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Effect of Six Week Training of Alternate Nostril Breathing on Cardiac Output and Systemic Peripheral Resistance in Prehypertensive Obese Young Adults

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ABSTRACT

Obesity is a state of excessive deposition of fat in the body. Prehypertension is a state just before hypertension (SBP=120-139 mm Hg, DBP=80-89 mmHg) and very common in young adults with family history of hypertension. Hypertension is very like to develop in prehypertensive obese young adults if prevention strategies are not applied timely. Alternate nostril breathing (ANB, Anulom-Vilom) is one of the most popular pranayama yogic exercises. The present study was done to find out effect of 6 week training of alternate nostril breathing on cardiac output and systemic peripheral resistance in pre hypertensive obese young adults by using Impedance Cardiovasograph (Nivomon, L&T Medical's). Sixty prehypertensive obese (BMI >30, SBP=120-139 mm Hg, DBP=80-89mmHg) male subjects, aged 17-25 years, participated voluntarily in the present study, Cardiac output, systemic peripheral resistance and other cardiovascular parameters were measured before and after 6 weeks training of Alternate Nostril Breathing (ANB) exercise of 15 minutes daily. Results showed significant decrease in all cardiovascular parameters after 6 weeks practice of ANB for 15 minutes daily. Decrease in Diastolic blood pressure (DBP), Systemic Peripheral Resistance (SVR) and Systemic Vascular Resistance Index (SVRI) was highly significant ($p<0.01$) while decrease in Systolic blood pressure (SBP), Heart rate (HR), Cardiac Output (CO), Stroke volume (SV) , Cardiac Index (CI) and Stroke volume Index (SI) was less significant ($p<0.05$).

Keywords: *Obesity, Prehypertension, Alternate Nostril Breathing, Impedance Cardiovasograph*

INTRODUCTION

An elevated arterial pressure is one of the most important public health problems in developing countries. Prehypertension is defined by systolic pressure between 120 and 139 mm Hg or diastolic blood pressure between 80 and 89 mm Hg. Prevention strategies are recommended for this population by adopting healthy life style to prevent them from development of hypertension. Early detection and treatment of hypertension reduces cardiovascular morbidly and mortality. Hypertension is one of the most common complex genetic disorders, with genetic heritability averaging 30%. Most studies support the concept that the inheritance is probably multifactorial or that a number of different genetic defects each have an elevated blood pressure as one of their phenotypic expressions. Therefore, people with family history with hypertension are at higher risk of developing hypertension. Age, race, sex, smoking, alcohol intake, serum cholesterol, glucose intolerance, and weight all may alter the prognosis of this disease. Obesity and male sex are the major risk factors for an adverse prognosis in hypertension along with other factors like smoking, alcohol intake, diabetes mellitus etc [1-3].

There is a positive correlation between obesity and arterial pressure. Obesity is associated with high normal blood pressure (Prehypertension) which may progress to hypertension stage 1 or 2. A gain in weight is associated with an increased frequency of hypertension in persons with previously normal blood pressure, and weight loss in obese persons with hypertension lowers their arterial pressure and, if they are being treated for hypertension, the intensity

of therapy required to keep them normotensive. Obesity is a state of excess adipose tissue mass. Obesity is more effectively defined by assessing its linkage to morbidity or mortality. Most widely used method to gauge obesity is the body mass index (BMI), which is equal to weight/height^2 (in kg/m^2). BMI of 30 is most commonly used as a threshold for obesity in both men and women. Hypertension and glucose intolerance are the risk factors influenced by adiposity. Distribution of adipose tissue in different anatomic depots also has substantial implications for morbidity. Specifically, intra abdominal and abdominal subcutaneous fat have more significance than subcutaneous fat present in the buttocks and lower extremities [1, 4]. Many of the most important complications of obesity, such as insulin resistance, diabetes, hypertension, hyperlipidemia, and hyperandrogenism in women, are linked more strongly to intra abdominal and/or upper body fat than to overall adiposity. Obesity may be lead to pulmonary abnormalities like reduced chest wall compliance, increased work of breathing, increased minute ventilation due to increased metabolic rate, and decreased total lung capacity and functional residual capacity. Severe obesity may be associated with obstructive sleep apnea and the "obesity hypoventilation syndrome". Exercise and reduced caloric intake is the cornerstone of obesity treatment. Even if exercise had no such salutary effect, it would be valuable in the obese individual for its effects on cardiovascular tone and blood pressure [1, 5]

Stress also worsens the condition in prehypertensive and obese people. As stress of any type leads to increase in sympathetic activity, which leads to further increase in blood pressure. Yogic exercises have been found to be useful in relieving the stress. Alternate-nostril breathing (ANB) or Anulom-Vilom is a type of pranayama that involves alternation in nostril breathing. Several investigations have suggested that ANB leads to a shift in sympatho vagal balance towards parasympathetic dominance and reduces sympathetic activity [6]. Change in cardiac output and peripheral resistance is very good indicator of change in autonomic status. As they tend to increase with sympathetic stimulation and tend to decrease with increase in parasympathetic activity. Cardiac output is the product of stroke volume and heart rate. Peripheral resistance in the body in man is primarily controlled by the arterioles which are richly supplied with sympathetic fibers, but sparse parasympathetic innervations [7, 8].

Cardiac output and peripheral resistance can be measured non- invasively by using Impedance Cardiovasograph (Nivomon, L&T Medical's). It is a Non Invasive vasography monitoring system. It measures the Cardiac Output (CO) and Blood Flow Index (BFI) of the patient non-invasively. It computes the Cardiac Output (CO), Stroke Volume (SV), Systemic Vascular Resistance (SVR), Cardiac Index (CI), Stroke volume Index (SI), Systemic Vascular Resistance Index (SVRI), Pulse Rate (PR) and various other cardiovascular parameters.

Obesity with Prehypertension is a common morbid clinical condition in young adults of high socioeconomic status and yogic exercise might be beneficial in these prehypertensive obese. Therefore, the present study aims to study the effect of 6 week training of alternate nostril breathing on cardiac output and systemic peripheral resistance in pre hypertensive obese young adults.

MATERIAL & METHOD

The present study was conducted in the department of physiology, Saraswathi Institute of Medical Sciences, Hapur. Sixty prehypertensive obese (BMI >30, SBP=120-139mm Hg, DBP=80-89mmHg) male subjects, aged 17-25 years, participated voluntarily in the present study, undertaken, to assess the effect of 6 week training of alternate nostril breathing on cardiac output and systemic peripheral resistance in prehypertensive obese young adults. Experiment procedures were in accordance with the ethical committee on human experimentation. Study was carried out at ambient temperature with minimal external or internal sound disturbances in the room. Subjects reported to laboratory 2 hours after light lunch. They were explained in detail about the experimental procedure. Informed consent was taken from all subjects.

Subjects were asked to lie in supine position and to take rest for 10 minutes. Systolic blood pressure (SBP), diastolic blood pressure (DBP) and heart rate (HR) were recorded by using automatic digital sphygmomanometer. Subjects were connected to Impedance Cardiovasograph (Nivomon) via color

coded 8 leads of NICO patient cable. Leads were connected at their respective locations as given below:

1. Red leads (I1 and I1′) -Behind the ears (Top pair)
2. Yellow leads (V1 and V1′) -Roof of the neck (Second pair)
3. Violet leads (V2 and V2′) -Level of xiphisternum (Third pair)
4. Green leads (I2 and I2′) End of ribcage or >5 cm from third pair (Bottom pair)

Basal cardiovascular parameters; Cardiac output, peripheral resistance etc were recorded using Impedance Cardiovasograph (Nivomon).

Then, alternate nostril breathing pranayama training was given to all subjects in the following steps.

1. Sit in a quiet place with the head, neck and trunk erect.
2. Fold the index and middle fingers of right hand in a way so that the right thumb can close the right nostril and the ring finger can close the left nostril (Vishnu Mudra).
3. Close the right nostril by the right thumb and exhale completely through the left nostril.
4. At the end of the exhalation close the left nostril with the ring finger, open the right nostril and inhale slowly and completely.
5. Repeat this cycle of exhalation through the left nostril and inhalation through right nostril, exhale completely through the same nostril keeping the left nostril closed with ring finger.
6. At the end of this exhalation close the right nostril and inhale through the left nostril and repeat this for two more times.
7. Inhalation and exhalation should be controlled and free from exertion and jerkiness in all the steps.

In summary, one exercise consisted of 3 cycles of exhalation through the left nostril and inhalation through the right nostril followed by 3 cycles of exhalation through the right nostril and inhalation through the left nostril and this was repeated for about 15 min [9, 10].

All the subjects practiced ANB for 15 min daily for 6weeks. After 6 weeks practice of ANB pranayama, subjects again reported to the lab. All cardiovascular parameters were recorded again. All data were collected and statistical analysis was done by student paired t-test using the window SPSS Statistics 17.0 version.

RESULT

Table1: Comparison of cardiovascular parameters in prehypertensive obese subjects before and after 6 weeks alternate nostril breathing pranayama *training*

S.N.	Cardiovascular Parameters	Before training	After training
1	Systolic blood pressure (SBP) (mm Hg)	130.47±4.2	118.24±2.11*
2	Diastolic blood pressure (DBP) (mm Hg)	84.34±1.5	73.22±2.42**
3	Heart rate (HR) (per minute)	80.41±2.62	71.28±0.83*
4	Cardiac Output (CO) (L/min)	5.62±0.07	5.12±0.11*
5	Stroke volume (SV) (ml/ beat)	71.11±1.54	73.84±1.86*
6	Systemic Peripheral Resistance (SPR) (dyne.sec/cm^5)	1367±16.4	1326.1±8.4**
7	Cardiac Index (CI) (L/min/m^2)	3.1±0.46	3.08±0.55*
8	Stroke volume Index (SI) (ml/ beat/m^2)	44.66±0.03	44.12±0.13*
9	Systemic Vascular Resistance Index (SVRI) ((dyne.sec/ cm^5/m^2)	775.5±14.1	754.5±11.3**

*p<0.05, **p<0.01

Data presented are mean ± SD. Analysis of data was done by student paired t-test

Table 1 show that all the cardiovascular parameters were significantly decreased after 6 weeks training of alternate nostril breathing pranayama. Decrease in Diastolic blood pressure (DBP), Systemic Peripheral Resistance (SVR) and Systemic Vascular Resistance

Index (SVRI) was highly significant ($p<0.01$) while decrease in Systolic blood pressure (SBP), Heart rate (HR), Cardiac Output (CO), Stroke volume (SV) , Cardiac Index (CI) and Stroke volume Index (SI) was less significant ($p<0.05$).

CONCLUSION

Obesity reduces the pulmonary as well as cardiac efficiency of subjects. Obesity is an important risk factor for development of hypertension. Prehypertensive subjects are also having higher risk of development of hypertension stage 1 or 2. Therefore, in case of prehypertensive obese people, progression to hypertensive state seems to be inevitable. However, regular yogic exercise like alternate nostril breathing may prevent development of hypertension. Sympathetic activity is more pronounced in obese individuals. This leads to increased blood pressure and heart rate in resting state in obese individuals. In addition, there is retention of fluid supported by increased sympathetic activity in obese persons which further tends to increase blood pressure [1]. Present study has shown that regular exercise of alternate nostril breathing for 15 minutes daily for 6 weeks significantly decreased the blood pressure of prehypertensive subjects bringing them to normotensive state. Systemic peripheral resistance and diastolic blood pressure was more significantly decreased which indicates that 6 weeks ANB practice significantly decreased the sympathetic activity. Significant decrease in heart rate is also brought about by decreased sympathetic activity and increased parasympathetic activity. Decrease in systolic blood pressure was significant but less pronounced, which indicates that weight reduction is needed to reduce water retention and volume overload in conjunction with yoga therapy.

Acknowledgement: Nil

Conflict of Interest: Nil

Source of Funding: Nil

Ethical Clearance: Procedures followed in the present study were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed concent was obtained from the subjects.

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Role of Ultrasonography of Cranium in Neonate & Infant of Western U.P. (Rural Population) in NCR Region Delhi

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ABSTRACT

Objective: Objective of this study was to know the findings of ultrasonography in newborn & infants admitted in Neonatal unit of MMC, Muzaffarnagar & SIMS, Hapur.

Design: Prospective study.

Setting: Neonatal intensive care unit & Department of Radiology, Muzaffarnagar Medical College, Muzaffarnagar & SIMS, Hapur.

Material & Method: In this study a total of 134 neonate and infants patients were taken at Muzaffarnagar Medical College, Muzaffarnagar & SIMS, Hapur between Jan12 to Dec14.

Conclusion: As the survival of high risk Newborn is increasing in developing countries, ultrasonography of cranium has now become an important diagnostic tool to detect normal anatomy and any pathological change in brain of neonate and infant.

Keywords: *Cranium and Anterior fontanelle.*

INTRODUCTION

Cranial USG is widely used for diagnostic information of brain morphology & cranial lesions in neonates[1,2]. There are some limitations for USG cranium especially when we required detailed parenchymal anatomy for which MRI provides greater resolutions, but it requires sedation and cost is high, CT scan had increased risk of ionizing radiations. As the ultrasonography is cheap, noninvasive, easy to perform, easy availability, is repeatability and movability, makes it popular screening tool[3]. Cranial ultrasound is mainly useful to newborn and infant until the fontanelle are closed[4].

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Cranial ultrasonography can detect the congenital anomaly, intracranial hemorrhage, postmeningitis hydrocephalus. Preterms are vulnerable for IVH and periventricular leukomalacia. Ultrasound cranium gives an idea about the incidence and evolution of cerebral lesions in the preterm[5,6]. Cranial ultrasound is also useful in term infants who have history of birth asphyxia or abnormal neurological sign[7, 8]. Most of the cranial USG obtained from cranial and sagitttal planes through the anterior fontenelle used as Acoustic window[6].

MATERIAL & METHOD

This study was carried out in 134 Newborn & infants at department of pediatrics and radiology of Muzaffarnagar Medical College, Muzaffarnagar and SIMS Hapur between the January 2012 to 2014. Most of the patients were born in SIMS Hapur and MMC Muzaffarnagar. Some are referred from nearby hospitals for admission in NICU. Inclusion criteria

are high risk infant having history of Birth asphyxia, Seizure, Respiratory distress, Neonatal Seizures, Preterm, congenital anamolies. Ultrasound scans were done using a curvilinear probe of 4-8 MHZ along with 4 D volume probe. The scans were assessed for cranial anatomy, ventricular size, evidence of focal or diffuse increased echogenicity in cerebral hemisphere and basal ganglion. Both coronal and sagittal scans were done involving the standard planes. Consent from parents & ethical committee clearances were taken.

RESULTS

A total of 134 patients were included in this study. Out of which 72 (53.70%) were male and 62 (46.30%) were female. Most of the USG were indicated in neonatal period 83(61.93%) while in 2nd and 3rd month of life 14(10.45%) & 16(11.95%) respectively. There were 48(35.82%) preterm, 70(52.24%) term & 16(11.98%) postterm neonates. Out of 134 patients, 60(44.78%) were having normal USG while 59(44.02%) have abnormal ultrasound scan. In abnormal ultrasound most of the patients having hydrocephalus 29(21.65%), periventricular densities were in 10(7.47%), cephalhematoma 9(6.72%), intraventricular hemorrhage 4(2.98%), encephalocele and subgalael cyst and encephalocele 2(1.49%) each, ventriculitis in 3(2.24%).

Table -1

Age of presentation n=134						
Age	**Male**		**Female**		**Total**	**%**
	No.	**%**	**No.**	**%**		
0-7 days	20	14.92	18	13.43	38	28.35
8-28 days	25	18.65	20	14.93	45	33.58
1-2 months	6	4.47	8	5.98	14	10.45
2-3 months	8	5.97	8	5.98	16	11.95
3-4 months	7	5.22	4	2.99	11	8.2
4-5 months	4	2.98	3	2.24	7	5.23
5-6 months	2	1.49	1	0.75	3	2.23
Total	**72**	**53.7**	**62**	**46.3**	**134**	**100**

Table -2

Gestational age n=134		
	No.	**%**
Preterm	48	35.82
Term	70	52.24
Post term	16	11.94
Total	134	100

Table -3

Ultrasound findings n=134		
	No.	**%**
Normal study	60	44.78
Hydrocaphalus	29	21.65
edema	15	11.19
Cephal haematoma	9	6.72
Periventricular densities	10	7.46
IVH	4	2.98
Encephalocele	2	1.49
Subglaleal cyst	2	1.49
ventriculitis	3	2.24
Total	134	100

DISCUSSION

Cranial ultrasound, when indicated can provide useful information about the structure of brain[8] and may be beneficial in intervention & treatment of predisposing factors related to these complications [9]. In our study the percentage of normal finding were noted in 60(44.78%) which correlate with the other studies[10,11] . In this study the hydrocephalus was found in 29 (21.65%), which is comparable to other study by Hadzagic[12] .Preterm babies in our study constitute 48 (35.82%) and cerebral edema, periventricular densities and IVH were found in 15 (11.19%), 10 (7.46%) and 4 (2.98%) which also corresponds to other study[13, 14] . However in some study the incidence of periventricular & thalamic densities was 20%[15] . In a study even well newborn also having minor abnormlaties in 50% of newborn[16,17] . Cranial ultrasound is very useful to detect acquired lesions such as edema, haemorrhage and congenital malfoarmation such as hydrocephalus, porencephalic

cyst, dandy walker cyst, arachnoid cyst, corpus callosal agenesis etc. As the survival rate of premature babies is increasing in developing countries like India, USG cranium may play a major role in detection & intervention of abnormalities.

CONCLUSION

The cranial ultrasound can be useful as it is easy to perform, free from radiation, transportable & cost effective modality to find abnormalities in brain. In countries like India, especially in remote areas where CT & MRI are not available USG cranium could be a very useful tool. As the USG cranium can be done in neonatal period, it enables early intervention and treatment.

Conflict of Interest : None

Source of Funding: None

Clearance of Ethical Committee: Taken

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Efficacy of Epidural Steroid Injection in Management of Low Back Pain

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ABSTRACT

The likelihood of experiencing an episode of low back pain increases with age, and 85% of people will have at least one episode in their lifetime. Prevalence of low back pain is next only to headache.

Total 25 patients (14 male and 11 female) who met the inclusion and exclusion criteria underwent epidural steroid injection. Patient pain scaling is done before performing the procedure, after 48 hours, after 2 weeks, after 3 months of the procedure. The proposed pain scale to be used is Numerical Rating Scale.

Out of total 25 patients, after 48 hours it was found 15 patients had mild pain (NRS 1-3),9 patients moderate pain (NRS 4-6) and 1 patient continued to have severe pain (NRS 7-10). After 2 weeks it was found 12 patients to be mild pain , 12 patients with moderate pain and 1 patient with severe pain. After 3 months it was found 7 patients had mild pain, 16 patients had moderate pain and 2 patients had severe pain.

The effect of epidural steroid injection decreases with time. The local effect of steroids has been shown to last at least 2 to 3 weeks at a therapeutic level.

Epidural Steroid Injection is a safe, effective, & economical treatment modality for LBP. It reduces the period of hospitalization, analgesic intake & facilitates the institution of early rehabilitative programs.

Keywords: *Low Back Pain ; Conservative Management; Epidural Steroid Injection.*

INTRODUCTION

Backache, which was known as an ancient curse, has now become a modern international epidemic. The likelihood of experiencing an episode of low back pain increases with age, and 85% of people will have at least one episode in their lifetime.[1] Prevalence of low back pain is next only to headache. Limiting activity levels, recurrence of symptoms in people with low back pain, psychological stress, loss of wages are of primary concern.[2]

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Epidural injection of corticosteroids is one of the most commonly used interventions in managing chronic low back pain.[3] They are combination of long acting steroid and epidural anesthetic. They provide analgesia for variable periods during which patient can go for rehabilitation exercises.[4] Steroids presumably exert their effects by limiting inflammatory response, inhibiting leukocyte aggregation, preventing degranulation of inflammatory mediators, stabilizing lysosomal and other membranes, and reducing the synthesis and release of proinflammatory factors.[5,6]

MATERIALS & METHOD

The present study is a Prospective Analytical study on 25 patients in department of Orthopaedics,

Sri Adichunchanagiri Hospital and Research Centre, B.G.Nagara, Nagamangala.

Patients meeting the inclusion criteria were selected from all patients attending AHRC OPD and admitted indoor. The patients were evaluated and followed up according to the protocol

INCLUSION CRITERIA

1. Patients who are not relieved of their low back pain by conservative management and they are not candidates or willing for spinal surgery.
2. Age >18 years and < 70 years
3. Willing to participate and after proper informed consent

EXCLUSION CRITERIA

The patients with the following symptoms were excluded from study

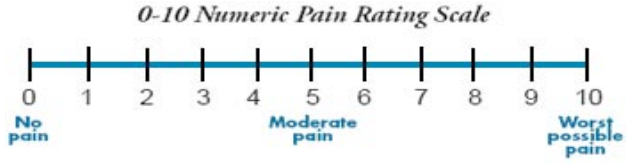
1. Patients with progressive motor deficit
2. Patients with multi-level degenerative spine disease, unstable spine, vertebral compression fractures, spondylolisthesis, cauda equina syndrome and arachnoiditis
3. Previous lumbar spine surgeries or epidural steroid injections.
4. Patient with history of allergy to steroids and local anaesthetic agents.
5. Patients with coagulopathy or systemic infection or infection of the injection site
6. Patients with an unstable medical or psychiatric condition
7. Patients not willing to participate in the study
8. Pregnant patients

Patients meeting the requirements of inclusion criteria and exclusion criteria were chosen,a detailed history taken and thorough general and local examination along with investigation done.

Straight leg raising test (SLRT), Patrick's test, Motor system examination of lower limb (including bulk, tone, power of muscles), superficial and deep reflexes and Sensory system examination was done.

Investigations like Blood tests (Complete haemogram, LFT, Renal function test), X Ray chest PA view, X Ray Lumbosacral spine AP and Lateral view, CT Scan, MRI lumbo sacral spine were done.

The proposed pain scale to be used is Numerical Rating Scale .



Patient pain scaling is done before performing the procedure, after 48 hours, after 2 weeks, after 3 months of the procedure and compared with the previous pre-procedure result

RESULTS

The following results of study were compiled after follow up of 25 patients:

1) Sex distribution of the study group is as follows :

Male – 14

Female – 11

2) AGE distribution of the study group is as follows :

20-30 years - 6

31-40 years – 10

41-50 years – 2

51-60 years – 5

61-70 years – 2

>70 years – none

3) Duration of symptoms of the study group is as follows :

<6 month : 3

6 month – 1 year : 4

1 year – 3 year :13

3 year -5 year : 4

>5 year : 1

4) ASSOCIATED RADICULOPATHY of the study group is as follows :

Right sided : 7

Left sided- 5

Bilateral – 4

No radiculopathy – 9

5) NUMERIC RATING SCALE

	1	2	3	4	5	6	7	8	9	10
Pre op	-	-	-	-	-	3	7	12	3	-
48 hours	1	6	8	5	4	-	1	-	-	-
2 weeks	1	5	6	4	6	2	1	-	-	-
3 months	-	2	5	6	6	4	2	-	-	-

6) POSITIVE PATRICK TEST:

The following people had positive patricks test

Pre op – 5

After 48 hours – 2

After 2 week-3

After 3 month – 3

7) Positive SLRT test :

Positive SLRT test of the study group

Pre op - 8

After 48 hours – 2

After 2 weeks – 3

After 3 months- 5

8) MRI findings:

Diffuse disc bulge noted at :

$L_3L_4 + L_4L_5$ – 2

$L_4L_5 + L_5S_1$ - 7

Isolated L_4L5 – 10

Isolated L_5S_1 - 6

DISCUSSION

From the above results we find that the effect of epidural steroid injection decreases with time.

There are several factors for varied results like patient selection, patient's individual interpretation of level of pain, regular follow up and the degree up to which patient follows post injection advice of doctors.

The local effect of steroids has been shown to last at least 2 to 3 weeks at a therapeutic level.

This therapeutic decay prompted many physicians to recommend multiple injections.[7]

The acceptable time interval between two injections is still debatable but some studies have shown that 7-10 days interval is appropriate.[8]

Only few of our patients reported with local pain over the injection site and headache, which subsided with conservative treatment.

There have been reports of epidural abscess, epidural hematoma, and duro-cutaneous fistula, bacterial meningitis and post-dural puncture headache.[9,10] None of these were seen in our study.

CONCLUSION

Epidural Steroid Injection is a safe, effective, & economical treatment modality for LBP. It reduces the period of hospitalization, analgesic intake & facilitates the institution of early rehabilitative programs. We recommend Epidural Steroid Injection as a conservative mode of treatment of back pain with or without radicular symptoms not responding to other modes of conservative treatment.

Acknowledgement: I would like to express my deepest appreciation to all those who provided me the possibility to complete this study. I would like to acknowledge with much appreciation the crucial role of the staff Dr (Prof) Abdul Ravoof, HOD , Department of Orthopaedics, who gave the permission to use all required equipment and the necessary materials to complete the study.

Conflict of Interest: None

Source of Funding : Self

Ethical Clearance : Approved

Shortcomings of the study: Inadequate sample size. Non availability of control group

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Study of Diabetic Retinopathy among Type 2 Diabetes Mellitus Patients Attending Ophthalmology Outpatient Department in a Tertiary Care Hospital in Western U.P., India

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ABSTRACT

Background: Diabetic retinopathy (DR) is the leading cause of new cases of blindness in person aged 20-74 years. **Objectives:** To assess the prevalence of DR and study co-relates among diabetic patients attending ophthalmic outpatient department in a tertiary care hospital of western U. P. **Methods:** Confirmed cases of Type 2 Diabetes Mellitus (T2DM), visiting ophthalmology OPD, were recruited in the study after taking consent and Ophthalmologic evaluation, blood sugar and blood pressure was carried out. Data was compiled and analyzed by using statistical tests such as arithmetic mean, average, percentage and Chai square test. **Results:** Out of all 116 recruited patients, mean age was 54.3 years, 37.93 % had DR of which 42.24 % were females and 57.76 were males. However difference in the gender was not statistically significant. 37.93% of the persons had either Non-Proliferative Diabetic Retinopathy (NPDR) or Proliferative Diabetic Retinopathy (PDR). About 18.10 percent persons had macular edema. The variables namely age, glycemic control ($P<0.05$) and duration of diabetes, high systolic blood pressure ($P<0.001$) were significantly associated with DR. **Conclusions:** Prevalence DR was 37.93% among the persons with T2DM. The study highlights the importance of control of systolic blood pressure and control of blood sugar as a preventive measure of occurrence of diabetic retinopathy.

Keywords: *Type 2 Diabetes Mellitus, Diabetic Retinopathy, NPDR, PDR, Macular Edema*

INTRODUCTION

It is expected that the prevalence of Diabetes Mellitus will almost double in next 25 years and at least 75 % of those affected will be in developing countries[1.] According to the report of International Diabetes Federation[2], India has about 61.3 million or 8% of the population suffering from Diabetes Mellitus. Due to high prevalence of Non-Communicable diseases, Government of India approved National Programme of Prevention & Control of Cancer, Diabetes and Cardiovascular Diseases & Stroke (NPCDCS) in 2010[3]. In the Indian context, geographic distribution also is known to contribute to the patterns of diabetes mellitus[4]. Diabetes mellitus is a complex disease having multiple factors for its occurrence. It has been observed that it is associated with progressive visual loss. Diabetic retinopathy (DR) is the leading cause of new cases of blindness in person aged 20-74 years [5-7]. The prevalence of blindness and visual impairment among Indians is diabetics was found to be high [8].

The identification of risk factors associated with diabetic retinopathy is essential if preventive measures are to be adopted and it is important for the development of better management strategies for diabetic retinopathy. By undertaking the present study an effort is being made to understand existing risk factors in the western region of U.P.

OBJECTIVES

To assess the prevalence of Diabetic Retinopathy (DR) and study co-relates for diabetic retinopathy among diabetic patients attending ophthalmic out

patient department in a tertiary care hospital located in western U. P., India.

MATERIALS & METHOD

It was a hospital based study carried out at Ophthalmology department of a tertiary care hospital of western U.P., India and only confirmed cases of Type 2 Diabetes Mellitus (T2DM) were included in the study. Inclusion & exclusion criteria were as below.

Inclusion criteria: Type 2 Diabetes Mellitus patients, who visited Ophthalmology OPD and were above 30 years of age were included in the study.

Exclusion criteria: The patients with mature cataract, whose fundi could not be examined, were excluded. The patients having history of exposure to radiation, and those who were diagnosed to be suffering from sickle cell disease, pheochromocytoma were also excluded since these conditions mimic fundus features with diabetic retinopathy.

Informed consent was obtained from all subjects before enrolling them for the study. The ophthalmologic evaluation was conducted by using Snellen chart, pupillary reflexes, detailed slit lamp examination, and dilated fundus was examined by indirect biomicroscopy. The assessment was conducted by specialist physician and a well-trained staff of the Department. The reading of random blood sugar was recorded for each person. History of hypertension was taken and B. P. was measured for each subject. Blood pressure was measured using a conventional mercury sphygmomanometer. Hypertension was reported to be present when the recorded systolic/diastolic blood pressure was higher than 140/90 respectively for at least two occasions. Retinopathy was classified according to the modified Airlie House classification, as introduced by the Early Treatment Diabetic Retinopathy Study (ETDRS) [9]. Data analysis was carried out using the statistical methods such as mean, range, Odd's ratio and Chai square tests.

Results

Out of 119 patients, one male and two females refused to participate in the study. Thus 116 patients were recruited for present study after applying inclusion and exclusion criteria. The distribution of the subjects with regard to age, sex, duration of diabetes, control of blood sugar and systolic hypertension is given below in Table 1. Out of 116 patients who were enrolled, the age ranged between 32 to 82 years with a mean age of 54.3 years. About 50 percent subjects were in the age group 45 to 60 years of age. In the present study, out of all 116 subjects 37.93 % had DR of which 42.24 % were females and 57.76 were males. However difference in the gender was not statistically significant. Almost 62.07 percent under study had normal fundus. Out of all who had DR, 72.73% had Non-Proliferative Diabetic Retinopathy (NPDR) and 27.27% had Proliferative Diabetic Retinopathy (PDR). About 18.10 percent persons had clinically significant macular edema.

Table 1: Distribution of the subjects having DR with regard to age, sex, duration of diabetes, control of blood sugar and systolic hypertension.

1. Age of diabetic patient	With DR n = 44	Without DR n = 72	inference
<=60 years	24	54	Significant at 0.05 level
> 60 years	20	18	
Total	44	72	
	P-value =5.18 at df=1		
2. Sex			
Female	21	28	Not Significant at 0.05 level
Male	23	44	
	P=0.873 at df=1		
3. Duration of Diabetes			

Cont... Table 1: Distribution of the subjects having DR with regard to age, sex, duration of diabetes, control of blood sugar and systolic hypertension.

< = 5 years	3	48	Significant at 0.001 level
> 5 -10 years	5	13	
> 10-15 years	8	7	
>15-20 years	12	3	
>21 years	16	1	
P-value	P=44.17 at df = 4		
4. Glycemic Control (RBS)			
Yes	12	20	Significant at 0.05 level
No	32	52	
P-value	P= 4.23 at df=1		
5. High systolic blood pressure			
No	16	31	Significant at 0.001 level
Yes	28	41	
P-value	P = 13.360 at df =1		

As observed from the table above, the difference among male and female subjects with T2DM for development of DR was not statistically significant. However association was observed with regard to age, duration of diabetes and control of blood sugar and systolic blood pressure at 0.05, 0.001, 0.05, 0.001 levels respectively.

DISCUSSION

The prevalence of DR in the present study was (37.93 percent) found to be lower as compared to the findings of Muawyah D[10]. Al-Bdour et al [11] in the hospital based study quotes the prevalence of DR to be 64 percent; whereas corresponding figures in other studies from Australia, Denmark, Iceland, Sweden, United States and United Kingdom, it ranged between 24-62 percent. DR prevalence in a study in south India was 7.3% for T2DM patients attending diabetes clinic (M. Rema) [12]. In Saudia Arabia region [13], the prevalence of DR was 31.3 percent and corresponding figure was 42.4 percent in Oman [14]. These differences observed could be due to different study designs and socio-geographic distribution.

The mean age of the patient with T2DM was 54.3 years. The findings are comparable with that with a study by Shrestha M K et al [15] in which the mean age of the patient was 57.4 and 44.7% had DR.

The risk of retinopathy is directly related to the control and duration of diabetes as shown by the Wisconsin Epidemiology Study of Diabetic Retinopathy (WESDR).[9] Ballard DJ et al [16] in their study have documented that duration of diabetes was significantly associated with DR. The present study corroborates the association between duration of T2DM and occurrence of DR and confirms the results from previous studies[17,18,19]. After 60 years of age the probability of having T2DM with DR is more as compared to that below 60 years.

The present study found association between high systolic blood pressure and occurrence of DR. Klein R et al [20] showed an association of blood pressure with long term incidence and progression of retinopathy; where as Aditi Gupta et al [21] found that high systolic and diastolic blood pressures are independent and significant risk factors for neurosensory detachment in Diabetic Macular Edema. Numerous previous studies supported the association between hypertension and the development and progression of retinopathy[7,8].

As regards occurrence of NPDR (72.73%) and PDR (27.27%) of present study, corresponding findings were 29.1%, and 3% in a study by Al Adsani AM[22]. The difference may be related to better glycemic control and less duration of diabetes. Clinically significant macular edema was found to be 18.10 percent in the present study as compared to 19.2 percent in a study by Shrestha MK et al.

Straton IM et al 3 in their prospective study of diabetic patients laid emphasis on good glycemic

control and treatment of hypertension for minimizing diabetic retinopathy. Patients with a good diabetic control had a lower prevalence of diabetic retinopathy than those with poor glycemic control as corroborated by other study 23. These findings are in agreement with those of the present study.

High prevalence of Diabetes has been documented globally as well as in India 24, 25, 26. The program for Prevention and Control of Diabetes aims for strengthening of infrastructure including human resources, health promotion and prevention. The findings of the present study may help the health professionals to deliver the services not only at the level of primary prevention but also for timely detection and prevention of Diabetic retinopathy and its complication. After having understood the risk factors for DR, it is also important to plan periodic counseling sessions for health education of all T2DM patients with regard for better compliance with regard to diabetes management and control of blood pressure.

CONCLUSION

Prevalence DR in the present study, at a tertiary level hospital in U.P., India, was 37.93% among the persons with T2DM. Association with regard to age, duration, high systolic blood pressure and glycemic control and development of DR has been reported. However no association was established between occurrence DR and gender.

The study highlights importance of control of systolic hypertension, glycemic control. DR which is a serious complication of diabetes. Therefore it is very important to encourage persons with T2DM to attend the follow on regular basis, which would go in a long way for prevention of occurrence of diabetic retinopathy.

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Conflict of Interest: Authors had no conflict of interest for undertaking this research.

Source of Support: Nil

Ethical Issues: Prior approval to conduct the present study was obtained from the concerned authorities of the institute. The participants were explained the purpose of the study, confidentiality was assured and consent was taken prior to their enrollment in the study.

Limitation: Blood Cholesterol levels and associated nephropathy were not considered in the present study.

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A Study of Adverse Outcome in Early and Moderate Preterms

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ABSTRACT

Background: The preterm birth rate has increased over the years in developed and developing countries. Prematurity is a leading cause of neonatal deaths. To reduce neonatal mortality in our country we need to look at the profile of preterm birth. This study attempts to look at the preterm birth rate, morbidity pattern and survival rate and analyse the risk factors for preterm birth born between 28-34 weeks.

Method: This is a observational nested case control study over a period of one year. The cohort included all premature newborm between 28-34weeks gestation. Detailed maternal and neonatal factors were studied and compared in newborns with and without morbidity.

Result: The incidence of preterm deliveries in the 28-34 week gestation is 52 per 1000 deliveries (5.28%). Of them 4.2% were born between 32-34 week and 1.2% were born between 28-31 weeks. The survival rate is 66.67% and 96.3% in the 28-31 and 32-34 weeks gestation respectively The odds of developing morbidity significantly increased with premature labour (OR=10.32, CI 1.34, 79.52; p= 0.025), antepartum haemorrhage (OR=3.02, CI 0.55, 16.55; p=0.019) and decreases with caesarean section (OR=0.04, CI 0.01, 0.29; p=0.001) and twin pregnancy (OR=0.16, CI 0.05,0.56; p=0.004). Neonatal jaundice and hypoxic ischaemic encephalopathy was the commonest cause of morbidity and mortality.

Conclusion: The survival rate is higher with increase in gestational age. The risk factors for morbidity are low birthweight, singleton pregnancy, normal vaginal delivery, premature labour and antepartum haemorrhage.

Keywords*: Preterm, outcome, morbidity, survival rate, risk factors.*

INTRODUCTION

Worldwide, approximately 9.6% of all births are preterm, but incidences vary by time and region. In almost all high- and middle-income countries of the world, preterm birth is the leading cause of child death. Preterm birth is estimated to be a risk factor in at least 50% of all neonatal deaths.[1,2] Preterm birth, defined as birth occurring before 37 weeks gestation, is one of the most significant contributors to neonatal mortality and morbidity, with long-term adverse consequences for health, and cognitive outcome as well as financial implications for health care. The highest rates of preterm births have been observed in developing countries, whilst rates from 5% to 12% were reported for Europe in 2004.[3] With improving lung maturity by giving antenatal steroids the obstetricians venture to deliver earlier in high risk cases. Preterm birth rates have been reported to range from 5% to 7% of live births in some developed countries, but are estimated to be substantially higher in developing countries. [2]

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Events leading to preterm birth are still not completely understood, although the etiology is thought to be multifactorial. There are various maternal and fetal causes of preterm births. Both maternal and fetal factors are more frequently seen in pregnancies occurring after assisted fertility treatments, thus increasing the risk of both spontaneous and provider-initiated preterm births.

Preterm birth can be further sub-divided based on gestational age: extremely preterm (<28 weeks), very preterm (28 - <32 weeks) and moderate preterm (32 - <37 completed weeks of gestation). Moderate preterm birth may be further split to focus on late preterm birth (34 - <37 completed weeks) [1]. There has been study [4] focusing on the extremely preterm and late preterm hence a need arose to analyse the survival rate among very preterm and the early moderate preterms.

In order to reduce neonatal mortality in our country we need to look at the profile of preterm births. Since survival of preterm <28 weeks in a developing country like ours is poor and associated with impairment, and the morbidity and mortality is comparatively lower in the late preterms, it would be ideal to concentrate on surveying the preterm health in the 28-34 weeks gestation. This study attempts to look at the preterm birth rate, morbidity and survival rate and analyse the risk factors for preterm birth in the 28-34 weeks.

Moreover we noticed that a lot of resources are drained to save premature newborn but the long term morbidity and mortality is poor in the extremely preterms due to low socioeconomic and poor literacy rate in our hospital. In such a background we planned a study the very and moderately preterm deliveries, their morbidity and mortality rates. There is a majority of such preterms who develop none of these complications and the outcome is similar to any term. Hence to understand why this happens we studied the maternal and fetal factors associated with adverse outcome in the very and moderate preterm.

MATERIALS & METHOD

The study was conducted in our neonatal intensive care unit between January to December 2014. The study population included all live babies born after 28 weeks and before 34 completed weeks during this period. This is a retrospective observational nested case control study. All deliveries between 28- 34 weeks are admitted to the neonatal unit as per protocol. The baby is assessed by a paediatrician and if sucking reflex is normal and the mother is able to breast feed the baby is shifted to the postnatal wards. Informed consent was taken from mother. The sick newborns remain in NICU. The newborns are followed till discharge.

The maternal details including age, parity, presence of anaemia, antepartum haemorrhage(APH), pregnancy induced hypertension (PIH), gestational diabetes mellitus(GDM) , hypothyroidism, preterm labour, prolonged premature rupture of membranes (PPROM) and confirmed with New Ballard score. The weight, sex, apgar scores at 1' and 5', complications like jaundice, respiratory distress syndrome, sepsis, pneumonia, NEC, congenital heart disease, hypoglycemia, seizures, birth asphyxia, ventilated /not ventilated, stay in NICU was collected from medical record.

Morbidity included (i) septicaemia (ii) neonatal jaundice (iii) respiratory distress syndrome (RDS) (iv) hypoxic ischaemic encephalopathy (v) necrotising enterocolitis (NEC) (vi) congenital heart disease (vii) hirschsprung's disease.

Statistical analysis included comparison of mean using student t test and Fischer's test in case of proportions. For categorical variables, logistic regression approach using a probit model in STATA V.12.0 was used and the outcomes were compared using odds ratio (OR) using statistical software R, V.3.1.0.

RESULT

There were 2500 live births in the hospital over one year. Of them 132 preterm in the gestation 28 -34 weeks met the selection criteria of our study. 58 of such newborn developed complications and were admitted in NICU.

The incidence of preterm deliveries in the 28-34 week gestation is 52 per 1000 deliveries (5.28%). Of them 4.2% were born between 32-34 week and 1.2% were born between 28-31 weeks. The gestation specific incidence, morbidity and survival rates are shown in Table 1. The survival rate is 66.67%

and 96.3% in the 28-31 and 32-34 weeks gestation respectively. The mean gestational age was 32.69±1.39 weeks and mean weight was 1590.91±357.78gms. The male to female ratio was 1.1:1. Of them, 43 were born by normal vaginal delivery and 89(67.42%) had caesarean section. 52 (39.39%) were twin pregnancies. Preterm labour was seen in 44(33.33%) cases. Antepartum haemorrhage (12.12%) and anaemia was the commonest risk factor for preterm birth (Table2)

There is significantly increased number of twin pregnancies ($p<0.05$) and caesarean section ($p=0.002$) among controls. A significantly higher number of preterms with morbidity have apgars of ≤ 7 at 5 minutes ($p=0.0001$). (Table 3)

In the logistic regression model, gestational age 28-32 weeks, birth weight 1000-2000gms, apgar score ≤7 at 5min have 8.8, 1.16, and 5.8 times higher risk of developing morbidity. The odds of developing morbidity significantly increased in mothers who had antepartum haemorrhage (OR=3.02, CI 0.55, 16.55; p=0.02), premature labour (OR= 10.32, CI 1.34, 79.52; p= 0.025) and decreases with caesarean deliveries (OR=0.01, CI 0.01, 0.29; p=0.001) and twin pregnancy (OR=0.16, CI 0.05,0.56; p=0.004). (Table 4)

Out of 132 newborns, 119 (90.15%) were well and discharged, 12(9.09%) preterm newborns died, and one was discharged against medical advice. Out of 132, 58 preterm developed complications and 12 (20.69%) of them died. 34(58.62%) developed jaundice, 14(31.25%) had respiratory distress syndrome, 15 (25.86%) had sepsis, 8 (13.79%) had hypoxic ischaemic encephalopathy (HIE), 2 (6.89%) suffered from necrotising enterocolitis and 3(3.27%) developed PDA. (Table5) There was need for mechanical ventilation in 8 of the newborn either in the form of continuous positive airway pressure or mandatory ventilation. One of the newborn with hyaline membrane disease, one developed bronchopulmonary dysplasia and was discharged on request against advice. The causes of mortality included sepsis, hypoxic ischaemic encephalopathy, respiratory distress syndrome and cyanotic heart disease. The case fatality rate was highest in cyanotic heart disease

DISCUSSION

Preterm birth rate trends for low- and middle income countries suggest an increase in some countries (e.g., China) and some regions (e.g., South Asia).[1,2] The preterm birth rate in Asia and south central Asia is 9.1% and 11.4% respectively. [3] In view of such data if the preterm birth is taken as 10% in our country, then in our hospital with 2500 deliveries, 250 are born preterm. More than half (52.8%) of all preterm deliveries are between 28-34 weeks gestation.

The study shows that 4.20% preterms were born between 32-34 weeks and 1.28% were born between 28-31 weeks which is lower than the Bangladeshi study [5] showing rates of 7.1% and 2.9% respectively. Since our hospital caters to the labourers, they come under low to middle income group. Our study reports a better survival rate of 66.67% and 96.3% among the 28-31 weeks gestation and 32-34 weeks respectively though reports state that in low-income settings half of babies born at 32 weeks still die due to a lack of basic care and 30% of those born at 28 to 32 weeks survive, with almost all those born at <28weeks dying in the first few days of life.[1]

There was premature rupture of membranes in 25.76% cases and antepartum haemorrhage and anaemia in 12.12% cases as similarly reported as commonest obstetrical risk factor for premature labour in a study in Nepal[6] and Lucknow.[7] But in our study we found the odds of developing morbidity increases with antepartum haemorrhage, anaemia and PIH but significant increase is seen with APH whereas in a study from India [4] in preterm <37 weeks report that the odds of developing morbidity decreased with increasing gestational age and increased with hypertensive disease of pregnancy. This difference can be explained by the fact that the preterm in our study are between 28-34 weeks there are increase number of multiple pregnancy which predispose to antepartum haemorrhage which commonly occurs between 28-34 weeks.

Among the preterm with morbidity the incidence of jaundice was highest followed by RDS and sepsis. Studies from Nepal and Malaysia [6,9,10] report highest incidence of sepsis and HMD respectively. The study from Nigeria[8] on preterm <37 weeks reports that the commonest medical conditions were respiratory problems in 95 (68.8%) followed by jaundice in 94 (68.1%) and sepsis in 54 (39.1%) of the patients. Neonatal jaundice gained precedence in our study as

our spectrum includes only the early and moderate preterms.

The incidences of NEC was lower in our study compared to others[8] due to early initiation of breast milk either orally or through nasogastric tube as deliveries are intramural and there is easy availability of breast milk. The mortality was lower in our study as respiratory distress syndrome was managed better due to availability of both surfactant and ventilation. The commonest cause of mortality was severe birth asphyxia following APH where both ventilation and circulation needs to be managed simultaneously and aggressively which is lacking due to deficiency of manpower. Similarly congenital heart disease was a cause of mortality due to shortage of diagnostic aids, personnels and set up for disease specific management.

Table 1: Incidence, Morbidity and survival rates according to gestation.

Gestation (weeks)	Incidence n=132(%)	Morbidity n=58(%)	Survival n=120(%)
28-31	24(18.18)	16(66.67)	16(66.67)
32-34	108(81.82)	42(38.89)	104(96.3)

Table 2: Characterestics of cohort

Parameters	n=132(%)
Gestational age (m±SD) wks	32.69±1.39
Weight (m±SD) gms	1590.91±357.78
Males	69(52.27)
Twins	52(39.39)
Caesarean	89(67.42)
Apgar 1′(m±SD)	6.03±1.50
Apgar 5′(m±SD)	8.07±1.52
Apgar≤7 at 5′ Primigravida	39(14.39) 72(54.55)
Maternal age (m±SD)yrs	25.73±5.12
PPROM	34(25.76)
Preterm labour	44(33.33)
Chorioamnionitis	2(1.52)
Pregnancy induced hypertension	14(10.60)
Antepartum haemorrhage	16(12.12)
Anaemia	16(12.12)
Gestational diabetes mellitus	4(3.03)
Hypothyroidism	6(4.55)
Bad obstetric history	8(6.06)
Morbidity	58(43.9)
Mortality	12(20.69)
Ventilated	8(6.06)

Table 3: Distribution of cases and control by maternal and neonatal variables.

Variable	Cases(n=58)	Controls(n=74)	P value
Weight(gms) ≤ 2000 >2000	54 4	66 8	0.44
Gestation(wks) 28-31 32-34	18 40	13 61	0.07
Males	31	38	0.81
Twins	10	42	0.0001
Maternal age	25.81 ±4.58	25.45±5.34	0.69
Primigravida	32	40	1.0
Caesarean	30	58	0.002
Apgar ≤7 at 5′	27	12	0.0002

Table 4 : Regression analysis for maternal Risk Factors for preterm birth.

Variables	Odds Ratio(OR)	Confidence interval(CI)	P value
Gestational age 32-34 weeks 28-31 weeks	Ref 8.80	1.85 - 41.76	0.006
Males Females	Ref 0.58	0 .17 - 1.99	0.39
Birth Weight >2001g ≤ 2000g	Ref 1.16	0.19 - 6.98	0.87
Apgar≥8 at 5min Apgar ≤ 7 at 5min	Ref 5.90	0.70 - 49.79	0.17
Single Twins	Ref 0.16	0.05 - 0 .56	0.004
Normaldelivery Caesarean	Ref 0.04	0.01 – 0.29	0.001
Maternal age 20-30 yrs ≤ 19 yrs ≥31 yrs	Ref 1.87 0.17	0.39 - 8.93 0.02-1.098	0.43 0.06
Primigravida Multigravida	Ref 1.26	0.35 - 4.48	0.73
Premature labour? No Yes	Ref 10.32	1.34 - 79.52	0.025
PPROM? No Yes	Ref 1.22	0.39-3.84	0.19
APH? No Yes	Ref 3.02	0.55 – 16.55	0.019
PIH? No Yes	Ref 1.04	0.17 - 6.44	0.97
GDM? No	Ref 1.09	0.09 – 13.19	0.95

Table 5: Morbidity and mortality pattern in preterms.

Complications	Morbidity	Mortality	Case fatality	
	n=58(%)	%(n=132)	n=12(%)	rate
Hyperbilirubinaemia	34(58.62)	25.76	-	
Sepsis	15(25.86)	11.36	3(25)	20
Hypoglycaemia	10(17.24)	7.58	-	-
TTN	5(8.62)	3.79	-	-
Respiratory distress syndrome	14(24.13)	10.60	2(16.67)	14.26

HIE	8(13.79)	6.06	4(33.33)	50
NEC	2(3.45)	1.52	-	-
PDA	3(3.27)	2.27	-	-
ROP	-	-	-	-
IVH	-	-	-	-
Congenital cyanotic heart disease	2(3.45)	1.52	2(16.67)	100
Hirschsprungs disease	1(1.72)	0.76	-	-

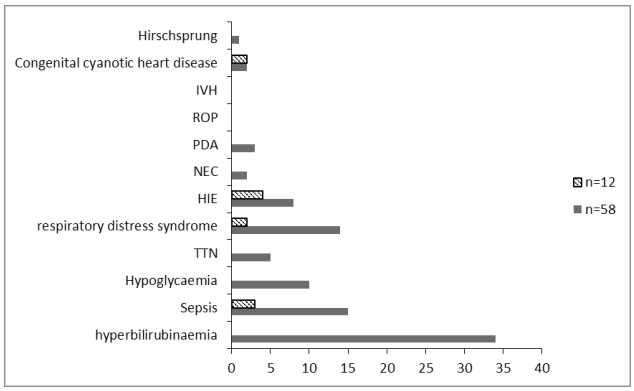

Figure 1: Morbidity and mortality schematic distribution

CONCLUSION

All preterm births in 28-34 week gestation account for half of total preterm births in our country. Maternal and fetal risk factors need to be addressed to improve perinatal outcome.

Neonatal jaundice and hypoxic ischaemic encephalopathy is the commonest cause of morbidity and mortality in preterms between 28-34 weeks gestation

Acknowledgement: Nil

Ethics: Since the corresponding author is in charge of NICU, data was collected in the process of treatment. The study was done retrospectively.

Conflict of Interest: Nil

Funding: Nil

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Health Care, Step Child of the Indian Government - a Glance on Maternal and Child Care

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ABSTRACT

Out of the 2.89 lakh women who died in 2013 as a result of complication in pregnancy or child birth, 50000 were in India i.e 17 per cent of maternal mortality of the world. We lose approximately two million children under the age of five every year and India is claiming the tag of a global leader. With the objective to evaluate health statistics and government role in sphere of maternal and child health, study was conducted based on secondary data obtained from statutory bodies of national and international concern. Areas of grave concern were identified and reasons for the same were proposed. Descriptive statistics, using frequency distribution mean percentage scores were calculated.

Keywords: *Maternal Care, Child Care, Mortality, Health Services, Public Health¸ Heath Care Spending.*

INTRODUCTION

According to the World Bank report 2013, India is the tenth largest economy and is home to every fourth person of the world. 2014 saw an annual growth rate of 5.4% in India with the growth rate of 6.86% in the service sector making it the fastest growing sector of the economy. Education and health are one of the most important service sectors socially as they hold a key aspect to both the physical and psychological well being of an individual but are coherently being ignored by the government. Recent years have seen a huge growth and also a potential to growth in both the said sectors, but has majorly been realized by the private players[7].

The height of public spending on health is a grave area of concern of the recent times and has been a paramount issue. A number of research studies along with policy documents of the government have repeatedly highlighted the low level of public spending on health in India. In particular, public spending on health as a percent of GDP has been the focus of discussions, as it is an indicator of the priority accorded to health in the planning process of the country. Policy documents like the Approach Paper to the Twelfth Five Year Plan (2012 to 2017), the High Level Expert Group for Universal Health Coverage (HLEG), the Programme Implementation Framework of the National Rural Health Mission (NRHM) and the Report of the National Commission on Macroeconomics and Health (NCMH) have all endorsed the need to raise the level of public spending on health in India from around one per cent to 2 to 3 per cent of GDP[4].

Whereas India claims to have a universal healthcare system Indian Health care system is just a nominal health care system, there are not enough hospitals (0.7 beds per 1000 people in 2012), medical staff, medicines or ambulance services available in the system. Quality of care and accessibility is very poor. The current nurse patient ratio is 1.7 nurses per 1000 people and doctor patient ratio is 0.7 physicians per 1000 people, which being one of the lowest in the world. India is currently known to have approximately 600,000 doctors and 1.6 million nurses. The recommended WHO guidelines suggest that there should be 1 doctor for every 600 people. This translates into a resource gap of approximately 1.4 million doctors and 2.8 million nurses.

Another major problem being faced is the influx of large number of patients towards the private health care. Most people depend on private hospitals for health care except very poor people, who depend

on government hospitals because they can't afford private out of pocket health care. The services in the public health care being highly compromised further act as a contributing factor to the prevailing detrimental trend.

Another concern that arise in relation to healthcare are that healthcare spending is lagging behind the GDP growth, out of pocket expenses are growing pushing the people towards poverty line, state of health infrastructure is dilapidated and Public Private Partnerships leave much to be desired.

According to constitution of India Article 47 in The Constitution of India 1949, it is Duty of the State to raise the level of nutrition and the standard of living and to improve public health. The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary

In a developing country like India, poverty, illiteracy and multiple pregnancies take their toll of mother's health and that of the breast-fed infant. High prevalence of anemia and malnutrition among the reproductive age group women, particularly during pregnancy and lactation can have irrevocable effects on the infant and mother's health.

Indian women have high mortality rates, particularly during childhood and in their reproductive years. India's maternal mortality rates in rural areas are among the worlds highest.

From a global perspective, India accounts for 19% of all live births and 27% of all maternal deaths. The health of Indian women is intrinsically linked to their status in society, especially for those living in a rural area. Major Issues in Maternal and Child Health are maternal mortality, unavailability of antenatal and postnatal care, child mortality along with anemia and poor nutrition. Societal perceptions, depleted social status of women, male child preference, and detrimental level of health awareness along government indifference have led propagation of these problems[4].

REVIEW OF LITERATURE

SIDDARTH RAMJI in his study titled **Newborn and child health in India: Problems and interventions** with the objective of finding why the neonatal mortality rates were high and suggested solutions to deal with the same. A review of ages at death during the first 28 days revealed that two-thirds of deaths occur in the first week of life and two-thirds of these within the first 2 days of life .Thus, almost 45% of neonatal deaths take place within 48 hours of birth. The major causes of death during this period are birth asphyxia and trauma, problems related to low birth weight, such as hypothermia, respiratory problems, feeding and peripartum infections and malformations. He suggested this issue can be holistically tackled by pushing for universalization of institutional delivery for all women, or use an at-risk approach to ensure institutional deliveries for high-risk women and provide a skilled birth attendant in the community for the remaining women. The first option must be weighed against the existing capacity of health care institutions both in the public and private sectors, the capacity of the user to pay for these services, and the evidence as to the type of skilled birth attendant needed to assist the delivery of low-risk women.

PRASHANT KUMAR SINGH, RAJESH KUMAR RAI AND CHANDAN KUMAR in their study **Equity In Maternal, Newborn, And Child Health Care Coverage In India** with the objective of assessing the inequity in coverage of maternal, newborn, and child health (MNCH) care services across household wealth quintiles in India and its states. They found that the mean overall coverage of 45% was estimated at the national level, ranging from 31% for the poorest to 60% for the wealthiest quintile. Moreover, a massive state-wise difference across was observed. Almost half of the Indian states and union territories recorded less than 50% coverage in MNCH care services. The study concluded that India needs focused efforts to address the inequity in coverage of health care services by recognizing or defining underserved people and pursuing well-planned time-oriented health programs committed to ameliorate the present state of MNCH care.

According To **DELOITTE 2015 health care outlook** India India's public health care system is patchy, with underfunded and overcrowded hospitals and clinics, and inadequate rural coverage. Reduced funding by the Indian Government has been attributed to historic failures on the part of the Ministry of Health and Family Welfare (MHFW) to spend

its allocated budget fully. This is despite increasing demand, due, in part, to growing incidence of age- and lifestyle-related chronic diseases resulting from urbanization, sedentary lifestyles, changing diets, rising obesity levels, and widespread availability of tobacco products. India's health care sector witnesses close to 50 percent spend on in-patient beds for lifestyle diseases, especially in urban and semi-urban pockets.

OBJECTIVES

I. To identify major trends in public spending on health care.

II. To evaluate the level of health care spending by the government on maternal and child care in India.

III. To evaluate the maternal and child health care needs.

IV. To ascertain reasons for poor maternal and child health in India.

FINDINGS AND DISCUSSION

As per the data of the world health organization pertaining to world development indicators covering the total of 248 countries of the world, the health spending by India is one of the lowest (Table 1). On comparing India with its neighboring countries on the parameter of percentage of GDP being spent on health, countries like China, Sri Lanka, Pakistan and most prominently Nepal are either spending equal or more on health[1].

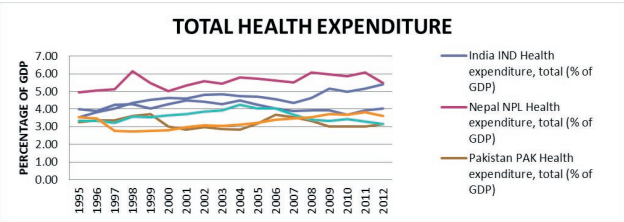

Figure 1 Source: Author's construction

BRICKS, which symbolizes the grouping of five emerging economies of the world being Brazil, Russia, India, China and South Africa was formulated with the intention of formulating a political hub or alliance and there by convert their growing economic power into a greater geopolitical clout. On analyzing the spending of all concerned countries in the group on health, India again emerges as the lowest spender[15].

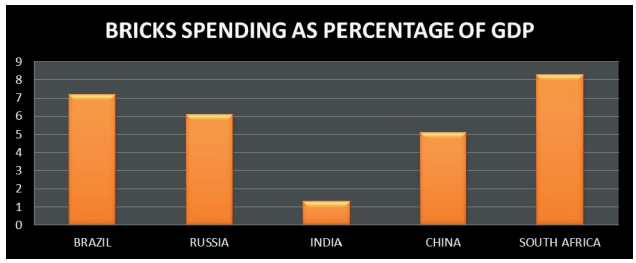

Figure 2 SOURCE: Author's construction

Health expenditure, public (% of GDP) in India was 1.20 as of 2011 which being one of the lowest in the world. Its highest value over the past 16 years was 1.20 in 2011, while its lowest value was 0.94 in 2005.Public health expenditure consists of recurrent and capital spending from government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations), and social (or compulsory) health insurance funds[14].

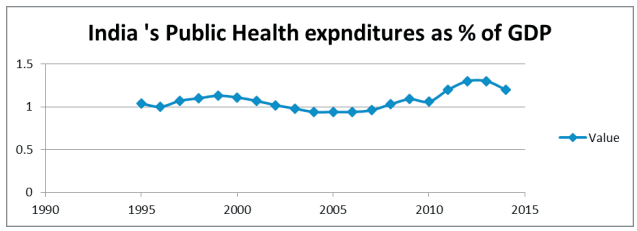

Figure 3 Source: Author's construction

On analyzing the percentage increase in spending for the domain of public health relative to the growth in GDP, an inconsistent increase can be concluded. Money coming out of the pocket of general public is being incoherently redirected for purposes of lesser importance to the general public[10].

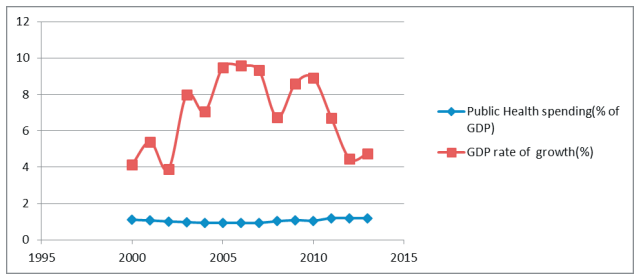

Figure 4 Source: Author's construction

Insufficiencies in public healthcare services have driven people across socio-economic strata to private healthcare facilities leading to issues of affordability challenges. In 2012, 61% of rural patients and 69% of urban patients chose private in-patient service providers, up from 40% reported in a 1986-87 government survey.

The concept of corporate hospitals has come up in a big way in the recent years. Multispecialty hospitals are an emerging trend of this era both in rural and urban areas. Solely private or private-public type of multispecialty hospitals have come in the state during the last decade. Though it has brought in allot of relief to suffering state of Indian health care, affordability is a major area of concern for such establishments.

The corporate have understood the vulnerability present in the health sector due to absence of required government resources and involvement hence have tapped upon these markets as seen in the following graph

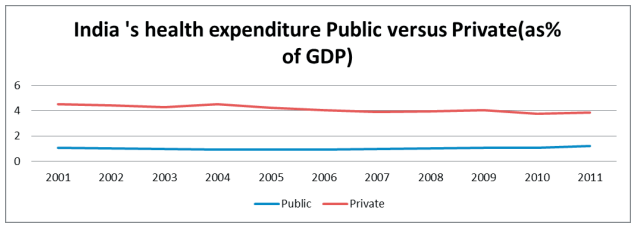

Figure 5: Source: Author's construction

High Out-of-pocket (OOP) Expenditure out of which, Share of Medicines is 66% & Diagnostics is 8%. High OOP on medicines is due to Shortage of medicines in public facilities, and drugs from private retailers are expensive. As a result a large number of people from the lower income groups are forced to sell off their assets and incur debts. The number of people impoverished due to spending on medicines increased from about 26 million in 2004-05 to 34 million in 2011-12 There was increase from 21 million to 29 million people in rural areas alone [2].

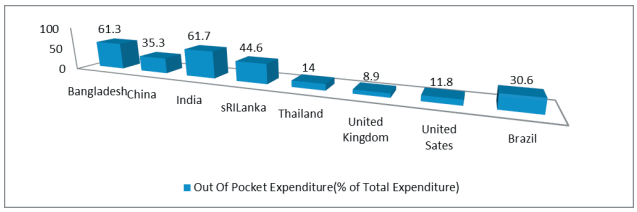

Figure 6: Source: Author's construction

As a consequence of low public spending there is lack of adequate infrastructure and shortage of human resources which is adversely affecting the quality of services. According to a study, there is severe shortage of human resources in rural areas. Considering that In India 68.84% of population resides in the rural areas. There is 10% shortage of doctors at primary health centers. The shortage of nursing staff at primary and community health centers is 23% and lack of specialists at community health centers is glaring 70%. The proportion of out-patients in private sector in rural areas is 78%; and the urban areas is 81% o proportion of in-patients in private sector is rural areas rural is 58%; urban is 62% (IDFC 2013/14).

Under the United Nations ambitious project of Millennium Development Goals child mortality was targeted to be reduced by 2/3. India ranks poorly on key health indicators, out of 194 countries, India ranks: 145 for Infant Mortality Rate (IMR) and Under-five Mortality Rate (U5MR), 122 for Maternal Mortality Ratio (MMR) and 162 for immunization coverage against Measles among one-year olds (IDFC 2013/14))

The maternal deaths were recorded at 190 women in 100,000 births. India is ranked at 47 positions in the under 5 year mortality of children. Less than 5 mortality rate has been 53 per 1000 births a reduction of 42% from 2000.

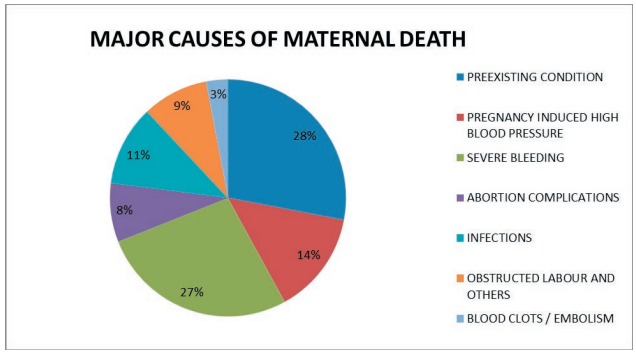

Figure 7: Source: Say L et al. Global causes of maternal death, 2014

Preexisting medical conditions, and severe uncontrolled bleeding while delivery have been cited as major reasons for maternal deaths followed by pregnancy induced high blood pressure and infections. The above mentioned conditions have their etiology in either poor medical facilities or lack of awareness, both of which cannot be countered without government intervention.

Other issues in Maternal and Child Health are early marriage and pregnancy, assisted births and institutional deliveries, malnutrition, maternal and child mortality.

India is ranked 47 in the world out of 194 nations in the under 5 years mortality rank. Even though the rate has come down from 91 in 2000 to 53 in 2013

with the reduction of 4.3%yet it is lagging behind most nations of the world. Infant Mortality Rate under 1 years of age is 41% and neonatal mortality rate is 29% as per 2013 UNICEF study. Around 1.34 children under the age of 5 die in India every year. The leading causes of death in under five year old children are preterm birth complications, pneumonia, birth asphyxia, diarrhea and malaria. About 45% of all deaths are linked to malnutrition.

Table 1 Source: WHO

Country	Total % of GDP spent on healthcare	Private Expenditure %	Per capita spent on healthcare (US $)	Per capita government spends on healthcare (US$)
India	4.1	70.8	132	39
USA	17.9	46.9	8362	4437
UK	9.6	16.1	3480	2919
South Africa	8.9	55.9	935	412
China	5.1	46.4	379	203
Brazil	9	53	1028	483
Pakistan	2.2	61.5	59	23
Nigeria	5.1	62.1	121	46
Russia	5.1	37.9	998	620

From the above table it can be deduced that we are not even close to the range of spending on health care being done by the developed nations. India is not even in league with its counterparts in BRICS nations and is bracketed even lower to countries like Nigeria.

Due to the ongoing negligent attitude being opted by the centre most of the resources are on the disposal of private players. Those being 80% of all doctors, 26% of nurses, 49% of beds and 78% of ambulatory services and 60% of in-patient care.

Another area of concern is inadequate penetration of medical insurance. Only 243 million of India's 1.2 billion citizens are covered under Government health insurance schemes

Allocations to the Ministry of Women and Child Development (MWCD), the nodal agency for women in the country, show a decline. The allocation of the women and child development ministry has been slashed by 44 percent in the budget for 2015-16. With respect to 'Women Welfare,' the allocations actually show a downward trend. And almost 87 per cent of the 2014-15 budget of the MWCD was allocated for the Integrated Child Development Services Scheme, leaving only five per cent for schemes exclusively meant for women[18].

CONCLUSION

There is a poor state of health services in the country, which requires immediate attention in all aspects maternal and child health being the most important of them. It will also be important to ensure increased spending on all social sectors such as health, education and sanitation, given their impact on women. Public health care is in a depilated condition and requires immediate economic reforms to become functional in the right contexts. Only a healthy nation can be a world leader and if our country aims to be one prompt action is needed.

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Ethical Clearance- Nil (Not Required)

Source of Funding- Self

Conflict of Interest - Nil

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Phenomenology of Migraine: An Observational Study in Eastern India

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ABSTRACT

Background: The data on migraine phenomenology in Indians is sparse. Earlier studies in India showed some difference in phenomenology compared to outside.

Objective: To find phenomenology of migraine.

Methods: Ours was an observational study. It was performed on 688 subjects of migraine (ICHD qualified) to study socio-demographic variable, location, laterality and quality of pain and associated phenomena through predesigned semi structured interviews.

Results: Total number - 688 (F:M→9:1), mean age-28.46(range 10-65 yrs); mean duration -22 month(range- 15 days to 15 yrs);23% were ethnic Bengalis and 77% non-bengalis living in a North Kolkata suburb. Most were housewives (71%) with only 15% having positive family history. 69.9% patients had unilateral pain at onset. Further, in our study the bilateral and unilateral headaches tended to spread equally (75%) to become hemicranial or holocranial; spreading was more common in left side, 'shifting unilateral' headache; vertex headaches tended to spread less. Aura was seen in only about 10% of the patients. Photophobia was the commonest associated event followed by nausea/vomiting; physical activity remained the most important aggravating factor. Relation with menses was found in 15% of patients.

Conclusion: Ethnicity probably plays an important role.

Keyword: *Migraine, Ethnicity, Phenomenology, Headache.*

INTRODUCTION

Migraine has been long known as a chronic debilitating neurological disorder characterized by mostly unilateral throbbing/pulsating headache, aggravated by work and at least moderate in intensity[1][2].However there are very few studies regarding the location, quality and spread of headache. Most of the studies involved only a few subjects. [3][4] Sjaastad et al [5] [6] found that most of the headaches were forehead or temporal regarding initial location with possibly ocular region involvement in some cases. Hemicranial headaches (ipsilateral frontal and parieto-temporal) were noticed in 2 /3rd of patients. [4] Studies outside India [7] have reported unilaterality with side shift was seen in 75% cases of common migraine. Recently Kelman et al [8] did a study on clinico-demographic profile and migraine phenomenology on a large scale. His study (n=1200)

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results were on the same line as previous studies done outside India. However in his study most of the people belonged to a single ethnic group. The most common locations noted were ocular (67%), temporal (58%) and frontal (55.9%).Vertex was involved in small number of cases (24%).

In India also, there is paucity of studies regarding socio-demographical profile and phenomenology of migraine patients. Indian studies [9] have reported 40% unilaterality and hemi cranial headaches in 20% cases which in contrast to other studies outside India. [10][11] However some studies outside India have reported lesser rates of unilaterality. [12]Also, migraine is a clinically diverse disease with the phenomenology varying according to race, ethnicity. The phenomenology may also vary in a single individual as regards location, quality and intensity. One such study [13] was performed in Kolkata, West Bengal (n=800) in a predominantly Bengali population. That study found that ocular location was the most common; unilaterality was noted in 41% patients. In 47% patients the pain remained at site. However cervico-occipital location was found in 26% patients.

Another study [14] was recently conducted in Banaras Hindu University (BHU) (n=969) studying the socio-demographic profile, triggering factors ad associated events but did not describe the location, quality and spread of headache. Thus there is paucity of studies in this regard. Studies need to be replicated across various ethnic groups in India as well.

In view of the fact that migraine phenomenology may vary according to race and ethnicities and keeping in mind the paucity of Indian studies regarding socio-demographic profile and phenomenology of migraine, this study was undertaken in a tertiary referral centre in North Kolkata suburb in a locality dominated by non-Bengali Muslims .

METHOD

Inclusion criteria: All patients capable of giving valid consent, in clear sense, age>10 yrs were considered eligible.

Exclusion criteria: People with other headaches, mental retardation and organicities (CT scan structural abnormalities) were excluded from study.

Our study was conducted for a 1-yr period extending from February, 2013 to January 2014 in the Psychiatry OPD of a tertiary referral centre in a North Kolkata Suburban area, which is largely dominated by non-Bengali Muslim population. Consecutive patients (aged 10 yr and above) after giving valid informed consent were assessed using semi-structured proforma covering the socio-demographic profile and clinical phenomenology. These patients were diagnosed with help of history and ICHD-2 criteria for migraine headaches. The patients were treatment-naïve except for OTC analgesics like paracetamol. The patients were assessed at the 2nd follow up 2 wks later for location, spread, quality, intensity, associated features, aggravating and relieving factors. Patients giving vague and inconsistent responses (n=22) were excluded from the study at 2nd follow-up.

The anatomic locations include:

1) Frontal: Unilateral /bilateral pain in forehead/retro orbital region.
2) Temporal: unilateral/bilateral headache in temporal location
3) Cervico-occipital: back of the head; clubbed together because of co-occurrence and inability of patients to localize
4) Vertex/central:

The patients were asked to locate with finger the precise area of origin of headache; particularly at onset of headache. In case of pain involving multiple areas (rarely) the part more afflicted was given precedence while noting location.

Ethical clearance was taken from Institutional ethics committee. Patient confidentiality was maintained.

Tools: Semi-structured proforma and questionnaires regarding phenomenology of migraine.

SPSS version 15 was used for statistical analysis.

RESULTS

The socio-demographic profile of 688 patients in our study is depicted on table 1.

Table 1: Socio-demographic prfile and clinical types in our migaine patients (n=688)	
Mean age	28.08 yrs[range11-65 yrs]
Sex	Female-618(89.8%);male -70(10.2%)[ratio 9:1]
Religion	Muslim-510(74.1%), Hindu-178(25.9%)
Ethnicity	Bengali: 159(23.1%), Non-Bengali: 529(76.9%)
Marital status	Married-519(75.4%), unmarried-169(25.6%)
Family history	Present-103(15%); absent -585(85%)
Social class	Lower-596(86.6%), middle-92(13.4%)
Educational status	Uneducated-98(14.2%), primary-223(32.4%), middle-118(17.2%), secondary-156(22.7%), Higher secondary-85(12.4%), graduate and above-8(1.2%)
Occupation	Housewife-493(71.7%), student-118(17.2 %), unemployed-27(3.9%), labourer-38(5.5%), businessman-12(1.7%)
Mean duration(months)	22.16 (range 0.5 to 180)
Severity	Mild-15(2.2%), moderate-190(27.6%), severe-483(70.2%)
Mean frequency(no. of attacks/wk)	1.4 (Range:0.25 -7)
Sidedness	Unilateral- 481(69.9%) [right-183(26.6%), left-228(33.1%), shifting unilateral-70(10.2%)], bilateral-207(30.1%)
Aura	Present-70(10.2%), absent -618(89.8%)

The clinical phenomenology is depicted in table no.2

Table 2: Clinical Phenomenology Of Our Migraine Patients(N=688)

Location	Temporal	262(38.1%)
	Frontal	293(42.6%)
	Cervico-occipital	76(11%)
	Others(vertex)	57(8.3%)
Quality	Throbbing-356(51.7%), blistering/mild throbbing-297(43.2%), dull aching-35(5.1%)	
Associated events	Nausea/vomiting	23(3.3%)
	Photophobia	29(4.2%)
	Phonophobia	11(1.6%)
	Multiple(combination of above)	615(89.4%)
	None	10(1.5%)
Spread	Present-511(74.3%), no spread-177(25.7%)	
Aggravating factors	Work	94(13.7%)
	Heat	4(0.6%)
	Light	30(4.4%)
	Multiple(combination of above)	555(80.7%)
	None	5(0.7%)
Relieving factors	Rest(including sleep)	201(29.2%)
	Medicine(Pcm)	242(35.2%)
	Both	240(34.9%)
	None specified	5(0.7%)
Menses	Aggravated with menses-48(7.5%), not aggravated-640(92.5%)	

Table 3A depicts laterality vs. location of pain at onset.

TABLE 3A Laterality vs. Location of pain(N=688)	
1.Unilateral pain	481(69.9%)
a)Frontal	241(50.1%)
b)Temporal	199(41.37%)
c)Cervico-Occipital	31(6.4%)
d)Others(Vertex and cervical)	10(2.07%)
2.Bilateral pain	207(30.1%)
a)Frontal	21(10.14%)
b)Temporal	94(45.41%)
c)Cervico-occipital	45(21.74%)
d)Others(Vertex and cervical)	47(22.7%)

Table3B depicts location of pain vs. laterality.

TABLE 3B: Location of pain vs. laterality(N=688)	
1)Frontal(n=262)	
Unilateral-241(92%)	Bilateral-21(8%)
2)Temporal(n=293)	
Unilateral-199(67.92%)	Bilateral-94(32.08%)
3)Cervico-occipital(n=76)	
Unilateral-31(40.8%)	Bilateral-45(59.2%)
4) Vertex(n=57)	
Unilateral-10(17.54%)	Bilateral-47(82.46%)

Table 4 shows the comparative spreading nature of frontal, temporal, occipital and other headaches

TABLE 4: Location of pain vs. spread	
1)Frontal(n=262)	
Spreading-207(79%)	Localized-55(21%)
2)Temporal(n=293)	
Spreading-215(73.38%)	Localized-78(26.62)%
3)Cervico-Occipital(n=76)	
Spreading-57(75%)	Localized-19(25%)
4)Vertex (n=57)	
Spreading-32(56.14%)	Localized-25(43.86%)

Thus our important findings are:

The study population consisted of mainly young(mean age 8.08 yrs) females(90%) of Non-Bengali Muslim ethnicity coming from lower middle class background in urban suburb of Kolkata. 15% had history of parents or a sibling affected by similar kind of headache. Most were married primary school literates having moderate to severe headache for 22 months on an average. Frequency of headache was 1.4 times/wk. Most were unilateral (69.9%); frontal location was commonest, followed by temporal and occipital .Occipital and headaches tended to be bilateral. Photophobia (4.2%) followed by nausea/vomiting (3.3%) were commonest associated symptoms. The quality was described as either throbbing or blistering. Most of the headaches appeared; mostly hemicranial and few holocranial. Vertex headaches appeared to be distinct from other headaches in the sense that they remained localized.

Aura was a relatively uncommon phenomenon (10%).

The common aggravating factors included work and heat and more commonly, a combination of the two.

Most of the headache subsided with OTC analgesics (35%) or rest (29%) or a combination of the two (34%).

7.5% had a positive history of the headaches becoming severe with the menses.

DISCUSSION

Our study was conducted in patients attending the Psychiatry OPD of a tertiary referral centre situated in suburb of North Kolkata. Our study population consisted on 688 patients of migraine. The study was carried out in mostly Non-Bengali people(77%), predominantly Muslims (75%). The only Indian studies carried out previously was on people of Bengali ethnicity, in 2007[13] and in BHU.[14] The patients were treatment-naïve except for OTC paracetamol.

The mean age of our patients was 28.08 yrs which is roughly similar to the median age of 27 yrs as found out in the study of BHU and other studies which report a peak incidence in third decade.

Our study had a high female: male ratio (9: 1), whereas Indian studies have found out a lower ratios of 2.6:1[13] and 4.6:1[14]. A large proportion of our patients were housewives (71.7%), followed by

students (17.2%). Similar pattern was also noted in the study by BHU, [14] which reported 55% housewives and students, 32%. 15% of our patients had a family history of parents or siblings having similar headaches. This is similar to the rate of familial involvement noted in BHU study [14] (15%).

The mean duration of illness at presentation was 22 months (range-0.5 months to 15 yrs), which was in sharp contrast to the study done in Kolkata, [13] where the average duration of illness was 6.6 yrs.

Most of our patients were having severe headache (70.2%), and having an average frequency of 1.4 times /wk.

51% of our patients had the classical throbbing headache while 43% had blistering/mild throbbing headache; only 5% had dull-aching pain.

Aura was present in about 10% of our patients, which was much higher than the 2.25% reported by the other study [13] among ethnic Bengalis; probably ethnicity plays a role here.

As regards to the laterality, 69.9% of our study population were having unilateral headache(of which 10% were shifting unilateral),which is much higher than the 40% found in the study of 2007,[13]but closer to the international rates of about 75%, [7]which includes side-shifting/shifting unilateral headaches.

Commonest anatomic location of headache was found out to be frontal(42.6%) followed by temporal(38.1%), cervico-occipital(11%) and vertex(8.3%).Our patients however rarely recorded ocular as the primary site of pain, though retro-orbital area was frequently involved during the spread of headache. This is in contrast to the study in Kolkata of 2007 where ocular headache was noted as commonest type. However frontal and temporal locations were found to be the most common locations in previous studies outside India.[5][6]Also our study had fewer patients suffering from vertex headache(8.3%) compared to the study in Kolkata[13](26%), probably due to the ethnicity factor as that study had commented on the frequent occurrence of cervical headache in Bengali subjects.

As regards laterality; frontal headache remained mostly unilateral (92%) and cervical headache were most commonly bilateral (85%). Amongst our patients with bilateral headache, most of them were in bitemporal location (45%); which was similar to the proportion noted in the study [13] in Kolkata (41%).

In most of our patients the headache tended to spread (75%); either hemicranially or holocranially. The rate of spread was noted to be almost equal in frontal, temporal and occipital headaches (75-79%).The frontal headache were the most spreading in this regard (79%). Vertex headache tended to remain localized the most (43%); and whenever it did spread, it was mostly in the surrounding area rather than the hemicranial or holocranial spread as shown by the other headaches. Thus the rate of spread of headache was higher as compared to the study in Kolkata [13] (75% vs. 53%); however the vertex headache tended to remain localized at that study also.

The bilateral headache also tended to spread at similar rates (73.33%); thereby making the spreading nature as one of the defining features of the episode.

Next, the analysis of associated events showed photophobia to be the singular most common associated symptom (4.2%) followed by the gastrointestinal symptoms nausea and vomiting alone (3.3%). 1.5% patients reported phonophobia as the only associated event. 89.4% had a combination of these events (almost always including nausea/ vomiting)as associated symptoms; overall photophobia was present alone or in conjunction in 88% and GI symptoms were present alone or in conjunction in about 77% patients.

The study of BHU [14] also found that GI symptoms were commonest associated events in migraine (52%).

However photophobia and phonophobia rates are not mentioned in that study. [14]

Thus our study re-emphasizes the importance of nausea/vomiting, photophobia and phonophobia as important associated events during migraine headache.

Analysis of aggravating factors revealed that work /any physical activity acted as the most important aggravating factor working alone(13%) followed by light alone(4.4%) and heat alone(0.6%);however most of the patients had a combination of all these factors playing to aggravate the headache(80%).In the

patients citing multiple aggravating factors, physical activity was the commonest factor(93%)thereby making physical activity the single-most important factor in exacerbating migraine headache(87%). Physical stress has been found to be an aggravating factor in the BHU study[14] also(31%).Here again, our study emphasizes "aggravation by activity" to be important marker of a migraine episode.

Medicines, mostly OTC analgesics like paracetamol appeared to be the savior of our patients (70%), while rest alone reduced pain in 29% patients.

0.7% patients couldn't specify any relieving agent for headache.

About 7.5% of our patients reported aggravation of headache during menses; the rates were lower as compared to BHU study (15%). [14]

So our study population had significant differences as regards their migraine phenomenology with the subjects studied in 2007.[14]The socio-demographic profile remained relatively similar to that of subjects of BHU study[14](Possibly due to similar ethnicity). However the migraine phenomenology remained similar to that reported in studies outside India.[5][6][7][8]

CONCLUSION AND RECOMMENDATIONS

Our observational study was conducted in a tertiary referral centre in a North Kolkata suburb on a predominant Muslim population. The socio-demographic profile as well as clinical phenomenology were both markedly different from the study in Kolkata.[13] However both the socio-demographic and clinical features bore some similarity to the study population in BHU[14] probably reflecting similar ethnicity.

Larger population based prospective studies comparing migraine phenomenology in different ethnic groups are needed. If a specific ethnic group could be identified specific and targeted genetic studies will be beneficial for future development of targeted and superior medication and other management.

Conflict of Interest: Nil

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Stress among the Teachers (Working Women) with Special Reference to Secondary School in Belgaum, Karnataka State: A Study

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ABSTRACT

The main purpose of this research was to study the stress among the teachers (Working Women) with special reference to secondary school in Belgaum District. Today teaching is becoming more challenge as a profession and it is one of the most significant and visible profession in the world. The word stress like success, future happiness, means different types to different people and except for a few specialize scientist. The aim of study is to find out the stress of working women teachers at working place like physical, psychological and suggest remedies. Based on the findings of the study it was majority of teachers (women's) are sufficient relationship with their colleagues. So they do not create any problems among them. Women teachers have some Physical Complaints it is effect on teaching. The overview draws on literature from social, psychological information, family environmental, attitude towards job information and Health information studies.

Keywords: *Stress, Working women, Teachers, Secondary schools.*

INTRODUCTION

Stress was equated with force pressure or strain exerted with force object or person which resists these force and attempts to maintain its original state. Stress is known as the ration of the internal force brought in to play when a substance is distorted to the area over which the force acts. Stress terminology continues to flourish in the Psychological and Social Science.

According to Gaziel H H (1993) [1], individual affected by stress may experience feelings of fatigue, loss of sleep, anxiousness and even burnout (exhaustion). In serious cases hypertension and ulcers may also occur. Stress has an effect on a person? Yes, Physical, Emotional and Psychological well-being. Stress is typically defined in terms of-

i. The external environmental characteristics;

ii. Individual emotional states ; or

iii. An interaction various emphasizing the relationship between individuals and their environments? In school teacher's stress is manifested in a growing number of teacher absences per year as well as an increase in early retirement as they simply go through the motions, as they have lost their love for the job.

In this study looked at cultural, personal and situational factors are how the teachers coped with the work related stress. They received a three part questionnaire that examined school size, locus of control, occupational stress and other stress sources.

The concept of stress cannot be ignored in the teacher's profession. The stress which teacher experience while performing the dual role are regular attendance on time irrespective of their health problem, arranging various education and development program which interferes in the time given to family and children.

Sometime work load during the examination and many times dominance by the senior continues noise, crowding pollution etc.., sometime family encouragement husband not give the support to the women. They face various problems in society like socialization, process of family, children effect on

physical and mental health.

"The changing status of the working women in India" Promila kapur (1974) [2], finds our reasons for women's work. She says that women, not because of economic necessity but because they want to have economic independence, individual status some of their socio-psychological needs, is in itself significant indication of their improved status.

Burnout is a work syndrome that stems out of the perceived discrepancy between the efforts put into work and its corresponding rewards (Friedman, 1995) [3] and leads to decreased prosperity and accomplishments (Burke & Greenglass, 1995) [4]. It is commonly observed in professions with intense face-to-face interactions, such as teachers or doctors (Schwab & Iwanicki, 1982) [5]. And its manifestation includes emotional and physical exhaustion, as well as many psychological symptoms – such as irritability, anxiety, and decreased self-esteem (Farber, 1991) [6]. It should be noted finally that burnout must be viewed as a continuous variable and not be classified as "all or nothing" (Girgin & Baysal, 2005) [7].

As such, there is a documented need to measure stress among Greek teachers focusing on a particular level of education (due to work differences between primary and secondary education), with a large sample and appropriate instruments. This has become more imperative in order to monitor the extent to which the recent massive educational and financial changes may have impacted on teacher stress (Kyriacou, 2001) [8]. Therefore, the main aim of the present study is to examine levels of teacher stress among Greek primary school teachers. The secondary aim is to explore whether internal (gender, age, years of teaching experience, and burnout) and external (teaching students with SEN) factors can predict levels of teacher stress.

The stress experienced by different occupation types and job roles has been discussed in many papers with a number of different occupations being described as experiencing above average levels of stress, for example, teachers (Travers and Cooper, 1993)[9], healthcare (Cooper et al., 1999) [10], nurses and social workers (Kahn, 1993) [11], and the ambulance service (Young and Cooper, 1999) [12], to name but a few. There are a number of work related stressors which have been linked to an increased likelihood of an individual experiencing negative stress out comes. (Cooper and Marshall's 1976) [13] , original model of work related stress included five sources of stress at work, each of which are represented in the revised model of stress on which ASSET is based (Robertson Cooper, 2002b) [14] , Cooper and Marshall's five sources of stress, with examples of the components of these sources given for each, are: (1) Intrinsic to the job, including factors such as poor physical working conditions, work overload or time pressures; (2) role in the organization, including role ambiguity and role conflict; (3) career development, including lack of job security and under/over promotion; (4) relationships at work, including poor relationships with your boss or colleagues, an extreme component of which is bullying in the workplace (Rayner and Hoel, 1997) [15] , ; and (5) organizational structure and climate, including little involvement in decision-making and office politics.

According to farmer reviewed the literature on achievement and career motivation in women and suggested that such motivation differs from that of men as a result of following factors-

a) Fear of success
b) Various of success
c) Home-Career conflict motivation
d) Myths about women and world of work
e) Lower risk taking in females.

The present study focuses on the stress among working women's in teaching profession. The social worker can play on vital role in schools and also can raise the status of teachers and professional development will take place.

The geographical scope of the study was limited to the secondary schools of Belgaum. The topical scope the study was the related problem of working women teachers in Belgaum City. The different factors like social, Psychological and emotional factors related to women and suggestion for the same

SCOPE OF THE STUDY

The study was to dimension would provide an opportunity to create an awareness regarding school social work and the teachers role in developing emotional stability in students and hence.

OBJECTIVE OF THE STUDY

- To know the respondents age group
- To study the respondents salary satisfaction
- To understand the psychological burden experienced by the respondents.

Hypothesis

- Excess workload in the schools as well as a non-cooperation of other staff members can cause stress among the teachers.
- Family, Economical problems load to stress among the working women teachers.

MATERIAL & METHOD

Period of the Study: The study was conducted for a period of 2 weeks on December 2009.The respondents were contacted and interviewed in the school premises during their leisure hours.

Research Instrument: A structured, non-disguised interview schedule was prepared for the purpose of collecting the data. The factors of the study were drawn out from the related studies and the statements of the schedule were framed representing the factors. These were given shape in consultation with the field experts.

Population profile and Sampling

The study was confined to Belgaum, state Karnataka. This district was selected keeping inmind that it is well endowed with school teachers. For the purpose of the study researcher selected 30 respondents as a sampling size from the 5 secondary schools of Belgaum city by using sample random sampling technique.

Data analysis and Interpretation:

Table no.1.Distribution of respondent by Age group

Age	Frequency	Percentage
18 to 25	0	0
26 to 30	10	33.33%
31 to 35	6	20%
Above	14	46.67%
Total	30	100 %

The above table shows that majority 47% respondents were false in the age category of above 35 and above where as 33.33% of respondents were false in the age category 26-30 and only 20% of respondents false in age category of 31-35. Since a majority of respondents were 35 to above in year.

Table no.2 Level of Satisfaction with salary

Response	Frequency	Percentage
Yes	9	30%
No (not satisfied)	21	70%
Total	30	100 %

The above mention table indicates that majority 70% of the respondents are not satisfied with their salary. Besides that only 30% of the respondents are satisfied with their salary. Researcher found that some women teachers have poor background joint families so they are not satisfied with their salary.

Table no.3 Extra wages according to work

Response	Frequency	**Percentage**
Yes	7	23.33%
No	23	76.67%
Total	30	100 %

The table shows 76.67% of the respondent is feeling they don't get extra wages according to their work and Experience. 23.33% of the respondents feel they get wages according to their work.

Table no.4. Physical Complaints

Response	Frequency	Percentage
Headache	15	50%
Chest pain	9	30%
Weakness	6	20%
Total	30	100 %

Above table shows that majority of 50% respondent headache, 30% respondent chest pain and other 20% respondent's weakness during the stress. Due to stress the respondents have somatic complaints.

I. FINDINGS

The major findings of study are discussed below-

- It was seen that majority of the respondents are the

age of 31-35 they are middle age group.

- The researcher found that teachers are not satisfied with their salary according into their work.
- It was found a majority teachers have somatic complaints on during stress.

CONCLUSION AND RECOMMENDATION

Based on the findings researcher concluded that stress among working women teachers as in present days they are facing lots of problems of stress so the researcher feel it was very important and necessary to understand the reason behind the stress.

- Try to avoid the family problems which effects on the job.
- To reduce the stress they should spent their leisure time in others activities ex- Yoga, reading novels, books, and listen to music, etc.
- Arrange the programme of stress management in schools.
- School should be provided enough Physical facilities to aid teaching and learning in the schools. Teachers should make good use of their time as well as maintain relationship with their colleagues and spent more happy time with their families.

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Conflict of Interest - Nil

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A Study of the Morbidity Profile, Living Conditions and Triggers for Migration among Migrant Workers in an Urban Area of South India

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ABSTRACT

Introduction: Migrants face serious impediments in accessing the basic health interventions available for the host population.

Aims: The objectives were:

1. To study the socio-demographic profile
2. To study the morbidity profile
3. To assess the living conditions
4. To understand the triggering factors for migration

Methodology: A cross-sectional study population on 166 migrant unskilled and semi-skilled workers from a private agency in Shivamogga. Data on the research variables was collected with a pre-tested and semi-structured questionnaire. Odds ratio, proportions and chi-square tests were done.

Results: Prevalence of overall morbidity among the workers was found to be 80%. Prevalence of hypertension was 78% among workers aged above 45 years. 78% of the male workers migrate for employment, while 94% of the female workers migrate with their husbands.

Conclusions: Health problems of migrants are diverse, and calls for coordinated action among various sectors.

Keywords: *health of migrants, informal workers, migrant construction workers*

INTRODUCTION

The tendency of migration has lived through generations, as individuals are constantly engaged in the quest for a better, improved and enriched life. India has migrants contributing more than one-third of its total population. Uneven pattern of national development has been identified as the main cause for the contemporary migration process.[1] As a consequence of globalization, a fading agricultural remuneration has resulted in migration of the rural poor, to seek employment in cities, at the lowest rung of the urbanization ladder. The Parliament of India enacted the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act in 1979 for the protection of workers engaged in labour outside their states of origin.[2] However, the stipulations of the Act were not implemented by the state governments in the true sense of the words. Another act which met with some success was the

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Mahatma Gandhi National Rural Employment Guarantee Act (NREGA), which guarantees 100 days of waged employment in a year and wages were in accordance with the prescribed minimum wages for that state. The scheme has covered 645 districts as of the data for the financial year 2014-2015. [3] The Factories Act, promulgated in 1948, states that no adult worker shall be required or allowed to work in a factory for more than eight hours per day or forty hours a week. [4]

Recent estimates from the Census 2001 migration tables[5] and Trade Unions enumeration[6] show that India has more than 191 million internal migrants and a 40 million are employed in the construction sector. Construction sector has employed the largest proportion of the Indian migrant population.[6] Unfavourable working conditions victimize women and children to verbal abuse and sexual abuse. The Executive Board of World Health Organization, in its 122nd session, had included the issue of health of migrants in its provisional agenda.[7]

Migration for the poor is mainly circular owing to the desire to 'keep a foothold' in home areas during the agriculture season, but also to the lack of social security and barriers to settling more permanently in urban areas.[8] There is a clear dearth of studies on migrant seasonal construction workers by the medical fraternity. In the context of understanding the health problems of rural-to-urban migrant unskilled and semi-skilled seasonal workers (MUSWs), a study was undertaken in the urban areas of Shivamogga district in Karnataka, with the objectives of assessing the morbidity patterns of the migrant seasonal workers and their living conditions, as well as to identify the triggering factors for migration.

MATERIALS & METHOD

With a population of approximately 17 lacs[9], Shivamogga falls into the third tier of Indian cities.[10] Migrant seasonal construction workers are employed with a private construction company that undertakes construction and renovation works in and around the Mc Gann Teaching Hospital and Shivamogga Institute of Medical Sciences. Workers are employed in different sections of labour such as masonry, flooring, plumbing, painting and electrical works.

The study proposal received ethical clearance from the Institutional Ethics Committee. It was a descriptive and cross-sectional study. With data from the National Sample Survey, Census 2001 migration tables and Trade Unions' estimates, we arrived at a minimum sample size of 166 workers, with alpha value of 0.05 and level of significance at 80%. 180 workers were recruited in the study, from which data of 166 workers was analysed. Since reliable estimate of the prevalence of morbidity among the migrant seasonal construction workers was lacking, we assumed the prevalence to be 50% for calculating the sample size. Operational definitions were required for the category of workers studied.[11] An "unskilled worker" is one who possesses no special training and whose work involves the performance of the simple duties that require the exercise of little or no independent judgment or previous experience, although a familiarity with the occupational environment is necessary. A semi "skilled worker" is one who has got some knowledge and skills of the particular trade or to do respective work and simple jobs with the help of simple tools or machines and not undergone any formal training course. We sought official permission from the construction agency that employed the workers. 166 workers were selected by random sampling. Informed consent was obtained and data was collected on socio-demographic variables, morbidity profile and reasons for migration. Direct observation of the settlements and work areas was undertaken to assess the living and working conditions respectively. Physical examination of the workers was done to look for parameters like conjunctival pallor and occupational trauma. Blood pressure of the workers was measured using a digital (Heuer™) sphygmomanometer. Study lasted from the months of June to August 2014. A pre-tested semi-structured schedule was used to collect data on the variables studied. The data was analysed on EpiInfo 7. Those who were found to be ill were referred to the medical college hospital. Larval survey of the workers' settlements was undertaken on a small scale to assess the Aedes larval indices in the area, as Shimoga district is endemic for dengue.

Findings: Out of 166 workers, 77 were females. Among 159 workers aged above 18 years, 18% do not have any legal documents of proof of identity or address. 52% of the workers were illiterate, while

40% have studied only up to the primary level of education. 79% of the illiterate workers were engaged in masonry.

73% of the workers were brick masons. Working family migrants were maximum among the masons. The workers employed here were entitled to Workers' Membership benefits. However, only 16% of the workers had registered for the membership. 7% of the workers had their children (aged less than 14 years) engaged in labour.

We defined 'overall morbidity' in our study as morbidity resulting from multiple conditions, infectious and non-infectious, as well as acute and chronic. The prevalence of overall morbidity was found to be 80%. Analysis of data on history of specific diseases in the past showed that the prevalence of pulmonary tuberculosis (treated and treatment-discontinued) was 3%. Prevalence of malaria in the past was found to be 8%. Proportion of morbidity was higher among the male workers, 71%, than females, 61%, but this difference was found to be statistically insignificant. Occupational trauma, with a prevalence of 18%, was found to be more common among the masons than workers employed in other labours, however, the association was statistically insignificant. Rate of hospitalization in the past one year was found to be 6.6%. 61% of the female workers had conjunctival pallor. The blood-pressure profile of the workers show that prevalence of hypertension among the migrant seasonal workers was 27%. Prevalence of hypertension was found to be 78% among workers aged above 45 years.

Total number of sheds in the area were 150. We counted a total of 42 discarded containers, of which 22 were found to have larval infestation. House index (percentage of houses or sheds infested with larvae or pupae) was found to be 60%. Container index (percentage of water-holding containers infested with larvae or pupae) was found to be 52%. Breteau index (number of positive containers per 100 sheds inspected) was 15.

Ventilation and lighting were inadequate in 95% of the temporary sheds. Drinking water was collected from a hand-pump dug for all the workers. Drinking water practice was unhygienic in 90% of the worker-households. Solid waste disposal practice in all the sheds was indiscriminate dumping at a site roughly 100 meters away from the living area. Toilet and defecation facility was created in makeshift sheds. Out of a total of 35 sheds meant for toilet, only 5 sheds had a water-seal latrine inside them; 30 other sheds had only pits dug for disposal. Water is carried in buckets from a tank which is continuously supplied with bore-well water.

26% of the workers work unprotected in conditions endangering life (painting the higher outer walls of buildings, masons at high sites without parapet walls and electricians drawing wires from electric poles).

The wages paid to the labourers ranged from hundred to three hundred rupees per day. Wages are not paid on any kind of regular bases, but, were left to the choice of the labourers to demand for their wage as and when they needed. In the case of most of the labourers, a cumulative amount equal to the monthly wages for the entire contract tenure was paid to the contractor who commissions labourers from different states. The contractor would equitably distribute the money among the labourers, taking into account of their experience and nature of work engaged in. However, it was found that 29% of the workers in our study were receiving wages less than 200 rupees per day. Irregular payment of wages was common among workers who were paid less than 200 rupees per day. Wages paid to the masons and the plumbers were lower than those engaged in flooring and electrical.

Majority of the workers, 34% were from Telangana, closely followed by Andhra Pradesh, 33%.

DISCUSSION

94% of the workers in the study were inter-state migrants. The workers live in conditions that pose serious health hazards, and consequently, the prevalence of morbidity, both present and past are significantly higher than those in the general population. A significant proportion of the workers admitted of not possessing documents of citizenship. This is a reflection of incomplete penetration of services of government's citizen-identification authorities among its targeted beneficiaries.

Prevalence of current morbidity was comparable

with previous reports from studies in Tamil Nadu and Kerala. Hospitalization rates are a proxy indicator of severe morbidity, and the 6.6% found in our study is comparable with previously reported values of 6.5 to 8%.

The odds of developing hypertension was found to be 22.3 times higher among workers aged above 45 years than those aged below 45 years (OR 22.29, 3.1612 – 60.8706; p 0.0003). Workers who indulged in either of the habits of smoking, alcoholism, both or chewing tobacco were found to be at a higher risk of developing hypertension than workers without any habits (OR 5.3491, 2.0254 – 14.1266; p 0.0004). Both associations were statistically significant. Smoking and alcohol consumption among the male workers was found to be 27%, and 24% of the women workers chewed tobacco.

The results of the survey for Aedes larvae in the areas inhabited by the workers showed significant findings. A shed was defined as one unit of accommodation and the surrounding premises, irrespective of the number of workers residing therein. House, container and Breteau indices were high and indicate high Aedes-infestation rates.

Tin sheets, wooden logs and planks, tarpaulin and steel wires were supplied to the workers at the time of their recruitment. We found that these makeshift sheds could not withstand the strong rain and storms during the part of the year when study was undertaken. While tin sheets make the walls, and ceilings by tarpaulin sheets, floor is level ground in all the sheds, pervious and with cracks and crevices. The settlement is surrounded by marshy and waterlogged areas that inundate in the monsoon. Pigs are let to graze on the vegetation in the surrounding areas and is a potential health threat.

Maximum number of workers who migrated due to famine were from the state of Telangana, followed by Orissa. Poverty is the reason behind 92% of the workers to discontinue education. 82% of the workers in the study were circular migrants, with footholds in their native states.

LIMITATIONS

Only 180 workers were recruited in the study as it was undertaken with a partial service orientation rather than pure research and basic drugs had to be provided considering the stock constraints. Accordingly, the power attached to the results is 80%. The current morbidity status was assessed based on the self-reported complaints and clinical suspicion, and not through investigations. Results of this study may not be generalizable to the entire population of migrant workers in India, as there may be other agencies that provide better working and living conditions to the workers, and we have not studied settlements outside Shivamogga.

Table 1: Age and sex distribution of workers

Age group (years)	Sex				Total	Percentage (%)
	Males	Percentage (%)	Females	Percentage (%)		
Below 18	2	1.2	0	0	2	1.2
18-23	21	12.7	7	4.2	28	16.9
24-29	22	13.3	20	12.0	42	25.4
30-35	15	9.0	28	16.9	43	25.9
36-41	8	4.8	8	4.8	16	9.6
42-47	7	4.2	11	6.6	18	10.8
48-53	6	3.6	3	1.8	9	5.4
54-59	5	3.0	0	0	5	3.0
Above 60	3	1.8	0	0	3	1.8
Total	89	53.6	77	46.4	166	100

Table 2: Estimates of morbidity prevalence

Current prevalence of morbidity based on self-reported complaints	Frequency	Percentage (%); N = 166
Fever	25	15
Respiratory complaints	32	19
Gastro-intestinal complaints	18	11
Dermatological complaints	42	25
Musculoskeletal complaints	23	14
Recent trauma	25	15
Prevalence of current morbidity from specific illnesses		
Cough lasting > 2 weeks	5	3
Fever with muscle pain	13	8
Genito-urinary diseases	7	4
Prevalence of hypertension	45	27
Prevalence of conjunctival pallor among female workers	47	61 (n = 77)

Table 3: Reasons for migration

Reasons for migration	Male workers (Total = 89)		Female workers (Total = 77)	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Employment	69	78	3	4
Family	0	0	72	93
Famine / floods	20	22	2	3
Education	0	0	0	0

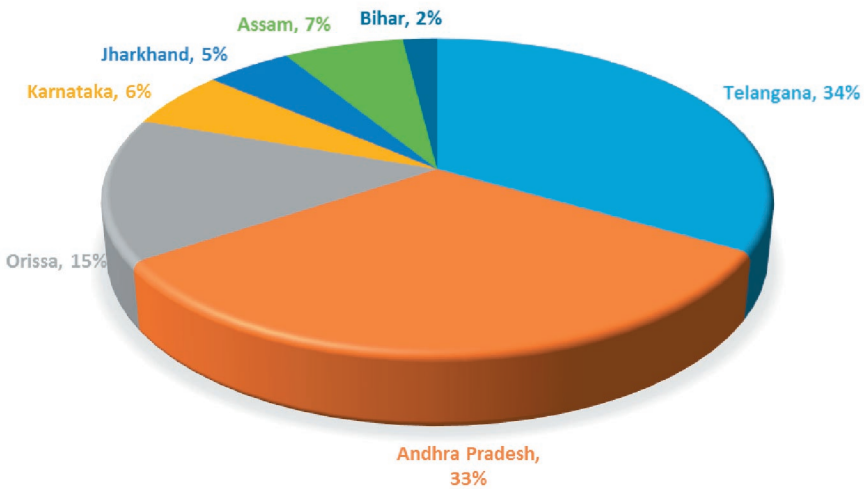

Figure 1: States of origin of the workers

CONCLUSION

Migrant construction workers face several serious impediments in accessing basic health services that are provided with the tag of equitable distribution. Migrant settlements have issues with acculturation with the hosts and this should prompt important actions to be taken to ensure their health and well-being. Migrant-friendly work areas, improved living conditions with hygienic basic sanitation services, provision of safe drinking water and rations and personal protection gear for the workers are few of the fundamental rights to be addressed for the migrant workers. Occupational safety and periodic risk assessment of the workplaces should be implemented to ensure a safe working environment for all workers. Effective tailgate training (brief job site safety meetings) can be a powerful tool to promote work safety in the construction industry.[12] Legislations on labour should be implemented with coordination of the companies, contractors, labourers' welfare groups, state and central governments.

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Ethical Clearance: Ethical clearance for the study was obtained from the Institutional Ethics Committee vide meeting held on 23-04-2014.

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Morquio Disease with Bicuspid Aortic Valve - A Case Report

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ABSTRACT

Morquio disease (MPS IV) is an autosomal recessive disease caused by deficiency of N-acetyl galactosamine-6- sulfatase (MPS IV A) or, of β-galactosidase (MPS IV B). The key symptoms found in patients with MPS IV A include musculoskeletal abnormalities and limited growth. Musculoskeletal abnormalities include pectus carinatum, genu valgum, kyphosis, atlanto-axial subluxation and joint laxity. Typical clinical findings and radiological picture provides clue for diagnosis of Morquio's disease. Urinary mucopolysccharides assay is the screening test for diagnosis while this can be confirmed by enzymatic and molecular study. Bicuspid aortic valve is a rare finding in Morquio disease.

Keywords: *Mucopolysccharides(MPS), Morquio disease (MPS IV), Dysostosis multiplex.*

INTRODUCTION

Morquio disease is an autosomal recessive mucopolysaccharide storage disease, characterised by inability to catabolise keratan sulfate and chondroitin 6 sulfate. It was initially described in 1929 by Luis Morquio of Uruguay. He observed the disorder in a Swedish family and found corneal clouding, aortic valve disorder and urinary excretion of keratan sulfate. The incidence of this disease is estimated to be 1:200,000.[1]

CASE HISTORY

7 year old boy presented with multiple deformities of body and short stature. He was delivered by vaginal route at term of non-consanguineous marriage. Birth weight was 2.5 kg. Developments were normal for first 2 years. Parents noticed bulging of chest at 3 yr of age and he gradually developed knock-knees at 4 yrs of age. His present height is 3 ft. On examination he was found to have pectus carinatum (pigeon chest) and kypho-scoliosis. There was corneal clouding and gross hearing loss, but intelligence was not affected. X-ray of lumbo-sacral region revealed anterior beaking of vertebrae, wide ribs, deformed epiphyses in wrist joints. Estimation of urinary GAG level was 24 mg/Mm (5.7-12.9 mg/Mm). Echocardiography revealed bicuspid aortic valve. He was diagnosed as a case of mucopolysaccharidosis type IV A, i.e. Morquio disease.

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DISCUSSION

Mucopolysaccharidoses are a family of inherited disorders that results from the deficiency of lysosomal enzymes involved in the degradation of glycosaminoglycans (acidmucopolysaccharides). Glycosaminoglycans (GAGs) are long-chain complex carbohydrate composed of uronic acids, amino sugars and neutral sugars; these include dermatan sulphate(DS), heparan sulphate(HS), keratan sulphate (KS), chondroitin sulphate(CS) and hyaluronan. These substances are synthesised and, with the exception of hyaluronan, linked to proteins to form proteoglycans, major constituents of ground substance of connective tissue as wll as nuclear and cell membranes. Failure of degradation of GAG moiety due to absent or grossly reduced activity of mutated lysosomal enzymes

results in the intralysosomal accumulation of GAG fragments. Distended lysosomes accumulate in the cell, interfere with the cell functions, and lead to a characteristic pattern of clinical, biochemical and radiological abnormalities. As a general rule, the impaired degradation of HS is more closely associated with mental deficiency and the impaired degradation of DS, KS and CSs with mesenchymal abnormalities.[2] On the basis of clinical and biochemical studies these disorders have been classified as MPS I through MPS VII.[1] Mucopolysaccharidoses are autosomal recessive disorders, with the exception of Hunter disease which is X-linked recessive.

Morquio disease (MPS IV) is an caused by deficiency of N-acetyl galactosamine-6- sulfatase (MPS IV A) or of β-galactosidase (MPS IV B). Both result in defective degradation of keratan sulfate. The gene encoding N-acetyl galactosamine-6- sulfatase (GALNS) is on chromosome 16q24.3 and the gene encoding β-galactosidase, GLB 1, on chromosome 3p21.33.[2] β-galactosidase catalyses GM1 ganglioside in addition to keratan sulphate and most mutations of GLB1 result in generalised gangliosidosis, a spectrum of neurodegenerative disorders associated with dysostosis multiplex. A W273L mutation of GLB1 gene commonly results in Morquio B disease. MPS IV A is usually more severe than MPS IV B.[2]

The key symptoms found in patients with MPS IV A include musculoskeletal abnormalities and limited growth. Musculoskeletal abnormalities include pectus carinatum, genu valgum, kyphosis, atlanto-axial subluxation and joint laxity.[3]

There is an International Morquio A Registry designed to study clinical outcomes of patientswith MPS IV A. This registry was started by International Morquio Organisation and Carol-Ann foundation. (www.morquio.com). 399 patients have been registered in the registry till end of 2011. Patients with severe phenotype accounted for nearly 3/4th of total patients. The age of onset of symptoms is around 2.2 years, but the diagnosis is usually delayed to 4.9 years.[4] According to the registry the mean birth weight is 3.5 kg and 3.4 kg in males and females respectively. Mean height of patients more than 18 years is 120 cm and 115 cm in males and females respectively.[4]

Patients with severe phenotype show typical skeletal manifestations (kyphosis, pectus carinatum) by 1 year of age, followed by gibbus deformity of back which may become clinically obvious at approximately 14 months of age. Genu valgum and waddling gait with a tendency to fall, growth retardation with short trunk and neck may become clinically obvious by 2 years of age. At that time it is common to observe the beginning of bone abnormalities in x-rays, particularly within hip, ovoid vertebrae and widening of ribs. Dysostosis multiplex refers to the characteristic radiological skeletal dysplasia seen in many types of MPS. A skeletal dysplasia that is distinct from other MPS (Table-I) is seen in MPS-IV-A.[4] Small teeth with frequent caries, mild corneal clouding, occasional hepatomegaly and aortic valvular disease are few extra skeletal manifestations. Life threatening atlanto-axial instability and dislocation may result from the instability of the odontoid process and ligamentous laxity.

Table-I, Potential radiological findings (dysostosis multiplex) of patients with MPS IVA[4,5]

Skeletal region	Potential radiological findings of dysostoses multiplex
Skull	Typically normal Possible abnormal J-shaped sella tursica Thickened diploic space
Chest/thorax	Pectus carinatum (pigeon chest) Funnel chest
Clavicles (collar bone)	Short thick
Ribs	Paddle/ oar shaped
Spine	Superiorly notched, inferiorly beaked vertebral bodies, Middle beaked vertebral bodies, posterior scalloping of Vertebrae, kyphosis

Pelvis/hips	Rounded iliac wings Inferiorly tapered ilia Coxa valga
Long bones	Generalised mildly hypoplastic epiphyses Hypoplastic fragmented capital femoral epiphyses Genu valgum Hypoplastic distal ulnae/ radial tilt Thick short diaphyses Tarsal bones with irregular contours
Hands	Meta carpals ,proximal pointing(often persistent proximal rounding in patients with MPS IVA) Metacarpals, thick/short/thin cortices (typically mild in patients with MPS IVA) Carpal bones: irregular/ hypoplastic Hand bone age compared to chronological age shows delayed bone development Carpal bone age compared to chronological carpal bone age shows very delayed maturation in carpal bones [epiphyseal- carpal disassociation] Scaphoid bone extremely delayed ossification or not radiographically present

Laboratory Diagnosis of MPS IV A

It encompasses both biochemical diagnosis and molecular diagnosis. Historically total urinary GAGs testing have been performed which if positive was followed by measurement of GALNS enzyme activity in leucocytes and fibroblasts. However GALNS activity may be decreased in other diseases like I-cell disease and multiple sulfatase deficiency.[4]

Urine based testing is a screening test and can have false negatives. It is always recommended for enzymatic or molecular testing to confirm the diagnosis.[4]

Urinary GAGs can be measured both qualitatively and quantitatively. Qualitative tests separate various GAG species, thus provide a starting path for differential diagnosis. The positive identification of KS is generally specific for MPS IV A, MPS IV B or rarely other LSD conditions.

The human gene encoding GALNS has been mapped to chromosome 16q24.3. The mutations are distributed along the entire gene and all types of mutations are found.[6]

Management

Once diagnosed, MPS IV A requires a multidisciplinary approach to patient care. While management of skeletal manifestations and the associated neurological complications is critically important, management of other organ systems, including visual, auditory, cardiovascular and respiratory systems are also important to assure quality of life.

Genu valgum needs correction. Osteotomy may be required. Physiotherapy is very important to preserve joint function. Periodic neurologic examination is required to prevent spinal cord compression. Functional impairment of spinal cord may be assessed by somatosensory evoked potential (SSEP). MRI of cranio-cervical junction is also helpful. Any procedure that requires sedation is to be done in presence of skilled anaesthesiologist because there is risk of spinal cord compression due to atlanto-axial subluxation during intubation (due to hyperflexion of neck).[4] Surgery to stabilise the upper cervical spine, usually by posterior spinal fusion before the development of cervical myelopathy, can be lifesaving.[2]

Corneal clouding is usually less severe but if there is significant corneal clouding, penetrating keratoplasty may be required.

Echocardiography can reveal mitral and aotic

valve thickening. Very rarely valve replacement may be required (mostly for aortic valve). Our patient had bicuspid aortic valve.[4]

Hearing deficit is common in Morquio IV A patients. They usually experience mixed hearing loss and may need tympanostomy tube insertion or hearing aids.[5]

They will suffer from restrictive lung disease due to thoracic deformity. They are prone to obstructive sleep apnea (OSA) and pulmonary hypertension.[4] CPAP will be helpful in OSA cases. Teeth of patients are typically small or with thin enamel with greyish colour. There is high risk of dental caries.[1]

LEGENDS

Fig 1. Pectus carinatum in child with Morquio disease

Fig 2. X-ray chest showing Oar shaped ribs

Fig 3. X-ray spines showing anterior beaking of vertebrae

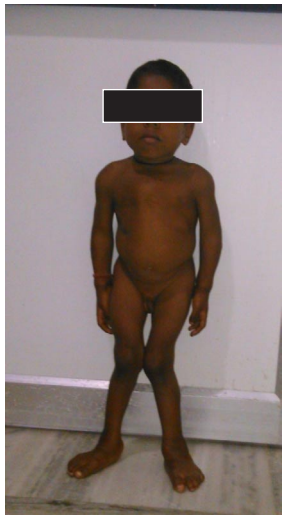

Fig 4. Genu valgum in Morquio disease

CONCLUSION

Typical clinical findings and radiological picture provides clue for diagnosis of Morquio's disease. Urinary mucopolysccharides assay is the screening test for diagnosis while this can be confirmed by enzymatic and molecular study. Bicuspid aortic valve is a rare finding in Morquio disease. Mucopolysaccharidosis should be kept in mind in a short stature child having short trunk and neck with resultant shorter upper segment than expected for age. A skeletal dysplasia that is distinct from other MPS (Table-I), preservation of intelligence, aortic valve disease and instability of the odontoid process and ligamentous laxity with possible life threatening atlanto-axial dislocation are characteristic features of MPS-IV. Urinary GAGs testing is a screening test and can be false negative. It is always recommended for enzymatic or molecular testing to confirm the diagnosis.[4]

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Evolving Mechanism for Cross Validation of Data Quality in Health Management Information System (HMIS) - Perspectives and Challenges Emerging from a State in India

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ABSTRACT

Implementation of Reproductive and Child Health (RCH) Programme was turning point in the history of HMIS in India. A study was conducted in Ghaziabad District of Uttar Pradesh to assess the quality of data under the RCH Programme using the cross examination of records from selected health units and in the community and vice-versa besides interviewing health programme managers, functionaries and community. The average score on the correctness of information on 10 selected service components recorded by ANM was in the range of 5.45 to 7.5, with an average score of 6.5 out of 10. Health care managers/providers use HMIS more as administrative defense mechanism rather tool for micro-planning due to lack of dependable data quality. There is a need for institutionalizing mechanism of cross validation of data quality under HMIS.

Keywords: *Health Management Information System, Reproductive and Child Heath Programme, Community Needs Assessment, National Rural Health Mission, Mother Child Tracking System.*

INTRODUCTION

The first detailed description of a health information system for yielding accurate and timely information for planning of health services in British India was given by Sir Joseph Bhore in his report of 'Health Survey and Development Committee' in 1946[1]. In the National Health Policy-2002, the need for establishing robust information system was emphasized[2]. The first systematically developed Health Management Information and Evaluation System (HMIES) for family planning programme was launched in 1964-67[3]. The HMIS version 1.0 was introduced in 1983-85 and a computer compatible HMIS (version 2.0) was piloted in 1989 in collaboration with the National Informatics Centre (NIC), scaled up only to 13 States and could not succeed[4]. In 1992, new reporting formats under the Child Survival and Safe Motherhood Programme were introduced[5]. Further, HMIS under Target Free Approach was revised in April 1996 on a pilot basis but abandoned shortly[6].

HMIS under the RCH programme in 1997 planned to get information on quality, coverage and client satisfaction from client and facility surveys carried out by independent agencies[7]. A web-based software for routine reporting system was also developed by the NIC. For fixing expected level of achievement/targets Community Needs Assessment Approach (CNAA) was introduced but it did not succeed[8] and several State governments piloted their own HMIS[9].

With introduction of National Rural Health Mission (NRHM) in 2005, a new web based HMIS and District Health Information System (DHIS)

were launched during 2008[10]. Another web based portal called Mother and Child Tracking System was launched in 2009 primarily to plan and track the selected MCH services at grass root levels[11]. Unfortunately, health information systems in most countries are inadequate in providing the needed management support [12,13]. Information systems tend to be "data-driven" instead of "action-driven"[14].

The success of HMIS had been limited as reflected in several studies conducted in India. A study in 16 major States in India found that all States were covering all components of health programme but differed significantly in the importance they attach to collecting, processing and utilizing the data[15]. A study conducted by Tiwari VK et. al in 2000 revealed that health workers were unable to implement CNAA, often faced short supply of printed stationery and were not sensitized [16]. A WHO sponsored study echoed similar findings[17]. Another study conducted at 35 Sub-centers in Haryana revealed that the health workers were over burdened with 13 different registers, use of data was restricted to enumeration and registration of beneficiaries and reporting of services but not for planning of work schedule, monitoring and team building, prioritizing of clients, community needs assessment. The health information was never shared with community members [18].The quality of data has always been vital issue to health officials in India[19].

A study was conducted in rural and urban areas of District Ghaziabad in Uttar Pradesh between May 2002 and April 2003. With objectives to study the quality of data using cross validation of data collected under HMIS in RCH Programme besides studying organizational structure, mechanism of data collection, recording, reporting, monitoring and feedback at various levels in the district.

MATERIALS & METHOD

A total of 2 Community Health Centers (CHCs), 4 Primary Health centers (PHCs), 12 Sub-centres and 21 villages were randomly selected from rural are and one Urban Family Welfare Centre & one Urban Health Post were selected from urban area of Gaziabad district. A total of 37 health care managers/providers were included in study sample. Information was collected pertaining to quality and completeness of existing records and reports, process of data collection, its recording, maintenance, reporting, analysis, time spent, utilization, feedback mechanism, mechanism of monitoring and problem faced in implementation at various levels using checklist and semi-structured interview schedules.

Taking five community representatives from each village; a total of 105 community representatives were interviewed to elicit responses regarding functioning of Sub-centers and Consultative Process for health needs assessment as per CNAA. In addition, from each village under study, 20 mothers having children between 1-2 years of age as on December 2002 (i.e. born between Dec 2000- Dec 2001) were randomly selected by systematic random sampling from Maternal Care register available at Sub-centre, making sample of 420 mothers from 21 villages under 12 Sub-centers. The sample was used for cross matching of information recorded by the Auxiliary Nurse Midlives (ANM) on 10 selected service components from registers related to maternal care, immunization and family welfare to assess the quality of information. A scoring system was developed for each component. Information recorded by the health worker was matched with first hand information generated from the beneficiaries. If the information generated from the beneficiaries matched with the record, the score was given '1' and for un-matched information, the score was given '0'. The score was added for all components and thus Sub-centre wise average score was calculated.

RESULTS

HMIS was being managed exclusively by the District Statistical Cell, posted with three Investigator-cum-Computors (ICCs) and at CHCs/PHCs with one ICC. MPW (F)/ANMs posted with Sub-centers/ Urban Family Welfare Center were responsible for collection, recording, maintenance and transmission of information, but they were not provided formal training in CNAA based new HMIS. The household survey and updation of Eligible Couple (EC) Register was not being done at Sub-center level. Events pertaining to pregnant women under treatment for anemia, referral of high risk cases, birth order, and birth weight, high risk new born referred, post natal care, RTI/STI cases, ARI and Acute Diarrhoeal diseases under 5 years were observed to be grossly under reported at many of the Sub-centres. Expected

Date of Delivery and next date of immunization was not readily available with ANMs. The ANMs were spending approximately 30% of their working time in recording and compilation of reports. At every level multiple overlapping reporting forms of CSSM, RCH etc and multiple overlapping reports were generated. The consolidated RCH reports were regularly submitted on 23rd from Sub-center to CHC/PHC, 25th of the month to District and 5th of the following months to State Head Quarters, respectively.

Cross Validation of Data Quality

The 10 selected service components recorded was matched with first-hand information generated from the clients and findings have been presented in the Table 1. Overall information recorded for 'Early ANC Registration' was 100% correct whereas none of the Sub-centres had recorded 'Expected Date of Delivery' in their records. Correctness of other information recorded in decreasing order was; Immunization of Child 98.57%, Person conducted delivery 92.61%, number of TT doses given 82.14%, number of IFA tablets given 81.19%, Eligible Couple contacted 77.85%, number of ANC check-ups 73.09%, Family Welfare method currently in use 38.33% and number of Post Natal Care 2.38%. The pattern is almost uniform in all the villages. However, a slight difference pertaining to 'eligible couples contacted' and 'family welfare method in use' was observed only in 2-3 villages. Scores for matched information of all 20 mothers were combined village wise to give an overall idea about the quality (correctness) of information recorded by ANMs for the 10 selected service components. It is evident from Table 2 that the village wise average score was in the range of 5.45 to 7.5, with an average score of 6.5. Some of the reasons for data quality being low were mainly due to lack of standardized instructions on how to collect data and lack of motivation among health services personnel.

Monitoring and Feedback System

The HMIS data was used only to monitor monthly achievement of targets at various levels at scheduled dates. The available data was seldom being utilized for micro-planning, assessing community needs, segmentation and prioritization of clients for services, preparation of work schedule for coverage of clients and tracking the clients for continuity of services, analyzing performance problems and developing alternate programme strategies. However, no supervisory visits, inspections of records or user's satisfaction survey were done due to lack of specific guidelines and resources.

Table 1: Cross Matching of Records of ANMs for Selected Service Components with Information Generated from the Clients

Subcentre	Village	Early ANC registration	Expected Date of Delivery	ANC check-ups	IFA tabs	TT Doses	Person who Conducted Delivery	PNC Check-ups	Immunization of child	Eligible Couples contacted	F.P.Method in use
Dausa	Niswapur**	20*	0	14	13	16	19	0	20	20	9
	Dausa	20	0	13	15	15	18	0	20	19	7
Indergarhi	Harsaom**	20	0	15	17	17	20	2	19	18	7
	Indergarhi	20	0	15	19	20	19	0	20	17	9
Hisali	Asalatnagar**	20	0	14	16	16	19	0	20	13	9
	Hisali	20	0	15	16	17	20	0	20	15	10
Mataur	Bagpat**	20	0	15	16	15	20	0	19	13	6
	Mataur	20	0	9	12	12	18	0	20	14	4
Bhojpur	Bhojpur main	20	0	20	19	19	20	1	20	19	8
Atrauli	Abalpur**	20	0	15	17	17	18	2	20	19	8
	Atrauli	20	0	14	16	16	18	2	20	18	7
Vikasnagar	Vikasnagar	20	0	13	18	18	18	1	19	8	3
Sirora	Sirora	20	0	12	17	14	20	2	20	20	12
Sherpur	Kirawali**	20	0	14	16	17	19	0	20	20	8
	Sherpur	20	0	18	18	18	20	0	20	20	16

(Cont...) Table 1: Cross Matching of Records of ANMs for Selected Service Components with Information Generated from the Clients

Allahbakshpur	Bagadpur**	20	0	15	15	15	18	0	19	16	7
	Allahbakshpur	20	0	16	16	16	19	0	20	20	4
Nidhawali	Kakrana**	20	0	18	17	17	13	0	20	11	7
	Nidhawali	20	0	16	18	18	14	0	19	8	6
Raghunathpur	Inayatpur**	20	0	12	13	15	19	0	19	9	7
	Raghunathpur	20	0	14	17	17	19	0	20	10	7
TOTAL (n=420)		**420 (100)**	**0 (0)**	**307 (73.1)**	**341 (81.2)**	**345 (82.1)**	**389 (92.6)**	**10 (2.4)**	**414 (98.6)**	**327 (77.9)**	**161 (38.3)**

* Number in each cell indicate about matched information , ** Non-Sub centre village

Number in bracket shows percentages

Table 2: Overall Quality (Correctness) of Information Recorded by ANMs for 10 Selected Service Components of Clients

Sub-centre	Village	Total Clients	Total Score	Average Score
Dausa	Niswapur**	20	131	6.55
Indergarhi	Dausa	20	127	6.35
	Harsoam**	20	135	6.75
Hisali	Indergarhi	20	139	6.95
	Asalatnagar**	20	123	6.15
Mataur	Hisali	20	133	6.65
	Bagpat**	20	124	6.2
Bhojpur main	Mataur	20	109	5.45
	Bhojpur	20	146	7.3
Atrauli	Abalpur**	20	136	6.8
Vikas Nagar	Atrauli	20	131	6.5
	Vikas Nagar	20	118	5.9
Sisora	Sirora	20	137	6.85
Sherpur	Kirawali**	20	134	6.7
Allahbakshpur	Sherpur	20	150	7.5
	Bagadpur**	20	125	6.25
Nidhawali	Allahbakshpur	20	131	6.55
	Kakrana**	20	123	6.15
Overall average	Nidhawali	20	119	5.95
				6.5

** Non-Sub centre Village

DISCUSSION

The study findings indicate many weaknesses in HMIS in the district, which improved in recent past. During the year 2011, monthly consolidated data, quarterly Financial Management Reports and infrastructure details were being uploaded from all 72 districts on HMIS portal and initially almost one fourth (18) districts have been identified to start facility based reporting under HMIS. Training of all district officials was conducted in the month of November 2011[20].

Another recent study shows further improvements during August 2010. Out of 35 States and UTs, among 28 States and UTs whose data was uploaded on the HMIS portal, the complete entries were found to be highest for Madhya Pradesh (93.4%), Uttar Pradesh

(92.7%), Tamil Nadu (90.8%), Gujarat (89.2%) and Andhra Pradesh (87.4%). As far as quality of uploaded data are concerned; number of women registering for ANC, number of live births and number of deliveries are under reported at the state level. It has been observed that women registering in first trimester, women receiving 3 Ante Natal Care, new women registering under Janani Suraksha Yojana, percent women receiving TT1 and women receiving 100+ Iron Folic Acid tablets has improved considerably during 2008-10. Few aberrations were also visible for women receiving 3 ANC, Percent women receiving TT1 and women receiving 100+ IFA tablets as few States have reported in such a fashion that indicators exceeded 100 or had missing constituent item(s). There had been consistent improvements in reporting on sex ratio at birth and percent institutional deliveries but decline in extent of female sterilization over three years period. The status of improvements in state level data can't be considered satisfactory as some aberrations still persist in abridged data[21].

Inspite of many improvements in HMIS, we have not been able to incorporate many recommendations of National Statistical Commission[22]. A recent study pointed out that there is a paucity of nationwide data on morbidity, cause specific mortality and other epidemiological information[23].

RECOMMENDATIONS

Based on the study findings, it is recommended that (i) a user's manual including reporting forms, registers, records etc should be readily available on the HMIS portal (iii) to stop multiple records and reports for consistency in reporting (iv) the internal validity of data should be improved by better training and use of information technology solutions (v) the mechanism of randomly selecting at least 20 villages from the district for cross validation of data by third party may be institutionalized for improving external validity and overall quality assurance in HMIS.

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Combined Contraceptive Vaginal Ring- its Acceptability in Indian Women

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ABSTRACT

Background: Since the introduction of hormonal contraceptives, combined oral pills have become the method of choice for many women. Although COCs have improved significantly, they have got some disadvantages. This has prompted development of non-oral hormonal contraceptive methods. One of them is combined contraceptive vaginal ring(CCVR).

Objectives: This study is targeted towards study of efficacy and acceptability of CCVRs in Indian women, along with cycle control, safety aspects, adverse effects and partner's compliance.

Method: The study enrolled married women attending outpatient department for contraceptive advice. They were counselled for CCVR. They were carefully instructed about the procedure of self insertion and removal. She is followed for 3 months and detailed history of her menstrual cycle, local and systemic complications, her compliance and acceptability were assessed.

Results: In our study CCVR was associated with good cycle control and was not associated with vaginal or cervical abnormalities. Treatment related adverse effects like headache, leucorrhoea, nausea, etc and systemic side effects are minimal. 93% women found the ring easy to insert, 98% found it easy to remove and 95% were satisfied with ring usage.

Conclusion: From the present study, it can be concluded that CCVR is an effective contraceptive with good cycle control that is well tolerated. It is associated with high user and partner acceptability and minimal local and systemic effects.

Keywords*: contraceptive, nuvaring, combined contraceptive vaginal ring, cycle control Combined contraceptive vaginal ring- its acceptibility in Indian women.*

INTRODUCTION

The history of contraception is a long one, dating to ancient times[1]. Since the introduction of hormonal contraceptive methods in early 1960s, combined oral contraceptive (COCs) have become the method of choice for many women worldwide[2]. Ongoing research is leading to improved types of hormonal preparation, reduced dosage and development of innovative methods of delivery with improved efficacy and acceptability, designed to meet the needs of individual user[3].

Although COCs have improved significantly over the last four decades and are widely used, as a class they have got some disadvantages. Orally administered treatment can lose significant amounts of their active drug substance(s) through first pass

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metabolism, vomiting and drug interactions leading to variable bioavailability[4,5]. Daily administration can also cause large fluctuation in serum hormone levels. Also daily oral administration has a compliance problem[6]. These factors have prompted the development of other non-oral hormonal contraceptive methods, some of which use controlled released formulation. Until recently, long-acting contraceptives such as injections, hormone-releasing intrauterine devices and sub dermal implants were the only alternatives methods available. They all require administration by trained personnel; after using injectable contraceptives the time to return to normal ovulation can be unpredictable; and because many of these methods are available as progestogens–only formulation they can produce a variable pattern of bleeding[7].

One of the advances in this regard, has been development of combined contraceptive vaginal ring (CCVR)[8]. Vaginal administration has several advantages. Its anatomy, histology and physiology provides the opportunity to use controlled-release formulation to achieve constant serum hormone level, avoidance of gastrointestinal disturbances and hepatic first pass metabolism and the possibility of administering both estrogen and progestogen at lower dosage compared to COCs[9,10]. Easy insertion and removal by the user, self-control by the user, no requirement for daily intervention and a rapid return to normal cycling after removal are also potential benefits associated with vaginal ring use[11].

Combined contraceptive vaginal ring is a flexible transparent plastic ring made from evatane with an outer diameter of 54mm and a cross-sectional diameter of 4mm (figure 1) containing 2.7mg ethinyl estradiol and 11.7mg etonorgestrel that release 15µg ethinyl estradiol and 120µg etonorgestrel per day[12,13,14]. Each ring is intended for one cycle of use; one cycle comprises 3 week of ring use, followed by a 1 week ring free period[15]. Data from studies have shown CCVR is effective contraceptive, with excellent cycle control, high user satisfaction and an optimal safety profile[16,17].

Figure 1: CCVR

Objectives: 1. To evaluate the cycle regularity during CCVR use.

2. To study the systemic adverse events like headache, nausea, gain in body weight, change in lipid parameters, blood sugar and liver enzymes during CCVR use.

3. To study the local adverse effect like leucorrhoea, vaginal discomfort, vaginitis and pain.

4. To study the chances of spontaneous expulsion.

5. To study acceptability, compliance and self-application of CCVRs in the study group.

6. To consider spouse opinion especially with reference to coital act.

MATERIALS & METHOD

This longitudinal study was conducted in the Department of obstetrics and gynaecology, Eden Hospital, Medical College, Kolkata, a tertiary care centre of Eastern India. 50 married women aged 18-45 years and have not used any form of hormonal contraceptive in the last 6 months seeking reversible means of contraception was recruited for study. Women who are currently pregnant, those having any medical disorders like diabetes, cardiovascular disease, severe hepatic disease, epilepsy, migraine with focal neurological symptoms, venous or arterial thrombosis, women with severe pelvic inflammatory diseases, with known or suspected malignant condition of genital organ or breast, women suffering from sexually transmitted diseases with undiagnosed vaginal bleeding, hypersensitivity to the active substances or any of the excipients of CCVR and having irregular cycle were excluded from the study.

The parameters studied are cycle regularity in terms of intended withdrawal pattern and irregular bleeding pattern, systemic effect on blood pressure, liver function test, body weight, lipid parameters, routine haemogram and blood sugar, effect on cervix and vagina, patient's compliance and acceptability and spouse's compliance.

Amongst all the patients attending outpatient department for contraceptive advice 50 women fulfilling exclusion and inclusion criteria were taken. They were counselled for combined contraceptive vaginal ring ccvr (nuvaring) and were informed about the procedure and purpose of the study. Informed written consent was taken. Thorough proper histories were taken and were examined properly. Pregnancy excluded. Initial blood investigations done. Per-speculum examination of cervix and vagina made and if required a pap smear done. Woman is then instructed carefully about the procedure of insertion and removal of the ring. Once the ring has been inserted it is left in vagina continuously for 3 weeks. Woman is advice to check for the ring regularly. Ring is removed after 3 week of use and after 1 week of ring free week a new ring is insert. Woman is followed for 3 month and then subjected to study tool. There were 6 drop outs from the study. Of these, 2 withdrew due to bleeding irregularities, 2 due to coital problem, 1 due to spontaneous expulsion of ring and 1 due to foreign body sensation. A detailed history of her menstrual cycle in the following 3 month is taken. History regarding any vaginal discharge, local allergy, headache, nausea, breast tenderness etc is taken. Her blood pressure and body weight is measured. Blood for routine hemogram, sugar, bilirubin, SGPT, SGOT, cholesterol and triglyceride done. Per-speculum examination of cervix and vagina done along with pap smear (if needed). Her compliance and acceptability is assessed via questionnaires along with her partner.

RESULTS

All the data were put on the charts and analysis of data done. Statistical analysis of the above study is done according standard statistical protocols.

Table 1: Distribution of pattern of menstrual cycle

Parameters	Result (n=44)	Percentage
Incidence of withdrawal bleeding		100% of cycles
Mean duration of withdrawal bleeding	4.2 days	
Incidence of early withdrawal bleeding		1.2% of cycles
Incidence of late withdrawal bleeding		13.7% of cycles
Incidence of irregular bleeding during ccvr (nuvaring) use		3.6% of cycles
Incidence of intended bleeding pattern during ccvr (nuvaring) use		95%

Table 2: Distribution of systemic adverse events

Parameters	Mean change (increase or decrease)	
Body weight	0.2% increase	0.18% decrease
Blood pressure	Diastolic(mm of Hg)	-0.1±8.4 after cycle 3
	Systolic(mm of Hg)	-0.1±9.8 after cycle 3
Blood sugar	0.70% increase	99.30% no change

Lipid metabolism	Total cholesterol	0.9% median change
	LDL cholesterol	0.2% from baseline
	HDL cholesterol	1.3% to cycle 3
	Triglyceride	2.1%
Liver functions	Bilirubin	0.23% median change
	SGPT	0.18% from baseline
	SGOT	0.31% to cycle 3
Cevical changes (Papani Colaou shift)	I to IIb	1 out of 44
	IIa to I	1 out of 44

Table 3: Distribution of local adverse events

Parameters		**Incidence**
Adverse events	Headache	3.8%
	Vaginitis	2.5%
	Leucorrhoea	4%
	Nausea	2.8%
	Device-related events	8%
Acceptability	Strongly disagree	2%
	Disagree	5%
	Undecided	3%
	Agree	92%
	Strongly agree	80%
Ease of use	Easy to insert	98%
	Easy to remove	93%
Sexual comfort domain	Ring felt by self during intercourse	30%
	Ring felt by partner during intercourse	18%
Satisfaction domain	Satisfied with ring usage	95%
	Recommended the ring to others	96%
Cycle related events	No change of length of cycle	98.6%
	Severity of pain unchanged or decreased	83.6%

DISCUSSION

The present study has been carried out in the Department of Obstetrics & Gynaecology, Medical College & Hospital to study the efficacy and acceptability of combined contraceptive vaginal ring in Indian women. In this study, 50 women were chosen and followed up in a prospective manner although there were 6 dropouts. All the parameters mentioned above were studied and relevant data collected and analysed.

Cycle control during ccvr (nuvaring) use was assessed by vaginal blood loss classified as either withdrawal bleeding or irregular bleeding. According to table 1, incidence of withdrawal bleeding occurred in 100 % of cycle observed with mean duration of withdrawal bleeding was 4.2 days. Incidence of early and late withdrawal bleeding was 1.2% and 13.7% of cycle respectively. Study by Bjarnadottir et al. 2002[18] has also shown similar results. Incidence of irregular bleeding during ccvr (nuvaring) use was 3.6%. In majority of cycle, the bleeding was restricted to spotting only. Also the incidence of intended bleeding pattern was 95% which was comparable to studies conducted by Dieden et al. 2002[19] and Bjarnadottir et al. 2002[18].

In the study, a clinically significant increase or

decrease in body weight was classified as change of 7% or more. In table 2, our study showed an increase of 0.2% and decrease of 0.18% which was clinically non-significant. Studies by Dieden et al. 2002[19] have shown increase of 0.84±3.1Kg. Measurement of blood pressure and blood sugar both have shown no clinical relevant changes from baseline values. The effect of ccvr (nuvaring) on lipid metabolism has been performed by Tuppurainen et al. 2004[20]. Total cholesterol level was largely unchanged; HDL-cholesterol and LDL-cholesterol level also did not change with ccvr (nuvaring). Triglycride level increased from baseline with ccvr (nuvaring). In summary, ccvr (nuvaring) has minimal effect on various lipid parameters. In our study median percentage change from baseline valves was total cholesterol-0.9%, HDL-cholesterol- 1.3%, LDL-cholesterol-0.2% and triglycrides- 20.1%.In the present study the effect of ccvr (nuvaring) on liver function was not clinically relevant with mean percentage change from baseline value being total bilirubin-0.23%, SGPT- 0.18% and SGOT-0.35%. Because of ccvr (nuvaring)'s vaginal location, local effect of ring on vaginal and cervical epithelium was studied. In our study ccvr (nuvaring) was not associated with an increased risk of cervical or vaginal abnormalities. Similar results were found by Roumen et al. 1996[21], Dieben et al. 2002[19] and Archer et al. 2002[22].

According to table 3, treatment-related adverse events with ccvr (nuvaring) were headache-3.8%, vaginitis-2.5%, leukorrhea-4%, nausea-2.8% and device related events- 8% which included coital problems, foreign body sensation and spontaneous explusion. In the study 92% of women agreed or strongly agreed that the instruction on ring use and storage were either clear or easy to follow. The proportion of women who found the ring easy to remove were 98% whereas the proportion of women who found ring easy to insert were 93%. Regarding the sexual comfort domain, 30% women could feel the ring during intercourse with 18% partners feeling the ring during intercourse. 95% women were satisfied with the ring usage and 96% women would recommend the ring to others. When enquired about the cycle-related characteristics, such as changes in the length of their menstrual period or pain, that they had experienced with the ring; 98.6% women reported that the length of their period was either same or shorter with 83.6% women reported the severity of their menstrual pain did not change or was less. In the study conducted by Novak et al.2003 [23] 97% agreed that the instructions for use were clear; 85% of women and 71% of their partners never/rarely felt the ring during intercourse and 94% of partners never/rarely minded that the women was using the ring. Overall acceptance was high, 96% were satisfied with the ring and 97% would recommend the ring.

CONCLUSION

From the present study it can be concluded that combined contraceptive vaginal ring is an effective contraceptive, with good cycle control that is well tolerated. It has a neutral effect on blood pressure and body weight, has no clinical relevant effect on blood sugar, has minimal effects on lipid metabolism, has no clinical significant effect on liver function, has no unfavourable effect on vagina and cervix. It is associated with a high level of user and partner acceptability and has a low incidence of adverse effect such as nausea, headache and leukorrhea and has very low incidence of spontaneous expulsion.

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Conflict of Interest: No conflict of interest

Source of Funding: self

Key message points:

- Combined contraceptive vaginal ring is a newer contraceptive which has a very good safety profile.
- It can be easily used and removed by the user.
- Nuvaring has been accepted both by the users and their partners.

Ethical Clearance- Taken from Institutional Ethics Committee, Medical College, Kolkata.

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Role of Health and Nutrition Education Programme of ICDS Scheme in Development of Women in Punjab

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ABSTRACT

Integrated Child Development Services (ICDS), scheme has been operating in the all districts of Punjab for decades. Nutrition and Health Education (NHED) component of ICDS had been evaluated in the light of the objectives, to know the basis and methods for imparting Nutrition and Health Education activities, and to identify the problems facing in organizing Health and Nutrition Education programme at Anganwadi level. For this study, one Sehna ICDS project was selected from Barnala district of Punjab. A total of 30 Anganwadis were selected on the basis of random It was shocking to note that a high majority (90%) AWWs did not receive any help and guidance from supervisor to organize NHED during this period. It is also disappointing to find that a high majority (80%) of the beneficiary women did not regularly attend NHED session

Keywords: *ICDS, AWW, AWC, NHED, ANM.*

INTRODUCTION

"You can tell the condition of a nation by looking at the status of its women". -Jawaharlal Nehru

Women are builders of the destiny of a nation. The progress of a nation depends upon its faithful and patriotic citizens, brave warriors, learned scholars, great politicians and statesmen. Such a great generation can be brought up only by good and dutiful mothers. The nucleus of the true progress of the nation lies in the hands of mothers. As Pandit Nehru said, "To awaken the people, it is the women who must be awakened, once she is on the move, the family moves, the villages move and the nation moves.[1]"Looking from this perspective, it is clear that educated healthy and enlightened women are assets to humanity.

India is one of the few unfortunate countries where the males significantly outnumber the females, and women maternal mortality rate in rural areas is the world's highest. Infectious diseases, malnutrition, and maternal and prenatal causes account for most of the disease burden. Females experience more episodes of illness than males and are less likely to receive medical treatment before the illness is well advance. Because the nutritional status of women and girls is compromised by unequal access to food, by heavy work demands, and by special nutritional needs, females are particularly susceptible to illness, particularly anemia. Women are often trapped in a cycle of ill health exacerbated by child bearing and hard physical labour.[2]

The health and nutritional status of Indian women is intrinsically linked to their status in society. Research on women's status has found that the contributions Indian women make to families often are overlooked, and instead they are viewed as economic burdens. There is a strong son preference in India, as sons are expected to care for parents as they grow in age. This "son preference" along with high dowry costs for daughters, sometimes results in the maltreatment of daughters. Further, Indian women have low levels of both education and formal labour force participation. They typically have little autonomy, living under the control of first their fathers, then their husbands and finally their sons. All of these factors exert a negative impact on the health and family status of Indian women.

Poor health has repercussions not only for women but also for their families. The care and development of children is closely linked with the condition of

women. Her status, care and, development directly affects the overall development of her children.[3] Women in poor health are more likely to give birth to low weight infants. They also are less likely to be able to provide good food and adequate care to their children. Finally, a woman's health affects the household economic well-being, as a woman in poor health will be less productive in the labour force.

The importance of bringing improvement in women's health and nutritional status has been realized and recognized by the Government of India. In 1975 Government of India initiated an integrated approach for the delivery of health care as well as nutrition and education services at the village level through Anganwadi Centres. This national programme is known as the Integrated Child Development Services (ICSD) Scheme. In the initial stages ICDS was implemented in 33 selected community development blocks. ICDS has expanded considerably in subsequent years and Up to 31st March 2013; there are 7076 sanctioned projects, 7025 operational projects in India. In Punjab ICDS program has expanded very rapidly. At present, there are 155 sanctioned and 154 operational projects.[4] Manisha Jain[5] rightly pointed out that the objectives of the ICDS mission would be to institutionalize essential services and strengthen structure at all level. There is a plan to roll out strengthened and restructured ICDS in three years beginning with 200 high burden districts in the first years 2012-2013 and so on.

Nutrition and Health Education component of ICDS scheme for Women has the long6term goal of capacity building of women in the age group of 15-45 years especially Pregnant women and Nursing women, so that they can look after their own health, nutrition and development needs as well as that of their children and families. The main objective of education in nutrition is to help individual to establish food habits and practices that are consistent with the nutritional needs of the body and adapted to the cultural pattern and food resources of the area in which they live. Nutrition and Health Education comprises basic health, nutrition and development information related to childcare and development, infant feeding practices, utilization of health services, family planning and environmental sanitation, maternal nutrition, ante6natal care, prevention and management of diarrhoea, acute respiratory infections and other common infections of children.[6] Health and Nutrition education is delivered by Anganwadi workers and ANMs through inter6personal contacts and discussions. An important contact point is established with the pregnant women and nursing mothers to educate them about services for children like taking care and monitoring of child's growth, timely immunization, knowledge about breast feeding, colostrum feeding, treatment of diarrhoea/minor illness, not to provide home6made medicines during illness, preparation of nutritious food/feeding practices, importance of education of the child, about cleanliness and hygiene, preparation of oral dehydration solution, care of severely malnourished children. Services for Mother provided are bout immunization during pregnancy, about institutional delivery, about feeding practices during pregnancy and lactating period, iron-folic acid (IFA) supplementation, about correct posture during pregnancy, correct posture during breastfeeding, about self-care & health, about diseases illness, about nipple hygiene, purification of water to mothers and adolescent girls, small family norms, etc.[7]

SCOPE AND OBJECTIVES

The scope of present paper includes a study to assess the message and methods and problems of Nutrition and health Education (NHED) programme of ICDS scheme at Anganwadi Centres (AWCs). For this purpose, one Barnala district was selected from Punjab. The objectives of the study were as given below:

1 To know the methods for imparting Nutrition and Health Education activities.

2 To know on what basis Nutrition and Health Education was given.

3 To identify the problems facing in organizing Health and Nutrition Education.

RESEARCH METHODOLOGY

To achieve the aim of the present empirical study to assess the message and methods of Nutrition and Health Education (NHED) for development of women's health, one Sehna ICDS Project was selected from Barnala district of Punjab. A total of 30 Anganwadis were selected on random basis from selected ICDS Block. The present study is primarily based on primary sources of information. For primary data, responses were elicited from the chosen sample

through open and close ended questions in the Schedule followed by personal interviews. Schedules were designed in English and for the convenience of the respondents, they were translated in Punjabi which is common language spoken in the Barnala district. Observation method was also used during personal visits to AWCs. Besides this, secondary sources of information like books, articles, and newspaper clippings, articles in research journals, websites and reports were also consulted to collect the factual data concerning the study. The data from the total sample of 30 Anganwadi workers was edited. The data collected was analyzed manually and tabulated.

FINDINGS AND DISCUSSION

Personal interviews and observation brought important results and major ones are presented in the tabular form below. All tables are related to responses of Ansganwadi Workers.

Table 1: How frequently did you organize Nutrition and Health Education session?

(Anganwadi Workers)

Attributes	Responses of Total AWWs
Once in a month	18(60)
Twice in a month	03(10)
Once in two month	03(10)
Not any session organized	06(20)
Total	30(100)

Source: Culled from Primary data. Figures in brackets are percentages.

Regarding non-formal nutrition and health education given by Anganwadi workers to women in the age group of 15-45, priority is to be given to pregnant women and nursing mothers whose aims to enable them to look after their own health and nutrition needs as well as that of their children. It is evident from Table 1 that a majority (60%) of the AWWs organized NHED session once in a month, some10% AWWs organized NHED session twice in a month and some 10.00% of the AWWs organized NHED session once in two month during 2011. It was disappointing to find that 20% of the AWWs did not organize any NHED session during this period. They justified it saying that AWWs union take decision that NHED services of ICDS is not job responsibility of the AWWs. It is job responsibility of the health functionaries. It means that they were unable to organize NHED session due to pressure of union which is not good.

Table 2: Which methods did you adopt for Nutrition and Health Education session?

(Anganwadi Workers)

Attributes	Responses of Total AWWs
Film shows	----------
Discussions	24(80.00)
Talk by experts	----------
Did not adopt any method	06(20.00)
Total	30(100)

Source: Culled from Primary data. Figures in brackets are percentages.

Replying to the question about methods for NHED adopted by AWWs, as given in Table 2, it indicated that a majority (80%) of the AWWs of the selected sample adopted discussions method for NHED. 20% of the AWWs did not organize any NHED session for the beneficiaries' women. AWWs and supervisors are supposed to make periodic meetings and home visits of beneficiary women for NHED. It was found that a high majority of AWWs discussed with beneficiary women about nutrition and health through periodic meetings and home visits. But the supervisors did not make any visit and also did not organize any meeting with beneficiary women which can be termed as poor functioning of programme.

Table 3: On what basis Nutrition and Health Education was given?

(Anganwadi Workers)

Attributes	Responses of Total AWWs
Immunization and common disease	18(60)
Supplementary nutrition	03(10)
Health and hygiene	03(10)
All above	06(2O)
Total	30(100)

Source: Culled from Primary data. Figures in brackets are percentages.

Table 3 provides vivid information about the basis, which was given by AWWs through NHED. It was found that 60% of AWWs replied that they organized NHED session to give the message of immunization and common disease to the beneficiary women. About 10% of the AWWs answered that they gave the message about importance of supplementary nutrition ration. Merely two (10%) AWWs viewed that they organized NHED session to give the message of health and hygiene. Only 20% of the AWWs replied that they organized NHED session to give the message of immunization, common disease, supplementary nutrition, health and hygiene to the beneficiaries`.

As per norms of ICDS, Anganwadi worker are supposed to educate the women about immunization, common disease, supplementary nutrition, health and hygiene. It was shocking to find that a majority (80%) AWWs did not organize NHED sessions as per national norms.

Table 4: What problems did you face in organizing Nutrition and Health Education session?

(Anganwadi Workers)

Attributes	Responses of Total AWWs
Lack of resource (fund or material)	----------
Lack of interest among women	09(30)
Health functionaries and higher official do not cooperate.	06(20)
Not any problem	15(50)
Total	30(100)

Source: Culled from Primary data. Figures in brackets are percentages.

The question about the main problem faced by *AWWs* in organized NHED at AWCs, as Table 4 showed that 30% of the AWWs felt that lack of interest among women was main problem. Health functionaries and higher officials did not cooperate to organize NHED sessions according to 20% AWWs. The remaining 50% AWWs replied that they did not face any problem in organizing NHED sessions.

NHED is key element of the work of AWWs. However, it was sad to find that fifty percent of the AWWs faced different problems to organize NHED session which is not good.

Table 5: Are beneficiary women regularly attending Nutrition and Health Education session? If not, what is the reason?

(Anganwadi Workers)

Attributes	Responses of Total AWWs
Yes, regularly attended	06(20)
AWC is for off,	03(10)
Women do not understand significance of NHED	06(20)
Women busy in household chores/others task	15(50)
Total	30(100)

Source: Culled from Primary data. Figures in brackets are percentages.

It is clear from the Table 5 that only 20% of the AWWs replied that the beneficiary women regularly attended NHED session. 10% of the AWWs answered that the beneficiary women did not regularly attend NHED session due to the reason that AWCs were far off from community residence. About 20% of AWWs viewed that the beneficiary women did not regularly attend NHED session as women did not understand significance of NHED. However a half (50%) of the AWWs replied that the beneficiary women remained busy in household chores and other tasks, so they were unable to attend NHED session.

It was disappointing to find that on the whole a high majority (80%) of the beneficiary women did not regularly attend NHED session. This shows poor and insufficient performance impact of the programme.

Summing up the findings from the study of the assessment of the methods, message and problems of health and nutrition education for women at AWCs showed that overall 20% of the AWWs did not organize

any NHED session during the concerned period. They revealed that AWWs union took decision that NHED services of ICDS were not job responsibility of the AWWs. A majority (80%) of AWWs of the selected sample adopted discussion method for NHED. Only 20% of the AWWs replied that they organized NHED session to give the message about all components of ICDS like immunization, common disease, supplementary nutrition, health and hygiene to the beneficiaries. It was also found that 50% of the AWWs faced different problem to organize NHED session at AWCs. It is also disappointing to find that a high majority (80%) of the beneficiary women did not regularly attend NHED session. Thus the results indicated that the NHED programme to women at AWCs was found to be ineffective and insufficient.

CONCLUDING OBSERVATION

The poor health of Indian women has been a concern on both national and individual levels for the last few decades, yet the question remains - are women's health needs ever taken seriously? Women development have been central targets of the family planning programme from the late 1960s but their reproductive health needs were never acknowledged beyond the survival of the child nor was there any concern to have an integrated/holistic approach to deal with their health issue.[8] Besides it, for development of women`s health is not only framing policies but it is the proper coordination and implementation of the polcies. It was observed from the present study that delivery of NHED services was far below the desired level. In this regard, it is recommended that Supervisors should be given the responsibility of organising formal NHED sessions at regular intervals in AWCs under their supervision. Continuous and effective monitoring by CDPOs and district officials, as also active participation of health functionaries, can go a long way in the effective implementation of this component. For group formation and collecting women at one place for NHED sessions, locally popular social or recreational event or activity may be organised. In addition, Anganwadi workers need to be given proper skill to the imparting NHED to the beneficiaries women. It is also suggested that CDPOs and supervisors, in such cases, can accompany the AWWs to make more home visits and be a part of the process of motivating the women to come for attend NHED sessions.

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Globalization and Weavers' Health in India-Case Study of Varanasi Silk Weavers

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ABSTRACT

India is known for its ethnic background. The gateway to this ethnic nation is formed by handicrafts. The country is fortunate enough to possess some highly skilled artisans. They have increased the fame of Indian handicrafts around the globe. Till now, many rural people earn their livelihood from their creative pieces of art. But after the emergence of globalization these people are affected very much. The precious handmade craft items are now produced on a large scale which degrades the quality and standard of the products it causes the real art work to be extinct. Although the average income of artisans is increased but the conditions of poor's remains intact. Consequently their health is affected.

Keywords: *Globalization, Weavers, Health, Varanasi.*

INTRODUCTION

Globalization describes the process by which regional economies, societies, and cultures have become integrated through a global network of political ideas through communication, transportation, and trade. The term is most closely associated with the term economic globalization: the integration of national economies into the international economy through trade, foreign direct investment, capital flows, migration, and the spread of technology (Bhagwati, Jagdish, 2004)[1].

From the start of 1990's there was economic crisis in India. India had to borrow money from International Monetary Fund and World Bank. They gave funds to India on the condition that India will open up the economy. These were called conditional ties. Structural Adjustment Programmers were started. The government made changes in the economy. This era was the era of liberalization, globalization and privatization. The government opened up the economy. It had to cut expenses on social sector. It also had to make provision for making labor laws less strict like starting Special Economic Zones. There was also competition from outside India and these affected weavers. There was economic effect and this also had poor effect on their health.

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Globalization effect on Health Sector

Globalization also had its affect health sector in India. In 1993 the World Bank came out with a report called "Investing in Health". This report suggested many changes in the health sector. These were called "Health Sector Reforms". Some of the features of Health Sector Reforms were as follows:

The World Bank started getting involved in the area of health in the mid eighties. But it the World Development Report (WDR) 1993-investing in Health which became the basis for the World Bank initiated Health Sector Reforms. The main idea was to strengthen fiscal position of the government by reducing expenditure on healthcare and other such 'non productive' sectors. The main tools to achieve these would be-

1. Introduction of "essential clinical package"- According to this the government should spend money only on a few health services to cut down on cost. These included mostly preventive services. Most of the curative services that were more profitable

were to be left to the private sector.

2. Introduction of User Charges- Introduction of user charges in the government facilities was recommended to recover cost.

3. Public Private Partnerships – The government was to involve the private sector. It was thought that was more efficient than the government.

4. Contracting out Services- This was supposed to increase efficiency and improve management.

5. Decentralizations-Transferring power to people (to take decisions or plan (Lister) [2].

As a result of these policies there was less spending on health sector. The condition of health sector in India is very poor already. It has many problems related to infrastructure, shortage of doctors etc. If government spending is low then these problems increase. There are lots of regional inequalities. The government spending per capita is also one of the lowest in the world. The public health spending as share of Gross domestic product **(GDP)** is also one of the lowest in the world. The out of pocket expenditure is very high and it is increasing day by day. According to National Sample Survey Organization (**NSSO**), between 1995 and 96, 2003 and 04, the admission cost in rural hospital has increased 78 percent and in urban area it has increased 126 %. Most of the expense has to be borne by the poor people because they use government facilities most. The role of private sector is also increasing but private sector works for profit. It will therefore not benefit the poor population.

Effect of Globalization Handicrafts Sector in India:

In India there were a number of changes because of liberalization of economy in the 1990's. There was an end to 'license raj' (referring to the regulated and controlled economic policy by the state for running business), reduction in the number of areas reserved for the public sector, amendment of the monopolies and the restrictive trade practices act, start of the privatization programs, reduction in tariff rates etc. Many Indian companies become international. This has also had effect on the handicraft sector in India India's Gross Domestic Product **(GDP)** growth rate has also increased. Indian economy experiences the existence of both traditional handicrafts and modern mechanized production.

The handicraft tradition in India is very old. It used to receive royal patronage in older times. The arts and crafts in India are also very diverse. Every region has some specialty. Indian handicrafts items, such as wood, stone, metal, grass, glass, cane and bamboo, textiles, clay, terracotta and ceramics. Even in textile there is a lot of variety. For example bandhni, chanderi, banarasi silk, taant, sambalpuri etc. Indian handicrafts sector forms the second largest employment sector -second only to agriculture. The Annual Report of various years of the Ministry of Textiles, Government of India suggests that the employment in this sector in 1997-98 was 52, 92 lakhs which became 58, 41 lakhs in 2001-02 and 60, 16 lakhs in 2002-03. In 2005-06, 65, 72 lakhs people were employed in this sector. Based on the National Council for Applied Economic Research **(NCAER)** survey of 1995-96, of the total workforce engaged in handicrafts, 47.42 % are women of which 37.11 % are coming under the backward communities like Scheduled castes/ Scheduled Tribes **(Jena, 2010)[3].**

Handicrafts Items Exported From India, 1998 and1999 to 2006 and 2007 (Rs. In Crore)

Items	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003- 2004	2004- 2005	2005-2006	2006-2007 Up to L 7
Carpet & others floor coverings									
Woolen	1783,32	1888,45	2045,96	2152,69	2293,79	2015,11	1974,00	2512,11	2571,05
Silk	136,46	153,93	167,03	198.27	209,42	198,69	187,25	181,70	215,23
synthetic	94,16	93,65	102,16	85,17	87,05	86,24	61,95	56,05	62,15
Total	2013,94	2136,03	2316,15	2436,13	2590,26	2300,04	2223,20	2749,86	2848,43
Others Handicrafts									
Art Metal ware	1329.16	1497.18	1778.10	1758.90	2165.21	2642.42	3364.93	3662.98	3391.04
Wood ware	286.04	394.95	434.44	431.88	511.35	609.07	721.18	853.06	803.72
H.P Textiles Scarves	1033.98	1158.05	1276.75	1221.59	1466.52	1611.43	1848.76	2053.70	2182.97
Embroidered & crochet Goods	1209.42	1584.36	1964.78	1931.97	2477.75	3286.05	4199.86	4711.45	4117.84
Shawls & Arts Ware	48.48	21.50	27.20	27.01	32.70	43.27	53.65	110.23	152.62
Zari & zari Goods	74.95	83.52	142.32	134.04	159.47	210.54	252.28	347.05	237.18
Imitation jewellery	104.10	113.64	121.68	117.53	138.79	161.90	200.56	274.86	259.45
Misc. Handicrafts	1057.57	1116.40	1210.08	1146.58	1391.62	1900.45	2391.48	2513.52	2124.13
Total	5143.70	5969.60	6955.35	6769.50	8343.41	10465.14	13032.70	14526.85	13268.95
Grand Total	7175.64	8105.63	9270.50	9205.63	10933.67	12765.18	15255.90	17276.71	16117.38

Jena (2010) [3] Indian Handicrafts in Globalization Times: An Analysis of Global-Local Dynamics

The above table shows the extent of the exports of different handicrafts products from 1998-99 to 2006-07. The total handicraft export is increasing over the years. There is not much change in export of carpet and other floor coverings category where as other handicraft category has registered an impressive growth in last decade. But despite this change the handicraft industry is facing many challenges because of globalization.

As a result many artisans have become marginalized. Artisans include potters, weavers, and other craft makers. It has been estimated by the United Nations that, in India in the past 30 years the numbers of artisans have declined by at least 30%. Many of these artisans have become casual wage laborers. They have lost their regular source of livelihood.

Another problems is that many of the important raw materials that artisans use like skins and hides, certain types of wood, metals, shells and other craft materials have either become too expensive for the artisans to purchase. In other cases they have been diverted to mass production.

In some places artisans' product is not in demand in the local market any longer. They produce for the world market. But here too they have world market is not predictable. So they have to depend on uncertain world market (Scrase, 2003) [4].

The effect of this is not only seen in India but also other countries. Commercialization and global expansion of certain craft industries concomitantly can lead to severe localized effects. For example, this is dramatically illustrated in the case of Indonesian textiles, where the development of this industry into a large, commercialized manufacturing process which created 80 000 jobs has led to the subsequent demise of an estimated 4.1 lakh traditional artisan jobs in weaving and associated crafts like dyeing (Scrase, 2003) [4].

Another matter is that in some cases because of commercialization and increase in demand the

artisans are losing their specialization and skill. According to (Jena, 2010) [3] that artists are bringing in changes in different artifacts to meet with the demands of the people. In Orissa for example, in the appliqué sector, as said above it has been observed that competition amongst the artisans, use of low quality inputs and use of readymade and machine made items have often brought down the standard of the work. Something exceptional in the market that may be liked by the tourists initiated change in the appliqué works (Jena, 2010) [3].

Effect of Globalization on Silk Weavers of Varanasi: In the section we have described the effect of globalization on the arts and craft industry. This section we will describe specific case of the Varanasi silk weaver and show how globalization is affecting health of weavers.

A weaver is a person who weaves clothing, arts & crafts and other items on especially as a means of livelihood.

In India there is a diverse tradition of arts, crafts and handloom. As per the handloom census there is total of 38 lakh handlooms in India. The prime attributes of this industry include: caste based, labor intensive, tradition oriented, having a legacy of unrivalled craftsmanship with a decentralized set-up that has spread throughout the length and breadth of the country.

Silk weaving has been very famous in Varanasi for centuries. It is estimated that there are more than 1.25 lakh weavers in the cluster, making it one of the largest geographical concentrations of handloom weavers in the country. However, there is no concrete data available. The estimates of the total number of weavers vary a lot. A local NGO, People's Vigilance Committee on Human Rights (PVCHR)[5], estimates that there are approximately 5 lakh weavers in and around Varanasi (Ahmed, 2008)[6].

The livelihood of the people of this area is dependent on handloom. In the state more than 12 lakh people are dependent on handloom for their livelihood. Both Hindus and Muslim are benefitted or affected by this industry. The reality tells a different story. The government policy relating to the weavers have not been effectively implemented and the benefits of governmental programs have not reached to them. The Sachar Committee reports the sad socio- economic conditions of Muslim Weaver. It is surprising to note the condition of silk weavers of Varanasi (Banaras), nearly 6000 weavers migrated to Surat, Mumbai and Kolkata in search of employment. The weavers do not have any identity card that leads to problem of counting as well as delivering the benefits of governmental programs to them. There has been a consistent demand for waiving off loans and providing them with minimum wages like National Rural Employment Act (NREGA).

In this globalization era India is member of World Trade Organization (WTO) and there is free trade regime. This has affected the conditions of weavers. Globalised economy has contributed to the ever-increasing competition among the developing nations. Due to this, the traditional crafts of the country are under threat from the neighboring countries by way of replication of the traditional items. Also, there has been increased import of Chinese silk cloths. This is because cheaper Chinese fabric being imported into the country. Earlier weavers used to buy silk from Karnataka. But it is very expensive. In 1990 it was ₹ 100 per Kg, and now it is ₹ 1500 per Kg. Chinese silk is cheaper. Factories in Surat are also making silk and artificial silk sarees (Ahmed, 2008) [6].

CONDITION OF HEALTH OF SILK WEAVERS

According to one study done on Varanasi weavers their socio economic condition is very poor. Most of them belong to Muslim community. They have to get raw material on credit from dealers. Since they do not have storage facility they have to sell their product soon even if they do not get a good price. In the study weavers were asked their problems. They reported the following problems- lack of electricity (96%), marketing (94%), production (82%), low wages (76%), no incentive from government (19%) and health (30%). As we can see, health is also a big problem among workers (Singh and Nalik, 2009) [7].

According to information on the website of Asian Human Rights Commission, because of their poor condition many weavers are having tuberculosis. The case of Lohta Panchayat, Varanasi District has been described. It is estimated that out of 200 families, in 50 families there are TB patients. Cure from TB

depends on good treatment and nutrition. But these weavers are too poor for this. This problem is increased because of the poor condition of the health services. There is no primary health centre in Lohta. The condition of the primary health centre in nearby Kashi Vidhyapith Block is very bad. This centre covers 85 villages with approximately 60,000 persons. The centre is located about 2.5 kilometers away from the main road. The access road to the centre is in such a condition that it is difficult for anyone to reach the centre. The centre is also not functioning properly. In paper the centre has two doctors, one nurse, two health assistants - one male and one female, one compounder and a lab technician. In addition to the staff the centre must also have 112 types of essential medicines, ready at the centre to be delivered free of cost to the patients. None of these facilities are available at the centre. Since the weavers are poor it is not possible for them to get facilities from private hospital that is in the city. However the doctors in charge of these centers work for private hospitals and keep the centers closed so that the patients are forced to approach the private clinics. Most of these doctors also have private practice and also work illegally at the private hospitals. The government also neglects these health centers by failing to provide medicines and staff (AHRC, 2007)[8]. We can see how both poor condition of work and poor condition of health services is causing health problems of weavers to increase.

DISCUSSION / CONCLUSION

Globalization created adverse situation for handicraft sector in India. As much as it was profitable for well to do families, it did play as a catalyst in worsening the economic conditions of the weavers who already belonged to poorer section of the society, hence, they became marginalized. Weaving families became poorer and poorer and it led to starvation which directly affected their health and in absence of proper health care service and also the inability to pay for whatever scarcely available medical sources were there resulted in worst scenarios, even deaths. According to Times of India news article, in 2007, in the last three years over 50 adults and children from weaving families have starved to death instead of enduring poverty.

We can see that globalization has been profitable for the well to do but not for the poor weavers. It has increased their problems and having bad impact on their health. The poor situation of health service system is also causing their problem to increase.

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High Prevalence of Abortion among Primigravida and Teen Aged Girls in the District of Purba Medinipur, West Bengal; India

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ABSTRACT

Background: There are limited data about abortion. We analyzed spontaneous and induced abortion data in terms of time, p ce and person and to find out association with socio-demographic determinants.

Materials and Method: We collected data of abortion cases in a data collection format during the period of January 2012 to March 2013 of Purba Medinipur district, West Bengal; India. We described the distribution of study cases by time, place and person. We analyzed data in Epi-info software and calculated P value (<0.05 significant).

Results: Among the total 3532 abortion cases, 53.8% (1900) were induced abortion and 46.2%(1632) were spontaneous abortion. Most of abortion cases were among age group of 20-29 years 61.2% (2202) followed by 12 -19 years age (teen age) 31.5% (1135). Maximum abortion revealed among low group income people 67% (2439). Of total abortion cases, sixth to ten standard educated women had 55.2% (1985) followed by illiterate to 5th standard educated were 37.4% (1346). Among them 51.3% (1845) were primigravida and 48.7% (1752) were multigravida. One case was died (Case Fatality Ratio=28.31/100,000). Induced abortion was associated with higher education and higher income group population, P <0.0001 and P <0.001 respectively. The most of the abortion were done at 3rd to 12th week of pregnancy 56.9% (2046) followed by 13th to 20th week of gestation 32.9% (1185).

Conclusion: Induced abortion was common among higher educated and higher income population. Abortion among teen aged girl may be addressed by social counseling and sex education and law.

Key words: *Abortion, primigravida, teenage pregnancy, West Bengal.*

INTRODUCTION

Globally, each year 210 million become pregnant, over 134 million of them ended with live birth, and 76 million pregnancies ended in still birth, spontaneous or induced abortion. [1, 2] It was estimated in 2003 that approximately 42 million pregnancies were terminated voluntarily. Among them, 22 million were terminated safely and 20 million were terminated unsafely. [3] Worldwide 20% of pregnancies ended with abortion and one in ten pregnancies were terminated by unsafe measures (unsafe abortion). [4] It was estimated that 358000 girls and women were died due to pregnancy related causes in the developing countries [5] and among them 47000 died due to

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unsafe abortion. [6] Teenaged pregnancies is gradually increasing and are a social and public health problem worldwide. [7]

A population based study conducted by the ICMR on 1983 that rate of induced abortion was 1.9 per 100 known pregnancy, whereas government statistics revealed 2.7 per 100 pregnancies in 1999. [8,9] But NFHS-2 in India data showed that 2% of all pregnancy ended with induced abortion, 4% spontaneous abortion and 2% ended with still birth among the all pregnancies. In West Bengal, the proportion of induced abortion, spontaneous abortion, still birth and live birth were 5.7, 5.1, 2.1 and 87 among the total of 100 pregnancies respectively. [10] There was limited information about abortion in Purba Medinipur district. ***Objectives:*** We analyzed spontaneous and induced abortions in term of time, place and person and find out association of socio-demographic determinants.

Materials and Methods:

Study area and population:

It was a cross sectional study. The study was conducted in the rural areas of district of Purba Medinipur between January 2012 and March 2013. The district had a population of 50,57312 with literacy rate was 87.02%.[11] The district has four sub-division and 25 development blocks and five municipalities. Our study areas were limited to only 23 development blocks. Sources of information were (i) Interview of abortion cases, (ii) Antenatal Care (ANC) register available at Sub-centers. We did not include abortion cases of municipality population of the district. Total municipal populations were 604,521. All the pregnant women who underwent abortion during the study period were included in the study. In case of death, information was taken from the closed relative of the deceased.

Data collection:

Data was collected by the health workers posted at different sub-centers of blocks. A structured data collection format was constructed. Health workers were trained for data collection procedure. They interviewed the abortion cases at their residences during field visit. Some additional information was also collected from the ANC register. Pregnancies were confirmed by the (i) history of amenorrhea (ii) examination of urine at Sub-center level by preg-color test or by the private and government pathological laboratories (iii) ultrasonography (USG) test (mainly done at private nursing home). These records were verified and checked.

Data analysis:

All the data were entered in the Epi-info software. We analyzed these data in Epi-info and Excel software, and calculated proportion, percentage and p value ($p < 0.05$ is significant).

Operational definition: [12]

Pregnancy ends one of the three definite outcomes such as

(i) Abortion: this may be (a) Spontaneous abortion (b) Induced Abortion

(ii) Live birth.

(iii) Still birth

Abortion: Interruption of pregnancy before 28 weeks of gestation starting from slight bleeding per vagina to complete expulsion of product of conception is called abortion.

Labour: Termination of pregnancy after 28 weeks of pregnancy is called labour.

Still birth: Expulsion of foetus after 28 weeks of pregnancy without any sign and symptoms of life.

Spontaneous abortion: An abortion may occur spontaneously is called miscarriage and more accurately called spontaneous abortion.

Induced abortion: An abortion takes place due to deliberate outside intervention in which case called as induced abortion.

Live birth: Delivery of a live baby after 28 weeks of gestation who has signs and symptoms of life such as respiration, pulse, heartbeat, crying etc.

FINDINGS

A total 47,570 deliveries occurred in 23 development blocks (out of 25 development blocks) during the study period (January' 2012 to March 2013) of 15 months duration in the district. Among them, 92 % (43557/47570) were live birth, 0.95% (451/47570) was

still birth and 7.42 % (3532/47570) were abortion. Mean age of women at abortion with standard deviation was 22.5 years (+ 4 years). One abortion cases was died due to septicemia (CFR= 28.31/100,000). She was 17 years old. All the pregnancies were confirmed by urine preg-color test. Total 220 ultra-sonography test reports were recorded, among them only five cases underwent abortion; rest 215 cases were still birth. In the total abortion cases, 61.2 % (2162) were at the age of 20 to 29 years of age group, followed by 12 to 19 years age group 31.6% (1112). Educated women such as 6th standard to 10th standard underwent maximum abortion 55.2 % (1948) than the less educated such as 1st standard to 5th standard women were 33.9 % (1198). Those who had family income less than Rs: 3000/- per month were aborted mostly 67.9 % (2397) than the income more than Rs: 3000/ per month. [Table 1]

Among the total abortion, 46.2 % (1632) were spontaneous abortion and 53.8 % (1900) were induced abortion. Induced abortion was conducted at Nursing Home 48.2% (1701) and at government hospital 5.5% (199). All the spontaneous abortion happened at their residences. First pregnancy (Primigravida) aborted mostly 53.2 % (1816), then Second pregnancy (Second gravida) were 34 % (1202) and more than second pregnancy were 14.6 % (516). A total 91.5% (3231) of pregnancies were aborted before 20th weeks and 8.5% (301) were aborted after 21 week to 27 weeks of gestation. Adolescent women were aborted 31.6 % (1116) and adult women were aborted 68.4 % (2616). [Table 2] Distributions of abortions in different blocks were also seen in [Figure 1].

The family income more than Rs: 3000/- per month of the abortion cases was significantly associated with induced abortion, ($p < 0.0000$) and those who were educated such as 10th standard were also associated with induced abortion ($p < 0.0001$). Abortion among the multigravida were likely associated with spontaneous abortion ($p < 0.459$) but was not significant. [Table 3]

DISCUSSION & CONCLUSION

Analysis of abortion data pointed that abortions were common mostly among primigravida and among the teen aged girls. Most of the abortion occurred before 20 weeks of gestational age. One third of the total abortions cases were from adolescent age group and were performed by induction. Induced abortion was mostly taken place at nursing home and spontaneous abortion was occurred at their resident. There were an increased number of induced abortions among the higher income and educated women. Abortion was among the adolescents girls were at risk of developing serious abortion related complications. One teen aged girl was died due to septic abortion. More than 50% of women aborted at their first conception which might have complication of subsequent pregnancies. More than 90% of the women in this study women experienced abortion before they attained the age of 29 years. But a study done at Kerala State showed that two third of the abortion took place before the age of 30 years and it was revealed that trend of abortion was gradually increasing among the young women. [13] Abortion at Government hospital especially at Block Primary Health Center (BPHC) also called Community Health Center (CHC) and Primary Health Center (PHC) were very low. Lack of training of Medical Officers of PHC and BPHC about safe abortion and non- availability of abortion infrastructures was may be the reason of low abortion performance at government health facilities. Most of the USG tests were done after the gestational ages were more than 28 weeks and these cases were recorded as still birth.

A study done in 1993 revealed that three fifth of abortion was induced abortion [14] whereas our study showed that 53.8 % of abortion was induced abortion. It is revealed that a number of abortion happened at tender age group (14-19 years). They might be experienced serious consequences of abortion related complications. One 17 years girl was died due to complication of induced abortion. Most of the abortion occurred during their first pregnancy. This was may be due to (i) un-planned pregnancy, (ii) non-availability of contraceptives devices, (iii) lack of awareness of different methods of contraceptives and (iv) lack of education.

A study at Tamil Nadu also observed that most of the abortion was conducted during their first pregnancies. [15] So, generalized consequences had been mentioned in this study also. Majority of abortions among the adolescent were induced abortion. Similar findings were shown in a study done on 2006 in North Central Nigeria. [16] Abortion among the teen aged were 32% of pregnancies in USA 2006 [17], it was

more or less similar with this finding as 31.6%. Study at Karachi Pakistan, revealed that most of the induced abortion were done after the age of 30 years and they had five or six children. But in this study it was found that most of the induced abortions were below 29 years and they had first and second pregnancy. [18] This could be addressed by awareness generation, imposing lows and counseling. Higher income people terminated their pregnancies by induced abortions process that might have life threaten effect on maternal health if done illegally and if performed by unskilled person. These could be tackled by social counseling, training of unskilled health workers and adequate arrangement of manpower and equipment at hospitals. Abortion conducted at Government sector was very poor. Local practioner (unqualified and qualified), conducted maximum number of abortion in the district. Abortion among teenage women also have serious health hazard even death. Insufficient rest and nutrition, lack of knowledge about pregnancy related health problems were reflected at rural lower income pregnant women. Specific health education and nutritional package to rural poor women would have to minimize spontaneous abortion among them.

Abortions impede women's health. Awareness generation is to be conducted among the population about the serious consequences of induced abortion. They will be motivated to adopt different methods of contraceptives instead of illegal abortion. Lack of rest among the lower income people during pregnancy, illiteracy and early age at marriage were a few determinants of abortion. Some of the strategic plans are need to be undertaken to enhance women's education, increase consciousness on serious consequences of early marriage, early pregnancy and its outcomes at community level will be reduced different types of abortion.

Table 1: Socio-demographic characteristics of abortion cases in Purba Medinipur district, West Bengal; India 2012

Sl No	Characteristics	Number	%
1	Age group		
	12 – 19 Years	1116	31.6
	20 – 29 Years	2162	61.2
	30 – 39 Years	244	6.9
	40 – 49 Years	10	0.3
2	Education of abortion cases		
	Illiterate	122	3.5
	1st to 5th Standard	1198	33.9
	6th to 10th Standard	1948	55.2
	11th Standard to Post graduate	264	7.5
3	Family Income of abortion Cases		
	< Rs: 3000/- per month	2397	67.9
	> Rs: 3000/- per month	1135	32.1
4	Sub-district wise distribution of abortion cases		
	Tamluk Sub-district	1125	31.8
	Haldia Sub-district	783	22.2
	Contai Sub-district	1074	30.4
	Egra Sub-district	550	15.6

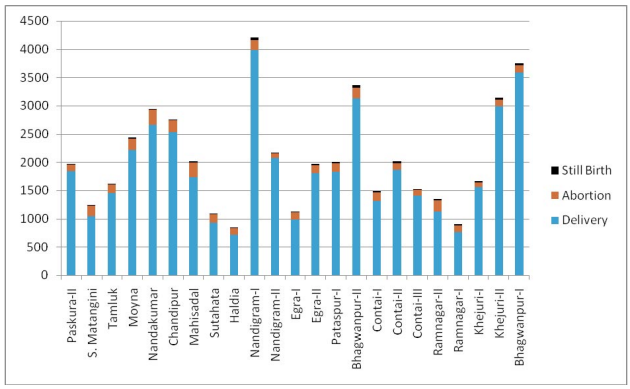

Figure 1: Distribution of total delivery, abortion and still birth in Purba Medinipur district, West Bengal; India, 2012

Table 2: Distribution of abortion cases in Purba Medinipur district, West Bengal; India 2012

Sl No	Characteristics	Number (n=3532)	%
1	Type of Abortion		
	Spontaneous	1632	46.2
	Induced	1900	53.8
2	Place where abortions take place		
	Government Hospital	199	5.6
	Nursing Home	1701	48.2
	Residence	1632	46.2
3	Gravida		
	Primigravida (1st Pregnancy)	1816	52.3
	Second gravida (2nd Pregnancy)	1201	34.0
	Multigravida (3 or more Pregnancy)	516	14.6
4	Duration of pregnancy at abortion (Weeks)		
	Up to 20th Week of Pregnancy	3231	91.5
	> 20th week of Pregnancy (up to 27th week)	301	8.5
5	Age at Abortion		
	Adolescent (12 – 19 year)	1116	31.6
	Adult (20 – 49 year)	2616	68.4
6	Ultrasonography test done before abortion	5	0.10

Table 3: Induced and spontaneous abortion associated to socio-demographic characteristics in Purba Medinipur district, West Bengal; India 2012

Sl No	Characteristics	Spontaneous		Induced		Chi-square	P Value*
		Number	%	Number	%		
1	Family Income Per Month (Rupees)					43.671	0.000*
	< Rs: 3000/-	1199	73.47%	1198	63.05%		
	> Rs: 3000/-	433	26.53%	702	39.95%		
2	Gravida					0.465	0.495
	Primi-gravida	829	50.80%	987	51.95%		
	Multi-gravida	803	49.20%	913	48.05%		
3	Women under went Abortion					0.563	0.453
	Adolescent girl	626	32.23%	590	31.05%		
	Adult	1106	67.77%	1310	68.95%		
4	Education					38.08	0.0001*
	Illiterate	73	2.1%	49	1.4%		
	1st to 5th Standard	601	17.0%	597	16.9%		
	6th to 10th Standard	871	24.7%	1077	30.5%		
	11th to Postgraduate	87	2.5%	177	5.0%		

* p value < 0.05 is significant

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Awareness of Diabetes Mellitus in the Population of Urban Field Practice Area of a Tertiary Care Hospital Located at Eastern Part of Uttar Pradesh, India

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ABSTRACT

Introduction: World Health Organization had predicted potential for rise in the prevalence of Diabetes Mellitus (DM) by the end of the last century. The World Economic Forum (2010) has predicted premature deaths due to non-communicable diseases. According to the research studies, India's prevalence of Diabetes Mellitus is expected to rise to 79.4 million. The present study was carried out study for understanding general awareness about DM.

Objectives: 1. To assess the awareness regarding risk factors associated with Diabetes Mellitus.

2. To assess the awareness about Diabetes Mellitus with regard to symptoms, complications and management.

Material method: The data was collected during health camp, organized at urban field practice area of a tertiary care hospital, located at eastern part of U.P. A semi-structured, pretested questionnaire was used by trained medical social workers after obtaining consent from respondents. Data was analyzed by using statistical methods such as average, mean, percentage.

Results: Out of 164 persons, 144 persons had some awareness about DM and were recruited in the study. Majority of the respondents were married (90.28%), and belonged to Hindu religion (80.56%) and unemployed or homemakers (56.94%). About 43 (61.92 %) respondents had heard of case/s of DM in the family. About half of the respondents were aware of heredity as a risk factor where as for other risk factors namely obesity, age advancement, lack of exercise, alcohol consumption and stress the awareness was less than 25 %. Perceived knowledge about symptoms, complications and management of diabetes was poor.

Discussion: In the present study, 44.44% of the respondents were aware of the risk factors and 61.81% of the respondents were not aware about symptoms of DM. Only 81.94% of the respondents were not aware of any kind of management of DM; maximum awareness was found for regular intake of medicines and for regular consultation with the doctor (68.09% each) followed by balanced diet (46.81%). Similar observations were found in Singarore where general knowledge was low but understanding of symptoms and complications was high.

Conclusion: In the present study the awareness of DM was poor with regard to its risk factors, symptoms, complications and management. A planned, community based health education program for prevention and control of DM is very essential for the population in Eastern U.P.

Keywords: *Diabetes Mellitus, DALYs*

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INTRODUCTION

In view of high prevalence of impaired glucose tolerance ranging from 3.6 - 9.1%, World Health Organization had predicted potential for rise in the

prevalence of Diabetes Mellitus (DM) by the end of the last century[1]. Subsequently in 2003 worldwide cases of Diabetes Mellitus were predicted to be double by 2015 from then existing cases of about 150 million[2] .

According to the research studies, Sarah Wild et al[3] India's prevalence of DM is expected to rise from 32 million (2000) to 79.4 million (2030). The World Economic Forum (2010)[4] has predicted premature deaths due to non-communicable diseases diabetes being one of them. In order to reduce and prevent Disability Adjusted Life Years (DALYs) and manage the huge load of diabetic patients, it is equally important to understand issues related to awareness which would facilitate enhancement of effectiveness of the program for prevention of Diabetes Mellitus. With this background the present study was carried out for understanding general awareness about DM in the urban field practice area of Urban Health center of a tertiary care hospital in eastern part of Uttar Pradesh in India.

Objectives:

(1) To assess the awareness regarding risk factors associated with Diabetes Mellitus.

(2) To assess the awareness about Diabetes Mellitus with regard to symptoms, complications and management.

MATERIAL & METHOD

The present descriptive study was carried out during health camp, organized at urban field practice area of a tertiary care hospital, located at eastern part of U.P. Trained medical social workers were given orientation of the study and recruitment was done after obtaining the consent by using the semi-structured, pretested questionnaire which included awareness regarding risk factors, symptoms, complication and management of DM in addition to socio-demographic information. The persons with age 21 or more years, having some awareness of DM were included; whereas the persons who had not heard of DM, having acute health problems and those who did not give consent were excluded. The collected data was compiled and analyzed by using statistical methods such as average, mean, percentage.

RESULTS

Out of 164 persons, 144 (87.80) persons, had some awareness about DM. Those who had not heard about Diabetes Mellitus 10.98% and those who did not give consent (1.22%) were excluded. Table 1 gives the details of socio-demographic characteristics of the respondents. The mean age was 41.05 years, about 38.89 % were males and 61.11 % females respondents. There were 80.56 % Hindus, 9.3% Muslims and 10.42% respondents belonged to other religion. Majority (79.17%) of the respondents had education up to or below middle class, 90.28 % were married. Majority (56.94 %) of the respondents were either unemployed or were home makers, followed by 15.28% group who were either doing service or had their own business where a the rest 27.78% were engaged in professional, semi professional and other type of occupation. About 43 (61.92 %) respondents had heard of case/s of DM among their respective family members.

Table 1: Socio-demographic profile of participants

Variable	Number (n=144)	Percentage
Age		
21 - 30	7	4.86
31 - 40	31	21.53
41 - 50	33	22.92
51 - 60	28	19.44
61 or more	45	31.25
Gender		
Male	56	38.89
Female	88	61.11
Religion		
Hindu	116	80.56
Muslim	13	9.03
Others	15	10.42
Caste		
General	79	54.86
SC	42	29.17
ST	17	11.81
Others	6	4.17
Education		
Illiterate	40	27.78
Primary	38	26.39
Middles	36	25.00
Secondary	18	12.50
Higher secondary	10	6.94

Graduates and above	2	1.39
Marital status		
Single	9	6.25
Married	130	90.28
other	5	3.47
Occupation		
Unemployed / home makers	82	56.94
Unskilled	8	5.56
Semiskilled	12	8.33
Skilled	9	6.25
Clerk/shop owner/ farm owner	22	15.28
Semi professionals	9	6.25
Professionals	2	1.39

As observed from table 2, 44.44% of the respondents were not aware of risk factor/s of DM. About half (53.75%) of respondents mentioned heredity as a risk factor for DM, whereas awareness regarding obesity, age advancement, lack of exercise, alcohol consumption and stress was 25%, 21.25%, 11.25%, 5% and 2.5% respectively. However, there was no response for hormonal imbalance. Average no. of responses per respondent was 1.19.

Table 2: Awareness of respondents about risk factors of Diabetes Mellitus

Variable	No. n= 80	Percentage
Hormonal imbalance	0	0.00
Family history	43	53.75
Age advancement	17	21.25
Obesity	20	25.00
Lack of exercise	9	11.25
Stress	2	2.50
Alcohol	4	5.00

Table 3: Awareness of respondents about symptoms of Diabetes Mellitus

Variable	Number (n=55)	Percentage
Excessive thirst	18	12.50
Changes in weight	31	21.53
Frequent urination	21	14.58
Frequent desire to eat	12	8.33
Numbness in hands/ feet	28	19.44
Joint problem	1	0.69
Change in vision	17	11.81

As regards awareness of symptoms of DM (Table - 3), about 61.81% of the respondents were not aware of the symptoms of Diabetes Mellitus. Out of those who were aware of some symptoms of DM, 12.50% of the respondents felt that excessive thirst was the symptom of DM. Regarding other symptoms namely frequent urination, changes in the weight, frequent desire to eat, numbness of hands/ feet, joint problems and change in the vision awareness was found to be 14.58%, 21.53%, 8.33%, 19.44%, 0.69% and 11.81% respectively.

Table 4: Awareness about complications of Diabetes Mellitus

Variable	Number (n=39)	Percentage
Eye related problems	12	8.33
Repeated infections	21	14.58
Kidney problem	1	0.69
Numbness of limbs	0	0.00
Heart problem	2	1.39
Delayed wound healing	33	22.92
Joint problems	2	1.39

Though 72.92% of the respondents were not aware of complications of DM; responses obtained for awareness about complications of DM (Table -4) included 22.91% for delayed wound healing, 14.58% for repeated infections, 8.33% eye related problems, 0.69% kidney problems, 1.39% heart problems and joint problems each.

Table 5: Awareness of respondents about management of Diabetes Mellitus

Variable	Number (n=26)	Percentage
Balanced diet	22	46.81
Low carbohydrate diet	12	25.53
High fiber diet	3	6.38
Regular exercise	8	17.02
Regular intake of medicines	32	68.09
Regular consultation with doctor	32	68.09
Regular blood sugar monitoring	15	31.91

As regards awareness about management of DM, only 18.06% respondents knew any kind of management for DM. About 81.94% respondents were not aware about management aspect of DM. The responses for management of DM were 68.09% for

regular consultation with doctor and regular intake of medicines each followed by 46.81% for balanced diet, 31.91% for regular monitoring of blood sugar, 25.53% for low carbohydrate diet, 17.02% for regular exercise, 6.38% for and high fiber diet. On and average there were 2 responses per person for management of DM. About one third respondents (28.47%) were found to have misconceptions (including risk factors, symptoms, complication and management) about DM.

DISCUSSION

The present study was carried out in the eastern part of U.P. of India, in the urban field practice area of a tertiary care hospital. Majority of the respondents of the study were married (92.28%), majority were females (80.56%), more than half of them were either not employed or were home makers and about 80% had education level below middle class.

The review of literature showed that overall awareness varied from 21% to 50.8% which is in agreement with the present study[5, 6]. In the present study, 61.92 % of the respondents had heard of DM in the family. Family health history is an important factor that reflects inherited genetic susceptibility, shared environment, and common behaviors. Use of family history as a screening tool for disease prevention is being promoted.[7]

It is a matter of concern that about one third persons had misconceptions about DM which is corroborated with other study in India[6]. Kesha et al[8] found that respondents with a family history of diabetes were more aware of diabetes risk factors and more likely to engage in certain healthy behaviors than their counterparts. Family history is one of the important factor while taking history of a patients because Erasmus et al[9] in their study among patients of type 2 DM found that altogether 27.3% of diabetic subjects had a family history of diabetes compared with 8.4% in the control group ($p<0.01$).

In the present study, 55.56% of the respondents were aware of any risk factors. About 61.81% of the respondents were not aware about symptoms of DM. Change in the weight, numbness of hands/ feet, frequent urination were among the most commonly observed symptoms. Risk factors namely obesity, overweight do matter in the Indian context as far as DM is concerned [10,11].

Muninarayana C et al found that about half of the population had some awareness about Diabetes and it was poor in rural area. Awareness about DM in a community based survey Ashita Singh et al[5] was 21%. The differences in the findings may be due to type of study design.

About 72.92% of the respondents were not aware of complications / long term effects of DM. This finding was comparable to other studies[11,5] where majority of the respondents were not aware of long term effects of DM. Wee[12] in Singapore observed low scores in general knowledge, risk factors for DM, but had high understanding of symptoms and complications.

Only 18.06% of the respondents were aware of any kind of management of DM. Those who were aware of some aspects of management of DM, maximum awareness was found for regular intake of medicines and for regular consultation with the doctor (68.09% each) followed by balanced diet (46.81%). Awareness regarding balanced diet, low carbohydrate high fiber diet, regular exercise, regular blood sugar monitoring are very essential and important. Some studies6,[13, 14] in the Indian context have highlighted urgent attention to lifestyle related issues by policy and healthcare planners for management of DM. It is worth noting that Zhang P et al [15] reported approximately 40 % of total cost of diabetes in the United Sates being spent for inpatient care of diabetes complications. Awareness of diabetic patients about self care is also one of the major issues for prevention and management of complications of D M[16].

In a cross sectional study on DM at Chennai, India6, the need for community level awareness program to improve knowledge & awareness about Diabetes has been recommended; whereas Hughes et al[17] highlighted need for need for knowledge attitude & belief of community health workers to make positive impact on prevention and management of diabetes.

In Indian context, in view of worrisome prevalence and changing scenario of DM,[18,19,20] Government of India has launched the National Program for prevention and control of Diabetes, Cardiovascular Diseases and Stroke in 2008 [21].

The present study documented that in the study population, awareness of DM was low with regard to risk factors (44.44%), symptoms (38.19%), complications (27.08%) and management of DM (18.06%). It is recommended that there is an urgent need to focus on improving the awareness of general population and diabetic patients in particular for prevention of DM and prevention & management of complications arising from DM.

CONCLUSION

The study found that the general awareness of DM was poor with regard to its risk factors, symptoms, complications and management. A planned, community based health education program with regard to prevention and control of DM is very essential for the population in Eastern U.P. It will help people to understand, check and initiate preventive measures including life style modifications for prevention & control of DM. It will also go in a long way in the context of primary, secondary and tertiary prevention of complications of DM.

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Evaluation of Cardiovascular Complications Caused by Diabetes in Western Region of Mongolia

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ABSTRACT

Some 382 million people worldwide population distribution or 8.3% of adults, are estimated to have diabetes. By 2035, the difference is expected to widen, with 347 million people living in urban areas and 145 million in rural areas. The objective of this survey is to evaluate the prevalence of risk factors and cardiovascular complications in patients with diabetes type 2 in the western region of Mongolia. The objective of this study was to evaluate the risk factors in patients with diabetes who were monitored by an endocrinologist in western part of Mongolia. This cross sectional study was conducted among 616 patients with diabetes who were selected randomly. Cardiovascular complications as a result of diabetes were assessed in the 5 western provinces of Mongolia: Khovd, Uvs, Bayan-Ulgii, Govi-Altai and Zavkhan. Main risk factors of diabetes were physical inactivity, obesity, abnormal diet, and high blood pressure. The fruit and vegetable diet of the patients were very low, and high salt diet was indicated. Age, duration of disease, high blood pressure, lipid defect, poor self-management, and high HbA1c were related with cardiovascular complications.

Keywords: *diabetes, cardiovascular complication, ischemia.*

INTRODUCTION

Some 382 million people worldwide or 8.3% of adults, are estimated to have diabetes. About 80% of these individuals live in low- and middle-income countries. If this trend continues, by 2035 some 592 million people, or one in 10 adults, will have diabetes[1]. In Mongolia, the estimated diabetes prevalence in 1999 was 3.1% of the adult population[2], in 2009 the number of people with diabetes had risen to 6.5%[3]. People with diabetes are at risk of developing a number of disabling and life-threatening health problems. In almost all high-income countries, diabetes is a leading cause of cardiovascular disease, blindness, kidney failure, and lower-limb amputation. As the prevalence of type 2 diabetes grows in low- and middle-income countries, so too does the impact of these costly -in both human and economic terms- complications[1]. Cardiovascular system disorder is the first cause of death in Mongolia. Mortality rate is higher center and western region than east region of Mongolia[4]. In Mongolian urban areas, a number of surveys have been conducted regarding diabetes, but very few survey have been conducted in rural areas. The objective of this survey is to evaluate the prevalence of risk factors and cardiovascular complications in patients with type 2 diabetes in the western region of Mongolia. We achieved this objective with following steps:

1. Evaluated the risk factors of diabetic patients who were monitored by an endocrinologist in the western part of Mongolia.

2. Cardiovascular complication had compared to self management and duration.

The survey methodology was approved at a meeting on November 15, 2013 by the Medical Ethical Committee at the Mongolian National University of Medical Sciences.

MATERIALS & METHOD

This was a onetime hospital-based cross-sectional study based in the Regional Center for Medical Diagnoses and Treatment in Khovd, Mongolia. 616

patients with diabetes were randomly selected. The prevalence of risk factors and complications of diabetes were studied with cross-sectional study design. All patients were monitored by an endocrinologist in Mongolia's 5 western provinces: Khovd, Uvs, Bayan-Ulgii, Gobi-Altai, and Zavkhan.

Step 1: Each patient's knowledge and psychosocial status were assessed by the internationally accepted STEP-survey questionnaire which is suggested by the World Health Organization (WHO), and International Diabetes Federation (IDF). The questionnaire included 5 chapters and 106 questions. Records were reviewed to obtain data pertaining to age, sex, duration of diabetes, and prevalence of risk factors.

Step 2: Weight, height, body mass index (BMI), waist circumference, blood pressure, percentage of body fat, and risk factor for cardiovascular complications was determined with specific equipment.

Cardiovascular risks had evaluated in 10 risk factors by ADVANCE risk engine apparatus and risk of cardiovascular complication had calculated coming 4 years and evaluated following table.

Table 1. Risk assessment for cardiovascular complication

Indicators for risk	Evaluation
<10%	Low
10-15%	Moderate
>15%	High

RESULTS

Table 2. Indicators of the participants

Indicator	N	Percentage (95% CI)
Sex		
Male	280	45.5% (40.4-50.6)
Female	336	54.5% (48.8-60.2)
Level of education		
Completed university	173	28.1% (24.01 -23.19)
Completed institute	161	26.1% (22.3 -29.9)
Completed secondary school	168	27.3% (23.27 -31.33)
Completed high school	75	12.2% (9.58 -14.82)
Completed primary school	39	6.3% (4.5-8.1)
Job status		
Government	172	27.9% (23.83 -31.97)
Non government	35	5.7% (4 -7.4)
Self business	68	11.0% (8.52-13.48)
Student	2	0.3% (-0.32-0.92)
Retired	197	32.0% (27.61-36.39)
Unemployed	142	23.1% (19.4 -26.8)
Location		
Bayan-Ulgii	110	17.9% (14.67 -21.13)
Khovd	202	32.8% (28.36 -37.24)
Uvs	121	19.6% (16.21 -22.99)
Zavkhan	113	18.3% (15.03 -21.57)
Gobi-Altai	70	11.4% (8.86 -13.94)
Age group		
<30	12	1.9% (1.18 -2.62)
30-39	28	4.5% (3.03 -5.97)
40-49	186	30.2%(25.95 -34.45)
50-59	274	44.5% (39.31 -19.69)
>60	116	18.8% (15.49 -22.11)

The study involved a total of 616 patients, 45, 5% (95% CI: 40.4-50.6) of which were men, and 54, 5% (95% CI: 48.8-60.2) women. 44.5% (95% CI: 39.31 -19.69) of participants were aged 50-59, 1.9% (95% CI: 1.18 -2.62) of participants were below 30.

23.1% (95% CI:19.4 -26.8) of the subjects were unemployed, 32.0% (95% CI:27.61-36.39) were retired, 28.1% had completed university, and 71.9% had completed secondary school.

32.8% (95% CI: 28.36 -37.24) of the participants were from Khovd province, 19.6% (95% CI: 16.21 -22.99) from Uvs province, 18.3% (95% CI: 15.03 -21.57) from Zavkhan province, 17.9% (95% CI: 14.67 -21.13) from Bayan-Ulgii province and 11.4% (95% CI: 8.86 -13.94) from Gobi-Altai province. (Table 2)

Table 3. Risk for cardiovascular complication (by age, sex and duration of disease)

Indicators	Low		Moderate		High		P value
	n	%	n	%	n	%	
Total	317	51.4%	204	33.1%	95	15.4%	
Sex				0.017			
Male	131	46.8%	94	33.0%	55	19.6%	
Female	186	55.4%	110	32.0%	40	11.9%	
Location							
Bayan-Ulgii	56	50.9%	36	32.7%	18	16.4%	
Gobi-Altai	40	57.1%	20	28.6%	10	14.3%	
Khovd	92	45.5%	75	37.1%	35	17.3%	
Uvs	71	58.7%	31	25.6%	19	15.7%	
Zavkhan	58	51.3%	42	37.2%	13	11.5%	
Age group				0.001			
<29	12	100%	-	-	-	-	
30-39	24	85.7%	4	14.3%	-	-	
40-49	117	62.9%	56	30.1%	13	7.%	
50-59	147	53.6%	85	31.%	42	15.3%	
> 60	17	14.7%	59	50.9%	40	34.5%	
Duration of disease				0.001			
< 5	229	53.5%	145	33.9%	54	12.6%	
6-10	84	51.5%	47	28.8%	32	19.6%	
> 11	4	16%	12	48%	9	36.%	

Risks of cardiovascular complication were studied by location. High risk of cardiovascular complication indicated some participants. 16.4% was lived in Bayan-Ulgii, 14.3% was lived in Gobi-Altai, 17.3%was lived in Khovd, 15.7% was lived in Uvs, 11.5% was lived in Zavkhan.

Under 29 were low risk for cardiovascular complication and 85.4 percent of 60 and older ages were indicated moderate and high risk for cardiovascular complication.

Duration of disease was under 5 years, 53.5% had indicated low risk, and 55.5% had indicated moderate and high risk. Duration of disease was 6-10 years, 51.5% had indicated low risk, and 58.5% had indicated moderate and high risk. Duration of disease was 11 and above, 16% had indicated low risk, 84% had indicated moderate and high risk. Age (p=0.001), and duration of disease (p=0.001) highly related to cardiovascular complication. (Table 3)

Table 4. Risk factors for cardiovascular complication

Indicators	Low		Moderate		High		P value
	n=574		n=19		n=23		
	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation	
Age	51.9	8.5	60.4	9.4	64.6	6.4	0.0001
BMI(kg/m^2)	30.0	4.7	29.0	4.9	29.0	3.1	0.381
Glucose (mmol/l)	10.4	2.8	11.1	2.3	12.2	2.2	0.006
HbA1c (%)	8.4	1.6	9.2	1.8	9.6	1.2	0.001
Total cholesterol (mmol/l)	5.5	0.8	5.9	0.7	5.9	0.9	0.003
Triglycerides (mmol/l)	1.9	0.5	2.1	0.5	2.1	0.5	0.103
HDL(mmol/l)	1.9	0.6	1.6	0.7	1.3	0.5	0.0001
LDL(mmol/l)	4.4	0.9	4.8	0.8	4.8	0.7	0.018
Blood pressure(mmHg)	136.7	23.8	163.2	35.1	166.5	16.9	0.0001

Average age of low risk patients was 51.9±8.5, Average age of moderate risk patients was 60.4±9.4, Average age of high risk patients was 64.6±6.4, (p=0.0001), level of HbA1c was 8.4±1.6 for low risk patients, 9.2±1.8 for moderate risk patients and 9.6±1.2, (p=0.0001) for high risk patients.Average of blood pressure 137.6±23.8 for low risk patients, 163.2±35.1 for low risk patients, 166.5±16.9 for high risk patients. (Table 4)

Table 5. Determination of risk for cardiovascular complication by logistic regression analysis

Indicator	OR	95% CI	P value
Blood pressure	6.66	2.76-16.06	0.0001
Total cholesterol	1.708	1.93-2.446	0.003
HbA1c	1.19	1-1.4	0.001
Age	1.19	1.14--1.25	0.0001
Sex	0.74	0.39-1.39	0.352
Duration of disease	1.31	1.2--1.43	0.0001
BMI	0.63	0.41-0.98	0.041
Number of indicated risk factors for per individual	2.46	1.32-4.57	0.004

Risks of cardiovascular complication had studied through a factor of logistic regression analysis. High level of blood pressure (OR=6.66, p=0.0001), total cholesterol (OR=1.708, p=0.003), age (OR=1.19, p=0.0001), duration of disease (OR=1.31, p=0.0001), HbA1c (OR=1.19, p=0.005), number of indicated risk factors per individual (OR=2.46, p=0.004) were statistically effected to cardiovascular complications. (Table 5)

Table 6. Correlation of cardiovascular risk and risk factor

Risk for cardiovascular complication	Number of risk factors (1 individual)		P value
	Average	Standard deviation	
Low	9.55	1.92	
Moderate	10.79	1.18	r=0.157
High	10.83	1.90	
Total	9.64	1.92	0.001

Number of indicated risk factors for per individual was highly related to risk factor of cardiovascular complication.(OR=2.46, p=0.004). (Table 5,6)

DISCUSSION

The study involved patients were 44.5% of participants were 50-59 age, 1.9% of participants were below 30 age and others. It was shows that age of patients not depends on foot complications. Under 29 were low risk for cardiovascular complication and 85.4 percent of 60 and older ages were indicated moderate and high risk for cardiovascular complication.

When level of HbA1c reduction by 1 unit, risk of cardiovascular complication also reduced by 16% (p<0.001)[5]. Cardiovascular complication related to blood pressure (OR=6.66, p=0.0001), total cholesterol (OR=1.708, p=0.003), age (OR=1.19, p=0.0001), duration of disease (OR=1.31, p=0.0001), HbA1c (OR=1.19, p=0.005), number of indicated risk factors for per individual (OR=2.46, p=0.004). These results also shows similar to other study such as D. Myagmartseren (2009)[6], S. Sainbileg (2011)[7], S. Baigalmaa (2011)[8] and Rajbharan Yadav (2008)[9].

CONCLUSION

1. The main risk factors of diabetes were physical inactivity, obesity, abnormal diet, and high blood pressure. A diet low in fruits, and vegetables and high in salt was indicated in the patients.

2. Age, duration of disease, high blood pressure, lipid defect, poor self-management, and high HbA1c were related with cardiovascular complications.

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Competing Interests: The authors declare that they have no financial or personal relationship(s) that may inappropriately influenced them in writing this paper.

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Performance Evaluation of Community Health Workers during CCSP Training Programme

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ABSTRACT

Research Question: What is the effectiveness of training to community health workers (ASHA,ANM,BHW, LHV) under the Comprehensive Child Survival(CCSP) training Programme?

Objectives: To assess the effectiveness of training given to community health workers(ASHA,ANM,BHW,LHV) under CCSP training Programme.

Study Design: Cross Sectional Study.

Study Duration: 12 months ie –April2009 till March2010

Participant: ASHA (Accredited Social Health Activists),ANM (Auxiliary Nurse Midwife), BHW (Basic Health Worker), LHV(Lady Health Visitor) who have taken the training formed the study group.

Methodology: A pre designed pre tested self administered questionnaire was administered to the participants on the 1st day and 10th day of their training. The result was analyzed by using suitable statistical package.

Result: Among the 320 participants 286 were ASHA,27 BHW,5ANM,3wereLHVs. Their mean pretest score was 10.15/20.0(50%) and their mean post test score was 16.70/20.0(80.3%). It was observed that there was a 32 % Improvement in the knowledge of the participants due to this training.

Conclusion: The findings from this study indicate that the training course is effective in improving the knowledge on various aspects of maternal and child health.It is recommended that to sustain this improvement a 6 monthly/ 12 monthly sensitization of the workers should be carried out.

Keywords: *ASHA,ANM, BHW, LHV, CCSP Programme.*

INTRODUCTION

The strategy of Integrated Management of childhood illness (IMNCI) is aimed at reducing child mortality and morbidity in developing countries. It combines improved management of common childhood illness (e.g. pneumonia, diarrhoea, malaria, measles, ear problems, and anaemia) with proper nutrition and immunization. In 1995, guideline for the integrated management of childhood illness at first-level facilities were finalized through a collaborative effort, which was led by WHO and supported by a programme of research[1]. WHO and UNICEF promoted a training course based on these guidelines in 1996, which was targeted at health workers in first-level facilites[2] and issued a joint statement on IMCI in July 1997[3].

For many countries, the introduction of IMCI provides an opportunity to review child health policies and to reorganize their services and interventions. The IMCI clinical guidelines are not entirely new, for e.g. the recommendations for case management of diarrhoeal diseases and acute respiratory infection(ARI) are very close to those that have been promoted by WHO over the past 10 years. However, the integrated approach in health service delivery and community interventions for all the

needs of each child and care requires new levels of coordination and shared responsibility among those implementing specific disease programmes and the supporting services in most countries[4].

By 2000, neonatal deaths were around two thirds of all infant deaths in the country, and around 45% of under- five deaths. Close to half of neonatal deaths occur in the first week of life. Many of these deaths could be averted if parents recognized warning signs, undertook appropriate feeding practices or had access to skilled health workers and facility-based care. In 2000, the Government of India adapted the IMCI strategy to focus greater attention on neonatal care. The resulting approach, Integrated Management of Neonatal and Childhood Illness (IMNCI), modifies IMCI with specific action taken to promote neonatal health and survival. So IMNCI is the Indian adaptation of the WHO-UNICEF generic IMCI strategy and is the centerpiece of newborn and child health strategy under Reproductive Child Health II and National Rural Health Mission[5].

The Government of UP went a step further and included care of Pregnant Women in the programme renaming it as Comprehensive Child Survival Programme (CCSP).This Programme was implemented in 17 selected districts after completion of 1 Year. The CCSP is an amalgamation of IMNCI strategy and home based newborn care with emphasis on Behaviour Change Communication and Community Mobilization. In CCSP, a comprehensive strategy was mooted for Uttar Pradesh envisaging a continuum of care, birth preparedeness, delivery care, essential newborn care and care of sick child with the goal of reducing the IMR and CMR by 50% from the baseline levels[6].

The three main elements of this programme are the training of functionaries, availability of primary health care at doorsteps and strengthening referral system.Training being an important component of this programme the following study was planned to evaluate the training programme of CCSP in Allahabad District.

OBJECTIVE

1. To assess the effectiveness of Community health workers training under CCSP Programme.

MATERIAL AND METHOD

This study involved an evaluation of training of field workers in Comprehensive Child Survival training programme using a pre-test & post-test questionnaire.This pre-designed self administered questionnaire consisted of 20 items having a closed ended questions. These questions covered the basic concepts of maternal and neonatal and child care as well as importance of timely referral. The questionnaire were filled by community health workers under the supervision of the facilitators. The same questionnaire was filled on the last day of the training and the results were analysed by suitable statistical package, simple proportions and paired-t test.

The training data collection was conducted between April 2009 till March2010. Ethical approval was obtained.

Participants &Facilitators: Training participants were community health workers. They belonged to 9 blocks among the 20 development blocks of Allahabad District.Total no. of participants included in the study were 320 out of which there were 286 Accredited Social Health Activist (ASHA) , 27 Basic Health Workers(BHW), 5 Auxiliary Nurse Midwife (ANM) and 3 Lady Health Visitors (LHV). These community health workers were operating in different development blocks of Allahabad District, each has a range of tasks from the provision of Maternal and Child health care to building Community awareness regarding Communicable and non- communicable diseases. The participants were trained in 3 separate groups of 8-10 each with two facilitators. One of these were medical officer from various Health Centers of Allahabad and other facilitator was taken from the local NGOs working on Maternal and Child health.

RESULT

A total of 320 participant who belonged to different blocks of Allahabad District were enrolled for the Comprehensive Child Survival Programme (CCSP) training. Table 1 shows block wise distribution of community health workers in the CCSP training programme. These blocks were Baharia, Holagarh, Jasra, Karchna, Kaudiyara, Kaudihar, Kotwa, Phulpur & Soroan. Majority 21% of the participant were from Baharia and Soroan and least were from Kaudiyara

(1.3%).

Table 2 depicts block wise comparison pre-test and post-test performance evaluation of community health workers.Good performance was seen by the participant of Kaudihar,Kotwa, Karchana, Jasrra and Holagarh,Phulpur,Holagarh,Soroan. Where as poor performance is seen by only ten of the community health workers who belonged to Kotwa, Holagarh,Soroan, phoolpur Bharia. Hence we cannot say that particular block is having good performance or bad performance.It is the ASHA among the community health workers who are showing the bad performance.They need more intense training.

Table 3 shows Average marks of participant in Pre-test and Post-test. By applying Paired t- test the value of P is found to be highly significant with the mean and standard deviation of Pre-test (10.15±4.62) and mean and standard deviation of post-test (16.70±3.56).

Conclusion:The finding from the above study indicate that the training programme is effective in improving the skills and knowledge of community health workers.There are ongoing challenges in delivering the services at local level but because of these training programme these workers are able to update themselves according to current knowledge.

Table 1: Block wise distribution of ASHAs

Name of Block	No. of ASHAs	Frequency
Baharia	68	21.3
Holagarh	52	16.3
Jasra	16	5.0
Karchana	27	8.4
Kaundiyara	4	1.3
Kaudihar	27	8.4
Kotwa	14	4.4
Phulpur	43	13.4
Soroan	69	21.6
Total	320	100

Table 2: Block wise comparison of Pre-test and Post-test of CCSP Programme for performance evaluation of Community Heath Worker

Block	Pre test			Post test		
	0-10	11-20	Total	0-10	11-20	Total
Baharia	32	36	68	4	64	68
Holagarh	24	28	52	4	48	52
Jasra	7	9	16	1	15	16
Karchana	15	12	27	0	27	27
Kaundiyara	2	2	4	0	4	4
Kaudihar	10	17	27	0	27	27
Kotwa	6	8	14	1	13	14
Phulpur	25	18	43	5	38	43
Soroan	26	43	69	3	66	69
Total	147	173	320	18	302	320

Table-3: Average marks of participant in Pre-test and Post-test Paired t- test

Evaluation	Mean	Std. Deviation	t-value	p-value
Pre test	10.15	4.62	-29.32	<0.001
Post test	16.70	3.56		

RECOMMENDATIONS

1. It is recommended that to sustain this improvement a biannual/annual sensitization programme for the community health workers should be carried out.
2. There should be regular monitoring of their performance.

Limitations: The present study is first of its kind in this part of world and hence there is no studies to compare the results of the current study with other studies.

Conflict of Interest: None

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Source of Funding: NRHM

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A Study of Anatomical Variation in Branching Pattern of Coeliac Trunk

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ABSTRACT

Background : Anomalous Blood vessels are always interesting from a scientific point of view since they often shed light on obscure problems of phylogeny and ontogeny. The unusual embryological development of the ventral splanchnic arteries can lead to considerable variations in the branching pattern of coeliac trunk.

Aim : To note down the variation in study.

Materials and Method : During routine Dissection of posterior abdominal wall of 30 Year old male Cadaver for undergraduate students in department of anatomy JJMMC we found this variation.

Results : Short coeliac trunk. Coeliac trunk war giving two branches left gastric artery and spleenic artery whereas common hepatic artery was arising from SMA.

Conclusion : The variation must be carefully understood for anastomosing the proper arteries in liver transplant surgeries , for celiacography in GI bleeding etc.

Keywords : *Coeliac trunk, left gastric artery, common hepatic artery, celiacography.*

INTRODUCTION

Anomalous blood vessels are always interesting from a scientific point of view since they often shed light on obscures problem of phylogeny and ontogeny.

The unusual embryological development of the ventral splanchnic arteries can lead to considerable variations in the branching pattern of coeliac trunk[1].

Each dorsal aorta even before the stage of its fusion gives ventral splanchnic arteries which are usually paired, distributed to the capillary plexus in the wall of yolk sac. With in the fusion of dorsal aorta the ventral branches fuse and form a series of unpaired segmental vessels, which run in the dorsal mesentery of gut and divide into ascending and descending branches.These vessels eventually form dorsal and ventral longitudinal anastomotic channels.

With the formation of longitudinal anastomotic channels, numerous ventral splanchnic branches are withdrawn and only three trunks persists as coeliac artery for foregut, superior mesentric Artery to midgut, Inferior mesenteric Artery to hindgut [1,2.] The 10th segmental artery given rise to coeliac trunk [5].

Anatomical variations which involve the visceral arteries are common also variation in branches of coeliac trunk have been reported by many authors.

Knowledge on these variations is necessary in order to avoid surgical injury and improper interpretation during imaging [3].

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MATERIALS & METHOD

15 specimens fixed with 10% formalin from both male and female human cadavers were studied by dissection method done by us. During routine dissection of posterior abdominal wall for undergraduate students in 30y old male cadaver in the department of Anatomy J J M Medical college we found this variation.

Case Report : The variation found is very short coeliac trunk, coeliac truck was giving two branches left gastric artery and spleenic Artery. Whereas common hepatic Artery was arising from superior mesenteric Artery.

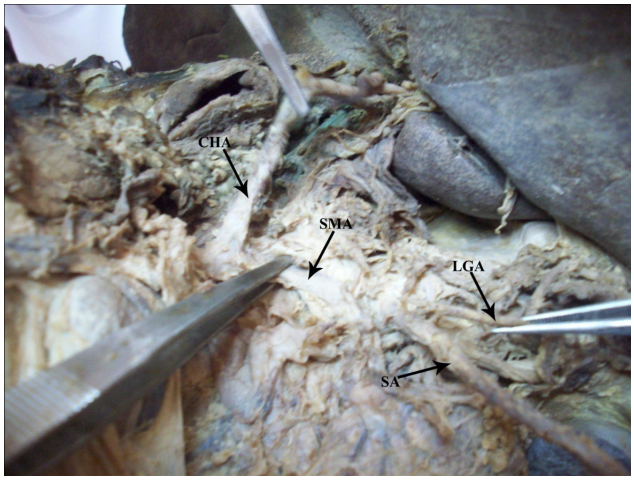

Fig.1 LGA & SA arising from common trunk whereas CHA is arising from SMA

Abbreviations : CT- Coeliac Trunk, SMA- Superior Mesenteric Artery, LGA- Left Gastric Artery, CHA- Common Hepatic Artery, SA- Spleenic Artery

DISCUSSION

Variation in the branches of coeliac trunk are the most commonly reported ones and many authors have reported different Variation patterns. Some of them were related to its branches[3]. Generally additional branches to coeliac trunk other than its normal branches are referred to as collaterals. The patterns of branching of coeliac trunk were observed to vary from classical trifurcation to abnormal trifurcation, bifurcation and quadrification of trunk[3].

Nayak et al observed that CT was unusually lengthy and that it took origin from left antero lateral surface of abdominal aorta[3]. Cicikcibasi it al observed a CT with 2 main branches the hepato splenic trunk and left gastric artery[3]. According to Mburu et al the CT was found to be trifurcated in 76 (61.7%), bifurcated in 22 (17.9%) and give collaterals in 25 (20.3%) Cadavers[3]. Chaing et al studied 405 patients angiographically for evaluation of hepatic artery variation while a single accessory hepatic Artery was found in 28% of there cases, some of the important patterns were accessory hepatic artery being direct branch from coeliac trunk , common hepatic Artery, left gastric Artery[1].

D′ Souzaetal reported an additional hepatic branch given by left gastric Artery which entered the left lobe of liver[1]. Youksel et al stated multiple variations that included an extremely long coeliac trunk an inferior phrenic trunk and an aberrant right hepatic artery derived from SMA. Vandamme and Bonte observed the absence of coeliac trunk in 1.25% of their series[4]

RESULTS

The coeliac trunk is very short. The left gastric artery and spleenic artery arise from coeliac trunk on the ventral aspect of abdominal Aorta and common hepatic artery arises from superior mesenteric artery. The percentage bifurcation of coeliac trunk calculated was found to be 13.32%.

CONCLUSION

The variations of coeliac trunk must be carefully understood for anastomosing the proper arteries in liver transplant surgeries. Anatomical segmental resection is now being widely practised. It is safe and superior to wedge resection in treatment of metastatic liver cancer. Variations of branches of coeliac trunk are also important during the performance of surgeries of the stomach, duodenum, pancreas, and the extra biliary apparatus. The variation become important in patients who undergo celiacography for GI bleeding and coeliac axis compression syndrome, prior to operative procedure of transcatheter therapy and for chemoembolisation of pancreatic and liver tumors.

Therefore, the careful identification and dissection of coeliac trunk branches are important to avoid iatrogenic injuries[3].

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Ethical Clearance : Taken from ethical committee

Source of Funding : Self

Conflict of Interest : This variation has not been published before and has got a huge clinical significance.

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A Success Story of Reduced Worm Infestation in Satara District

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ABSTRACT

Introduction: Helminthiasis or worm infestations refer to worms that live as parasites in the human body and are a fundamental cause of disease associated with health and nutritional problems beyond gastrointestinal tract disturbances. De-worming school children by antihelminthic drug treatment is a curative approach for expelling the heavy worm load. **Objectives:** To assess the prevalence & types of of Soil Transmitted Helminthic (STH) infestations among school going children in selected schools in Satara district. To study anti-helminthic ongoing activities in Satara district. **Method:** a descriptive survey was conducted in Satara district in Jan-Feb 2013 by KIMSDU Karad along with stool examination by WHO approved Kato-Katz technique among school going students. **Results:** The prevalence of Soil Transmitted Helminthiasis was found <1%. **Conclusion:** STH prevalence of <1% which is lowest ever reported from India. This result would be related to improved hygienic practices and periodic mass deworming.

Keyword: *STH, Kato-Katz technique, school going children.*

INTRODUCTION

Helminthiasis or worm infestations refer to worms that live as parasites in the human body and are a fundamental cause of disease associated with health and nutritional problems beyond gastrointestinal tract disturbances. Globally, over 3.5 billion people are infested with intestinal worms, of which 1.47 billion are infested *Ascaris lumbricoides* (roundworm); 1.3 billion with the hookworm and 1.05 billion with *Trichuris trichiura* (whipworm). School children aged 5 – 15 years suffer the highest infestation rate and worm burden that can be attributed to poor sanitation and hygiene (WHO2001). About 400 million school-age children are infested with roundworm, whipworm and hookworm worldwide, a large proportion of who are found in the East Asia region (Cambodia, China, Lao PDR, Thailand, and Vietnam). These parasites consume nutrients from children they infest, thus retarding their physical development and causing ill health. They destroy tissues and organs, cause abdominal pain, diarrhoea, intestinal obstruction, anaemia, ulcers and other health problems. All of these consequences of infestation can slow cognitive development and thus impair learning.[1]

The geohelminths-roundworm, hookworm and whipworm are among the 10 most common infestations in the world and are endemic in many developing countries including India. The highest intensity of worm infestation occurs in school-age children and is one of the leading causes of

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morbidity, accounting for 12,3% and 11.4% of disability adjusted life-years (DALYs) lost due to all causes in girls and boys, respectively.[2] Children, on account of their behavior like walking barefoot, poor hand hygiene etc, carry the greatest burden of worm infestations in the population. These worms pose a threat to their physical and mental development and have an impact on their short and long term development & education, limit their participation in school and decrease their earnings in adulthood. National family and health survey of 2005-06 states that in Maharashtra, 40% of the <3yr children are underweight and 72% are anaemic.[3,4]

De-worming school children by antihelminthic drug treatment is a curative approach for expelling the heavy worm load. However, drug therapy alone is only a short-term measure of reducing worm infestation and reinfestation. Control measures through improved sanitation, hygiene and de-worming are needed to prevent infestation and re-infestation.[1]

A study supported by Govt of Maharashtra in collaboration with KIMSDU & J-PAL in 2013 to estimate the worm load in the school going children in Satara district using WHO recommended Kato-Katz technique of stool examination.

Objectives: 1. To assess the prevalence & types of of Soil Transmitted Helminthic (STH) infestations among school going children in selected schools in Satara district.

2. To study anti-helminthic ongoing activities in Satara district

MATERIAL & METHOD

A descriptive study was organized by Zillha Parishad (ZP) Satara in coordination with Krishna Institute of Medical Sciences Deemed University, karad (KIMSDUKarad) & Jameel Poverty Action Lab (J-PAL) Chennai to assess the prevalence of soil transmitted helminthiasis among school going children studing in 1st to 7th std in satara district in the month of Jan & Feb 2013. A team of field supervisor, health workers, Lab technicians & quality checker was formed & trained at KIMSDU, Karad in the first half of January 2013. Detailed plan of survey was prepared under the guidance of experts from all the three parties.

One school each from 11 rural & 04 urban areas of Satara district & 6 children i.e. 3boys & 3girls from each class (I to VII) from each school were selected randomly & enrolled for the study. An informed consent of the parents & school teachers was taken. Name, age, sex, std. were noted & the purpose of the study was explained to them and also they were instructed to collect stool sample in given plastic container in the next morning. The children were told to handover the sample to the health worker within 2-3hrs of collection of samples & the samples were then transported to nearby CHCs/PHCs for examination by using Kato-Katz technique. The team of Lab. Technicians was trained by International expert from J-PAL in stool examination by Kato-Katz technique (WHO2001)[5,6] at KIMSDU Karad. Quality (10%) check was done by Microbiologist from KIMSDU Karad. Details of mass deworming, hygiene promotion & Health education activities were collected from the office of ZP & schools.

All the data was entered in to the excel sheet & analyzed by statistician for frequency & prevalence. Institutional Ethics Committee Clearance, permission from the head of each school & informed consent from the parents of selected children was taken prior to data collection.

OBSERVATIONS

During the Sample Survey for Estimating the Burden of Intestinal Worm Infestation in Satara District, total 15-schools in 15-locks were enrolled. Total 814 children were registered for the study. Among them 707 children brought the stool samples which were tested for parasite by using Kato-Katz technique.

Seven children were found positive for one or the other forms of intestinal worms, which showed 0.99% (<1%) prevalence of worm infestation among school going children in Satara district, Maharashtra. Among these seven positive children six were boys & one girl giving a prevalence rate of 1.5% & 0.23% respectively. Area wise distribution of stool positive cases & prevalence showed following, from Mahabaleshwar rural 2.38%, Mahabaleshwar urban 5.55%, Phaltan rural 2.12%, Phaltan urban 2% and Jawali 1.85%.

Figure I: Distribution of study subjects according to gender:

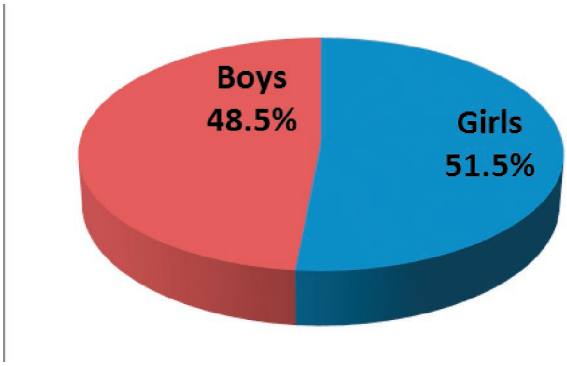
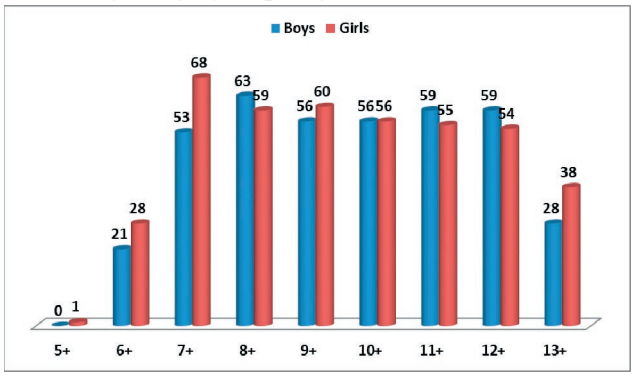


Figure-I show gender wise distribution of study subjects according to which nearly equal representation of both gender was maintained.

Figure-II: Distribution of study subjects according to age group & gender:



No significant difference (χ^2=5.302, p=0.724) existed in the proportion of study subjects according to age group & gender as shown in figure-II .

Table I: Taluka wise distribution of study subjects in Satara district:

Sr.No	Areas studied	Total	%
1.	Koregaon	56	6.8
2.	Jawali	56	6.8
3.	Karad Rural	53	6.5
4.	Karad urban	44	5.4
5.	Patan	56	6.8
6.	Mann	56	6.8
7.	Khatav	56	6.8
8.	Satara	56	6.8
9.	Khandala	56	6.8
10.	Wai Rural	54	6.6
11.	Wai Urabn	56	6.8
12.	Mahabaleshwar Rural	47	5.7
13.	Mahabaleshwar Urban	56	6.8
14.	Phaltan, Rural	56	6.8
15.	Phaltan, Urban	56	6.8
Total		814	100

Table I shows nearly equal representation of study subjects in each of the study area in satara district.

Table II: Distribution of study subjects according to standard & gender:

Class(Std.)	Total	%	Boys	Girls
1st	115	14.1	45	70
2nd	128	15.7	66	62
3rd	122	15.0	61	61
4th	117	14.4	58	59
5th	113	13.9	57	56
6th	109	13.4	58	51
7th	110	13.5	50	60
Total	814	100	395	419

No significant difference (χ^2=6.234,p=0.397) existed in the proportion of study subjects according to standard & gender as shown in table II.

Table III: Distribution of study subjects according to stool sample collection:

Stool sample	**Total**	**%**	**Boys**	**Girls**
Submitted with sample	707	86.9	340 (48%)	367 (52%)
Submitted, but empty	14	1.7	7 (50%)	7 (50%)
Not submitted	93	11.4	48(51.6%)	45(48.4%)
Total	814	100.0	395(48.5%)	419(51.5%)

Table IV: Details of stool sample examination report by Kato-katz technique:

Areas	Children tested			Total positive	Sex	Age	Std	Type of Worms
	T	M	**F**					
Mahabaleshwar, Rural	42	24	18	02	F	11	5	E.Vermicularis
					M	11	5	**HK** (28eggs)
Mahabaleshwar, Urban	54	26	28	02	M	7	1	H.Nana
					M	10	4	H.Nana + **TR** (5eggs)
Phaltan Rural	47	24	23	01	M	10	5	H.Nana
Phaltan Urban	50	21	29	01	M	12	7	H.Nana
Jawali	28	14	14	01	M	8	3	H.Nana + **TR** (3eggs)

Table-IV shows details of stool examination report of samples of stools submitted by study subjects according to which only 06 male & one females students stool showed positive results whereas remaining stool samples were reported as negative after examination by experts.

Out of positive samples there was only one sample positive for Hookworm, one positive for Enterobious vermicularis, two positive for both H.Nana & Trichurias & 3 positive for only Trichuriasis. Overall prevalence of soil transmitted helminthiasis in satara district was found to be <1%.

Out of all schools visited all of them had safe and sufficient water supply within the school premises. It was found by observation that 99-100% children were wearing foot ware within the schools although this did not ensure that they practiced the same outside the school also.

An intensive health education drive was undertaken in all schools studied. The posters showing the importance of hygienic practices were displayed on the walls within & outside of schools & it were found during general interview of teachers that health educational activities were conducted very regularly for school children to make them aware of the importance of healthy hygienic practices.

The deworming of children was done regularly (twice in a year) by the school health team of ZP in satara by giving single dose of Albendazole 400mg tablet/suspension.

Political will & consorted & consolidated efforts of all office bearers & stake holders of ZP satara was seen in implementation of the gram swachhata abhiyan under which financial support & expertise for building latrines for each family was provided.

DISCUSSION

More than 1.5 billion people or 24% of the world's population are infested with soil-transmitted helminthic infections worldwide. Infections are widely distributed in tropical and subtropical areas, with the greatest numbers occurring in sub-Saharan Africa, the Americas, China and East Asia. Over 270 million preschool-age children and over 600 million school-age children live in areas where these parasites are intensively transmitted, and are in need of treatment and preventive interventions.[4]

The burden of STH in India is yet to be estimated but various studies indicate that overall prevalence of

STH has been 29.7% in Delhi[7], 31.5% in Uttaranchal[8], 33.4% in Arunachal pradesh[9], 38.7% in rural area of Darjeeling district of west bengal[10]. It was found to be a community burden in Assam[11]. A survey has been carried out in India in eight different ecologically homogenous zones by Bora et al[12] and prevalence of STH ranging from 34 to 36% in hilly and coastal areas was found. In chitradurga urban area it has been 39.6%. It was 92% in a south Indian fishing village[13]. In a retrospective laboratory based study the proportion of positive stool samples for parasitic infections has been found to be 6.68%[14].

The prevalence of soil transmitted helminthic infections in apparently healthy school children of mean age 9-10 years drawn randomly from one school each in 7 tehsil of Zilla Parishad schools of Aurangabad district, Maharashtra, India has been during March 2011 to August 2012 evaluated.[15] Stool sample from 547 children have been analyzed using the Kato-Katz technique. The overall prevalence of *Ascaris lumbricoides* has been found to be the most common among STH (67.72 %) followed by *Trichuris trichiura* (28.48%) and hookworm (3.80%). Children aged 9-10 years have had the highest rate of infection. Though there has been no significant ($p>0.05$) sex related difference in the prevalence of helminthic infection, *A.*lumbricoides and hookworm infection have been relatively higher in male pupils. Mixed infections have been recorded, with *Ascaris* and hookworm, and *Ascaris* and *Trichuris reflecting* the two most commonly occurring combinations.[7]

The prevalence of worm infestation found by newer technique of stool examination of Kato-katz technique (WHO2001[5]) in satara district has been much lower (<1%) than the expected prevalence. The prevalence in Aurangabad found by using same technique in 2011-12 has varied from 3.7% for hookworm to 67.7% for ascaris. The actual prevalence in satara is far below then these expected figures.

Under the programme Gram Swachata Abhiyan implemented in the state of Maharashtra for changing the health & cleanliness at village level, has included construction of latrines, sewage disposal & its utilization as well as disposal of solid waste.

It is been implemented in all 140 villages of satara district. The Satara district was awarded 1st prize at state and national level in 2013. Under this scheme Rs.4,600/- were given as subsidy for construction of latrines, Rs.500/- additional were given for hilly terrains. The schedule caste/tribes and Navabodha were given Rs.11,000/- under Golden jubilee scheme of state of Maharashtra. Over & above the support given for construction of latrines Rs.4,000/- were given for connection of tap water, it is expected that it will soon be declared as Nirmal District (clean district) which means it would be free from open field defecation and 100% provision of latrines in rural & tribal areas.

It thus appears that the success story of satara district of Maharashtra is the culmination of political will for construction of latrines, proactive efforts taken by the teachers from schools to create awareness among school children for hygienic practices like hand washing before eating & after defecation, using foot wares & use of latrine for defecation. Along with these primary preventive measures regular coverage of all school children with albendazole twice a year as secondary preventive measure seems to have worked in bringing down the worm infestation at lowest ever reported from any district of Maharashtra and also from India.

CONCLUSION

A descriptive survey carried out on representative sample of 707 school going children in satara district Maharashtra had STH prevalence of <1% which is lowest ever reported from India. This result would be related to improved hygienic practices and periodic mass deworming.

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Evaluation of the Diagnostic Accuracy of Twelve Discrimination Indices for Differentiating β-thalassemia Trait from Iron Deficiency Anemia

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ABSTRACT

The two most frequently encountered microcytic and hypochromic anemias are iron deficiency anemia (IDA) and β-thalassemia trait (βTT) need expensive laboratory tests to differentiate. Several mathematical formulae have been proposed for differentiation of these two entities, based on red blood cell indices generated by electronic cell counters. The diagnostic reliability of the twelve discrimination indices (RBC, MCV, RDW, RDW index, Mentzer index, England & Fraser index, Srivastava & Bevington index, Shine & Lal index, Green & King index, Ricerca index, Ehsani index and Sirdah index) was assessed. One hundred twenty four (124) children aged between 4.0 and 17.3 years were enrolled in this study, out of which, 53 cases were β-thalassemia trait and 71 were iron deficient. The receiver operative characteristic (ROC) curve was constructed for each index to calculate the area under the curve (AUC), in addition, sensitivity, specificity, and likelihood ratios were calculated. None of the above mentioned discrimination indices found to be 100% sensitive and specific, though some of these indices (RDW, MCV, S&LI) showed more than 80% sensitivity, but their specificity for the detection of IDA was not satisfactory. EI and G&KI showed largest AUC (0.773 and 0.771 respectively) with both sensitivity and specificity above 70%. It was concluded that EI and G&KI could be used as a screening tool for differentiation of these two conditions.

Keywords *β-thalassemia trait, iron deficiency anemia, discrimination indices, sensitivity, receiver operative characteristic curve.*

INTRODUCTION

The most common causes of hypochromic and microcytic anemias i.e. iron deficiency anemia and β-thalassemia traits are major public health problem in North Maharashtra region, India. The βTT should be differentiated from IDA to avoid unnecessary iron treatment to the patients of βTT. To date many discrimination indices have been defined to quickly discriminate between these two conditions via parameters obtained from automated cell counters [1-9]. Many authors have evaluated its diagnostic reliability for differentiation of βTT and IDA. They expected the diagnosis would be technically good, rapid, inexpensive and reliable without more time and money-consuming methods such as determination of HbA_2 and serum iron. However, none of these indices has found to be 100% sensitive and specific in prediction of βTT and IDA. The present study was conducted to evaluate the reliability of these discrimination indices in 124 children aged between 4.0 and 17.3 years by calculating their sensitivity, specificity, positive and negative likelihood ratios and area under curve (AUC).

MATERIAL & METHOD

One hundred twenty four children with microcytic and hypochromic anemia aged between four and 17.3 years were involved in this study. All participants selected for this study were diagnosed during family study of β-thalassemia major patients who reported at Government civil hospital pediatric ward for regular blood transfusion. Informed consent was obtained from all individual participants included in the study. Complete blood count, estimation of HbA_2, serum iron, serum iron binding

capacity (SIBC), serum ferritin were determined in all cases. Seventy-three children with a hemoglobin (Hb) level of <11g/dl, mean corpuscular volume (MCV) ≤76fl, ferritin <10ng/ml and transferrin saturation <12% were diagnosed to have IDA. Remaining 51 children diagnosed as βTT based on their normal ferritin level and elevated level of HbA_2 (>3.5%). Complete blood count was obtained through Coulter counter (Beckman coulter, Inc., USA). Quantitation of HbA_2 was performed with Bio-Rad Variant II HPLC β-thalassemia short program (Bio-Rad, USA).

Twelve discrimination indices used in the present study for evaluation are as follow:

Ehsani Index (EI): (MCV – 10 × RBC)

England & Fraser Index (E&F): MCV – RBC – (5 × Hb) – 8.4

Green & King Index (G&K): (MCV^2 × RDW / Hb × 100)

MCV

Mentzer Index (MI): MCV / RBC

RBC count

RDW

RDW Index (RDWI): (MCV × RDW / RBC)

Ricerca Index (RI): RDW / RBC

Shine & Lal Index (S&L): (MCV^2) × MCH / 100

Srivastava & Bevington Index (S&B): (MCH / RBC)

Sirdah Index (SI): (MCV – RBC – 3 × Hb)

These indices were calculated by differential values as defined in the original published literatures. Sensitivity, specificity, positive likelihood ratio and negative likelihood ratio were calculated for each index as follows.

Sensitivity = [true positive/true positive + false negative] × 100,

Specificity = [true negative/true negative + false positive] × 100,

PLR = true positive rate/false positive rate

NLR = false negative rate/true negative rate

In addition, for each index, the ROC curves were constructed to obtained area under the curve (AUC) and the new cut off values with highest sensitivity and specificity. The collected data were analyzed with SPSS (version 11) (SPSS Inc., Chicago, Illinois, USA) statistical software. An independent sample t-test was performed to detect differences between the means of two groups. P-values < 0.05 were considered significant.

RESULTS

This study included 124 microcytic and hypochromic children, out of which 51 were β-thalassemia trait and 73 were iron deficient. The mean age was 10.4 years (range 4.0–17.3 years). The hematological data of these two groups are depicted in Table 1 with mean and SD. The statistical analysis showed that there are significant differences between means of both groups (P <0.05). Combined cases of β-thalassemia trait + iron deficiency anemia were not included in this study.

Table 2 summarizes the evaluation of different RBC indices and mathematical formulae for differentiation of βTT from IDA with sensitivity, specificity, positive and negative likelihood ratios. ROC curves were constructed (Fig. 1 & 2) to obtained new cut off values with high sensitivity, specificity and AUC of each indices and formulae as depicted in Table 2. None of the above mentioned discrimination indices showed 100% sensitivity and specificity, though some of these indices (RDW, MCV and S&LI) having more than 80% sensitivity, but their specificity for the detection of IDA was not satisfactory. According to AUC, EI and G&KI showed good reliability with relatively large AUC (0.773 and 0.771 respectively) and both sensitivity and specificity above 70% followed by MI, S&LI and RDWI. Moreover, remaining indices showed moderate reliability with relatively normal AUC as depicted in Table 2.

Table 1: Hematological parameters obtained from β-thalassemia trait and iron deficient subjects with mean and standard deviation

Parameters	β-thalassemia trait (n=51) mean (SD)	Iron deficiency anemia (n=73) mean (SD)
RBC 10^{12}/l	5.3 (0.6)*	4.7 (0.7)
Hb g/dl	10.4 (0.8)	10.1 (0.6)
Hct %	35.8 (4.0)*	33.8 (3.4)
MCV fl	67.5 (4.8)*	72.6 (5.4)

MCH pg	19.6 (1.8)*	21.9 (3.4)
MCHC g/dl	29.2 (2.9)*	30.1 (4.0)
RDW %	16.7 (1.8)*	19.0 (3.4)
SI ug/dl	103.3 (36.1)*	30.1 (6.2)
TIBC ug/dl	301.4 (52.7)*	321.8 (25.8)
TS %	27.2 (6.4)*	9.5 (2.3)
Ferritin (ng/ml)	34.4 (10.6)*	9.8 (1.2)

*statistically significant

SI, serum iron; TIBC, total iron binding capacity; TS, transferrin saturation

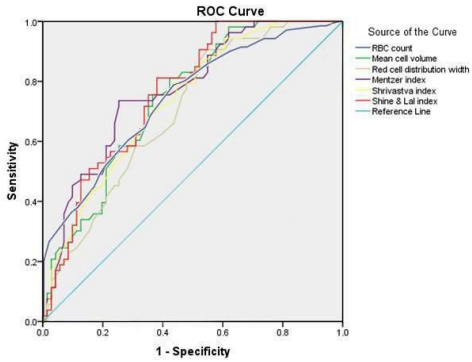

Fig. 1 Receiver operative characteristic curve of RBC count, MCV, RDW, Mentzer index, Srivastava & Bevington index and Shine & Lal index

Table 2 Evaluation of different discrimination indices for differentiation between β-thalassemia trait and iron deficiency anemia

Discrimination indices	AUC (95% CI)	βTT published cut off value	βTT new cut off value	Sensitivity as per new cut off value	Specificity as per new cut off value	PLR	NLR
RBC	0.748 (0.665–0.831)	>5	>5.1	78.8	57.9	1.87	0.37
MCV	0.740 (0.655–0.825)	≤72	<72.2	81.1	57.7	1.92	0.33
RDW	0.700 (0.609–0.790)	<14	<17.2	90.6	45.1	1.65	0.21
Mentzer Index	0.768 (0.686–0.851)	<13	<13.9	73.6	74.6	2.90	0.35
England & Fraser Index	0.732 (0.642–0.822)	<0	<4.5	67.9	73.2	2.53	0.44
Srivastava & Bevington Index	0.734 (0.648–0.820)	<3.8	<4.4	79.2	54.9	1.76	0.38
Shine & Lal Index	0.762 (0.679–0.844)	<1530	<1068	81.1	60.6	2.06	0.31
Ricerca Index	0.734 (0.648–0.820)	<4.4	<3.5	67.9	66.2	2.01	0.48
Green & King Index	0.771 (0.690–0.853)	<65	<78.2	71.7	70.4	2.42	0.40
Red Cell Distribution Index	0.761 (0.678–0.843)	<220	<236.3	77.4	64.8	2.20	0.35
Ehsani Index	0.773 (0.691–0.854)	<15	<20.1	71.7	73.2	2.68	0.39
Sirdah Index	0.750 (0.665–0.836)	<27	<31.6	52.8	85.9	3.74	0.55

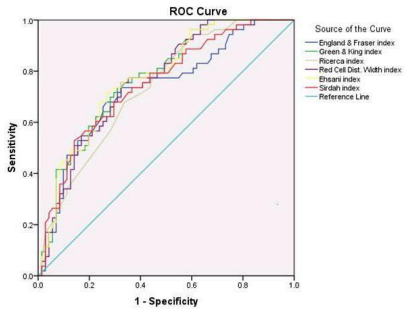

Fig. 2 Receiver operative characteristic curve of England & Fraser index, Green & King index, Ricerca index, RDW index, Ehsani index and Sirdah index

DISCUSSION

Microcytosis and hypochromasia are the common features of blood samples from βTT and IDA and are major public health problems in India[10]. The prevention of homozygous state (β-thalassemia major) can be achieved through the screening of population at risk. Various screening methods are available for detection of βTT like osmotic fragility test, quantitation of HbA_2, peripheral blood smear and serum iron studies. However, osmotic fragility test has poor sensitivity and specificity, quantitation of HbA_2 by HPLC/microcolumn chromatography is costly and not routinely available and blood smear examination is fast and inexpensive but the efficiency is not satisfactory. Less time-consuming methods are the discrimination indices calculated from red cell indices obtained during routine complete blood count. Considering this, various discriminant indices have been defined and the respective authors reported 100% sensitivity[1-9]. However, later none of these indices were found to be 100% sensitive or specific. The possible reason for unreliability of these indices would be the overlapping values reported in each index with these two conditions [11-13]. The present study evaluated and compared 12 discrimination indices for their reliability in the differentiation of βTT from IDA in children.

In the present study, an elevated RBC count with mild anemia and microcytosis was reported in βTT as compared to IDA patients. The CBC data of both groups (Table 1) showed significant differences between all the parameters except Hb. The cases of βTT showed significant reduction in MCV and MCH values and it does not correlated with the degree of anemia, similar finding was also reported [10]. This fluctuation between MCV values are due to thalassemia mutation, as earlier report stated that there is relationship between MCV and type of thalassemia mutations [14]. Moreover, the hematological phenotype and type of thalassemia mutations are also correlated significantly [15].

Table 2 showed that some indices have more than 80% sensitivity like RDW with 90.6%, MCV and S&LI both have 81.1% sensitivities, but the specificities of these indices were not satisfactory. However, RDW is a measure of the degree of variation in red cell size, has been found to be good discriminant function [13, 16], this may be misleading as found in our study that βTT has an elevated level of RDW compared with IDA. Previous studies have also reported the same results that RDW alone has not found to be reliable [12, 17-19].

Moreover, indices like MI, G&KI and EI have both sensitivity and specificity more than 70%. According to the findings the highest to lowest sensitivity for diagnosis of βTT were RDW > MCV = S&LI > S&BI > RBC > RDWI > MI > EI = G&KI > E&FI > RI > SI. In case of IDA the sensitivity for detection of IDA from top to bottom belonged to SI > MI > EI = E&FI > G&KI > RI > RDWI > S&LI > RBC > MCV > S&BI > RDW. The discrimination indices with high sensitivity cannot be relied on for a safe differential diagnosis between βTT and IDA, since, they do have high sensitivity, but their specificity for the detection of IDA was not satisfactory. Hence, they cannot be used neither as a screening tool for βTT because they could result in a significant number of false positive results.

At our data set, EI, G&K and MI proved to be the reliable index with new cut off values with AUC (0.773, 0.771 and 0.768 respectively) followed by S&LI, RDWI, SI, RBC, MCV, RI, S&BI, E&F and RDW. The sensitivity of EI (71.7%) observed in the present study was much lower compared to the original study, where it was approximately 93% [8]. Similarly, the sensitivity of G&KI in our study is 71.7% consistent with the finding of previous study [20]. However, it is much lower compared to the original study on G&KI by its authors, where the sensitivity of the index was 100% [6].

There are remarkable inconsistencies were seen among the results obtained in different studies. Sirdah, et al [9] proved their proposed index (SI) as the most efficient in discriminating between βTT and IDA followed by G&KI. Demir et al [11] found highest reliability for RBC and RDWI indices for differentiating βTT from IDA in children. Lafferty et al [21] showed the effectiveness of MCV, S&LI and MI. These contradicts in the results could be attributed to the differences in study population and spectrum of thalassemia mutation in different ethnic group.

It was concluded that, none of the above selected discrimination indices provided 100% sensitivity and 100% specificity for the differentiation purposes. In

countries like India where resources are scares with high prevalence of IDA, differentiation between βTT and IDA by discrimination indices might be quite useful. For the screening of βTT in children, new cut off values should be obtained by constructing ROC curves. EI and G&KI could be used as screening tool for differentiation of βTT and IDA.

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Conflict of Interest: Authors have no conflict of interest.

For this study ethical clearance was obtained from institutional review committee.

"All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards."

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Physical Activity Pattern, a Modifiable Risk Factor for Type 2 Diabetes Mellitus (T2DM) among Mothers in Kerala

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ABSTRACT

Background Type 2 Diabetes Mellitus (T2DM) has grown to epidemic proportions placing India as the world capital of Diabetes. Over 387 million worldwide have DM thus imposing a heavy burden on the global nations. Physical activity is a key determinant for T2DM. ***Objective:*** of the study was to identify the activity pattern of mothers of adolescent children. ***Methodology:*** Using a multistage stratified random sampling, 104 mothers from urban and rural areas of a selected district of Kerala were studied using a modified, validated Global Physical Activity Questionnaire (GPAQ). Data was analyzed using SPSS 18. ***Results:*** Majority subjects were Christian (65.4%), from rural areas (74%), having mean age of 41yrs, belonging to nuclear families (61.5%), with post-graduate qualification (44.2%) and working as teachers (55.8%). Family history of DM seen in 67.31% with 12.5% being unaware of their diabetic status, 37.5% had other health problems and 16.3% were on medications. Activities include household work; cooking (80.8%), house cleaning (74%), washing and ironing (63.5%), gardening (38.55%), regular work (65.4%), farming (19.2%) and morning walk (39.4%); with more walking in urban (48.8%) than rural (38.8%) area. Some reported doing manual labor (20.9%) - wood cutting, farming and grass cutting –daily (8.7%) or weekly (59.6%). Besides housekeeping, a few used the treadmill. Domestic appliances were used by 51% subjects to conserve effort and energy. Leisure time of mothers was spent on entertaining guests, phone calls, television or computer; with children spending time on studies, mobile phone, television or computer, while neither spent time on recreational physical activities. ***Conclusion:*** Inactivity in middle age contributes to "diabesity and metabolic syndrome, the precursors of T2DM. Maternal activities are pivotal to familial health. Awareness, appropriate training and support might kindle motivation to spread across the society.

Keywords*: diabetes mellitus, risk factors, physical activity, mothers.*

BACKGROUND

Twenty first century has witnessed a global epidemic of Type 2 diabetes mellitus, a lifestyle disease. The International Diabetes Federation estimates over 387 million people with DM worldwide in 2013 which is projected to reach 592 million by 2035. India has emerged as the world capital of diabetes mellitus with 66.8 million diagnosed cases, in the age group of 20- 79 years.[1]

In Kerala, the prevalence of type 2 DM is 27.11%[2] against a national prevalence of 8.56% [3] with Ernakulam city reporting the highest (19.5%).[4] Diabetes causes heavy burden due to long term complications, increased morbidity and mortality.

Diabetes is considered a silent killer as it causes the major damage during the pre diabetes stage. Having no single particular cause, physical inactivity, sedentary lifestyle, calorie laden diet enriched with sugar and fat, obesity[5]- particularly abdominal adiposity[6], diet rich in animal products[7] and systolic hypertension are found to be modifiable risk factors. Once developed, there is no permanent cure but the disease is controllable and complications preventable with a comprehensive package of therapeutic diet,

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exercise, medicines and follow up.

Supported by NRI remittances, Kerala's booming economy has promoted consumerism and a sedentary lifestyle. Accessibility to household appliances like mixer, fridge, washing machine, mobile phones, lifts and automobiles has made physical exertion redundant. Preference for white collar jobs[8], sedentary lifestyle, unrestricted TV watching, restricted play areas, and a recent hike in rural wages has fuelled food inflation and changing dietary patterns from eating cereals to proteins; more of egg, meat, milk, vegetables, pulses and fruits.[9] A highly competitive education scenario has also contributed to the curbing of physical activities among young adults and has enforced the sedentary habits.

Physical inactivity is identified as a modifiable key risk factor for T2DM. The ICMR-INDIAB study conducted across India found nearly half of the population (392 million) to be inactive individuals.[10] Physical inactivity was significantly more common in urban than rural area. The time spent in moderate to vigorous intensity activity was mostly at the workplace. More than 90% subjects did no recreational physical activity, with most being rural females and the lack of recreational activity increased with age. Mothers are more involved with family and the activities of their children. Identifying the activity pattern of mothers will highlight the top modifiable risk factor for type 2 diabetes mellitus which is pivotal for prevention. Hence the study was planned among mothers of adolescents attending high schools.

METHODOLOGY

The study objective was to identify the activity pattern of mothers and to find its association with selected variables. A list of schools was prepared from a randomly selected educational district of Kerala including those from both urban and rural areas. Three schools were selected at random from urban and rural each and 104 mothers were selected randomly during PTA meeting. Ethical clearance was obtained from Institutional Review Board. Data was collected using a questionnaire based on Global Physical Activity Questionnaire (GPAQ) that contained questions related to demographic characteristics and physical activities pertaining to travel (2), regular job(3), household activities(3) additional activities(5), healthy activities(2), entertainment(2) and an open ended question. Questions included heavy activities the mothers did, if any, besides regular activity; its nature, duration and frequency, and the activities of their children after school hours, and inquired on the presence of any constant stress. Collected data was analyzed using SPSS 18 and is presented in tables and graphs.

FINDINGS

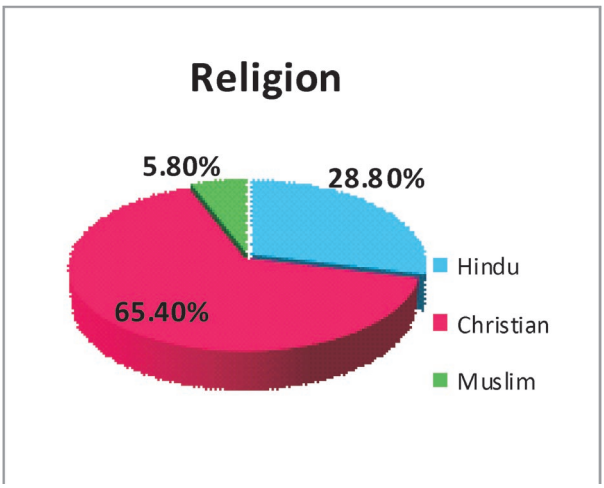

Fig.1 Distribution of subjects by Religion

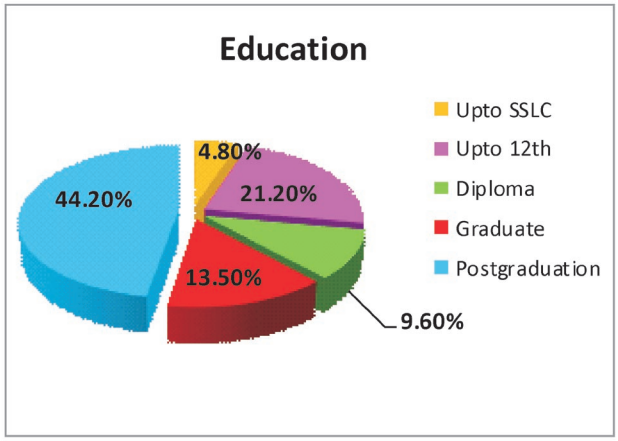

Fig.2 Distribution of subjects by Education

Among the 104 mothers, majority (65.4%) was Christian and belonged to nuclear families (61.5%) from rural areas. Educational distribution shows post graduates (44.2%) and graduates (13.5%). The mean age was 40.99 ± 10.58 years.

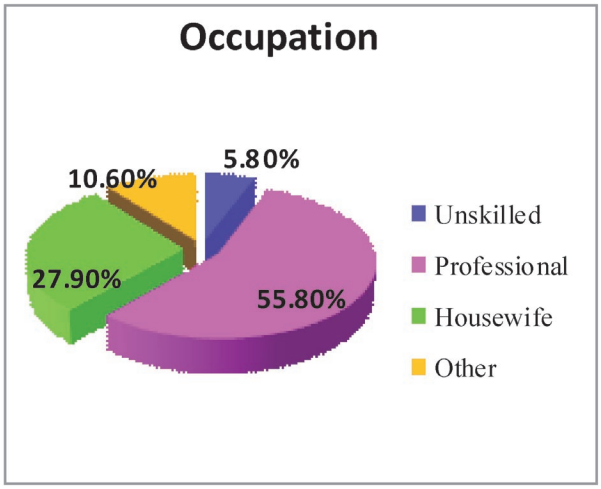

Fig.3 Distribution of mothers by Occupation

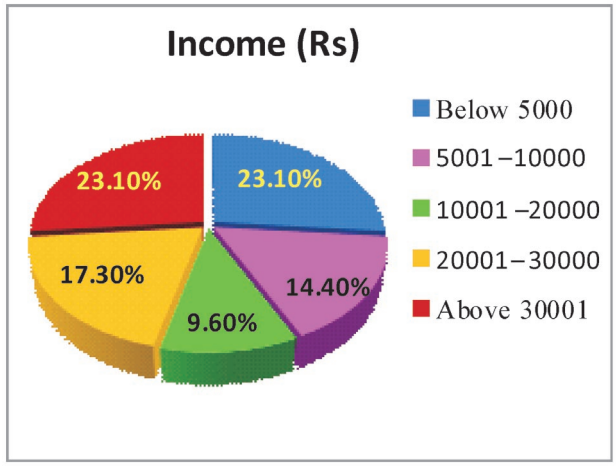

Fig.4 Distribution of mothers by monthly income

Most of them were employed professionals (55.8%) with a full time job (53.8%) (Fig-3) and (23.1%) earned an average monthly income between < 5000 to > 30,000 (Fig.4). Majority had appliances such as mixer alone (51%), refrigerator and mixer (19.2%) or mixer, refrigerator and washing machine (19.2%). Family history of type 2 diabetes mellitus was found among 67.31% subjects; while 12.5% were unaware of their diabetic status; 37.5% subjects experienced health problems, 16.3% were on medications.

ACTIVITY PATTERN

Regular household activities included cooking (80.8%), house cleaning (74%), regular work (65.4%), washing and ironing (63.5%), weekly heavy exercise (59.6%) and gardening (38.55%). Some subjects took a morning walk (39.4%), more doing so in urban (48.8%) than rural (38.8%) areas, while a few mothers did manual labor (20.9%), and farming (19.2%). Heavy exercises such as wood cutting, farming and grass cutting were also reported (8.7%) daily or weekly (59.6%). Few mothers reported weekly house cleaning, washing and treadmill walk as heavy exercise.

Table-1Activity pattern among mothers from urban and rural areas

Activities	Performance frequency	Urban(27)		Rural(77)		Total(104)	
		f	%	f	%	f	%
Morning walk	Daily	21	48.8	20	32.8	41	39.4
	Weekly	2	4.7	8	13.1	10	9.6
Cooking	Daily	34	19.7	50	82.0	84	80.8
	Weekly	2	4.7	1	1.6	2	2.9
Wash /iron cloth	Daily	26	60.5	40	65.6	66	63.5
	Weekly	12	27.9	19	31.1	31	29.8
House cleaning	Daily	31	72.1	46	75.4	77	74.0
	Weekly	5	11.6	11	18.0	16	15.4
Caring for domestic animal	Daily	4	9.3	16	26.2	20	19.2
	Weekly	3	7.0	2	3.3	5	4.8
Yoga	Daily	2	4.7	3	4.9	5	4.8
	Weekly	24	55.8	2	3.3	2	1.9
Gardening	Daily	4	9.3	12	19.7	16	15.4
	Weekly	11	25.6	29	47.5	40	38.5
Sick care	Daily	4	9.3	5	8.2	9	8.7
	Weekly	6	14.0	4	6.6	10	9.6
Baby care	Daily	5	11.6	8	13.1	13	12.5
	Weekly	3	7.0	1	1.6	4	3.8

Table-2 Activity pattern of mothers besides household job (N-104)

Activities	Performance frequency	Urban		Rural		Total	
		f	%	f	%	F	%
Traveling	Daily	14	32.6	37	60.7	51	49.0
	Weekly	15	34.9	14	23.0	29	27.9
Regular Work	Daily	26	25	42	40.4	68	65.4
	Weekly	1	.009	2	0.01	3	2.9
Coolie/manual labor	Daily	9	20.9	-	-	9	8.7
	Weekly	1	2.3	-	-	1	1.0
Tailoring	Daily	2	4.7	2	3.3	4	8
	Weekly	7	16.3	11	18.0	18	17.3
Farming	Daily	9	20.9	11	18.0	20	19.2
	Weekly	13	30.2	15	24.6	28	26.6
Rubber Tapping	Daily	4	9.3	2	3.3	6	5.8
	Weekly	24	55.8	1	1.6	25	24.03
Heavy exercise	Daily	3	7.0	6	9.8	9	8.7
	Weekly	28	65.1	34	55.7	62	59.6

Subjects from rural areas spend more time on entertaining visitors and guests (65.6%) than their urban counterparts (37.2%). Mothers of both areas, urban (30.2%) and rural (18%), watched TV serials daily. Weekly computer use was equal in both groups- rural (31.1%), urban (31.1%). None of the subjects mentioned doing any recreational physical activities themselves.

Table-3 Sedentary activity pattern among mothers in urban and rural areas (N=104)

ACTIVITIES	Performance frequency	Urban		Rural		Total	
		f	%	f	%	f	%
Phone/guests entertaining	Daily	16	37.2	40	65.6	56	53.8
	Weekly	5	11.6	11	18.0	16	15.4
TV serials	Daily	13	30.2	11	18.0	24	23.1
	Weekly	9	20.9	13	21.3	22	21.2
Computer	Daily	3	7.0	8	13.1	11	10.6
	Weekly	19	31.1	19	31.1	31	29.8

Children after school hours mostly engaged in sedentary activities such as studies (85.9%) or private tuition (3%), reading or watching television (47.9%), computer (26.8%) and mobile phone (22.5%). No mother reported encouraging any physical activity in their children.

DISCUSSION

Physical inactivity among mothers was apparent: other than the moderate activity performed at workplace or at home on household errands. Domestic appliances and housemaids minimized physical effort and energy expenditure. Daily travelling was required more for rural subjects going to work. Gardening, farming, caring for domestic animals and tailoring were the moderately heavy activities prevalent among rural subjects while 24(55.8%) urban subjects practiced yoga weekly. Leisure time was utilized on entertaining guests or phone calls, on television or computers. Above findings could be a reflection of the prevailing culture.

The ICMR study conducted by Anjana et al reported similar findings; more than 90% of subjects studied from four regions of India did no recreational physical activity. Proportion of subjects reporting no recreational activity steadily increased with

increasing age from 86.7% to 95.9%. (Trend $\chi 2$: 199.1, $p < 0.001$). Those who spent time for moderate to vigorous activity, spent less than 20 minutes per day; was highest in Jharkhand, followed by Chandigarh, Maharashtra and Tamil Nadu.[9]

According to CDC facts, more than 25 % U.S. women are not active at all, more than 60 % women do not engage in recommended amount of physical activity and that social support from friends and family has a positive relationship to regular physical activity.[11]

The present study found children spending their spare time mostly on studies or electronic gadgets. None of the mothers reported doing recreational physical activities or supporting their children in doing so.

During childhood and adolescence, families critically influence their children's health behavior - including physical activity. Parents should serve as models for their children, engage in activities with them, monitor their health behavior, and provide support and encouragement that can result in constructive behavior change and positive health outcomes.[12]

Promoting parent involvement is a key recommendation by the Center for Disease Control and Prevention's "Guidelines for School and Community Physical Activity Programs". Parental encouragement, support, and beliefs may be more powerful influences than role modeling for development of active lifestyle in their children. Because activity patterns have been found to track over a lifespan, efforts to promote activity at a young age can have major public health benefits. [13], 14

Socioeconomic status has a relationship with children being obese or overweight; high socioeconomic status (SES) groups have a higher risk of obesity, while middle SES groups are at higher risk of being overweight. [14] An American Time Use Survey describing the time use of teenagers aged 15-17, found girls spending significantly more time doing housework, caring for younger siblings, and studying, and less time watching television. Adolescents in households with more educated parents spend more time studying and less time watching television, were more likely to eat dinner with a parent, but they also got less sleep.[15] Overall 392 million individuals are inactive in India. The findings highlight the high risk for type 2 diabetes mellitus and indicate the urgent need for promoting creative and recreational activities for women, especially middle aged women. Further, it demands active involvement and encouragement by parents in developing a healthy activity pattern among the young generation to prevent a major disease.

CONCLUSION

Having a high proportion of subjects with family history of diabetes mellitus coupled with an unhealthy lifestyle is a dangerous indicator of future health problems which demand urgent intervention for increasing awareness on healthy lifestyle, particularly among families at parental level. Professional contribution to mobilize a multilevel involvement along with mass awareness programs may facilitate the desirable change in attitude and encourage physical activities including recreational activities, especially among mothers at their middle age.

Conflict of Interests: None

Source of Funding: Self

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A Study on the Impact of Training on the Performance of the Street Food Vendors in Visakhapatnam, Andhra Pradesh, India

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ABSTRACT

The survey was conducted on street food service providers in Visakhapatnam city and the data was analysed. The low cost, convenience and speed of service are the reasons for the success in the street food business. Action Research on Street Food Safety was undertaken with fifty street food providers. The training module was prepared and the training methodology included skill demonstrations, charts, flash cards and video clippings. A pretest and a post test were done to assess the impact of the training programme.

Impact of training on knowledge levels of vendors was quite clear from the pre and post training data, while no changes in on-field hygiene practices was observed.

Keywords: *Street foods, food safety, contamination, training, vendors, food handling.*

INTRODUCTION

Food Security is the mainstay for any living being to sustain life. Thus it becomes the core responsibility of a Government. Food Security means that all people at all times have physical & economic access to adequate amounts of nutritious, safe, and culturally appropriate foods, which are produced in an environmentally sustainable and socially just manner, and that people are able to make informed decisions about their food choices. Food Security also means that the people who produce our food are able to earn a decent living wage, growing, catching, producing, processing, transporting, retailing, and serving food.[1]

At the core of food security is access to healthy food and optimal nutrition for all. Food access is closely linked to food supply, so food security is dependent on a healthy and sustainable food system. The food system includes the production, processing, distribution, marketing, acquisition and consumption of food. A healthy, sustainable food system is one that focuses on Environmental Health, Economic Vitality, and Human Health & Social Equity.

The street food services have fulfilled the objectives of the food security to certain extent, but the environmental and personal health aspect is not taken care of. A Rasch modeling technique was developed in Netherlands to reduce consumer health risks from food borne diseases .[2] The present study is one such attempt to improve the role of street food services in maintaining the food security of the society.

OBJECTIVES

1. To evaluate the impact of training on improvement in food safety aspects and the quality of food services.

METHODOLOGY

The survey was conducted on a sample of 50 street food service providers in Visakhapatnam city and the data was analysed. The low cost, convenience and speed of service are the reasons for the success in the street food business. Action Research on Street Food Safety was taken up with fifty street food providers, to bring about a change in the food hygiene and handling. The training module was prepared and the training methodology included skill demonstrations, charts, flash cards and video clippings. A pretest

and a post test was done to assess the impact of the training programme. About 3500 vendors were similarly trained in Calcutta, India in a major study by Chakravarthy.[3]

FINDINGS

The occupation per se has been a family business and about two generations have been living on this business for their livelihood. The consumers are attracted by convenience, taste and low prices of street foods, with poor knowledge on food hygiene and safety. The pre-training knowledge of the vendors was very poor, especially with reference to food borne illnesses, food adulteration, conservation of nutrients and value addition as can be seen from Table-1.

Table-1: Pre- and Post- training knowledge of vendors (%) on street food safety

S.No.	Questions	Training	
		Pre	Post
1.	Name any four food borne illnesses	29	52
2.	Name four characteristics of spoiled food	38	86
3.	Name four immediate symptoms of food borne illnesses	48	80
4.	Name four ways to prevent contamination while handling food	37	83
5.	Name four contaminants which make food unsafe for consumption	33	46
6.	Name four biological sources of food contamination	68	95
7.	Name four ways to manage left-over food	10	23
8.	Name four ways of serving safe drinking water	56	85
9.	Name four energy foods	17	63
10.	Name four ways to conserve nutrients while processing and cooking	17	56
11.	Name four nutrients which are essential for growth and maintenance	17	66
12.	Name four food sources of protein	46	77
13.	Name four rich sources of vitamins	27	56
14.	Name any four food adulterants	17	65
15.	Name four common sources of minerals	10	52
16.	Name four ways for value addition of the food products	8	23
17.	List four harmful effects of excessive heating of oil	27	64
18.	Name four protective clothes necessary for a food handler	26	83
19.	Name four bad habits which should be prohibited by food handlers	62	80
20.	Name four activities which contaminates food with harmful organisms	17	78
21.	Name four activities after which hand wash with soap is a must	52	80
22.	Name four sanitizes which may be used by street food provider	73	83
23.	Name safe disposable utensils for serving the street food	53	90
24.	How vendors can be benefited through having an association	31	81
25.	Name four benefits of training you had.	25	90

The performance of the vendors on the field was very unhygienic, especially in food handling, food display, oil heating practices etc. As can be observed from Table- 2, the issues related to food handling and hygienic practices items 11,12,13,15 improved in 50% sample while items 23 and 24 were very poorly maintained (< 20%).

Table-2: Pre- and Post-training Performance Rating (%) of Good Hygienic Practices of the vendors

S.No.	Food Hygiene Parameters	Training	
		Pre	Post
1.	Ingredients to be used should be of good quality, free from adulterants, kept covered to avoid contamination from dirt and microorganism	12	85
2.	Cooked food and drinks should be stored in clean vessels with proper lids, free from contamination with microorganisms and foreign materials. Display items should be covered properly through glass, plastics etc.	9	82
3.	Perishable foods should be held at temp's out of danger zone(40^0- 70^0)	15	79
4.	Potable water should be used for washing and cooking	61	97
5.	Left-over food should be stored safely and not mixed with fresh food.	39	100
6.	Avoid reuse of leftover oil	21	91
7.	Foods without cooking like chutney, fruit chat, salads should be prepared after thorough washing of raw material in clean/ chlorinated water. The equipment and accessories properly sanitized; stored in stainless steel/ glass/ white porcelain vessels with proper cover and separate spoons.	15	91
8.	Potable water should be kept in clean container and should be served through tap/ long handled utensil and thoroughly washed glasses should be used for drinking.	24	67
9.	The food handler should wear proper protective clothes and should serve the food using gloves/ fork/ tongs/ spoons	6	64
10.	Food handler should look smart and keep well groomed and free from bad habits like smoking, chewing, pan, gutkha, tobacco.	39	91
11.	The cart should be clean with steel surface and provision for heating, cooling and storage of food water, utensils, ingredients separately.	24	39
12.	Unit should be covered from all sides.	24	48
13.	The foods should be served in properly washed, drained and dried utensils.	30	39
14.	Wash utensils using proper detergent and three tubs system.	9	52
15.	Utensils should be washed drained and stacked at portable racks above 60 cm ground level and should keep them upside-down and spoons, forks etc. with handles up.	12	42
16.	In the absence of water the food should be served in good quality disposable vessels including green leaves and dry molded leaves with plastic linings.	9	64
17.	The surrounding of the food unit and also inside space should be free from dust, flies, mosquitoes, insect etc.	15	64
18.	Location of the unit away from water logged drains, toilets and street animals.	18	58
19.	Waste disposal bins should be used for disposal of garbage and other waste material.	39	94
20.	Don't serve food in ceramic utensils with cracks, coloured utensils, coloured papers and newspapers.	70	70
21.	All food preparations should be performed using proper fuel at a platform 60-70 cm. above ground.	39	100
22.	Mixing of ingredients for batter should be done at platform 60-70 cm above the ground using proper equipment else do it after washing your hands properly.	30	94
23.	Only liquid soap should be used at wash basin with regular water supply and drainage at washing point.	9	15
24.	The dining tables and service counters should be cleaned through sanitized and dry mops and after every mopping, hands should be washed.	6	15

The unhealthy practices that are hazardous to the consumers were deciphered, mainly in food preparation and serving activities. The identified practices are as follows –

a) Displaying of food in open without lids or covers.

b) Handling food with hand

c) Preparing food and keeping it open for long time

d) Serving plates were washed in half a bucket of stagnant water, repeatedly, without soap many a times. This is the most unhygienic and unhealthy practice.

e) Washing area very untidy due to spilling of food from used plates.

f) Stagnation of plates washed water.

g) Accumulation of left-over food from plates in the food vending area and butter papers, banana leaves etc. used in serving.

h) There was foul odor, flies and unhealthy ambience due to garbage.

i) Unhygienic working surface of the cart.

j) Untidy appearance of the vendors with undone hair, soiled clothes and unacceptable personal hygiene like nose cleaning, meddling with hair, scratching skin, intermittent practice of urination etc.

k) Heating oil over smoking point and repeated use of heated oil.

Based on the pre-training observations, the emphasis was laid on modification of practices in the street food operations, which were very deleterious to the safety of the consumers. The above aspects were stressed during training and relative measures were suggested to prevent cross contamination and safeguard the health of the consumers. The performance of the vendors before training can be observed in Fig.1.

Fig.1: Serving idli with hand (Practice before training)

One of the sessions on skill development in using tools to serve idli during training is shown in Fig.2

Fig.2: Serving idli with ladle (Practice during training)

The vendors were observed to have developed only marginal knowledge on hygiene, food sanitation and food safety practices after the training. The overall training impact is depicted in Fig.3.

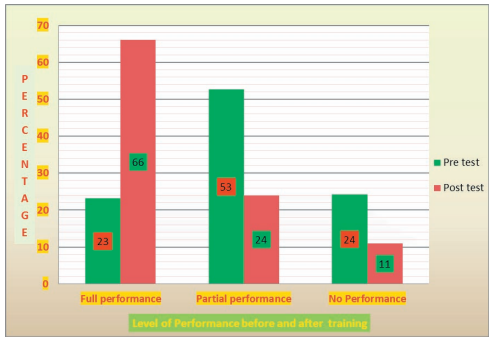

Fig. 3: The overall training impact on Performance

However there is no perceptible change in the practices and performance of the vendors during operations on the field. It can be observed from Fig.3, that the acceptable practices were fully followed by 23% of the vendors before training which has improved to 66 % after training. Consequently a proportional change was observed in partial practices and in no practices before and after training.

DISCUSSION & CONCLUSION

The impact of training in enhancing the knowledge of vendors is very striking from the comparison of the pre and post training data (Tables 1 & 2). However the impact of the training was not visible in on-field performance of the vendors.

The reasons could be-

- They are habituated to a way of life and changing habits is an uphill task.
- It was strongly felt that the consumers should be educated.
- Consumers' awareness and demand for hygiene

will definitely improve the performance of the vendors.

- The vendors however expressed happiness over the involvement of the experts in their activities.

Several studies have stressed the importance of hygiene in street food preparations. Mohle- Boetani et al [4] reported outbreaks of salmonellosis in clover sprouts through food vehicles. Ivic and Kocic [5] reported salmonella contamination in a retrospective study in Macedonia. Lupien[6] stressed on the need to educate consumers about the potential risks of foods in marketplace. Woteki et al [7] has commended on the inclusion of food safety in 2000 edition of Dietary guidelines for Americans which increased the focus on food safety. Several studies emphasized the importance of hygiene and risks associated with the street foods.[2, 8-11]

Several studies stressed on hygienic practices like washing hands; Freeman et al [12] suggested that hand washing reduces the risk of diarrhoeal disease by 40% as hand washing after contact with excreta is poorly practiced globally, despite the likely positive health benefits. While another study[13] proposed diarrhoea risk reductions of 48, 17 and 36%, associated respectively, with hand washing with soap, improved water quality and excreta disposal among Chinese. The transmission of helminthic infection due to poor hygiene in preschool children in Panama was reported.[14-15] In some cases, these consumers lack an understanding of proper food-handling practices reported from Mumbai, India[16] and other Asian countries.[17-20] The potential risk of street foods for foodborne diseases were reported from Bogor, Indonesia [21] and sixty percent E-coli in street foods from Calcutta, India which could have led to a major epidemic if not for the resistance among the Indians,[3]

The unhealthy practices followed by the vendors give rise to many gastro- intestinal problems in consumers at very young age. Even though hygiene was reported to be poor, scientifically, it was not visible to the consumers and hence they patronized street food industry. The education of consumers has to be taken up on large scale. The presence of a regulating and monitoring system and a demand from the consumers will definitely change the street food quality.

Acknowledgement:

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3. The cooperation of the vendors for the project is highly appreciated.
4. Paper presented at the Annual Dietetic Association at AIIMS,Nov.1,2011.

Conflict of Interest: None

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Ethical Clearance: Not Applicable

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Cytodiagnosis of Infections Mimicking and/or Increasing the Risk of Cervical Cancer

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ABSTRACT

Introduction – "Carcinoma" the name itself is dreaded, so why scare the patient when differential diagnosis can be done by careful scrutinization. And why not "alert" the patient for her increased predisposition to carcinoma cervix due to an associated virus. To top it all, when this can be done by a simple, non-invasive outpatient procedure – the best screening test available till date – the Pap test, if the degree of suspicion is kept high.

Tuberculosis & Herpes simplex are the infections which clinically mimic & increase the predisposition to cancer cervix respectively.

Aims/Objectives –

Case 1 – due to its rarity & clinical confusion with carcinoma cervix[(1,8)], we present a case of 32 yrs. female, P3L1, with chief complaints of pain abdomen & post coital bleeding.

Case 2 - due to its acting as an "accomplice" to another virus –HPV & increasing the risk of carcinoma cervix[(13,19)], we present a case of 35 yrs. female with pain lower abdomen, dysfunctional uterine bleeding, low backache & lumbar radiculopathy with restricted SLR (straight leg raising test)

Observation – Case 1- patient presented with pain abdomen & post coital bleeding. Per speculum examination revealed bad erosion in the cervix, bleeds on touch & is friable. Clinical suspicion was of carcinoma cervix but Pap smear revealed epitheloid cell granulomas & Langhan's giant cells. Biopsy of the cervix and endometrium confirmed the diagnosis.

Case 2 – patient presented with low backache & lumbar radiculopathy in neurosurgery department with associated complaints of itching vulva, pain lower abdomen & DUB. Per speculum revealed vaginitis & a nabothian cyst.

Per vaginal examination revealed cervix downward with thickened & tender left fornix.

Pap smear revealed peripheral margination of chromatin, ground glass nuclei, eosinophilic inclusion body, moulding & multinucleation suggestive of cellular changes consistent with HSV.

Result/conclusion – Cervical tuberculosis should be considered in the differential diagnosis of carcinoma cervix in young women[(1,8)].

HSV patients can present with radiculopathy & as they predispose to CA cervix acting as a synergistic cofactor with HPV, should be advised for close regular follow up.

This simple screening test is beneficial for the patient, hence reemphasizes its importance.

Keywords - *Pap smear, tubercular cervicitis, tubercular endometritis, HPV, HSV -2,*

INTRODUCTION

SCC is the most common cervical CA & has its own predisposing factors & conditions mimicking it, the knowledge of which alerts the pathologist as well as the clinician to screen & treat from that aspect.

Tuberculosis of the genital tract mimics carcinoma cervix clinically[1,2,3] & HSV,which was once suspected as a cause of CA cervix in 1960's & 1970's till HPV was implicated as the causative agent in 1980's,now is an important synergistic cofactor to HPV. In addition, symptomatic & asymptomatic herpetic infections facilitate the acquisition of HIV two to three fold. Thus, primary prevention of HSV-2 & HPV infection is the best available way for reducing the infection.[17]

Gardasil, the first preventive HPV vaccine, was approved by FDA in 2006 & the Gardasil inventor Prof. Ian Frazer has passed his big test for genital herpes vaccine trials too in humans. A study of vaccine in 20 healthy people, each receiving 3 doses, was completed late last year & the results were described as "encouraging".

CASE -1

A 32 yrs., Indian, multiparous female presented with the complaint of pain abdomen & post coital bleeding since 6 months. Menstrual history was normal. Per vaginum examination revealed cervix downwards, uterus reteroverted retrofixed, normal size, firm/mobile, fornix free. Per speculum examination revealed bad erosion in the cervix, friable & bleeds on touch.

ESR was raised. Abdominal USG & chest radiograph was normal. Clinical suspicion of CA cervix was made & Pap smear was sent for examination.

Microscopic examination of the Pap smear revealed epitheloid cell granulomas & Langhan's giant cells (fig 1,2,3).[4,5,6,7,8] Biopsies of the cervix & endometrium were done which confirmed tubercular cervicitis & tubercular endometritis.AFB was negative.

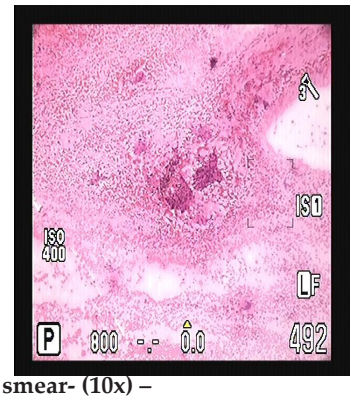

Fig 1 –pap smear- (10x) –

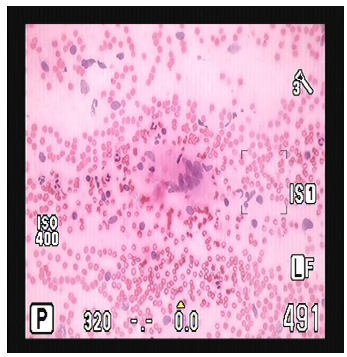

Fig 2- pap smear -Langhan's giant cell (10x) granuloma & langhan's giant cell

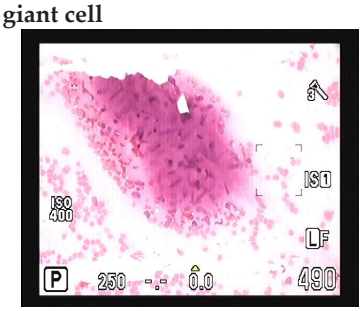

Fig 3- pap smear -epitheloid cell granuloma(40x)

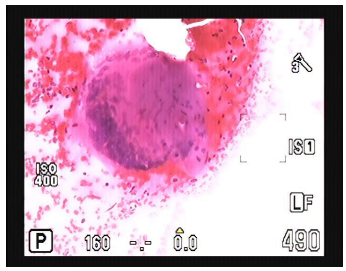

Fig 4 – langhan's giant cell (40x)

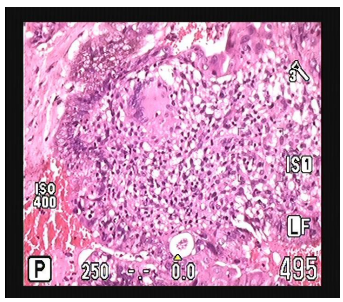

Fig 4 – Langhan's giant cell on HPE (40x)

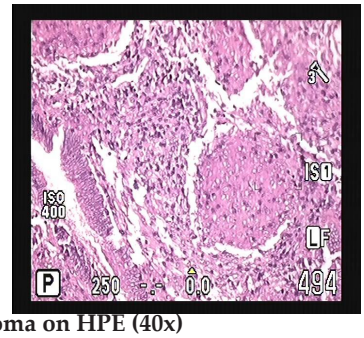

Fig 5 – granuloma on HPE (40x)

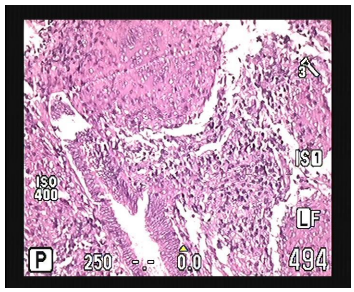

Fig 6 – granuloma on HPE (40x)

CASE - 2

35 yrs., Indian multiparous female presented in the neurosurgery dept. with complaints of severe low backache with lumbar radiculopathy.SLR (straight leg raising test) was restricted. No motor /sensory deficit. History revealed other complaints of pain lower abdomen, DUB & vulval itching for which the patient was referred to the gynae dept.

P/V examination revealed cervix downward, left fornix thickened & tender with a small cystocoele & rectocele.

P/S examination revealed vaginitis ++ and a nabothian cyst.

Pap smear was sent for examination, which revealed peripheral margination of chromatin, ground glass nuclei, eosinophilic inclusion body, moulding & multinucleation suggestive of cellular changes consistent with Herpes simplex virus.

PCR was advised but the patient was not available for follow up.

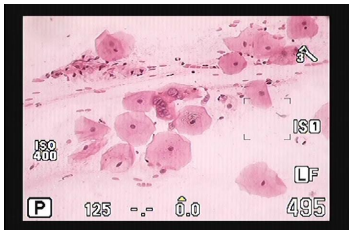

Fig 7 – Cellular changes suggestive of herpes simplex virus (HSV)

DISCUSSION

Carcinoma cervix, dreaded by females, has extensively been studied in a series of clinical, epidemiological, pathological & molecular studies.

Though, HPV is mainly implicated in cervical carcinogenesis with its high risk (16, 18…) & low risk (6, 11…) subtypes, many women are infected with HPV & only a few develop CA. This underscores the importance of other risk factors, which influence whether HPV infection will remain latent or turn into precancerous or cancerous lesion. These so called "other risk factors" depend on host virus interactions & environmental factors.

HSV-2 infection has been proved to be an important synergistic cofactor[13,18,19] by molecular studies. In addition, symptomatic or asymptomatic herpetic infection facilitates the acquisition of HIV[14,16] also two to three times, emphasising the importance of primary prevention of HPV as well as HSV.

HSV is a DNA virus of herpes viridae with two subtypes –

i. HSV -1 with non-genital infections

ii. HSV -2 with lesions below the waist especially genitalia.[15]

Though, both are virtually identical under the microscope, sharing approximately 50% of their DNA, both types infect the mucosal surfaces- usually the mouth & genitalia & then establish the latency in the nervous system.

HSV 1 establishes the latency in the trigeminal ganglion & HSV 2 [20]has the "site of preference" in the sacral ganglion & recurs in the genitalia.

In our set up, the patient presented in neurosurgery department with neurological symptoms more discomforting to her than the associated gynaecological complaints. It was not expected clinically that neurological symptoms may be due to HSV infection which was diagnosed on Pap smear taken for her associated gynaecological complaints.

The other patient diagnosed as suggestive of granulomatous lesion, probably tubercular presented in the gynaecology dept. with erosion cervix & a fear

of harbouring CA due to the major complaint of post coital bleeding. This diagnosis was further confirmed on cervical & endometrial biopsies.

Tubercular cervicitis in pap smears must be distinguished from tissue repair which may accompany any chronic cervical lesion. Proliferating fibroblasts with multinucleated giant cells often lead to confusion. Other granulomatous aetiology like sarcoidosis, mycotic infection, schistosomiasis, foreign body reaction should be ruled out.[1,3,4,5]

AFB is not always demonstrated in cytological smears[10] & may be negative in the biopsies too.[9] Isolation of mycobacteria, though a gold standard for diagnosis, is negative on culture in one – third cases[2,4,5]. Therefore, presence of typical epitheloid granulomas with Langhan's giant cells[11,12] is sufficient for the diagnosis if other causes have been ruled out. Pap smears may be normal despite the presence of the lesion due to faulty technique of taking pap, non – inclusion of the representative area(s), lack of proper preservation etc.

CONCLUSION

The psycho-social impact of the diagnosis made is great on the patient. Most patients perceive STDs as a stigma-

i. "Only promiscuous people get STDs"
ii. "How could this happen to me" – state of shock
iii. Patient may expect lack of respect from the health care providers & may not seek care.
iv. Patient can have confusion about the disease & what it means for her future. "will I ever be able to have sex again"
v. Partner's issue of fidelity & decision to disclose.

Thus, while screening, diagnosing & declaring the diagnosis to the patient these factors should be kept in mind.

Pap screening is a simple screening OPD tool which is a window to the diagnosis of many genital infections & carcinoma.

Acknowledgement - I would like to thank the head of the department, other colleagues & technical staff for their kind support & cooperation.

Conflict of Interest - No

Source of Funding – Personnel & for infrastructure MGMC

Ethical Clearance – Clear

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Perception and Practice Regarding Infection Control Measures among Healthcare Workers in District Government Hospital of Tumkur, India

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ABSTRACT

Infection control is the discipline concerned with preventing nosocomial or healthcare-associated infection, a practical sub-discipline of epidemiology. It is an essential, though often under recognized and under supported, part of the infrastructure of health care. Hence the objective of the present study was to assess perception & practice of infection control measures among healthcare workers in district government hospital of Tumkur. **Methodology:** A cross sectional study was conducted among hospital employees using a pretested questionnaire which had four domains. **Results:** 78.5% of health care workers had knowledge about sterilization procedures for infection control and regarding the sterilization procedures used. When observed for practice had many lacunae's. **Conclusion:** Knowledge towards infection control procedures was goo but attitude as well as practice was very poor indicating the need for motivation & training.

Keywords: *Infection control, Health care workers, Hospital acquired infections.*

INTRODUCTION

Healthcare-associated infections (HCAI) are a major setback to any organization. The prevalence of HCAI varies widely across the globe. Worldwide it is estimated that almost 10% of the hospitalized patients acquire at least one HCAI.[1,2] The prevalence of HCAI in developing countries can become as high as 30-50%.[3,4] Many of these pathogens in HCAI are multi-drug resistant and are able to survive in the environment for a long period of time.[5,6] The most important mechanism of spread of these HCAI is via the contaminated hands of the healthcare givers that is doctors, nurses, other staff or relatives/friends of the patients. Contaminated environmental surfaces are another important reservoir for spread of these infections.[5,6] However, they are often un-recognized. Infection can also spread to patients by drugs, intravenous solutions or by foodstuffs.[5,6] These HCAI are associated with increased morbidity, mortality and healthcare expenditures.[7]

Hence, healthcare workers must know the various measures for their own protection. They should improve organization of work, implement standard precautions and dispose biomedical waste. Cross infection makes infection control practices important for health care personal's to protect both patient as well as themselves. Effective implementation of infection control procedures and adherence to standard precautions are challenging especially in resource-limited settings.

So, the purpose of the present study is to know the perception & practice regarding infection control measures among health care workers of district hospital, Tumkur city.

METHODOLOGY

Design: A cross sectional study was conducted among hospital employees in district referral hospital, Tumkur city who had direct contact with patients or their immediate environment in the month of September 2013.

Subjects: Study participants were nursing/

technical professionals and interns.

Questionnaire: An anonymous, structured, self-administered questionnaire printed in local language (Kannada) was pre tested and kappa statistics (0.80) was used for internal & external validity. The questionnaire was divided into four domains:

1) Knowledge about standard infection control procedures.
2) Attitude towards the utility of guidelines/protocols compliance of infection control.
3) Perception of Environmental cleaning & about their training in Infection control procedures.
4) Practice of various ways to prevent the hospital acquired infections.

Apart from demographic variables, the experience in direct patient care (in years) was recorded.

The first domain of the proforma judged the knowledge of health care workers on the correct method of instrument sterilization, use of protective barriers while handling patients and in various procedures, appropriate hand washing, disposal of used syringes and needles, their recapping after use & disposal of biomedical waste.

The second domain of the proforma judged the attitude of healthcare workers in the incident of a needle-stick injury, about hepatitis B immunization, and necessity of the awareness about various infection-control measures.

The third domain of the proforma had questions to assess the perception of various activities that prevent HAIs and the satisfaction about their training regarding that. It also had questions on accidental exposure to infected blood samples, provision in hospitals for reporting this, the support offered by the hospital for training programmes and any working infection control committee in the hospital. The last part was filled by investigator after observing the work of health care workers in wards/labs.

DATA COLLECTION AND ANALYSIS

The permission to conduct the study was taken from the District surgeon & medical superident of the government hospital. Ethical clearance was obtained by institutional ethical review board. The participants were approached in the hospitals. After obtaining the written informed consent, data was collected by a self-administered questionnaire for assessing the perception whereas practices of nurses and technicians with respect to infection control were observed. The questionnaires were distributed and adequate time was given to complete and return. The nursing and other technical staffs working in three different shifts per day were included by contacting at their scheduled timings to include all the health care workers of the hospital. Observations were recorded on a pre-tested semi-structured proforma. The collected data was entered and analyzed using Statistical Package for Social Sciences (SPSS) Version 11.5, and Chi-square test and *p* value of 0.05 was used to see association.

RESULTS

Of the total 186 hospital staff, 128 (84 hospital staff including nurses and technicians and 44 nursing students) participated in the present study.

Demographic variables:

Table I shows that majority of participants (66.4%) were in the age group of 20 -30 years. All the nurses had completed either BSc (Nursing) or Diploma, the technicians had done BSc in Medical Laboratory Technology (MLT) & the nursing students were from IInd and IIIrd year of BSc Nursing posted in government hospital for their clinical training. Majority of the participants were females 62.5% (100% of the nurses being females) & the remaining 37.5% were male staff and technicians. 63% were less than 5 years of experience, 14% were between 5-10 years, 16% were between 10 - 15 years & 6% were above 15years.

Table II describes majority of health care workers (78.5%) had knowledge about sterilization procedures for infection control and regarding the sterilization procedures used.

Table III depicts the comparison in knowledge about sterilization procedures among hospital staff & students. 63% of the Hospital workers said Autoclave compared to students & this difference was statistically significant.

80.5% of participants had answered that they use Gloves, Mouth mask & Apron as personal protective

measures but none reported for the use of protective eye glasses. 89.1% were aware of hepatitis B vaccination & vaccinated as well, and almost half (58.3%) of the healthcare workers (54.2% hospital staff and 64% students) were aware of the six steps of hand washing and all of them reported using plain soap for maintaining hand hygiene. 61.7% reported that they dispose the gloves after its usage, but 31.3% still reported of its reuse.

93% of the health care workers had a attitude that they follow all the safety rules at work and 86.7% reported to use PPE to prevent cross infections & believe that it won't interfere their work.

Table IV shows when the compliance for infection control procedures was checked with their year of experience, it was noted that as the number of years of experience increases the use of PPE decreases. And this was statistically significant.

On being asked about the procedure to be followed in the event of a needle-stick injury, 85.3% healthcare workers were aware of the appropriate sequence of events to be followed and its notification to the appropriate authority immediately. Some (16.4%) healthcare workers were already exposed to infectious blood samples but awareness regarding the Infection Control Committee in the hospital was very poor as only 12.3% were aware of the presence of such a committee. Among the hospital staff, 70% have not undergone any training program for infection control, this included 88.6% hospital staff and 88% students. 65.6% were not aware of biomedical waste management handling rules & reported municipal dustbin may be method employed to dispose the hospital waste. Nearly half of the staff reported lagging encouragement from the higher authority for training programmes & 48.4% somewhat disagreed that there will be a necessary support from the hospital authority to protect themselves in case of accidental exposure/ injuries.

Observations with respect to infection-control practices of healthcare workers:

The observation was carried out among the hospital staff only as nursing students were not engaged in routine care and procedures in the ward. On observing the work of hospital staff (n = 84), it was observed that 62.3% respondents disposed the used syringes and needles in the correct way and 38.7% still recap the needles after use; 72% hospital staff washed their hands after every patient & only 28% threw the infected waste in a red/yellow bag.

Segregation at the point of disposal was not done & the people who use to clean/carry the waste didn't follow any of the protective measures.

DISCUSSION

Considering the enormity of the challenge that infectious agents pose as well as their nature to continuously multiply in real time, the implementation of effective sterilization protocol among all healthcare communities is vital. The data from this study indicated that the current state of knowledge related to sterilization among health care workers was good but attitude towards practice & practice was poor. This was similar to the survey of Sessa et al on nurses of Italy where the attitude on Hospital Acquired Infections was not satisfactory making them to not to perform appropriately the disinfection in their work activity.[8]

Askarian et al state that their study showed a generally poor adherence to standard isolation precautions among dental health care professionals in Shiraz.[9] The literature knowledge emphasize that only having knowledge of infection control measures and a positive attitude towards them does not ensure adherence to the guidelines.[10,11,12] This is similar to present study results. And present study found that although knowledge towards sterilizing is high, practice is not coherent with the literature knowledge. This was similar to a survey of hospital employees conducted in Kampala, Uganda.[13] The difference obtained regarding knowledge, attitude and practice of cleaning & sterilization of the instruments was statistically significant similar to a study by Y Jain A et al.[14] Hence, the findings of the present study marked the importance of training the healthcare workers and maintaining strict protocol regarding infection control procedures in the hospitals.

Along with that one should abide themselves to the universal guidelines like "Standard infection control and precautions", "OSHA regulations" and guidelines set by Center for Disease Control &

Prevention.[12,15-19]

Suggested measures to overcome this problem:

Hospital Acquired Infection is a health hazard. It is important to minimize the risk of spread of infection to patients and staff in hospital. Training in infection control programme along with a formation of Infection Control Committee (ICC) in the hospital to help health care workers to report & get timely support should be encouraged. This helps in reducing patients' morbidity, mortality, length & cost associated with hospital stay & a sense of security for the health care workers.

Table I: Demographic details

CHARACTERISTICS	N (%)
Gender distribution	
Males	37.5%
Females	62.5%
Distribution of Participants	
Nurses	53.9%
Technicians	11.7%
Interns	34.4%
Age groups (In years)	
21-30	66.4%
31-40	27.3%
41-50	6.2%
Educational qualification	
BSc/ Diploma/ GNB	53.9%
MBBS - Interns	34.4%
MLT	11.7%
Level of experience	
< than 5 years	63%
5– 10 years	14%
10– 15 years	16%
> Than 15 years	06%

Table II: Knowledge of HCWS on Infection control procedures:

	Hospital Staff	Students
Sterilizer used	Response in Percentage	
Autoclave	63.1	34.1
Boiling	36.9	65.9
x^2 Value – 9.755 p-value - 0.002		
Immediate action taken when in direct contact with HIV patients		
Anti HIV immunoglobulins	**22.6**	**20.5**
Anti HIV drugs	**48.8**	**25.0**
Blood test	**21.4**	**38.6**
Dont know	**7.1**	**15.9**
x^2 Value – 9.403 p-value – 0.24		
Personnel protective measures used		
Gloves, Mouth mask, Apron	**77.4**	**80.5**
Gloves, Mouth mask	**13.1**	**10.9**
Gloves	**9.5**	**8.6**
Protective eye ware	**0**	**0**
x^2 Value – 1.576 , p-value – 0.45		

Table III: Comparison of Knowledge of HCWs on Infection control procedures

	Hospital Staff	Students	
Sterilizer used	**Response in Percentage**		
Autoclave	63.1	34.1	**S**
Boiling	36.9	65.9	
x^2 Value – 9.755 p-value - 0.002			
Immediate action taken when in direct contact with HIV patients			
Anti HIV immunoglobulins	22.6	20.5	
Anti HIV drugs	48.8	25.0	**NS**
Blood test	21.4	38.6	
Dont know	7.1	15.9	
x^2 Value – 9.403 p-value – 0.24			
Personnel protective measures used			
Gloves, Mouth mask, Apron	77.4	80.5	**NS**
Gloves, Mouth mask	13.1	10.9	
Gloves	9.5	8.6	
Protective eye ware	0	0	
x^2 Value – 1.576 , p-value – 0.45			

S – Significant: **NS** – Not Significant.

Table IV: Comparison of compliance to infection control procedures in different age groups

Wear disposable gloves whenever there is a possibility of exposure to blood or other body fluids	**Less than 70% of the time**	**More than 70% of the time**
< than 5 years	28.4	71.6
5– 10 years	66.7	33.3 **HS**
10– 15 years	57.1	42.9
> Than 15 years	75.0	25.0
x^2 Value – 16.251, p-value – 0.001		
Wear a mask when there is potential exposure to an airborne respiratory communicable disease		
< than 5 years	33.3	66.7
5– 10 years	27.8	72.2 **S**
10– 15 years	52.4	47.6
> Than 15 years	50.0	50.0
x^2 Value – 9.715 , p-value – 0.021		
Wear protective eyewear whenever there is a possibility of splashes of blood or other bodily fluids		
< than 5 years	98.8	1.2
5– 10 years	94.4	5.6
10– 15 years	85.7	14.3 **S**
> Than 15 years	100	0
v^2 Value – 8.023 , p-value – 0.046		

S – Significant: **NS –** Not Significant: **HS –** Highly Significant.

CONCLUSION

Overall knowledge towards infection control procedures was good among the health care workers of a government district hospital, Tumkur. But, attitude as well as practice was very poor. To address these shortfalls and to improve the adherence to procedures constant motivation is required. Improved compliance with recommended infection control measures is required for all health care personnel's.

Continuing education programs and short-time training courses about cross infection and infection control procedures are suitable for students, assistants to upgrade as well as to reinforce the practices. Many lacunae's exist in educating, monitoring and upgrading the employs. Measures have to be taken to motivate the seniors to organize & encourage continuous education as well as training programmes.

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A Study on Perception Regarding Medical Research among Final Year Medical Students

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ABSTRACT

Introduction: In recent years, in medicine and education field, a paradigm shift has been noticed from experience-based to evidence-based practice. Evidence-based medical practice is based on research, which translates new knowledge into powerful tools for prevention and treatment of disease. Increase in clinical and biomedical research is essential for continuing advances in health care and develop new initiatives. To ensure that the best possible care is provided to patients, research evidence is very important. Students and practitioners should update them regarding recent knowledge. To help foster scientific thoughts and nurture evidence-based practice in clinical settings, research experience is very important.

Materials and method: All the medical students of Final Year M.B.B.S. were selected for the study. Out of 290 students,281 give their consent for study. So the total number of study subjects were 281.Ehical clearance was taken from the College Ethical Committee before study. The questionnaire given to student consisted of three sections. The first open section sought information regarding students age, gender, and residence. Section two comprised of close-ended questions focusing on students knowledge and attitude towards research. The last section was also close-ended and aimed to identify barriers towards research as perceived by the students.

Results: Most of the students were in the age group of 24-26 yrs (61.57%). Most of the students were female (59.43%).Medical research journal reading habit was found in 39.86% students. Students reading medical journals frequency was poor. Interestingly, majority (45.91%) felt the need for reading journals as part of curriculum only. 37.01% students reading journals out of interest. Overall information regarding Medline indexed medical research journals was very poor.. Only 13.17% students were currently part of any ongoing research project and only 4.6% had any manuscript published or anticipated under name at the time of conduct of the study. 69.40% students desired research as part of basic medical education. Students give lack of research training (20.28%) as principal barrier towards medical research.

Conclusion: The present study shows that medical students have positive attitudes towards research despite poor knowledge and awareness of research methods and scientific communication. Thus, there is an urgent need to emphasize the importance of research and to undertake professional programs preparing students as well as supervisors for this task Evolving medical science necessitates research training to be considered as an essential and fundamental component, 'an underlying principle', in an innovative undergraduate medical curriculum . It is important to teach undergraduate students the full scientific publishing process, including the peer review process, the format for scientific articles and the necessary skills in word processing.

***Keywords**: Perception, research, medical students.*

INTRODUCTION

In recent years, in medicine and education field, a paradigm shift has been noticed from experience-based to evidence-based practice. Evidence-based medical practice is based on research, which translates new knowledge into powerful tools for

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prevention and treatment of disease [1]. Increase in clinical and biomedical research [2] is essential for continuing advances in health care and develop new initiatives. To ensure that the best possible care is provided to patients, research evidence is very important [3]. Students and practitioners should update them regarding recent knowledge. To help foster scientific thoughts and nurture evidence-based practice in clinical settings, research experience is very important [4]. To provide lessons in teamwork, to develop critical analytical skills, thinking and enhance students skills in searching and evaluating literature, independent writing, future clinical practice, students should be exposed to research in their earlier stages of career [5]. Students' choice of clinical specialty can be come to know earlier by engaging them in research projects [6]. Very few medical graduates choose clinician-scientist careers in the last two decades, reason may be non-prioritization of medical research in undergraduate curriculum [7]. Many medical practitioners have either limited or no formal education in research and are inadequately prepared to critically analyze the quality of research they are reading [8].Research is very important in India because of a weak public sector health care, and a staggering disease burden. Although investment has increased in infrastructure for health research over the past decade, gaps remain in evidence to guide reduction of important health burdens/challenges. Furthermore, even when technical knowledge is available, political commitment, managerial competencies, and incentives for changing behavior within health systems are often lacking. Despite far reaching consequences, research perception of medical undergraduate students has barely been investigated to date. So present study was conducted to find out perception of their research-specific skills and competencies, and to find out obstacles towards conduct of research.

MATERIALS & METHOD

All the medical students of Final Year M.B.B.S. were selected for the study. Out of 290 students,281 give their consent for study. So the total number of study subjects were 281.Ehical clearance was taken from the College Ethical Committee before study. The questionnaire given to student consisted of three sections. The first open section sought information regarding students age, gender, and residence. Section two comprised of close-ended questions focusing on students knowledge and attitude towards research. The last section was also close-ended and aimed to identify barriers towards research as perceived by the students.

RESULTS

Most of the students were in the age group of 24-26 yrs (61.57%) followed by 25.27% students in the age group of 22-24 yrs .Most of the students were female(59.43%).42.35% students were from urban area and 27.75% students from rural area. **(Table 1)**

Medical research journal reading habit was found in 39.86% students. Students reading medical journals frequency was poor. Interestingly, majority (45.91 %) felt the need for reading journals as part of curriculum only.37.01% students reading journals out of interest. Overall information regarding Medline indexed medical research journals was very poor. 59.79% did not know any. Still, encouraging was the fact that 72.60% students were willing to contribute to any research project. Obviously, a large section (51.6%) did not know the role specifications of research workers. Only 13.17% students were currently part of any ongoing research project and only 4.6% had any manuscript published or anticipated under name at the time of conduct of the study. 69.40% students desired research as part of basic medical education, probably because 81.3% students had not received any kind of research training previously. **(Table 2)**

Students give lack of research training (20.28%) as principal barrier towards medical research. Other reasons given by students were lack of infrastructure (19.22%), lack of financial incentives (17.44%) and lack of funding (16.37%). **(Table 3)**

Table 1: Demographic Characteristics of the medical students

Variables	No (%)
Age	
20-22 yrs	18(6.41%)
22-24 yrs	71(25.27%)
24-26 yrs	173(61.57%)
Above 26 yrs	19(6.75%)
Sex	
Male	114(40.57%)
Female	167(59.43%)
Residence	
Urban	119(42.35%)
Semiurban	84(29.90%)
Rural	78(27.75%)

Table 2: Perception regarding research in medical students

Variables	No (%)
Medical journal reading habit	
Yes	112(39.86%)
No	169(60.14%)
Frequency of reading medical journals	
Once a month	98(34.88%)
Once every 3 month	116(41.28%)
Even less frequently	28(9.96%)
Never	39(13.88%)
Need for reading medical research journals	
Out of interest	104(37.01%)
Part of curriculum	129(45.91%)
No need	48(17.08%)
Information regarding Medline index medical journals	
Do not know any	168(59.79%)
One	43(15.30%)
Two	35(12.46%)
Three	27(9.61%)
Four	5(1.78%)
More than four	3(1.06%)
Would you like to contribute to any research project	
Yes	204(72.60%)
No	77(27.40%)
Is currently part of a research project	
Yes	37(13.17%)
No	244(86.83%)
Would like to have medical research as part of Basic Medical Education	
Yes	195(69.40%)
No	86(30.60%

Table 3: Perceived barrier towards medical research

Barriers	**No(%)**
Lack of research allotted time	14(4.98%)
Lack of research training	57(20.28%)
Lack of statistical support	13(4.63%)
Lack of mentorship	7(2.49%)
Lack of financial incentives	49(17.44%)
Lack of infrastructure	54(19.22%)
Lack of funding	46(16.37%)
Uncertainty about future benefit	41(14.59%)

DISCUSSION & CONCLUSION

The present study shows that medical students have positive attitudes towards research despite poor knowledge and awareness of research methods and scientific communication. They recognized the benefits of acquiring research skills, but identified practical difficulties of participating. The most important barriers towards research were lack of infrastructure, current time commitment to research, and lack of formal training and mentors, as were identified by Perneger TV, et al. in 2004 [9]. Increase in knowledge of scientific methods and critical thinking may reinforce attitudes towards science and help to embrace evidence based medicine (EBM) [9]. Only a minority of students are submitting articles for publication which agrees with other studies that quote 8-17.6% of medical students either had anticipated or published articles [10]. Working in research projects require in-depth understanding of research methodology, epidemiology, and biostatistics [11], which are usually not acquired during undergraduate medical training. The main cause of our dismal performance in the field of research and innovation has been a curriculum that focuses on didactic learning instead of a scientific and an experimental approach. This lecture-based curriculum does not stimulate students interests in research during medical school and therefore they are less likely to seek a research experience. Majority of the faculty lacks experience in research. Thus students are not exposed to dedicated role models and hence a vicious cycle of a non-experimental approach towards science is set up. Thus, there is an urgent need to emphasize the importance of research and to undertake professional programs

preparing students as well as supervisors for this task [12]. Courses in research methodology have already been proved a helpful tool toward successful conduct of research that can substantially increase research knowledge, skill, competence and productivity [13]. Evolving medical science necessitates research training to be considered as an essential and fundamental component, 'an underlying principle', in an innovative undergraduate medical curriculum [14]. It is important to teach undergraduate students the full scientific publishing process, including the peer review process, the format for scientific articles and the necessary skills in word processing. Case discussion teaching and problem-based learning (PBL) can be employed successfully rather than traditional lecture-based courses. Finally, encouraging research culture and fostering the development of inquiry and research-based learning among students is a high priority in order to develop more and better patient-oriented clinician-researchers.

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Assessment of Hospitalized Patients' Awareness of their Rights in Saudi Arabia

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ABSTRACT

Purpose: The primary purpose of the present study was to identify the level of awareness among hospitalized patients about their rights. The secondary purpose was to identify the differential awareness of hospitalized patients based on their citizenship status, educational level and region. **Methods:** Across sectional descriptive questionnaire based interview was completed among hospitalized patients in medical and surgical wards. **Results:** Most of the patients do not know about their rights (69.3%), 78% did not know about the bill of rights and 74% the patients do not have a university degree. Non Saudi residents have higher level of awareness than Saudi citizens. Patients who lives in Riyadh City had higher level of awareness than patients live in rural regions. **Conclusion:** Based on the results of the present study it can be concluded that most of hospitalized patients in Saudi Arabia are not aware about their rights.

Keywords: *Patients' Right, Awareness of rights, bill of rights.*

INTRODUCTION

Patients' awareness of their rights is a fundamental human right that promotes ethical medical practices. The concept of patients' right was first introduced in 1927 [1]. The universal declaration of human rights have been issued to ensure patients' rights for health care since the middle of the nineteen century [2, 3, 4, 5]. In 1973 the patients' bill of rights was approved by the American Hospital Association (AHA). Two decades later, the Board of Trustees of AHA revised the bill of rights hence it became popular practice in all hospitals of North America and Europe. At the beginning of the 20th century, the ministry of health, in Saudi Arabia, accredited patients' bill of rights. The bill included detailed documents that were centered on patient-physician relationship, care delivery issues, right to privacy, the right to health care without prejudice, the right to be informed with written consent form, and the right to reject care [6].

Review of research topics with regard to the implementation of patient's bill of rights showed that remarkable unawareness of patients' rights at the global level but increasing in the developing and underdevelopment countries, mainly due to socioeconomic factors [7, 8, 9, 10, 11, 12]. Some authorities attributed low level of awareness of patients' rights to low level of education. Kuzua *et al.*, showed that low level of education contributed to low level of patients' awareness of their rights. High level of education along with more use of technology resulted in high proportion of patients (90.8%) exhibit awareness of their rights [13, 14]. Clearly in well developed countries, wherein people attain high level of education and substantial usage of telecommunications and technology, people exhibit more awareness about patients' rights[15], nor they were given information regarding patients' bill of rights [16, 17].

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The economic systems in Saudi Arabia is very supportive to patients' rights. All patients in Saudi governmental hospitals have access to free health care. More than 50% of health care professionals in Saudi hospitals are foreigners, cultural mix from North America, Europe, Middle East and Far East. There are more than 9 million foreigners residents in Saudi Arabia that represent one third of the total population with potential one third of non Saudi patients' pools. The literature lack information regarding the assessment of the differential foreigners patients' awareness of their rights who receive free health care as well as Saudi citizens in Saudi's governmental hospitals. Clearly studying patients' awareness of their right in the Saudi health care system should provide new information to supersede human knowledge. Furthermore the literature lacks information regarding the differential awareness of hospitalized patients in surgical wards in whom stress level may be potentiated, as compared with other medical wards. There is need to assess hospitalized patients differentiated awareness of their rights and how it is impacted by population migration (foreign residents) factors besides the demographic and socioeconomic factors in Saudi Arabia.

In view of the aforementioned review, the present study was conducted to assess the level of differentiated awareness of hospitalized (medical and surgical) patients (citizens and foreign residents) about their rights with focus on whether they were being informed by their right, their ability to comprehend, ability to evaluate the implementation of care, and ability to identify their satisfaction regarding their rights.

METHODOLGY

Study Design: A questionnaire-based cross-sectional survey was conducted among hospitalized patients in medicine and surgery wards at King Khalid University Hospital (KKUH) in Riyadh – Saudi Arabia. A sample of 212 patients was recruited randomly for this study. The inclusion criteria for subjects' recruitment into the study were; fully conscious, age range 18 -85 years old, able to give consent, admitted to the hospital at least once in the last six months and Arabic and English speaking patients. The questionnaires were filled by researcher through face to face interview.

Statistical Analysis: Statistical analysis was conducted using SPSS. Frequency analysis was used to describe the percentage of responses of participants. Chi square (X^2) Test was used to compare the proportion of the responses. Prior probability of error, p-value, of 0.05 ($p < 0.05$) was selected to test the differences.

RESULTS

The majority of participants were males, aged from 18-35, Saudis, married, living in Riyadh. Around one-third of the participants were with university and above education level. Most of them had an economic level of less than 5000SR and most of them had been admitted more than twice and most of them had spent 3-7 days in the hospital.

Overall Patients' Awareness Findings

Table 1 shows the awareness of patients about their rights: 69.34% of the respondents did not know about their rights. There were less than one third of patients who benefited from the bill of rights (Figure 1). The most known rights were: 1) "Be discharged as recommended by the doctor with appropriate medications, follow-up appointments, and required education/ information"; 2) "Receive compassionate and respectful care". The least known right was "Be able to refuse to take part in any proposed research. Such refusal or withdrawal will have no effect on care delivered" (Table 2). The level of patients awareness increased significantly ($p<0.05$) as the level of education increased (Table 3).

Differential Patients' Awareness Findings:

It was found that non Saudis know more about their rights than Saudis citizens (Table 4). Most of the non Saudis have university and above educational degrees. Table 5 showed that most of Saudis patients recruited randomly for the present study had high school level of education or below.

With regard to the differential Patients' awareness based on the region, it was found that patients reside in Riyadh know more about their rights than those who live outside Riyadh (Table 6). Perhaps this is attributed to the fact that those patients who live in Riyadh are more educated than those who don't live in Riyadh (Table 7). It was remarkable to note that patients who have been admitted for more than 30

days become more aware of their rights than those who spent less time in the hospital (Table 8).

DISCUSSION

The major findings of the present study emphasize that hospitalized patients' awareness of their rights is low in the governmental hospital in Saudi Arabia mainly due to lower level of university degree education. It should be pointed out that lower educational level would require careful clarification by health care professionals while working with patients. Although this issue may be directed by improving the relationship between patients and health care professionals, yet many of the workers are not native Arabic speakers. This issue may be resolved by having an interpreter to ensure that patients able to understand or at least know about their rights, especially with those patients with low level of education. According to the study done in Turkey in 1998, only 9% of patients were aware of their rights [12]. This was mainly due to lack of education to patients and health care professionals about patients rights [12]. Another study in Turkey in 1998 showed that 23% of patients know about their rights, which shows differences in the educational levels categories [15]. The latter study together with the study performed at KSMC and the study in Riyadh in 2010 in primary health care centers have similar results to the study herein reflected a similar education level [15, 17, 18]. On the contrary the study that was conducted in Malaysia showed that 90.8% of patients were aware of their rights because of the increase use of information technology and educational level [13, 18, 19]. Clearly educational level impacts patients' ability to read, understand, comprehend and apply information provided. These observations lead to introduce new concepts with regard to patients' awareness of their right know as the "differential awareness" inducted by educational process.

The second major finding of the present study is higher differential patients' awareness of foreign patients, as compared to Saudi citizens. The ministry of labor in Saudi Arabia attempt hard to implement the hiring policy saudinization which limit job opportunity for foreigners, unless they have educational degrees above bachelor degrees. Therefore it is expected foreign pats recruited for this study came from higher level of education pool, foreign pool. These findings also in introduce new concepts with regard to patients' awareness of their right know as the "differential awareness" inducted by educational process, secondary to population migration.

It is believed that the media should have an effective role in educating patients about their rights, though may be difficult to be implemented in Saudi Arabia because of cultural issues that may be resolved as time goes, as evident by the extraordinary and tremendous governmental expenditure and outstanding efforts to spread out higher education institutions in order to improve Saudis' educations levels.

Table 1: Awareness of patients about their rights

Do you know of the existence of an official list of patients rights?	**No.**	**%**
Yes	65	30.7
No	147	69.3

Table 2: Patients awareness of their rights

The patient has the right for the following:	**Yes**		**No**	
	F	**%**	**F**	**%**
1. Receive compassionate and respectful care.	201*	94.8	11	5.2
2. Be cared for by qualified competent staff and to be seen by a specialized consultant.	183	86.3	29	13.7
3. Be kept fully informed of his/her diagnosis and treatment plan.	190	89.6	22	10.4

(Cont...) Table 2: Awareness of patients about their rights

4. Receive all necessary information to allow informed consent to be given for all medical interventions.	187	88.2	25	11.8
5. Be informed of the effects on his/her health if he/she refuses treatment.	179	84.4	33	15.6
6. Be able to comment on and discuss the care and services he/she is receiving.	174	82.1	38	17.9
7. Be assured of privacy and confidentiality with regard to medical and social information.	187	88.2	25	11.8
8. Be able to refuse to take part in any proposed research. Such refusal or withdrawal will have no effect on care delivered.	165**	77.8	47	22.2
9. Be discharged as recommended by the doctor with appropriate medications, follow-up appointments, and required education/ information.	204*	96.2	8	3.8
10. Be provided with a medical report summarizing his/her medical condition and course during admission.	178	84.0	34	16.0
Total	1848	87.1	272	12.9

*The most known rights. **The least known rights.

Table 3: Relation between education level and the knowledge of existence of an official list of patients rights

			Do you know of the existence of an official list of patients rights?		Total
			Yes	No	
Education level	illiterate & literate without certificate	Count	8	33	41
		% within Do you know of the existence of an official list of patients rights?	17.9%	82.1%	100%
	School	Count	33	76	109
		% within Do you know of the existence of an official list of patients rights?	29.9%	70.1%	100%
	University & above	Count	25	37	62
		% within Do you know of the existence of an official list of patients rights?	40.3%	59.7%	100%

Table 4: Differential Awareness of Based on Nationality

			Do you know of the existence of an official list of patients rights?		Total
			Yes	No	
Nationality	Saudi	Count	59	139	198
		% within Nationality	29.8%	70.2%	100%
	Non-Saudi	Count	6	8	14
		% within Nationality	42.9%	57.1%	100%

Table 5: Differential Awareness Based on Nationality and education levels.

			Education level			Total
			illiterate & literate without certificate	School	University & above	
Nationality	Saudi	Count	39	104	53	196
		% within Nationality	19.1%	53.6%	27.3%	100.0%
	Non-Saudi	Count	2	3	11	16
		% within Nationality	14.3%	21.4%	64.3%	100.0%

Table 6: Differential Awareness Based on Knowledge about the Existence of an Official list of Patients' Rights

			Do you know of the existence of an official list of patients rights?		Total
			Yes	No	
Residency	In Riyadh	Count	45	85	130
		% within Residency	34.6%	65.4%	100.0%
	Outside Riyadh	Count	20	62	82
		% within Residency	24.7%	75.3%	100.0%
Total		Count	65	146	212
		% within Residency	30.8%	69.2%	100.0%

Table 7: Differential Awareness Based on Residency and Education level

			Education level			Total
			illiterate & literate without certificate	School	University & above	
Residency	In Riyadh	Count	22	64	44	130
		% within Residency	16.4%	49.2%	34.4%	100.0%
	Outside Riyadh	Count	18	45	19	82
		% within Residency	21.5%	55.7%	22.8%	100.0%
Total		Count	38	107	62	212
		% within Residency	18.4%	51.7%	30.0%	100.0%

Table 8: Differential Awareness Based on length of stay and number of known rights

	Duration	N	Mean	Std. Deviation	Std. Error Mean
Scores	Up to 30 days	188	8.6486	1.98385	.14586
	More than 30 days	24	9.2857	1.23056	.26853

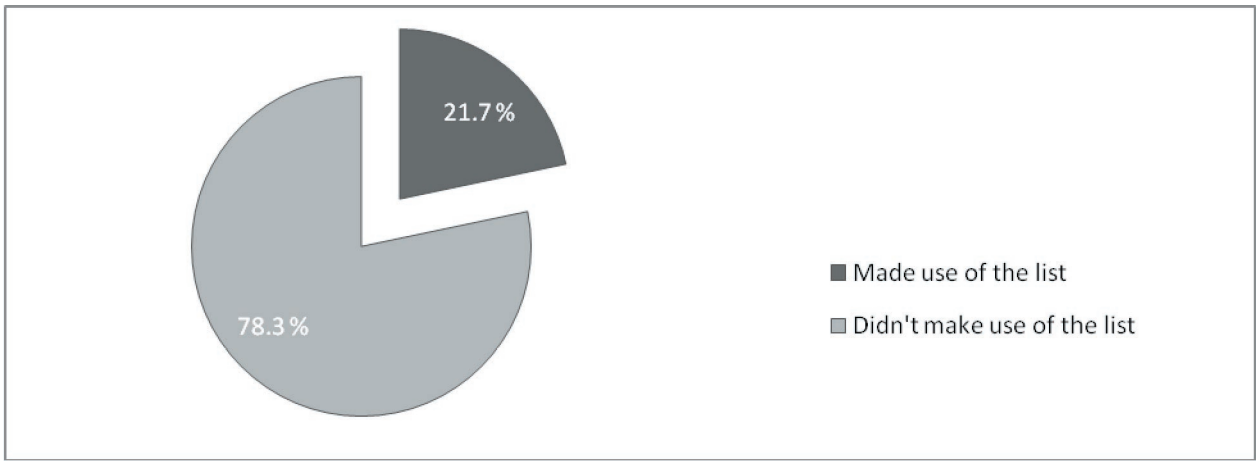

Figure 1: Percentage of patients benefited from the bill of rights of the total sample (212 patients)

CONCLUSION

Based on the results of the present study it can be concluded: 1) most of hospitalized patients in medical and surgical wards are not aware about their rights; 2) Non Saudi patients have higher level of awareness; 3) Patients who reside in Riyadh City have higher level of awareness than those patients who live in rural regions.

RECOMMENDATIONS

Providing patients with multiple methods to explain patients rights in accordance with their needs or preferences, such as papers, monitors and audio notes or given to the patients directly should be used. Additionally, there should be a focus on educating patients with an education level less than university. The media should support the patients awareness of their rights by using different methods; for example, TV, Radio, Newspapers, websites and social networks including ; Twitter, Facebook, etc. Finally, health care personnel should be advocates for patients' rights.

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Declaration of Interest: The authors have no conflict of interests to declare.

Ethical Clearance: The study protocol was approved by the Institutional Review Board (IRB) during.

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A Study on Socio Demographic Profile of Adult Female Smokers in Rural Areas of Srikakulam District, A.P.

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ABSTRACT

Background: Female smokers in India has gone up in the last 30 years but the number of men who puff daily dipped in the country where more people are smoking today, smoking among Indian men fell from 33.8% to in 1980 to 23% in 2012 while women in 2012 a total of 12.1 million women smoked in India, compared to 5.3 million female smokers in 1980 while the prevalence of male smokers was estimated to be 98 million in the same year.

Objectives:

1. To study the socio demographic profile of rural female smokers.
2. To find out reasons for smoking among rural females.

Materials & Method: A community based cross sectional descriptive study was conducted among 176 adult female subjects in three villages of Srikakulam Rural Mandal, Data regarding socio demographic profile, personal habits, reasons for smoking and health profile will be collected by interview method from 01-05-2014 to 31-05-2014 (1 month). IEC clearance was taken and data was analyzed with EXCEL 2007.

Results: Among female smokers, age of starting of smoking <15 years was 57.96% . House wives were 53.67%, Agricultural labour were 30.68% and 15.34% were other labour. Illiterates were 94.88% and 5.12% were primarily educated. 98.86% females were smoking chutta and 1.37% females were smoking cigarette. 59.66% smoke after taking meals, 10.79% to cheer up, 10.23% smoke to get relief from boredom.

Conclusion:- Smoking among females constitute high risk group requires special attention.

Keywords: *Rural, Female, Smoking, Reasons.*

INTRODUCTION

Female smokers in India have gone up in the last 30 years but the number of men who puff daily dipped in the country [1]. Smoking among Indian men fell from 33.8% to in 1980 to 23% in 2012[1].

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While women in 2012 a total of 12.1 million women smoked in India compared to 5.3 million female smokers in 1980[2].Smokers in India also consumed an average of 8.2 cigarettes per day. United States had 14.3% women smokers followed by Russia and Nepal (both 16.9%) Pakistan (5.4%), India (3.2%).India is currently in the phase 2 of tobacco epidemic, which follows a cyclical pattern. While there are male smokers, women smokers follow the trend in this phase, the prevalence of overall tobacco use among men as 47% and women 21% in the country [2].

OBJECTIVES

- To study the socio demographic profile of rural female smokers.
- To find out reasons for smoking among rural females.

Study Design and Setting:

- Community based cross sectional descriptive study conducted at three villages of srikakulam rural mandal.

Study Subjects and Sample Size:

Srikakulam rural mandal consists of 34 villages, all the 34 villages were arranged in alphabetical order and then 3 villages were picked up by simple random sample method. Among the three villages all female adult smokers were identified with the help of health workers, 176 adult female smokers were identified in 3 villages.

Sample size:

- Sample size–176 subjects.

Inclusion criteria:

- All adult females who were smoking for at least one year.

Exclusion criteria:

- Less than one year smokers were excluded from study.

Study period:

- From 01-05-2014 to 31-05-2014 (1 month).

Study tools:

- A predesigned and pretested questionnaire was used to gather information about socio demographic profile, personal habits, reasons for smoking and health status of the study population.

Data Collection:

- After taking oral consent data was collected by interviewee method and collected information will be kept confidential.

Ethical Consideration:

- The proposal was forwarded to and subsequently cleared by the institutional ethical committee.

Statistical Analysis:

- Data was entered and analyzed with EXCEL 2007.

Table-1: Age wise distribution of rural female population

Age	Female population	Percentage
40-50	34	19.32%
51-60	50	28.41%
61-70	74	42.05%
70 above	18	10.23%
Total	**176**	**100%**

Table-1 depicts age wise distribution of rural female population, 42.05% belongs to 61-70 years, followed by 28.41% in 51-60 years age group.

Table-2: Socio Economic Status wise distribution of female smokers

Socio Economic Status	Female population	Percentage
Class - I	1	0.56%
Class - II	2	1.1%
Class – III	3	1.7%
Class - IV	12	6.8%
Class - V	158	89.77%
Total	**176**	**100%**

Table-2 depicts that 89.77% were in Class – V followed by 6.8% in Class – IV AS PER B.G. Prasad Classification.

Table-3: Education wise distribution of Rural female population

Education	Female population	Percentages
Illiterate	167	94.88%
Primary	9	5.12%
Secondary	0	0%
Inter	0	0%
Degree/Professional	0	0%
Total	**176**	**100%**

Table-3 shows that 94.88% were illiterates fallowed by 5.12% females were primary educated.

Table-4: Age of starting of Smoking among Rural Females

Age	Female population	Percentage
<15 Years	102	57.96%
>15 Years	74	42.04%
Total	**176**	**100%**

Table-4 Age of starting of smoking depicts that 57.96% of females started smoking at the age of <15 years.

Table-5: Type of smoking product wise distribution of female's smokers

Type of product	Female population	Percentage
Beedi	0	0.0%
Cigarette	2	1.37%
Filter less cigarette	0	0.0%
Chutta	174	98.86%
Pipe	0	0.0%
Total	176	100%

Table-5 depicts that 98.86% females were smoking chutta followed by 1.37% females were smoking cigarette.

Table-6 Knowledge of ill effect of smoking

Diseases	Female population	Percentage
COPD	4	2.27%
Mouth Ulcers	0	0.0%
Lung cancer	100	56.81%
HTN	3	1.71%
Mouth Cancer	0	0.0%
Don't Know	69	39.21%
Total	176	100%

Table-6 depicts that 56.81% were aware that smoking causes the Lung cancer, 2.27% said COPD, 1.71% said HTN and 39.21% said that they were not aware of smoking ill effect.

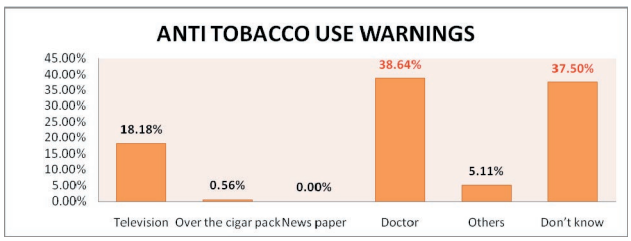

Chart-1: Antitobacco use warnings

Chart-1, The bar chart depicts that the Anti tobacco use warnings, 38.64% were had warnings from doctor followed by 18.18% from television, 5.11% from others and 37.50% don't know about warnings on smoking.

Table-7: Reasons for smoking among Females

Reason	Female Population	Percentage
Relives Stress	1	1%
Cheer up	19	10.79%
Relives Anxiety	0	0.0%
Relives boredom	18	10.23%
After meals	105	59.66%
When at home	10	5.68%
Relaxing	6	3.41%
When drinking Alcohol	0	0.0%
When around other users	7	3.98%
More than one option	10	5.68%
Total	176	100%

Table-7 depicts that 59.66% smoke after taking meals, followed by 10.79% to cheer up, 10.23% smoke to get relief from boredom, 5.68% when in home, 3.41% for relaxation and 1% to get relief from stress.

DISCUSSION

In my present study, the illiterates were 94.88% who were the majority smokers because of their ignorance. My study correlates with the study conducted by Satyanarayana Gavarasana, Prasad VSNR etal[8] on illiteracy, ignorance and willingness to quit smoking among villagers in India concluded that majority of the female smokers were illiterates (63%).

In present study regarding anti tobacco use warning 38.64% had warning from doctors, 18.18% known warning from television and 37.50% don't know about warning, my study correlates with the study concluded by S. Kathirvel, JS Thakur, S Sharma etal[7] on women and tobacco: A cross sectional study from North India and they concluded that majority of the females know about anti tobacco warning from doctor, television, radio, advertisements and nurses.

In present study regarding knowledge on ill effects of smoking 56.81% were aware that smoking causes lung cancer, 2.27% were aware that smoking causes COPD, 1.71% aware about HTN and 39.2% don't know about ill effects of smoking. My study correlates with the study conducted by Yaseenjan, Rafiquir etal[9] on Tobacco smoking in adults: A cross

sectional study from a rural area of Kashmir.

Regarding reasons for smoking among females, 59.66% smokes after taking meals, 10.23% smokes to get relief from boredom, 5.68% smokes when they are at home, 10.79% smokes to get cheer up. The present correlates with the study conducted by S. Kathirvel, JS Thakur, S Sharma etal[7] on women and tobacco: A cross sectional study from North India.

CONCLUSIONS

- 42.05% female smokers were in 61-70 age group followed by 28.41% in 51-60 yrs.
- 94.88% smokers were illiterates.
- 53.97% were house wives and 30.68% were agricultural laborers.
- 57.96% started smoking at <15yrs age group.
- Reasons for smoking were,59.66% smokes after meals, 10.23% said when boredom,10.74% to cheer up.

RECOMMENDATIONS

- IEC activities must be strengthened.
- Smoking cessation programmes must be organized in rural communities.
- Health education campaigns among adolescents regarding smoking ill effects must be frequently organized through Anganwadi centers.

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Conflict of Interest – Nil

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Choriocarcinoma Presenting as Intracerebral Hemarrhage and No Evident Primary : A Rare Presentation

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ABSTRACT

Choriocarcinoma is the most malignant tumor of gestational trophoblastic neoplasia. It grows rapidly and metastasizes to the lung, liver, and, less frequently, to the brain. One rare case of metastatic cerebral choriocarcinoma with initial presentation of intracerebral hemorrhage is reported. Our patient had metastasis to brain and lung with no evidence of genital disease. She has received systemic as well as intra-thecal chemotherapy, her β-HCG levels have come down, and she is on follow-up.

Keywords *: Choriocarcinoma, intracerebral hemorrhage, Unknown primary.*

INTRDUCTION

Our patient was 30 yr old female with two living issues. She had history of abortion 2 months back and she presented to emergency room with subacute weakness of right side with sudden worsening. Brain imaging revealed hemorrhagic metastasis and her β-HCG levels were high and her CAT scan of pelvic organs was normal. Few cases have been reported with metastatic choriocarcinoma with no evidence of primary genital disease.

CASE REPORT

30 year old female presented to us with 15 days history of gradually increasing weakness of right side of body and 3 days history of loss of speech, headache and vomiting. She had two living issues and history of one spontaneous abortion one years back. She had delivered a dead baby two months back (due to abruption placenta). 2o days after delivery she had undergone drainage of vaginal wall hematoma (histopathology examination of drained material was not done). On examination she had GCS 11/15 , pulse 72/min , BP 120/80 and mild pallor. Her neurological examination revealed right complete hemiplegic and fundus was normal. Her chest x-ray revealed right lower zone opacity (fig 1)and CAT scan of brain revealed a 5 x 4 cm hemorrhagic mass in the left parieto-temporal area with vasogenic edema (fig 2). Contrast enhanced CAT scan of chest revealed multiple soft tissue densities in both lungs suggestive of metastasis and mediastinum was normal (fig 3). An MR image of brain revealed a hematoma in left parieto-temporal area. Because she was of childbearing age we suspected a gestation trophoblastic neoplasia, her blood was checked for β-HCG, which was positive (8543.5 mIU/ml). Her ultrasound and CAT scan of abdomen and pelvis revealed no definitive primary lesion in the uterus. So a final impression of Choriocarcinoma with metastasis to lungs and brain with tumor bleed was made. The patient was in the high-risk group (> 12 score) according to the WHO classification of the gestational trophoblastic disease. Patient was given decongestive therapy and other supportive treatment and was shifted to Medical Oncology side where she received first cycle of Chemotherapy (EMA-CO). After receiving first cycle of chemotherapy she left hospital against medical advise , she was admitted again after 3 months with severe headache, nausea, vomiting, progressive somnolence and weakness of other side of body (i.e.; left side) ,CECT head was repeated

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which revealed right parietal lobe hemorrhage with intraventricular extension and hydrocephalus with multiple ring enhancing lesions in both cerebral hemispheres with significant perilesional edema with mass effect (suggestive of metastasis)(fig 4 & 5). Her blood β-HCG was 94366 mIU/ml (normal < 5 mIU/ml) and CSF β-HCG level of 2596 mIU/ml (<0 .4 mIU/ml). Her serum / CSF β-HCG ratio was 36 (< 60:1 is suggestive of brain metastasis) . She was again started on chemotherapy (EMA-CO) along with whole brain irradiation and intrathecal methotrexate. So far she has completed three cycles of chemo-radiotherapy and her β-HCG levels have come down to 1500 mIU/ml.

DISCUSSION

The gestational trophoblastic disease includes : hydatiform mole that is a hydropic degeneration of chorionic villus, the invasive mole which is locally invasive, and choriocarcinoma that is highly malignant neoplasm composed of biphasic cellular components of mononuclear cytotrophoblasts and multinucleated syncytiotrophoblasts. Gestational choriocarcinoma is a highly malignant epithelial tumor arising from the trophoblasts of any type of gestational event. Abnormal uterine bleeding is most frequent symptom. Its incidence is 1 in 50000 live births after normal pregnancy and 1 in 30 after complete hydatiform moles [(1)]. Maternal age is a well established risk factor with both young (< 20 yrs) and old age (>35 yrs) being a risk factor for GTN[(2)]. A history of previous episode of GTN also increases the risk in subsequent pregnancies[(3)]. The disease is more common in Asian countries, with an incidence rate of one per every 2,000 pregnancies. The reviewed databases only include 150 cases of choriocarcinoma that show brain and pulmonary metastasis[(4)].

Approximately 30% of the patients with choriocarcinoma show metastasis on diagnosis and only few cases have been reported all over world who presented as intracranial Haemarrhage. In our case, it presented as intracranial parenchymal Haemarrhage and had spread to the lung and brain ; which occur in 50% and 10% of the cases, respectively. Other less common locations are the vagina (30%), liver and kidney[(5)].In these patients , however , cerebral metastasis is the major cause of death[(6)]. Choriocarcinoma with cerebral metastasis have been associated with intracerebral hematoma, embolic vascular occlusion, subdural hematoma, arterial aneurysm and a spinal epidural hematoma[(6)]. Brain metastasis are thought to arise from tumor emboli from the lungs as it is most uncommon for such lesions to arise in the absence of pulmonary metastasis. The trapped neoplastic cells, with a form of emboli in the cerebral circulation, have a predilection for invading the vessel wall, which can result in hemorrhage within the tumor, or partial disruption of the vessel wall that can lead to aneurysm formation and subsequent hemorrhage [(7)] . In the series reviewed, it was preceded by hydatiform mole in 60% of the cases, by previous miscarriages in 23%, primary in 5% and after full-term pregnancy in 10% of the cases[(7)]. In our case, the patients had delivered a dead fetus 2 months back and had a spontaneous abortion 2 years back. The diagnosis requires consistent clinical setting, β-HCG levels produced by syncytiotrophoblast and pathology with the presence of cyto- and syncytiotrophoblasts. B-HCG is necessary for the diagnosis, and is also useful for the follow-up in the detection of recurrence and as prognostic marker. There are different scales that allow for staging the tumor, as it is necessary to establish its extension, and this will allow for establishing the diagnosis and choice of the most appropriate approach for the case. Serum : CSF β- HCG ratio of less than 60 : 1 is a sensitive indicator of CNS metastasis. The WHO scale suggests that patients with scores over eight are considered a special high risk, and recommends starting therapy as soon as possible without ruling out the use of additional therapies such as surgery and radiation therapy[(8)]. Our patient had scored 13 points on this scale. The FIGO and TNM classification of the AJCC are other valuable classification scales[(9)]. A mitotic index over six, distant metastasis, endometrial invasion and diagnosis two years after childbirth are poor prognostic factors in the disease [(6,7)].

Our case was rare for several reasons . First, the patient had no history of molar pregnancy. Second, no primary focus was found. According to the literature, metastatic choriocarcinomas have been reported without evidence of choriocarcinoma in the pelvic cavity, suggesting that pelvic

choriocarcinoma can regress after metastasis. Third, she had metastasis to the both lung and brain. Fourth, she presented as intracranial hemorrhage.

The treatment of choriocarcinoma consists of polychemotherapy, including regimens that have generally shown to be beneficial with acceptable cure rates and low recurrences. Treatment with the EMA-CO regimen (etoposide, methotrexate, actinomycin/cisplatin-vincristin) in a study performed by Bolis et al showed a 32- month survival of 88%, in patients at a high risk [10]. Swisher et al reported 28% complete remissions in their study[11]. Other options are BEP (bleomycin, etoposide and cisplatin) and VIP (vinblastin, iphosphamide and cisplatin) that are considered as second line options in cases of recurrences of disease progression[12].

The role of adjuvant radiation therapy have also been reported; some authors recommend holocranial irradiation with 30-40 Gy concomitantly with chemotherapy in the case of brain metastasis[13] .In a study of 78 patients with choriocarcinoma and brain metastasis, a survival of 50% in the group treated with radiation and chemotherapy, vs. 24% in those receiving chemotherapy alone. Surgery is considered a second option in patients with local, chemotherapy resistant metastasis and in recurrences[13] .

Figure 1 : chest x-ray revealing right lower zone opacity.

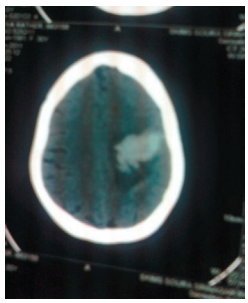

Figure 2 : CAT scan of head revealing left parieto-temporal hemorrhage with perilesional edema and significant mass effect.

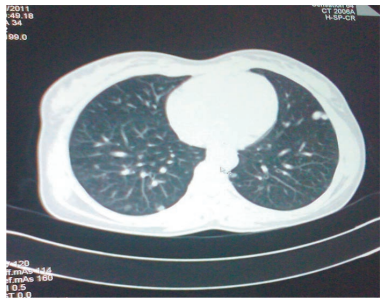

Figure 3 : Contrast enhanced CAT scan of chest showing multiple soft tissue densities suggestive of metastasis.

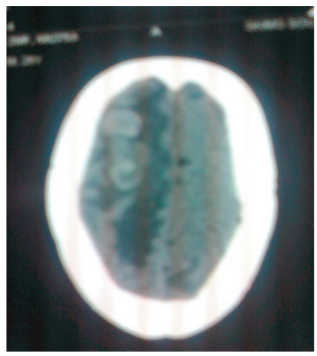

Figure 4: CAT scan of head showing right parietal lobe hemorrhage with ventricular extension with dilated occipital horns of lateral ventricles.

Figure 5: Contrast enhanced CAT scan of head revealing multiple ring enhancing lesion with perilesional edema and significant mass effect.

CONCLUSION

Choriocarcinoma is an important cause of hemorrhagic metastasis to brain. This is especially true for womens in reproductive age group and who have conceived recently irrespective of results i.e.; abortion, normal baby or stillbirth. So one should always suspect and evaluate for gestational trophoblastic disease in womens with hemorrhagic metastasis to brain.

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Conflict of Interest: Nil

Source of Funding: Self

Ethical Clearance: We have taken permission from our institutional ethical committee for publishing this case.

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Assessment of Psychopathoogy in Patients Presenting with Chronic Itch in a Teriary Care Hospital in Eastern India

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ABSTRACT

Background: Chronic itch patients often have co-morbid psychopathologies which have significant contribution to patient sufferings. **Aim:** To assess prevalence of different psychiatric disorders as per DSM-IV, in patients with chronic itch. To compare the psychopathological profile among different subgroups of patients presenting with chronic itch. **Method:** Total 100 patients with chronic itch were divided into 4 groups. Group-1: With primary Dermatological lesion, having a DSM-IV diagnosis, Group-2 With primary Dermatological lesion, not having a DSM-IV diagnosis, Group-3:Without primary Dermatological lesion, having a DSM-IV diagnosis , Group-4: Without primary Dermatological lesion, not having a DSM-IV diagnosis. They were assessed for different psychopathology. **Result:** 32% of all chronic itch patients fails GHQ cut-off who on applying MINI-2005, detected to be suffering from major depressive disorder, dysthymia current, generalized anxiety disorder, psychotic disorder. Among GHQ failed patients, itch duration is negatively correlated with years of education and positively correlated with GHQ anxiety, GHQ depression,GHQ social dysfunction. Among GHQ failed patients, all the domains of GHQ-28 (somatic symptoms, anxiety and insomnia, social dysfunction and depression) are positively correlated with one another and also with HAM –A and HDRS scales. **Conclusion:** These psychopathologies eg mainly anxiety and depression affect the course and outcome of dermatological symptoms but are often overlooked. Overall prognosis will be improved if these psychopathologies are evaluated and managed properly.

Keywords: *Chronic itch, Psychopathology, Dermatology.*

INTRODUCTION

Skin is the largest organ of the body. A person may use the skin to communicate emotional distress [1, 2.]. Itch is the most frequent symptom in dermatology and has been researched more extensively in recent years. Chronic itch (itch more than 6 weeks) may occur due to organic and non-organic causes. Among organic causes are skin disorders e.g. Psoriasis, atopic dermatitis, chronic idiopathic urticaria etc, hematological disorders, infectious diseases eg HIV, endocrine diseases e.g. diabetes mellitus, biliary disease e.g. cholestasis, malignancy, uraemia on hemodialysis etc.[3]. Non-organic causes include psychogenic pruritus, psychogenic excoriation etc[3].

The prevalence of itch in this population was

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8.4%; this was the most prevalent of all reported skin symptoms. In one large study, itch was present in 8.4% of population, thus being the most prevalent skin symptom[4]. Women reported more itch than men (11.9% and 9.6%, respectively). Itch is more prevalent among individuals with lower socio-economic status and lower household income[5]. As for other health outcomes, the report of itch has strong social determinants[5,6,7]. Low socio-economic status and different health behaviour and lifestyle among immigrants may be important contributing factors[8,9,10,11].

AIMS AND OBJECTIVES OF THIS STUDY

1. To assess and compare prevalence of different psychiatric disorders applying Mini international neuropsychiatric interview -2005, in patients with chronic itch, dividing them in different groups according to dermatological profile and psychiatric caseness (according to GHQ-28)

2. To compare the psychopathological profile (anxiety, depression, obsession and compulsion) among different groups of patients presenting with chronic itch and assess if they have any correlation with clinical variables.

MATERIALS & METHOD

1. STUDY POPULATION- Initially 160 patients (80 in each group) attending tertiary care institution in Eastern India with chronic itch, were selected by consecutive purposive sampling over 1 year. Among them 100 patients (50 in each group) were selected randomly using a computer generated random number chart. It was a cross sectional, out-patient department based study.

Inclusion Criteria- Patients >18 years presenting with itch for more than 6 weeks.

Exclusion Criteria - Patients with history of any substance abuse other than nicotine, h/O liver/kidney/ hematological disease within past 1 yr, uncontrolled diabetes mellitus/thyroid disease, any other active organic cause (other than dermatological causes) of chronic itch, as diagnosed by senior dermatologist.

PARAMETERS TO BE STUDIED

A) To assess anxiety, depression, obsession and compulsion and any other psychopathology using study tools (different psychopathologies in patients with chronic itch due to different causes using:

1. General Health Questionnaire (GHQ)-28.
2. Mini international neuropsychiatric interview (MINI)- 2005.
3. Hamilton Anxiety Rating Scale (HAM-A).
4. Hamilton Rating Scale for Depression (HAM-D).
5. Yale-Brown Obsessive Compulsive Scale (YBOCS)

B) To compare psychopathologies among different groups of patients, presenting with chronic itch.

STUDY TECHNIQUES- Initially, two groups, each having 80 patients each, with itch more than six weeks attending tertiary care institution in Eastern India. One group consists of patients with some primary dermatological diagnoses and another group with no primary dermatological diagnoses. From each group 50 patients were selected randomly and then examined thoroughly. Valid consent were taken from 160 patients. Dermatological and socio-demographic data were collected as per semi-structured proforma. All of them were assessed for psychiatric caseness by using General Health Questionnaire-28.

Four groups were created –

1) Group-1: with primary dermatological lesion, fails GHQ cut-off
2) Group-2: with primary dermatological lesion, does not fail GHQ cut-off
3) Group-3: without primary dermatological lesion, fails GHQ cut-off
4) Group-4: without primary dermatological lesion, does not fail GHQ cut-off.

Patients included in group 1 and 3 were analyzed with MINI, HAM-A

HAM-D and YBOCS.

STATISTICAL ANALYSIS

To measure, compare and correlate different psychopathologies in patients presenting with chronic itch following statistical methods were applied: Chi – square test, student t test, Pearson's correlation , SPSS 16.0 version.

RESULTS & ANALYSIS

Clinical Profile of Patient: Proportion of patients in each group was 14% in group 1, 58% in group2, 18% in group 3, 10% in group 4.

Among group 1 and group 3 who fail GHQ cut-off (total 32 patients), MINI was applied and most common disorder found was major depressive disorder (14 patients) followed by dysthymia (10 patients) (Table- 1).Chi- square test applied and significant difference in proportion found among MINI diagnosis of these 2 groups.(x^2 =13.648, p< 0.05) .

Characteristics of itch also studied among various groups which revealed statistically significant results. It was seen that increase of itch in stress (p< 0.001, x^2= 19.785) (Table- 2), response of itch to psychiatric treatment (p< 0.005, x^2= 20.367) (Table- 3) were significantly more in group 1 and group 3 (who fail GHQ cut-off).

Response of itch to dermatological treatment was also significantly different (p<0.05, x^2= 14.351) with group 1 and group 2 having maximum response (Table- 4).

CORRELATIONAL STATISTICS

Pearson correlation statistics (Table- 5) were applied among different variables in patients who fail GHQ cut-off (group 1 and group 3). Significant correlation were found among:

(a) Itch duration and size of skin lesion (p< 0.05), GHQ anxiety (p<0.05), GHQ social dysfunction (p<0.05),GHQ depression(p<0.001)and GHQ total scores (p<0.001),

(b) Duration of continuation of itch in hours once started and GHQ somatic symptoms (p< 0.05), GHQ depression (p<0.001), GHQ total scores (p<0.001), HDRS total scores(p<0.001)

(c) GHQ Somatic symptoms and GHQ social dysfunction (p<0.001), GHQ depression(p<0.005), GHQ total scores(p<0.001), HDRS total scores(p<0.05)

(d) GHQ anxiety and insomnia symptoms and GHQ depression (p=0.005),GHQ total scores(p< 0.001), HDRS total score (p< 0.05), HAM total scores(p< 0.001),

(e) GHQ social dysfunction and GHQ depression (p< 0.05),GHQ total scores (p<0.001), HDRS total scores(p< 0.05)

(f) GHQ depression scores and HDRS Total scores (p < 0.005),

(g) HDRS total scores and Total HAM scores (p< 0.01)

TABLES & FIGURES

Table 1 : Distribution of psychiatric cases among group 1 and group 3 patients according mini- 2005

		Groups		Total
		Group 1	Group 3	
Mini diagnosis	No dx	0	2	2
	Dysthymia current	4	6	10
	Major depressive episode	10	4	14
	Hypomanic episode	0	1	1
	Psychotic disorder	0	2	2
	Genaralised anxiety disorder	0	3	3
Total		14	18	

Chi-Square Tests is significant 10.638 (>5)

Table 2: Does itch increse in stress – difference in proportions

		Groups				Total
		Group 1	Group 2	Group 3	Group 4	
Does itch increse in stress	No	8	56	14	10	88
	Yes	6	2	4	0	12
Total		14	58	18	10	100

Chi-Square significant19.7 (>5)

Association of stress and itch among GHQ failed patient is significant (p value .034)

Table 3: If itch responds to psychiatric treatment – difference in proportions

		Groups				Total
		Group 1	Group 2	Group 3	Group 4	
If itch responds to psychiatric treatment	No	0	2	0	2	4
	Yes	0	0	4	0	4
	Not done	14	56	14	8	92
Total		14	58	18	10	100

Chi-Square test is significant 26.727 (>5)

Table 4: If Itch Respond To Dermatologic Treatment – Difference In Proportions

		Group				Total
		Group 1	Group 2	Group 3	Group 4	
If itch responds to dermatologic treatment	No	0	2	2	4	8
	Yes	14	54	16	6	90
	Not done	0	2	0	0	2
Total		14	58	18	10	100

Chi-Square is significant 18.3 (>5).

Table 5: Correlational statistics in ghq- failed patients (group 1 and group 3)

		Size of skin lesions in milimeters	Ghq 28 somatic symptoms	Ghq 28 anxiety & insomnia symptoms	Ghq 28 social dysfuntion	Ghq 28 depression	Ghq-28 total scores	Hdrs total scoree	Total ham scores	Ybocs total scores
Size of skin lesions in milimeters	Pearson correlation	1	-.028	.475	.086	.245	.270	.547	.409	.141
Ghq 28 somatic symptoms	Pearson correlation	-.028	1	.080	.614	.494	.681	.358	.259	.250
Ghq 28 anxiety & insomnia symptoms	Pearson correlation	.475	.080	1	.295	.480	.641	.384	.584	-.080
Ghq 28 social dysfuntion	Pearson correlation	.086	.614	.295	1	.411	.770	.357	.161	-.084
Ghq 28 depression	Pearson correlation	.245	.494	.480	.411	1	.849	.512	.058	-.187
Ghq-28 total scores	Pearson correlation	.270	.681	.641	.770	.849	1	.55	.314	-.087
Hdrs total	Pearson correlation	.547	.358	.384	.357	.512	.552	1	.461	-.165
Total ham scores	Pearson correlation	.409	.259	.584	.161	.058	.314	.461	1	.299
Ybocs total scores	Pearson correlation	.141	.250	-.080	-.084	-.187	-.087	-.165	.299	1

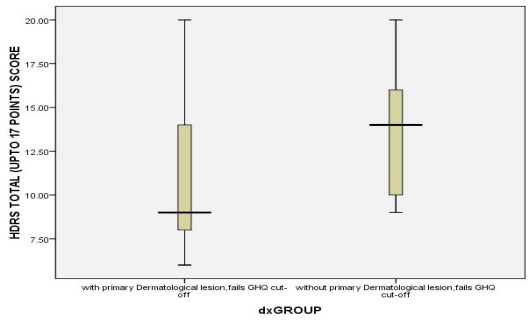

Figure 1: Boxplot showing total hdrs scores in GHQ-Failed Groups

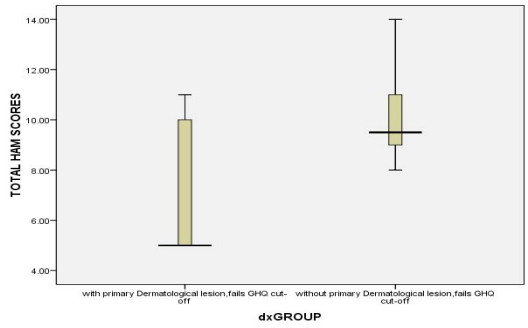

Figure 2: Boxplot showing total ham-a scores in GHQ-Failed Groups

DISCUSSION

This institution based cross- sectional study conducted at dermatology OPD tertiary care institution in Eastern India reveals different psychiatric co-morbidities associated with chronic itch and how they co-relate with each other and clinical factors.

PSYCHIATRIC CASENESS IN ITCH PATIENTS

Clinical data shows patients who fail GHQ cut-off are 32% of all patients indicating that they have some kind of psychological or emotional problems. This matches with most of previous studies [1,2] .

PSYCHIATRIC DIAGNOSIS AND ITCH

Our study reveals psychiatric caseness in 32% cases. Like most other previous studies our study also reveals high prevalence of major depressive disorder and dysthymia among chronic itch patients. Among GHQ failed patients those without having primary dermatological diagnosis, have more anxiety and depression than their Group 1 counterpart (Fig 1&2).

In our study in group 1 patients having primary dermatological diagnosis, we found major depressive disorder and dysthymia only. But most other studies anxiety disorders, suicidality and sleep problems are very common [12].

ITCH CHARACTERISTICS IN DIFFERENT DIAGNOSTIC GROUPS

Group 1 and group 3 patients, who fail GHQ cut-off, show high prevalence (62.5%) of increase of itch with rest which again support the observation of French Diagnostic Group.

We also tried to find out if there is any association of severity of itch with stress. It was seen 12% of all patients feel that their itch increase with stress and there is significant differences ($p < 0.001$, $x^2 = 19.785$) in proportion among the four groups (Table 2).

More significantly, when we considered only the GHQ failed patients, 31.25% (N=32) of them responded positively. So, we can infer that patients who are more prone to psychiatric disorder, feel more severe itch with stress than their GHQ-passed counterparts. Though very few studies done on influence of stressor on severity of itch, our result match with previous studies. All of them report increased itch with more perceived or actual stress .

RESPONSE TO TREATMENT

In our study, none of the patients who failed GHQ cut-off with primary dermatologic diagnosis, got any psychiatric treatment and only 4 patients (out of 18), who are without any primary dermatologic diagnosis received psychiatric treatment (table 3). This denotes lack of awareness among dermatologists about psychological co-morbidity in chronic patients and also stigma of psychiatric illness for which probably the group 3 patients avoided attending psychiatry OPD, even when referred.

When we assessed response to dermatological treatment, we found 90% of all patients respond to dermatological treatment. Response of itch to dermatological treatment was also significantly different ($p<0.05$, $x^2 = 14.351$) with group 1 and group 2 having maximum response.(Table- 4)

Surprisingly most of the patients who have no primary dermatological disease and fail GHQ cut-off (88.89%) also respond to dermatological treatment.

This is expected because all patients who scratch develop some secondary skin lesion. Placebo effect of dermatological drugs should also be considered here.

CORRELATION BETWEEN PSYCHIATRIC PARAMETERS AMONG GHQ FAILED PATIENTS

In our study size of skin lesion is positively correlated with anxiety($r = 0.409$, $p < 0.05$) and depression ($r = 0.547$, $p < 0.005$). Obviously, larger will be the lesion, more the patient will be anxious and depressed about the disease.

All the subscales of GHQ-28 eg somatic symptoms, anxiety and insomnia, social dysfunction, depression are highly correlated with one another as well as with HDRS and HAM-A. It is a common finding in all studies [12]. A patient who is anxious and depressed about a chronic skin disease will obviously score high in all above-mentioned scales and sub-scales as all focus mainly on anxiety and depression.

CONCLUSIONS

The study demonstrates a high prevalence of psychopathology (32%) among chronic itch patients. These patients attend dermatology OPD and most of them (90%) benefit partially from dermatological treatment.

Though they have a huge burden of psychopathologies eg mainly anxiety and depression and some psychotic disorders, which affect the course and outcome of dermatological symptoms, these are often overlooked.

Most previous studies were dermatological-disease specific and demonstrated huge burden of psychopathologies in chronic and recurrent dermatological disorders.

Our study was a generalized one in contrast to most previous studies and it also detected a significant number of itch patients of purely psychological origin. Overall prognosis will be improved if these psychopathologies are evaluated and managed properly.

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Conflict of Interest – None

Source of Funding- Self

Ethical Clearance – Proper clearance taken from ethical committee of the institution.

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Intervention for Breast Cancer Stress Marker as Global Women and Mental Health Concern Requiring Emotional Support- A Meta Analysis

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ABSTRACT

Background: Breast cancer is a major public health concern and the most common cause of cancer-related mortality among women. Stress hasn't definitively been proven to **cause** cancer; other research has suggested it can play a detrimental role. The damaging effect of stress is on a par with recently documented dangers of taking doubles the risk of breast cancer. Many women who have breast cancer often experience distress. Women with advanced breast cancer who have abnormal daytime levels of cortisol, a hormone released in response to stress are significantly more likely to die sooner than patients with normal levels of the hormone.

Objective: The purpose of this systematic review is to identify effective treatment for the increased cortisol level in breast cancer stress.

Materials and Method: Randomized clinical trials published between 1996 and 2013 that involved treatments to reduce the cortisol level among stressed breast cancer patients were selected for the systematic review. Jadad scale was used to check the methodological quality. RevMan 5.2 version was used for integrating the study results statistically. Three studies met the selection criteria.

Results: The estimate confirms that the nursing intervention reduces the stress and cortisol level among breast cancer patients.

Conclusions: This Meta analysis supports that nursing intervention plays a very important role in reducing stress marker.

Keywords: *Intervention, Breast cancer, Stress marker, Mental Health Concern, Emotional support, Meta analysis.*

INTRODUCTION

Public health data indicate that the global burden of breast cancer in women, measured by incidence, mortality, and economic costs, is substantial and on the increase.[12] The incidence of breast cancer is rising in India and is now the second most commonly cancer diagnosed in women after cervical cancer. It is estimated that in 2008 there were 115251 new cases of breast cancer with an age standardised incidence rate of 22.9 per 100000. It is estimated that by 2030 the number of new cases of breast cancer in India will reach just under 200000 per year. [1] Psychological stress has been correlated with breast cancer development in numerous epidemiological studies. [2] Despite the increasing survival rates however, breast cancer continues to be a stressful experience for those affected. [3] While breast cancer is a major stressor for any woman, there is great variability in women's emotional responses and their ability to mobilize the resources to cope with distress. However, although levels of distress tend to decrease over time, a

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subset of women with breast cancer remain highly distressed. [3, 4]

Cortisol and catecholamines not only provide an objective indicator of stress-induced HPA and SNS activity and a means by which stress may impact breast cancer progression via immune modulation, but also a means by which psychological stress may have direct influences on mammary epithelium and tumor vascularisation. [5] Women with advanced breast cancer who have abnormal daytime levels of cortisol, a hormone released in response to stress are significantly more likely to die sooner than patients with normal levels of the hormone. [6] Nurses can support the breast cancer women well by listening to them, accepting their emotions and informing them in detail. Therewith, they can convey a sense of security to the women and help them to maintain hope and the ability to deal with reality.[7] There is no shortage of literature for nurses interested in psychological aspects of breast cancer. Diagnosis and treatment of breast cancer are stressful events that can affect both short and long term functioning. Traditionally the primary focus of the role has been to provide support and information to breast cancer patients and their families. [8]

MATERIALS & METHOD

Search strategy: Electronic data base search for published trials were carried out using PubMed, Psychinfo, Science direct, Cochrane and Google Scholar. Uniform resource locator were used additionally to view Indian Journal of Palliative Care, Journal of Psychosocial Oncology, Journal of Korean Academy of Nursing, **European Journal** of **Oncology Nursing, Oncology Nurse Advisor,** Psychotherapy and Psychosomatics and **Integrative Cancer Therapies** by using key words breast cancer, stress, cortisol and nursing intervention. The search studies published between1996 and 2013 were selected for the Meta analysis. Grey literatures were not included as part of this review.

Study selection criteria: Studies published in peer reviewed English language journals were included. Randomized clinical trials predominantly included were nursing interventions after the diagnosis of breast cancer on stress and cortisol level.

Data extraction: All abstracts were reviewed systematically. After evaluation inclusion and exclusion criteria were designed. Out of 25 only 3 abstracts were selected for further evaluation. Studies eliminated were on the basis of 3 abstracts with no intervention, 5 studies designed under nonrandomized clinical trial, 9 abstracts based on alternative system of medicine and 5 studies in the field of non nursing.

Quality of the trail: Jadad scoring system revealed that the selected three studies secured high quality score with the average 4 out of 5.

Statistical analysis: Effect sizes were calculated for conducting the meta analysis by using the standardized mean difference (d). In this study random effects model was used for computing the mean effect sizes and I^2 test was used for assessing heterogeneity which is expressed in percentage. Odds ratio was used to compute the outcome comparison between experimental and control group.

RESULTS

Table 1 displays the studies included in the meta analysis. Comparison was made between 3 different interventions like Psychotherapy; Mindfulness based stress reduction and Mindfulness meditation programme as evident in table 2. All the 3 trails had reported significant positive outcome measure. Salivary cortisol level and NK cell function was also compared as shown in table 3. [9-11] Risk of bias was evaluated for the studies included in the meta-analysis. The elements that were studied for risk of bias included sequentially numbered opaque sealed envelope and allocation concealment.

Table- 1 : Studies included in meta-analysis

Author	Intervention	Participants	Methodology	Efficacy measure	Duration	Effect sizes (Confidence interval)
Hsiao FH et al [9]	Psychotherapy	48	Open RCT	Salivary cortisol level, Beck Depression Inventory-II (BDI-II), Meaning in Life questionnaire (MLQ)	8 weeks	0.034(-0.412 to 0.521)
Elisabeth Kenne Sarenmalm et al [10]	Mindfulness Based Stress Reduction	36	Blinded RCT	NK cell function, Hospital Anxiety and Depression Scale (HAD), Sense of Coherence scale (SOC), Memorial Symptom Assessment Scale (MSAS), Total Symptom Burden Scale (TMSAS), Global Symptom Distress Index (GDI), Health-related quality of life (HRQoL), International Breast Cancer Study Group Quality of Life Core Questionnaire (IBCSG QoL)	8 weeks	0.015(-0.353 to 0.347)
Kang G1, Oh S [11]	Mindfulness Meditation program	50	Open RCT	Salivary cortisol level, Perceived stress scale, Jalowiec coping scale	8 weeks	0.195(-0.503 to 1.066)

Effect size: Two comparisons were made with three Randomized controlled trail. The mean effect size of psychotherapy on salivary cortisol versus mindfulness stress reduction on salivary cortisol and NK cell function was 0.081 (CI of 0.422 to 0.644) based on cumulative sample of 134 with I^2 test of heterogeneity at 5.73. [9-11]

Displayed Table 1 Effect size interpretation states that Mindfulness Meditation program (0.195) was more effective than Psychotherapy and Mindfulness Based Stress Reduction on salivary cortisol level. Psychotherapy (0.034) on salivary cortisol level seems to be more effective than Mindfulness Based Stress Reduction (0.015) on NK cell function.

Table- 2 : Comparison of treatment in terms of nursing intervention

Study subgroup	Experimental arm protocol events	Control arm protocol events	Weight	Odds Ratio
Hsiao FH et al [9]	3	2	25.7%	0.37 (0.12, 1.35)
Elisabeth Kenne Sarenmalm et al [10]	2	2	19.5%	0.41 (0.35, 1.24)
Kang G1, Oh S [11]	1	2	17.6%	0.24 (0.29, 1.33)

Table 2 projects the comparison of 3 different nursing interventions. Based on the treatment protocol events, 3 protocol events stand for the weight 25.7% and odds ratio 0.37. 2 treatment protocol events stand next with weight 19.5% and odds ratio 0.41. Least with 1 treatment protocol event the weight stands 17.6% and odds ratio 0.24. When compared with 3 different nursing interventions, 3 protocol events were more effective than 2 and 1.

Table -3 : Comparison of salivary cortisol vs NK cell function

Study subgroup	In vivo and In vitro parameters	Weight	Odds Ratio
Hsiao FH et al [9]	Salivary cortisol higher level at 21.00 h ($p < 0.01$)	18.5%	0.29 (0.31, 1.45)
Elisabeth Kenne Sarenmalm et al [10]	NK cell function was measured using a newly developed assay called flow cytometric assay	21.8%	0.33 (0.11, 1.34)
Kang G1, Oh S [11]	Decreased salivary cortisol level, psychological stress response and perceived stress and emotional focused coping	15.4%	0.19 (0.18, 1.48)

Table 3 projects the comparison of salivary cortisol vs NK cell function. In vitro parameters were used to assess NK cell function with highest weight 21.8% and odds ratio 0.33. In vivo parameters were used to assess salivary cortisol level with weight 18.5% and odds ratio 0.29. Likewise the estimated weight 15.4% and odds ratio 0.19 stands for the in vivo parameters to check salivary cortisol level. From the estimated values NK cell function adds more objectivity for the stress markers along with salivary cortisol as a biomarkers.

DISCUSSION

There have been an increasing number of global health initiatives to address breast cancer including efforts for the Cure Breast Health Global Initiative (BHGI), the U.S. Centers for Disease Control and Prevention (CDC), the American Cancer Society, the National Cancer Institute (NCI), and ongoing work by leading oncology societies in different parts of the world. To support such initiatives, and to provide a scientific evidence base for health policy and public health decision making, there is a need for further health services research and program evaluations.

This systematic review evaluates the studies originating from foreign countries on efficacy of nursing intervention for breast cancer stress marker. This work extends upon the previous foreign review research on nursing intervention for breast cancer stress on cortisol level. [9-11] None of the literature survey and grey literature was found in India based on the present systematic review. This meta-analysis estimates the quantitative effect of the nursing intervention on breast cancer stress marker reported in the studies and presents them in a comparable manner by using effect sizes. The results of the present meta-analysis show the significant positive outcome of nursing intervention on breast cancer stress marker. The present findings emphasize that much work needs to be done further for establishing the evidence base for efficacy of nursing intervention for breast cancer stress cortisol level in the Indian population. Further studies should be done related to the systematic review and replicated in order to fill the research gap and build strong evidence based practice in the field of nursing.

Emotional support is also known to be a key factor in reducing anxiety and stress in hospitalized patients [24]. Nurses are aware that their patients want emotional support for alleviating the stress markers and try to give it to them, but are often prevented by schedules for required treatments, nursing actions and charting [25].

The reporting of stress at baseline might take place around the time of diagnosis among breast cancer patients. The relation between stress and breast cancer risk could also have a hormonal basis, since stress-induced disruption of the functions of the neuroendocrine axes. Future studies are needed to

confirm these findings and further researchers could explore the potential role of an individual's stress marker and psychological coping styles in mediating or modifying the effects of stress due to the diagnosis of breast cancer.

The context of the diagnosis of breast cancer is an important one and of all the points along the cancer trajectory, it has received the least research study. In objectivity cortisol has long been regarded as a core concept in understanding stress with significant research study. Regarding stressful circumstances, those patients with higher symptom stress are particularly burdened. Beyond the adverse effects of symptoms on their quality of life, high symptom stress may also lead individuals to behave in ways which make the situation worse.

The observed benefits exceeded the threshold for clinically significant differences in overall quality of life after treatment in breast cancer patients. The promising findings of previously reported emotional support focused nurse directed intervention consequently although demonstrated improved quality of life over time Further research is needed to examine the differential effects for all comers versus at risk patients and to compare the benefits of verbal versus written and telephone emotional support. Selecting for very poor quality of life and longer term follow up will be necessary to examine the generalizability of the findings and to deepen the understanding of this promising emotional support to fill the research gap and draw evidence based practise in nursing.

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Statement of Human Rights: The data collection methods followed was in accordance with the ethical standards of the responsible committee on human experimentation.

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A Study on Clinical Correlation of Orbital Diseases Interventional and non Interventional Diagnostic Procedures

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ABSTRACT

Background: Proptosis is the hallmark of all orbital disease. Any disease process that causes an increase in the orbital contents produce proptosis. It is defined as abnormal protrusion of one or both eyes usually resulting from mass lesion, vascular abnormality or an inflammatory process. **Objectives:** To study the clinical correlation of orbital diseases interventional and non interventional diagnostic procedures. **Materials & Method:** All the patients who presented in Dr. RSPR Government regional eye hospital from November 2005 to October 2007, with history of protrusion of the eyeball or with other symptoms and were found to have proptosis on examination formed the material for this prospective study. Altogether 25 cases were diagnosed and detailed information was taken. **Results:** The incidence of proptosis was 0.037 percent. Majority of the patients (40 percent) belonged to the age group of 31-45 yrs. The commonest cause of proptosis in this study was found to be Orbital tumors in 40% cases. Out of 25 cases palpable mass was felt in 24% cases and no mass was felt in 76% cases. **Conclusions:** Diagnosis of orbital diseases was much correlated clinically with non interventional diagnostic techniques like CT – scan, B-Scan, and were confirmed by interventional techniques like FNAC and Biopsy.

Keywords: *Age, sex, orbital diseases, interventional and non interventional modalities.*

INTRODUCTION

Orbital diseases are one of the challenging subject for ophthalmologist from clinical as well as diagnostic point of view. The exact diagnosis of orbital diseases was often an imposing problem the greatest difficulty in diagnosing was its varied etiological factors from simple acute & chronic inflammatory conditions to neoplasms that sometimes could be blinding or fatal. But recent diagnostic technology like computerized tomography, ultrasonography & magnetic resonance imaging has revolutionized the evolution of patients with orbital disease. All these recent aids have greatly improved our ability to diagnose and manage patients with proptosis [1].

Proptosis and Exophthalmos are the two terms that have become loosely synonymous. Exophthalmos should be defined as forward protrusion of eyeball alone while the term proptosis should be used for those cases where lids and orbital contents shares this displacement. With the measurement of the proptosis an assessment of the protrusion can be made axial or eccentric, unilateral or bilateral. Retraction of the upper lid on the ipsilateral side may also simulate proptosis but the latter is probably not present if the observer, looking at the patient from the front, sees the margin of the lower lids "touch" the limbus (i.e., corneoscleral junction). It has been seen that simple and elaborate clinical examination with detailed history help to

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reach at a diagnosis in most of the cases. History provides useful clues; benign lesions tend to have longer history than malignant ones, while an acute onset with pain suggests an inflammatory lesion, such as pseudotumour. Occasionally the presence of solid mass within the orbit may be indicated by orbitonometry (a measurement of the pressure necessary to reduce the proptosis) while the process of proptosis may be calibrated by exophthalmometry and axial measurements [2].

A general medical examination is important as this may reveal a thyroid or lymphomatous disorder or the presence of a primary malignant tumour. In additional chest X-ray, blood analysis and serology are done to exclude syphilis.

Investigation of the orbit is now based upon a combination of plain X-ray and computerized tomography. Other established techniques such as carotid angiography, orbital venography and ultrasonography are ancillary and not used routinely. A definitive diagnosis often has to await an aspiration or an excision biopsy. If the tumour is palpable, it can be approached directly through the skin and muscle.

Even after an exhaustive evaluation of the patient the exact cause may still be in dark, however with most modern investigative and surgical techniques and help from other specialists like E.N.T. and neurosurgery etc, there seems to be a glimmer of hope for assessment and cure.

OBJECTIVES

To study the clinical correlation of orbital diseases interventional and non interventional diagnostic procedures.

MATERIALS & METHOD

All the patients who presented in Dr.Rednam Surya Prasad Rao (Dr.RSPR) Government regional eye hospital from November 2005 to October 2007, with history of protrusion of the eyeball or with other symptoms and were found to have proptosis and conducted thorough examination. Most of the cases were admitted in department of ophthalmology. Some cases were referred from other departments in this hospital. Patients were selected on the basis of clinical detection of proptosis.

Detailed history regarding onset, nature and progression of proptosis, associated symptoms were taken. A thorough clinical examination and relevant investigations were done, which includes non interventional diagnostic procedures like X-rays, ultrasonography and computed tomography and interventional diagnostic procedures like FNAC and Histopathological Examination. Expert opinion from other specialities like E.N.T. and neurophysician were taken wherever required.

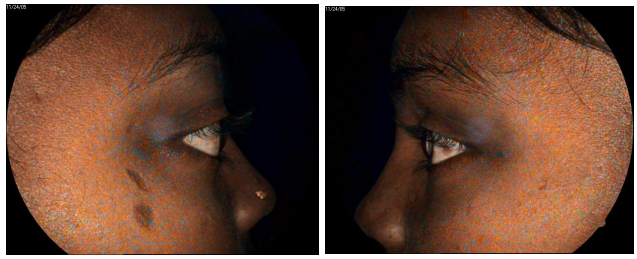

Figure 1: Cavernous Haemangioma pre operative:

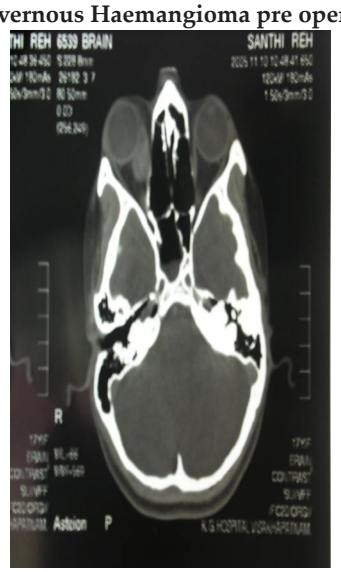

Figure 2: CT – Scan findings:

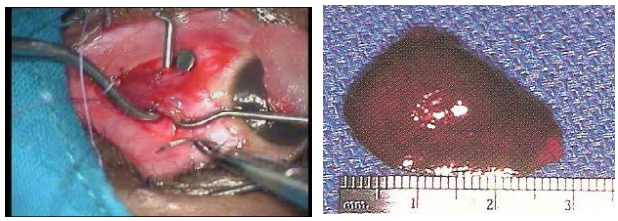

Figure 3: Surgical Approaches- Antero Medial Orbitotomy Done

Figure 4: Cavernous Haemangioma Post operative condition:

RESULTS

Table -1: Incidence of study subjects

Total number of patients attending eye OPD at Dr. RSPR, Government regional eye Hospital, Visakhapatnam, from November 2005 to October 2007were 66,277.	
Total number of proptosis cases during the same period Percentage of patients with proptosis	25 (0.037%)

The total number of patients attending at Government regional eye Hospital, Visakhapatnam, from November 2005 to October 2007 was 66,227 out of which there were 25 cases of proptosis. Thus the incidence of proptosis was 0.037 percent.

Table– 2: Incidence of involvement of eye

Eye in involved	No of cases	Percentage
Right eye	8	32%
Left eye	12	48%
Both eyes	5	20%
Total	25	100%

In the present study involvement of the right eye was 8 (32%), left eye 12 (48%) and both eyes was 5 (20%).

Table – 3: age wise distribution of proptosis cases

Age in years	No of cases	Percentage
0-15	4	16
15-30	3	12
30-45	10	40
45-60	5	20
Above 60	3	12
Total	25	100

In the present series, out of 25 patients 4 (16%) belonged to the Age group of 0-15 years. In the age group of 30-45 years there were 10 (40%).

Table – 4: Palpable mass

Palpable Mass	No. of cases	Percentage
Felt	6	24%
Not felt	19	76%
Total	25	100%

In the present study out of 25 patients, Palpable mass was felt in 6 (24%).

Table –5: amount of proptosis

Amount of proptosis	No. of cases	Percentage
2-4	9	36%
5-8	15	60%
9-12	1	4%
Total	25	100%

In present study, out of 25 patient amount of proptosis was 2-4mm in 9 (36%) patients, 5-8mm in 15 (60%) patients and 9-12 mm in 1(4%) patients.

Table-6 amount of proptosis and role of CT Scan in diagnosis of orbital lesions

CT – Scan diagnosis	Cases	Percentage
Specific diagnosis	20	80%
Normal	1	4%

CT scan shows specific diagnosis in 20 cases (80%), normal in 1 case (4%),

Table 7: Role of B-scan in diagnosis of orbital lesions

B-scan Diagnosis	Cases	Percentage
Specific diagnosis	8	32%
Non specific diagnosis	17	68%

B-scan shows specific diagnosis in 8 (32%) cases, and non specific diagnosis in 17 (68%) cases.

Table – 8: Role of HPE in Orbital diseases:

HPE	No. of cases	Percentage
Specific Diagnosis	8	100%
Non specific Diagnosis	0	0%
Total	8	100%

Histopathological examination is done in 8 cases and confirmed the diagnosis in 8 cases.

Table- 9: Confirmation of Diagnosis by Histopathological examination

Sl. No	Orbital lesion	FNAC finding
1	Orbital psuedotumor	Many degenerating polymorphs, histiocytes and plasma cells
2	Orbital psuedotumor	Many degenerating polymorphs, histiocytes and plasma cells
3	Orbital psuedotumor	Many degenerating polymorphs, histiocytes and plasma cells
4	Rhabdomyosarcoma	FNAC shows malignant round cell tumor (embryonic type) suggestive of rhabdomyosarcoma
5	Primary Ewing's sarcoma of orbit	FNAC shows small, round cells with large nuclei, homogenous chromatin and scanty cytoplasm.

Table -10: Aetiological incidence

Aetiological group	Males	Females	Total	Percentage
Grave's ophthalmopathy	3	2	5	20%
Orbital psuedotumor	3	-	3	12%
Orbital cellulitis	2	-	2	8%
Cavernous hemangioma	1	1	2	8%
Orbital cysticercosis	-	2	2	8%
Lacrimal gland tumor	-	1	1	4%
Orbital abscess	1	-	1	4%
Rabdomyoma	1	-	1	4%
Fungal granuloma of PNS extending in to orbit	-	1	1	4%
Encephalocele	1	-	1	4%
Sphenoid wing meningioma	1	-	1	4%
Fibrous dysplasia	-	1	1	4%
AML (Granulocytic sarcoma)	-	1	1	4%
Ewing's sarcoma	1	-	1	4%
Rabdomyomsarcoma	-	1	1	4%
Optic nerve glioma	1	-	1	4%
Total	15	10	25	100%

DISCUSSION

In the present study, when the hospital data was analyzed the incidence of proptosis was 0.037 percent. S.R.Khasgiwala has quoted an incidence of 0.05 percent. Thus the incidence of proptosis in our hospital is in concurrence with the observation made by the above-mentioned study [3]. In the, present study, out of 25 patients there were 15 males (60%) and 10 (40%) females. The male: female ratio was 1.5:1 Majekodunmi S [4] found in his study, the male female ratio of the 75 patients was 1.8:1. Coop ME found in his study of 47 cases of orbital psuedotumours the male female ratio was 53% & 47%. Chavis R.M Garner A. and wright J.E 9 in their study of 55 cases of inflammatory orbital psuedotumour, the male female ratio was 60%: 40 [5].

In the present study of 25 patients palpable mass was felt in 6 (24%) and no mass was felt in 19 (76%) cases. In case of rhabdomyosarcoma palpable mass was felt at the lateral margin of orbit which was hard in consistency. Pleomorphic adenoma of lacrimal gland palpable mass was felt at the lateral margin

of orbit. In encephalocele papable mass was felt at the superomedial orbital wall. According to Sir Duke Elder in some cases of rhabdomyo Sarcoma a mass can be palpated although the ability to do this depend on some extent on the duration after the onset when the palpation is attempted the longer the growth has been present the less likely is it that a discrete mass will be distinguishable [6].

In the present study amount of proptosis was 2-4mm in 9 (36%), 5-8 in 15 (60%) patients and 9-12 in 1 (4%) amount of proptosis in thyroid ophthalmopathy was 3mm, in 2 cases, 5mm in 2 cases, 7mm in one case, Rhabdomyo Sarcoma is 12mm, orbital cellulitis is 7mm and two cases of pseudo tumor it was 6mm, and in one case of pseudo tumor it was 5mm, and in one case of pleomorphic adenoma of lacrimal gland it was 4mm, and in fungal granuloma of PNS extending to orbit was 3mm. According to Duke- Elder proptosis is marked in case of Rhabdomyosarcoma and orbital cellulitis and moderate in pseudo tumour.

In the present study, out of 25 patients proptosis regressed in 12 cases, persisted in 4 cases and in the remaining 8 patients it could not be recorded as 4 patients absconded, one refused treatment, 1 patient expired, to and in one patient of orbital cysticercosis no treatment was given as she is pregnant lady. According to Miller J.H Stephen after the course of steroids in case of Psuedotumor most cases show rapid resolution[7]. Out of ten 10 (100%) patients of tumors, CT diagnosis correlated with histopathological diagnosis in 7 (70%) cases of neoplasms. (CT evaluation of proptosis) Sabharwal KK and et al in there study of 23 patients of tumors CT-diagnosis correlated with pathological diagnosis in 18 (78.26%). Thus CT-evaluation of orbital tumors in the present study is concurrent with the above mentioned studies. Thus the present study is in concurrence with the above mentioned study.

Pseudo tumour accounted for 12% of patients of proptosis in the present study compared to the study by MK Narula et al 1994 (5) where psudotumour accounted for 11% patients of proptosis. In the present study overall CT diagnosis was found to be correct in 20 patients (80%). Our results are similar to the study by Zahir Shah Masud et al (2004). In their study the diagnostic accuracy of CT scan in evaluation of proptosis was 80%. CT scan is highly useful in describing the precise location and extent of the lesion and is fairly accurate in lesion characterization.

In the present series the most common lesion causing proptosis were orbital tumors comprising of 10 (40%) of the cases followed by Grave's ophthalmopathy 5 (20%) of the cases, Orbital psuedotumor 3(12%) of the cases, Orbital cysticercosis 2(8%) of the cases, Orbital cellulitis 2(8%) of the cases, Orbital abscess 1(4%) of the cases, Fungal granuloma of PNS extending in to orbit 1(4%) of the cases, Encephalocele 1(4%) of the cases. The most common lesion causing proptosis in the present study was tumours 10(40%). Our findings correlated well with the findings of Masud MZ et al (2006) who described neoplasms (33%) as the most common causes of proptosis in their study.

Sabharwal KK, Chouhan AL, Jains. 50 patients presenting with proptosis were evaluated by CT scan. The most common lesion causing proptosis were tumours (46%). Thus the present study is concurrence with above mentioned studies [10].

Zakharia H.S, Asdourian K. and Matta C.S. in their study of 85 cases found pseudotumor to be one of the causes of proptosis comprising of 8 percent. Orbital cysticercosis includes 2 (8%) of the cases in the present study. M.Al Salem et al in their study of 62 cases proptosis, found orbital cellulitis constituted of 43.5% of the total cases.

1 case fungal granuloma of PNS extending in to orbit is seen in the present study, which accounted for 4% of the total cases of proptosis. 1 case of Encephalocoele is seen in the present study, which accounted for 4% of the total cases of proptosis.1 case of rhabdomyosarcoma is seen in the present series, which accounted for 4 percent of the total cases of proptosis [12].

CONCLUSIONS

History is helpful in the diagnosis of orbital lesions of mainly inflammatory origin and to differentiate benign lesions from malignant lesions. Clinical examination even though did not lead to accurate aetiological diagnosis, it excluded many unnecessary investigations on the part of the patient and examiner. CT is also useful to demonstrate the precise extension of the orbital lesion, the involvement of adjacent

paranasal sinuses & nasal cavity, the evidence of bone erosion and intracranial extension which helps in pre treatment evaluation & post treatment follow up. To conclude CT scan can be considered as a cost effective, non invasive, reliable diagnostic tool for evaluation of proptosis.

Diagnosis of orbital diseases were much correlated clinically with non interventional diagnostic techniques like CT – scan, B-Scan, and were confirmed by interventional techniques like FNAC and Biopsy, and management of orbital diseases is quite favourable.

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A Study on Clinico-histopathological Correlation of Skin Diseases in a Dermatological Setting

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ABSTRACT

Dermatologists sometimes face diagnostic dilemmas during their consultations. For them skin biopsy is a method of choice. **Background:** Skin biopsy is an established method for helping the dermatologist in overcoming the diagnostic dilemmas which occur during consultations. However all skin biopsies produce neither conclusive diagnosis nor the dermatologists routinely perform this procedure on every patient they consult. **Aims and Objectives:** (a) to estimate the factors effecting diagnostic accuracy and (b) to explore the correlation with clinical diagnosis accuracy of dermatologist with the histopathology reports. **Materials and Method:** A retrospective analysis was performed on 103 patients in tertiary care hospital. Percentage, chi square and correlation coefficient were used for statistical analysis. **Results:** The mean age of dermatology patients who underwent skin biopsy was 32 years, distribution of skin disease was higher among male(58.3%) than female(41.7%) and this is statistically significant($p<0.05$).The most common site of biopsy was lower limb (41.7%),the most common clinical diagnosis was infectious diseases(55.3%) and most frequent pathological diagnosis was infectious diseases(52.4%).The correlation coefficient between dermatologist and pathologist was 0.993 which was highly significant ($p<0.001$).**Conclusion:** skin biopsy remain a diagnostic tool for dermatology clinical practice.

Keywords: *Skin diseases, Biopsies,_Clinico-histopathological correlation.*

INTRODUCTION

As with any other medical disorder, the proper management of skin disease requires a correct and precise diagnosis. Many skin diseases can be quickly diagnosed by their clinical features and need little or no investigations. At the other extremes some patients need detailed and time consuming investigations to confirm the diagnosis. [1]The dermatologist in most of time requires just visual inspection with or without help of magnifying devices. However sometimes the precise diagnosis is in dilemma with many confusing differential diagnosis. To confirm the diagnosis, the dermatologist requires the skin biopsy. Sometimes histopathological findings are quite different from what were clinically expected. Similarly to classify the type of leprosy requires the histopathological studies because the slit smear alone does not give clear picture of underlying patho-microbacterial activities. The accuracy of diagnosis of skin lesions has important outcomes in treatment selection and prioritization of treatment. [2]

The aim of this study was to know factors affecting accurate diagnosis and to correlates clinical diagnoses set by dermatologist in patients with skin disorder, referred for biopsy with that of histopathology reports.

MATERIALS & METHOD

This is a hospital based ,retrospective study from department of Skin & Venereal Diseases , Saraswathi Institute of Medical Sciences ,Hapur; a tertiary care hospital .Skin biopsy were retrospectively reviewed from Oct 2013 to Sept 2014 after ethical clearance and approval from the research and development department. Study subjects includes 112 patients who

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visited the Department of Skin & VD for diagnosis of various complaints over a period of 1 year and were clinically examined for skin lesion .Out of which only 103 patients both male and female age between 10-85 with adequate sample were included in this study. Biopsy was taken from clinically diagnosed skin lesion of patients and examined by pathologist by routine microscopy with H & E or special staining. History and clinical examination of patients regarding age, sex, location of lesion, site of biopsy, single clinical diagnosis of skin lesion and histo-pathological reports were recorded. These biopsies were separately reviewed by a dermatologist and a pathologist before a final diagnosis was made.The clinical diagnosis as well as histopathological diagnosis was used to reach a correct diagnosis.

Statistical analysis was done using SPSS 20 version. Thus data obtained from patients with skin lesions were presented in terms of frequency, percent and analyzed using chi-square test to explore association between dependent variable .A value of p<.05 and <.001 were considered as statistically significant. Correlation coefficient was used for analysis of relationship between the clinical diagnosis and histo-pathological diagnosis .

RESULT

In view of the clinical diagnoses that were proposed by dermatologists 103 out of 112 biopsies were evaluated after excluding incomplete expression.

Table1. Age and Sex distribution of dermatology cases underwent skin biopsy

Age-Group (Years)	No (%)	Male No (%)	Female No (%)
10-20	31(30.1)	13(21.7)	18(41.9)
20-30	29(28.2)	20(33.3)	9(20.9)
30-40	15(14.5)	9(15.0)	6(14.0)
40-50	13(12.6)	11(18.3)	2(4.7)
50-60	8(7.8)	5(8.3)	3(7.0)
60+	7(6.8)	2(3.3)	5(11.6)
Total	103(100.0)	60(58.3)	43(41.7)

Chi-Square-11.092, d.f.5, p< 0.05*

Table1 revealed that out of 103 patients that underwent skin biopsy, 60(58.3%) were male and 43(41.7%) female. The mean age for both male and female was 32 years. In males, maximum dermatological diseases were seen in the 20-30 year age group with 33.3% followed by 10-20 year age group with 21.7%; while in females, more cases i.e.41.9% were found in 10-20 years age group. Females above the age of 60 had more frequent dermatological infections than males. After performing the chi-square test the difference in frequencies were found statistically significant (p< 0.05).*

Table 2.Distributions (%) of dermatology cases according to location from where biopsy was obtained.

Specific site / Anatomical site	Frequency (%)	Head	Face	Ant. Thorax	Abdomen	Arm .Shoulder	Forearm/Elbow	Wrist/Hand	Thigh/Buttock	Leg/Knee	Foot	Ankle	Others
Head/Face	11(10.7)	7	4	-	-	-	-	-	-	-	-	-	-
Thorax	11(10.7)	-	-	11	-	-	-	-	-	-	-	-	-
Abdomen	4(3.9)	-	-	-	4	-	-	-	-	-	-	-	-
Upper extremities	30(29.1)	-	-	-	-	7	15	8	-	-	-	-	-
Lower extremities	43(41.7)	-	-	-	-	-	-	-	10	19	7	7	-
Others	4(3.9)	-	-	-	-	-	-	-	-	-	-	-	4
Total	103(100)	7(6.8)	4(3.9)	11(10.7)	4(3.9)	7(6.8)	15(14.6)	8(7.8)	10(9.7)	19(18.4)	7(6.8)	7(6.8)	4(3.9)

Each biopsy was studied regarding both anatomical regions and specific locations (Table 2). According to anatomical region the sites were found to be higher in lower extremities (41.7%) followed by upper extremities (29.1%). Regarding specific location, the respective sites were found to be the head (6.8%), Face (3.9%), the anterior thorax (10.7%), the abdomen (3.9%), the arm including shoulder (6.8%) , and forearm including elbow (14.6%). The most common specific locations were the leg and knee (18.4%).The others sites were- prepuce, anal area & radial nerve (3.9%).

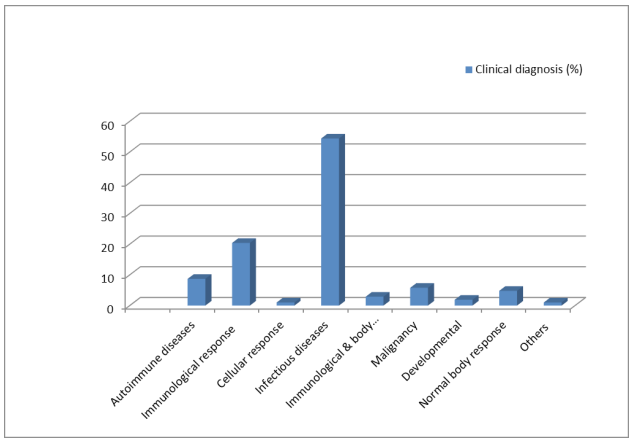

Fig 1. Bar chart showing the pattern of skin disease (%) diagnosed by dermatologist

In view of the clinical diagnoses that were proposed by dermatologists 103 patients were having 37 specific valid diagnoses, subdivided into 9 different groups of skin diseases .Fig 1 showed that out of total patients 54.4% were suffering from infectious disease followed by diseases related to immunological response (20.4%) and autoimmune diseases with 8.7% patients.

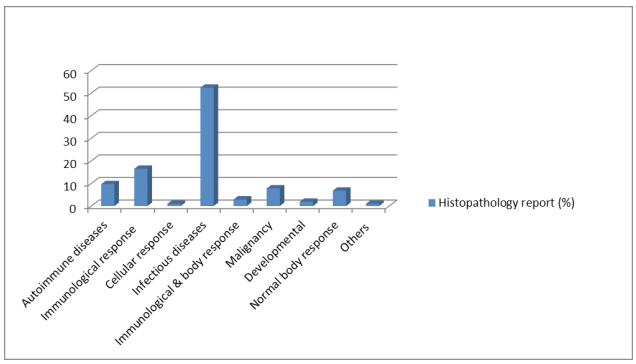

Figure 2: Bar chart showing the classification of all the suggested histological diagnoses.

The study of the histological diagnoses that were reported by the pathologists included 103 skin biopsies and their distinctive pathology that were previously diagnosed clinically by the dermatologists were revealed in Fig 2.The maximum no of patients i.e. 52.4% had infectious diseases,16.5% had diseases related to immunological response and 7.8% patients had malignancy .

Performing the chi-square test between proposed clinical diagnosis and histopathology report, the difference in frequencies were found to be statistically significant (Chi- square 690.658).p<.001 highly significant

Table 3: Clinico-histopathological correlation between dermatologist and histo-pathological report.

Cate-gory	Skin diseases	Clinical diagnosis	Histopa-thology report
		No (%)	No (%)
1.	Autoimmune diseases	9(8.7)	10(9.7)
2.	Immunological response	21(20.4)	17(16.5)
3.	Cellular response	1(1.0)	1(1.0)
4.	Infectious diseases	56(54.4)	54(52.4)
5.	Immunological & body response	3(2.9)	3(2.9)
6.	Malignant	6(5.8)	8(7.8)
7.	Developmental	2(1.9)	2(1.9)
8.	Normal body response	5(4.8)	7(6.8)
9.	Others	1(1.0)	1(1.0)
	Total	**103(100)**	**103(100)**

Correlation coefficient 0.993, p<0.001*

The classification of biopsy patients were subdivided into different subdivision as shown in table3. Table showed that clinical diagnosis made by dermatologist matched with the histo-pathological diagnosis. Bacterial diseases like leprosy, tuberculosis etc accounts for 52.4% of cases Immunological response like psoriasis, purpura, nodular vasculitis, lichenoid dermatitis,vitiligo etc accounts for 16.7% of cases ,Autoimmune diseases like Pemphigus,scl eroderma,morphea and juvenile myositis_accounts

for 9.7%of cases .The 7.8% of malignancy includes squamous cell carcinoma,basal cell carcinoma,dermal malignant neveus and squamous epithelial papilloma. Others skins diseases like cell injury, immune vascular response and pigmented plaque responsible for only 1% of biopsy reports.

Correlation coefficient between diagnosis made by dermatologist and histopathology reports is 0.933 i.e. highly significant at the level p<0.001.*

DISCUSSION

Despite the fact that modern techniques have been developed for the diagnosis of skin diseases, dermatologist still relies on biopsy for this purpose. In this study there are wide ranges of diseases that require skin biopsy in order to confirm their clinical diagnosis with histopathology. Many times dermatologist is challenged by diagnosis problem. For them skin biopsy constitutes a simple and inexpensive procedure, which help in proper clinical decision for diagnosis and treatment of patients. In the present study revealed a male preponderance as 58.3% were males and 41.7% were females which is in consistent with other studies. Similarly_the sex distribution of cases revealed by Karn D et al., and D'Costa et al ,that male constituted 57.94% while females were 42.06% of total cases respectively[3,4] —While contrasting with other studies with a female preponderance by Hubert et al.,(52%) and also by Nanda et al.,(52%) .[6, 9]

In the present study, correlation coefficient was observed 0.933 between of clinical and histological diagnoses which is consistent with the study by Bin Yap showed where it was in 92% agreement, while D'Costa et al; in their study found that histopathology was able to give diagnosis in 82.33% of cases.[5,4]The high correlation seen in this study might be due to active interest of dermatologist in proper diagnosis of cases , participation of dermatologist in reviewing histo-path slides and by continuous discussion and coordination with pathologist. While other study found a clinicopathological diagnostic accuracy up to 75% or measured 34% to 45% by non dermatologist. [7, 8]This may be because of superficial knowledge of dermatology by non dermatologist. In some instances there is lacking histological diagnosis, this could be attributed to inadequate and inappropriate specimens .We cannot completely compare different studies because dermatologist seem to perform superiorly in diagnostic accuracy to others, due to their larger clinical experience. Most of the time they avoid it due to unwanted procedure and extra cost of treatment. Many a time patient is not willing to undergo this small surgical procedure.

Further high diagnostic accuracy was found when there is appropriateness of choice of site of lesion for biopsy. [10]The anatomical distribution of lesion revealed that maximum number of cases the lower limbs (41.7%) was more frequently involved than upper limb (29.1%). Similar finding were observed by other D'Costa F found that lower limb were involved in maximum number of cases (32.75%) compared to upper limb (27.07%). [4]The clinical and histological evaluation revealed that most common diseases were infectious diseases (52.4%) followed by immunological response. Similar finding were observed by D'Costa et al; they also found that most number of cases in their study were of infectious diseases comprising of 24.29% cases while Rajput JS et.al; found that maximum number of cases 38.33% showed infectious diseases of all non-neoplastic skin biopsies. [4, 11]High percentage of infectious diseases may be due to poverty, ignorance, access to medical care, climatic condition and for skin diseases they seek medical advice very late._

This study shows that frequency of malignancy was 7.8% which is similar to other studies by Bin Yap FB & Memet EB et.al; 6.75% & 8.28% respectively. [5, 12]

CONCLUSIONS

The skin diseases are one of the most frequent diseases among the general population. The histological examination of skin lesion is an important diagnostic tool to reach the exact diagnosis of skin diseases. The overall accuracy of the clinical diagnosis depends on clinico-pathological correlation thus indicating its utility. This study concludes that without knowledge of dermatology, clinico-pathological correlation is compromised. Despite the fact that a plethora of modern techniques have been developed and utilized in the diagnosis of skin disease, dermatologists still rely vastly on biopsy for diagnostic purposes. As discussed in this study, there is a wide range of diseases that require dermatologists to perform skin biopsy in order to confirm their

clinical diagnosis, and the histological perspective proves to be both helpful and reliable in the majority of cases. However, there are also limitations in this method and there are cases wherein biopsy does not produce diagnostic results.

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Accuracy of Glycosylated Hemoglobin in HIV/AIDS Hyperglycemic Diabetic Patients : A Comparative Study

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ABSTRACT

Background : HIV/AIDS patients present with metabolic abnormalities frequently. Diabetes mellitus is one of the most common metabolic abnormality in HIV patients. HbA1c is most reliable parameter to assess the glycemia in diabetes mellitus but the accuracy of HbA1c is not appropriate. This study was performed to assess the accuracy of HbA1c in HIV patients.

Methods:- In this cross sectional study we performed HbA1c test, Glucose, CD4 cell count, ART Regime, in 50 Diabetic HIV hyperglycemic subjects and compared them with 50 age matched Non HIV infected hyperglycemic diabetic subjects.

Result: HbA1c underestimate the glucose up to 27±4 mg/dL in HIV infected diabetic hyperglycemic patients when compared with non HIV infected hyperglycemic diabetic patients.

Conclusion: Glucose concentration was not accurately predicted by HbA1c in HIV infected subjects who were on NRTIs therapy.

Keywords :- *Glycosylated Hb, NRTI, HIV, Hyperglycemia.*

INTRODUCTION

AIDS is the major killer of young adults specially in developing countries. Near about 40 million people are infected and numbers continue to rise. HIV/AIDS patients present with immunosupression along with metabolic abnormalities frequently, and diabetes is one of them. HIV patients having more impaired glucose tolerance compared to general population[1] and higher prevalence of diabetes mellitus[2]. Diabetes is a metabolic disorder of carbohydrates, fats and proteins and is considered to be life threatening if not treated. Hemoglobin A1c is recommended by ADA for the monitoring of glycemic control in patients with known diabetes[3] but not for diagnosis of the disease. The diagnostic utility of HbA1c is always questioned[4-7] due to lack of standardization of its values as well as imperfect correlation with fasting plasma glucose levels[8]. HbA1c is synthesized by non enzymatic glycation process under post translation modification.[9] Moving average of blood glucose levels can be predicted by HbA1c. Strong correlation between preceding 1 to 3 months mean level of blood glucose and concentration of HbA1c has been established by various clinical studies particularly compared with the reliability of other tests of glycemia.[10-12] Concentration of glycated hemoglobin depends upon the life span of RBC, if in any condition RBC's life span decreases results in decreased concentration of glycated hemoglobin. It is oftenly used to predict diabetes specific complications and treatment protocol.[13]. Antiretroviral therapy increased abnormal glucose metabolism in HIV-infected patients. The accuracy of HbA1c is may not be appropriate when diabetes associated with HIV/

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AIDS[14,15]. In the present study, we aim to determine the accuracy of HbA1c in assessing the glycemia in HIV/AIDS patients.

MATERIALS & METHOD

The present work entitled "Accuracy Of Glycosylated Hemoglobin In HIV/AIDS Hyperglycemic Diabetic Patients : A Comparative Study" was undertaken in the Department of Medicine, Chhattisgarh Institute of Medical Sciences, Bilaspur in association with Department of Biochemistry, CIMS, Bilaspur, with aim to determine any relationship between A1c and glycemia in HIV infection. The study protocol was approved by Institutional Ethical Committee and consent was obtained from all subjects before the study being started. .

Out of total 100 subjects the study group comprises of

1. Normal control group (Diabetic subject without HIV infection) – 50.

2. HIV with hyperglycemia – 50.

The patients admitted/visited Infectitious ward/ ART center.

Inclusion Criteria:- HIV Patients with Diabetes Mellitus or hyperglycemia (Fasting Glucose ≥ 110 and 130).

Exclusion Criteria:- Patients who had hemoglobinopathy, recent changes in diabetes therapy, anemia, opportunistic infection, renal disease, a recent blood transfusion or corticosteroid use were excluded.

Sample Collection:- Blood samples were obtained by puncture of anticuboital vein. 5 ml blood was collected in the EDTA vials from each subject. HbA1c was estimated on YL HPLC. Hb was estimated by cyanmethaemoglobin method. Glucose was determined on Fox Nova LA. CD4 cell counted on sysmex CyFlow counter.

Statistical Analysis:- Student's *t* test was performed for group comparison. A reference regression equation was generated by using the values of HbA1c and serum glucose level of control subject. The equation which was used to calculate predicted glucose concentration from measured HbA1c in HIV is given under:

A1C-glucose discordance = mean (One value of fasting and random glucose) – predicted glucose for the measured A1C

HbA1c-glucose discordance was calculated using a published reference equation.[16] P values of <0.05 were considered significant.

RESULTS

HIV patients were analyzed by taking into account the HIV infection status, CD4 Cell count, Red Blood Indices and the demographic data. The antiviral medications (including ART) was also taken into account. The criteria of fasting blood sugar was an important parameter which was adhered with strictly. As per the ADA recommendation FBG was found to be elevated, which was <126 mg/dL and Hemoglobin A1c < 6.5%. 7,8,13 Other parameters like erythrocytes characteristics, race, the current treatment status, and the characteristics of HbA1c were also examined. In the present study we observed significantly low level of HbA1c level in HIV infected patients with diabetes when compared with non HIV infected diabetic patients for the predicted glucose level. HbA1c underestimate glucose by 27±4 mg/dl. No any individual ART drug was assessed due to less number of patients (table 1) .

DISCUSSION

The incidence of newonset diabetes is 1%–7% among HIV-infected patients, as long as the survival of HIV/AIDS patients increases the prevalence of diabetes mellitus among these patients will most likely increase. Several of the ARV medications associated with it.[17] Monitoring of glucose level to manage the diabetes is one of the most important steps and HbA1c is considered as gold standard for the same. By assaying HbA1c one can predicts an average of blood glucose levels over the past 120 days, however, daily glucose monitoring cannot be done. HbA1c is formed by a non enzymatic process as a result of post translation modification. This modification is essentially irreversible and occurs over the entire life span of RBC. However, in HIV infected patients, inaccuracy of HbA1c values has been reported. In the present study we found significantly discordance

between HbA1c level and glycemia evaluated from HbA1c and plasma blood glucose level and observed significant difference ($p < 0.0001$) between them. ART were strongly associated with it. Polgreen PM et al[18] and Diop ME et al[19] reported that hemolysis played a major role for this discordance. Similarly Gil Cunta De Santis[20] also reported anemia as a most frequent haematological abnormality in the patients infected with HIV under HAART treatment. The eventual relationship with drugs used in the treatment of HIV infection is difficult to study since antiretrovirals are used in association. The percentage of HbA1c is only reliable indicator for hyperglycemia when the lifespan of RBC is normal but not if lifespan is altered. HbA1c level is lowered by all factors which shorten the lifespan of RBCs[21]. The concentration of HbA1c in circulation during hemolysis, is reduced as well as the number of immature and less gylcated hemoglobin containing RBC increases to relative abundance. Few medications can also reduces the accuracy of HbA1c without causing hemolysis.[22] Peter SK et al also reported glycemia may not be assessed by HbA1c among HIV infected patients on NRTIs based therapy.[23] The association of hemolysis with these drugs is strong, and maximum patients experience some degree of hemolysis.

CONCLUSION

In our study we found HbA1c is less sensitive to assess accurate glycemic status in HIV patients specially on NRTIs based therapy. Due to limitations of our study further study is required to understand the effect of antiretroviral drug's impact on hemoglobin glycation.

Table 1 Demographic details and list of parameters measured between HIV infected diabetic and control subjects

Sr. No.	Parameters	HIV infected Hyperglycemic Diabetic Patients	Control
1.	Numbers (n)	50	50
2.	Age(years)	50±1	50±1
3.	Sex(Male/Female)%	68/32	68/32
4.	Duration of HIV	12.5±0.8	
5.	HIV viral load < 50 copies/ml (%)	64	-
6.	CD4	574±15	-
7.	Duration of DM	7.00 ± 0.59	8.09±0.65
8.	Current ARV Therapy(%)		
	NRTI	72%	-
	PI	42%	-
	NNRTI	28%	-
9.	HbA1c	6.7±0.26	7.76±0.59
10.	Hb	13.9±0.2	14.8±0.1
11.	MCV(fL)	94±1	-
12.	Serum Glucose	179±5	156±4
13.	Glucose discordance	27±4	-

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Summer Workshop for Children of Slum Dwellers: A Self Reliance Initiative

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ABSTRACT

Background: Urban slums in India are a neglected community as far as public facilities are concerned. There is no health infrastructure since such areas are largely illegal and unauthorised to start with and therefore, the community cannot utilize the social security schemes as well, that are meant for the economically weaker sections of the country. Objectives: To generate health awareness among the slum adolescents and make them economically independent. Methodology: summer workshop was conducted for a period of one week by the MBBS students in the urban slum of Bhangel. Two groups of slum adolescents were recognised. Health awareness sessions were conducted for these children everyday on one or the other relevant health topic along with teaching them some vocational skills. Results: on comparing the pre and post workshop assessment, the results were encouraging. Conclusion: Marked improvement was observed in the knowledge levels and livelihood promotion.

Keywords: *Urban slums, health awareness, workshop, vocational skills, adolescents.*

INTRODUCTION

India is a developing country with its share of challenges, especially with respect to population growth and health. The importance of population stabilisation towards the growth and development of a nation is paramount and can only be achieved through awareness generation in the community. Similarly, the achievement of Millennium Development Goals is an uphill task without active participation of the community. This community itself is not a uniform population due to the differences in age groups, genetic compositions, susceptibilities for diseases, personal habits, place of residences etc.

Our country comprises of urban, rural and slum population. Currently, as per WHO estimates, the number of people living in slum conditions in India is 104.7million[1]. A slum household is defined[2] as a group of individuals living under the same roof lacking *one or more* of the following conditions:

- Access to improved water
- Access to improved sanitation
- Sufficient-living area
- Durability of housing
- Security of tenure

The slum population specifically is the neglected community as far as provision of health care and other public amenities are concerned. Though our government has set up basic infrastructure in the form of schools, anganwadi centers etc., yet the manpower available in these areas is largely ignorant about how to utilize the public system since they belong to the local population only. Eg. the school teachers are not aware about the basic health care delivery system, where to refer to children suffering from even minor ailments like conjunctivitis, refractive errors, scabies, worm infestation etc. These people also don't have access to vocational opportunities and therefore

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remain disadvantaged as compared to their rural and urban counterparts.

Children, specially the adolescents, are the best messengers of health awareness and need generation, since they have an inquisitive large peer group which is ready to explore unknown horizons due to their curious nature at this stage of life. They also have lots of queries and doubts in relation to sexual health and body image. They are also vulnerable for high risk behaviour in the form of substance abuse, unprotected sex with multiple partners, health issues related to mental health, nutrition, violence, HIV injuries etc.[3] So, this is the most appropriate group for the initiation of health awareness activities. Summer vacations are the best time to utilize for such health awareness activities, since children usually finish their holiday homework during the initial days and are free for the later part of the vacations. While their more affluent urban counterparts enrol in various different summer workshops and acquire different skills, these children do not have access to such opportunities.

The Department of Community Medicine in the School of Medical Sciences and Research, Greater Noida, is continuously striving for the betterment of the population served by its two centres- the Urban Health and Training Centre at Bhangel (Noida) serving the slum population and the Rural Health and Training Centre at Panchayatan (Greater Noida) serving the rural population through its various activities and services. The centres provide services like general OPDs, day care facilities, specialist OPDs, health awareness sessions in the community etc. But certain lacunae in discharging the goods, still remain which are beyond the control of the department, in the form of transport restrictions, shortage of human resources, shortage of funds, time restrictions and other responsibilities of the faculties etc.

To overcome these lacunae, the department started an initiative in the form of allotting small community based research projects to enhance the health status of this section of the society. Under the same activity, a group of five 6th semester MBBS students (2012-13 batch) approached the department with the idea of conducting a summer workshop for the underprivileged adolescents, so that they become more aware of their health and gain vocational independence. The time period for this workshop entitled "Main hoon naa" was approximately a week. The students conducted this exercise in the urban slum of Bhangel, which comes under the field practice area of UHTC.

AIMS AND OBJECTIVES:

1. To improve the level of health awareness among slum children
2. To make the slum children financially independent

METHODOLOGY

To start with, two groups of adolescents were identified- the 'Raftar' group having children aged 10-14yrs and the 'Didi' group with children aged 15-19yrs.The groups were assessed for their knowledge regarding personal hygiene and menstrual hygiene with the help of questionnaire (pre-workshop assessment). This was followed up next day by a discussion on the same topic by the MBBS students. Both the groups were also taught how to make lipsticks and first aid boxes and sell them. Each day a new health related topic was discussed to generate awareness among the children and some vocational activity was undertaken. The two groups were then asked to identify more adolescents in their community and bring them to the workshop to make it more sustainable. The new children called the Atithi group, were then taught about the various health related issues and also given training on the various vocational activities by the Raftar group under guidance of the Didi group. Towards the end of the workshop, these adolescents were again assessed for their knowledge regarding the health issues discussed so far and also trained on the tactics of successfully selling their products (post-workshop assessment).

RESULTS

All the participants were eager to take part in the various activities of the workshop. When the pre and post workshop status of the participants' knowledge regarding various parameters was assessed, we found a considerable increase in the knowledge levels post workshop. The various parameters were menstrual hygiene, personal hygiene, water sanitation etc. None of the participants had any vocational training earlier. All of them developed various vocational skills like

making first aid boxes, dust bins, application of mehendi on hands, lipstick making etc. At the end of the day, they sold the products made during the day in the workshop and raised money.

DISCUSSION & RECOMMENDATIONS

The faculty members were amazed to see the results of this little initiative of the students. The participants were enthusiastic in pursuing the activities and had imbibed considerable knowledge about the personal hygiene, menstrual hygiene, community hygiene and water sanitation. These children were keen to disseminate the knowledge they had gained to their peers. They also learnt many vocational skills and could raise money after selling their products.

India is a vast country having a total of 500 medical colleges, each having their urban and rural health centres catering to a population of 30,000[4] ; amounting to 15 million population collectively. All these colleges are tertiary level centres having the necessary infrastructure as well as resources. Initiation of same kind of activities in the urban slum areas catered by these colleges will definitely bring about a change in the health status of this underprivileged population and empower them socially and financially. The Health Ministry can involve the NGOs active in these areas to cater to their health needs and also start small vocational centres within the slums. This can be taken up as part of National Urban Health Mission[5] under the Public Private Partnership-PPP. The State government can also allocate funds for slum based research projects aimed at enhancing the health and financial status of this section of our society.

Ethical Clearance: Since this was a part of the undergraduate curriculum, ethical clearance was not required.

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Under Five Malnutrition: A Review of Literature on the Current Public Health Problem in Developing Nations

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ABSTRACT

Globally, PEM continues to be a major health burden in developing countries and the most important risk factor for illnesses and death especially among young children. The WHO estimates that about 60% of all deaths, occurring among children aged less than five years in developing countries, could be attributed to malnutrition. The Sub-Saharan African countries and the Indian sub-continent bear the main brunt of PEM in the world. On an average, the PEM associated mortality in Sub-Saharan Africa is between 25 to 35%. In Indian sub continent, almost half of the children under five years of age (48%) are chronically malnourished, 43% under five are underweight for their age and one out of five is wasted. PEM is also associated with a number of co-morbidities such as lower respiratory tract infections including tuberculosis, diarrhea, malaria and anemia. These co-morbidities may prolong the duration of hospital stay and death among affected children. Thus the improvement of nutrition therefore is the main pre requisite for the reduction of high infant and under five mortality rates, the assurance of physical, social and mental development of children as well as academic achievements.

Keywords: *Under five, Malnutrition, developing countries, morbidity, children.*

REVIEW OF LITERATURE ON UNDER FIVE MALNUTRITION

World Health Organization (WHO) defines malnutrition as "the cellular imbalance between the supply of nutrients and energy and the body's demand for them to ensure growth, maintenance and specific functions"[1]. The terms primary malnutrition and secondary malnutrition, refer respectively, to malnutrition resulting from inadequate food intake and malnutrition resulting from increased nutrient needs, decreased absorption and/or increased nutrient losses. According to WHO report, 27% of children under five years of age in developing countries are underweight that caused about 3.4 million deaths during the year 2000, 1.2 millions of which happened in Asian Countires[2]. Among the four principal causes of mortality in young children worldwide, under nutrition has been ascribed to be the cause of death in 60-70% of children with diarrheal diseases, 52.3% of those with pneumonia, 44.8% of measles cases and 57.3% of children with malaria. In the developing nation, malnutrition is an underlying factor in over 50% of the 10-11 million's children under 5 year of age who die each year of preventable cause[3].

In India, almost half of the children under five year (48%) are stunted and 43% are underweight[4]. The proportion of children who are severely undernourished is also notable – 24% according to height for age and 16% according to weight for age. Wasting is also quiet a serious problem in India, affect 20% children under five year of age[4].

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Under nutrition is substantially higher in rural areas than in urban areas. Even in urban areas 40% of children are stunted and 33% are underweight. Nutritional problems are substantial in every state in India. The proportion of children under age five years who are underweight ranges from 20% in Sikkim and Mizoram to 60% in Madhya Pradesh. In addition, more than half of young children are underweight in Jharkhand and Bihar. Other states where more than 40% children are underweight are Meghalaya, Chhattisgarh, Gujarat, Uttar Pradesh and Orisa[4]. Wasting is more common in Madhya Pradesh (35%), Jharkhand (32%) and Meghalaya (31%)[4]. As per the National Family Health Survey (NFHS-3)[4], among the light main cities of India, prevalence of underweight is highest in Indore (39%) and lowest in Hyderabad and Kolkata (20-21%). More than 4 out of every 10 children in Mumbai, Meerut and Delhi are stunted[4].

Anthropometric parameters can assess growth cross- section ally or longitudinally. If children are measured once, their growth states for age can be assessed by comparing this measurement with the appropriate reference curve. If they are measured more than once and plotted on an appropriate growth curve, growth velocity data is obtained which can be even more useful. Particular care should however be taken to use appropriate equipment and techniques for measurement of Stature/Length and Weight.

For weighing, infant scales, beam balances and readout scales are available. Preferably the nude weight should be taken or the estimated weight of clothing should be subtracted. The newborn weight should be taken close to the nearest gram. As weight is the earliest anthropometric parameter to be affected by under nutrition, it is the most important index of early and current malnutrition. Length and height is the most useful indicator of long term growth status. Recumbent length is measured in children less than 2 years of age and stature/standing height is measured in children more than 2 years of age. When possible, the parent's stature should be taken to determine the influence of genetics on growth. Length or height is affected in long standing malnutrition, therefore stunting is usually a reflection of long standing malnutrition.

The WHO working groups report on measuring the nutritional status of children recommends the use of Z-score system over percentiles or percentages. In brief, Z-score indices are linear, sex independent and allow for further computation of summary statistics such as means and standard deviations to directly classify a populations nutritional status[5]. For instance, an average value of Z-score significantly lower than the mean value comes zero of the reference distribution typically means that the entire distribution of the study objects has shifted downwards suggesting that most, if not all, individuals, have been affected. Prior to 2006, the nutritional status of pre-school children was most often assessed in relation to an international growth reference population established by the U.S. National Centre for Health Statistics (NCHS) and endorsed by WHO. In 2006, the WHO released new multi centric growth reference standards (MGRS) for assessing the growth and development of children from birth to 5 years of age. These new standards are based on breastfed infants and appropriately fed children of different ethnic origins raised in optimal conditions and measured in a standardized way. The MGRS was a population based study conducted between 1997 & 2003 in Brazil, Ghana, India, Norway, Oman and The United States. It combined a longitudinal follow up from birth to 24 months with a cross-sectional component of children aged between 18 and 71 month. These new standards have been endorsed by international bodies, including Government of India and even the CDC now recommends the use of WHO standards in US population up to 2 years of age.

These are many classification systems available for malnutrition. They are briefly highlighted in the tables (1 to 4) however the WHO classification and Welcome Trust Classification system is most commonly practiced.

Table 1:- Classifications of Malnutrition is Children

Classification	Definition	Grading	
Gomez	Weight below % median weight for age (WFA)	Mild (Grade1) Moderate(Grade2) Severe (Grade 3)	75-90% WFA 60-74% WFA < 60% WFA
Waterlow	Percentage below weight for height (WFH)	Mild Moderate Severe	80-90 % WFH 70-80% WFH < 70% WFH
Kanawati	MUAC divided by occipital frontal head circumference	Mild Moderate Severe	< 0.31 < 0.28 < 0.25
Cole	Z Scores of BMI for age	Grade I Grade II Grade III	BMI for age Z score < - 1 BMI for age Z score < - 2 BMI for age Z score < - 3

Table 2:- IAP Classification of malnutrition (0-6 years)

Grade of Malnutrition	% Weight for age of standard median
Grade 0/Normal	>80
Grade I	71-80
Grade II	61-70
Grade III	51-60
Grade IV	<50

Table 3:- Welcome Trust classification of Malnutrition

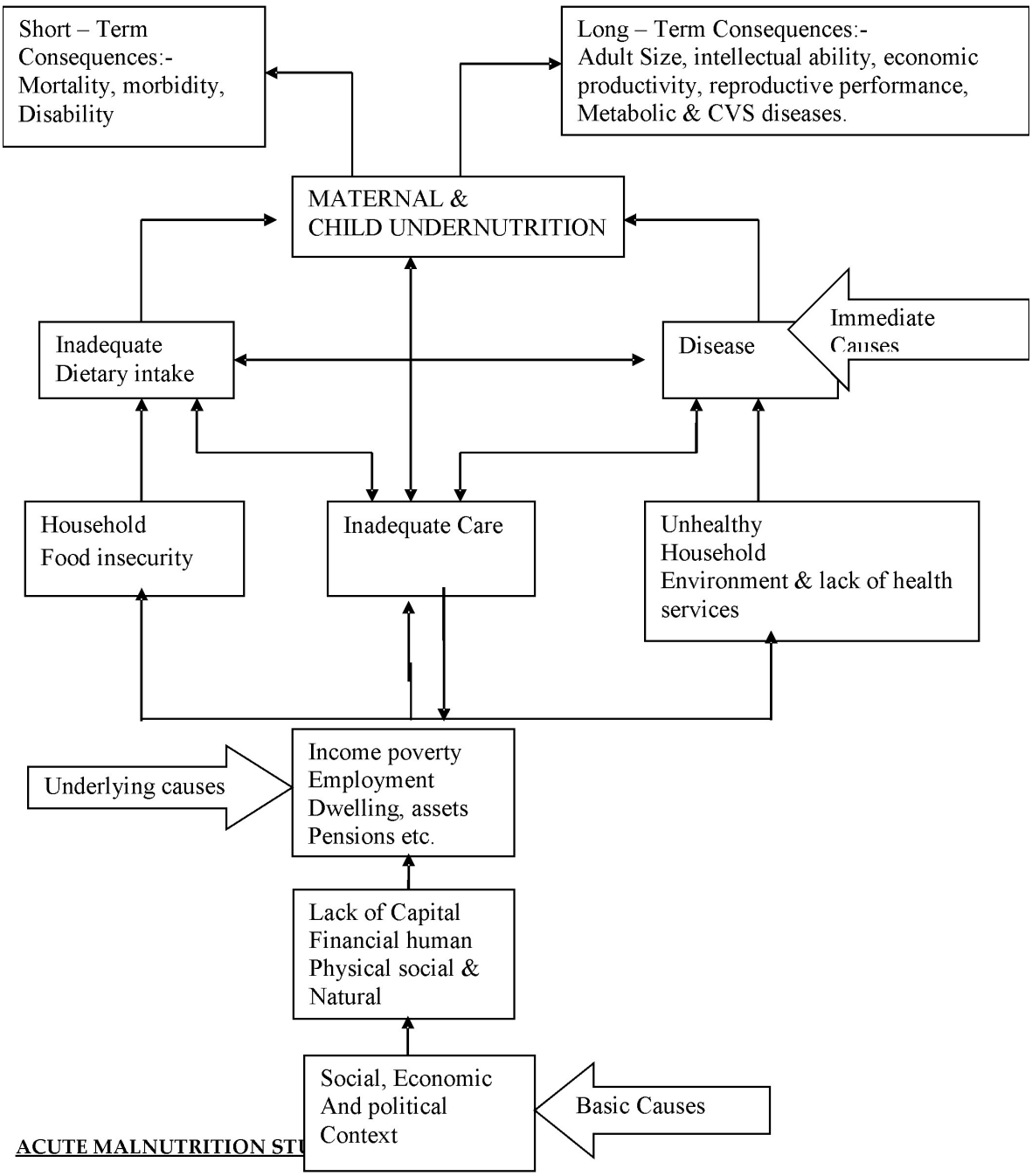
Weight for age	Edema	Type of Malnutrition
>80%	Nil	Normal
>80%	Positive	No under nutrition (look for cause of edema)
60 – 80%	Negative	Under nutrition
60 – 80%	Positive	Kwashiorkor
<60%	Negative	Marasmus
<60%	Positive	Marasmic Kwashiorkor

Table 4:- WHO classification of malnutrition

Parameter	Moderate Malnutrition	Severe
1. Symmetrical edema	No	Yes(Edematous malnutrition)
2. Weight for height (Wt/ Ht)	SD score between – 2 & - 3 (moderate wasting)	SD score <-3 (Severe wasting)
3. Height for age (Ht/A)	SD score between -2 & -3 (moderate stunting)	SD score <-3(Severe Stunting)

A large number of socio economic factors are involved in causation of malnutrition is a child like poverty, illiteracy, lack of health education, poor environmental sanitation and infections. The contributory effect of these factors is highlighted in flow chart 1. According to NFHS-3[4], six out of 10 children living in the poorest households (households in the lowest wealth quintile) are stunted and almost as many are underweight. However, even is the wealthiest household, one-quarter of children are stunted and one-fifth are underweight.

Flow Chart 1:- Frame work of the relations between poverty, food insecurity and other underlying and immediate causes to maternal & child under nutrition and its short-term and long-term consequences.



ACUTE MALNUTRITION STU

The reported prevalence of acute malnutrition in infants and children with mixed diagnosis admitted to hospital ranges from 6.1 to 40.9 % (see table 5)[7-15].

Table 5:- Prevalence of acute malnutrition in hospitalized children

Reference	Country	Age	N	Prevalence	Definition
Pawellek et al[5]	Germany	All ages	475	6.1%	Wt/Ht <80%
Rocha et al[6]	Brazil	<5 yrs	186	6.9%	Wt/Ht <-2SD
Marteletti at al[7]	France	2 months-16 yrs	280	11.0%	Wt/Ht <-2SD
Dogan et al[8]	Turkey	1 month -25yrs	528	27.7%	Wt/Ht <-2SD
Ozturk et al[9]	Turkey	2-6 yrs	170	31.8%	Wt/Ht<80%
Hankard et al[10]	France	>6 months	58	21.0%	MI <-2SD
Hendricks et al[11]	USA	0-18 years	268	71.%	Wt/Ht<80%
Hendriske et al[12]	UK	7 months-16 years	226	8.0%	Wt/Ht <80%
Moy et al[13]	UK	3months -18 years	255	14.0%	Wt/Ht <-2SD

Most recently, Pawallek et al [5] reported about the prevalence of malnutrition is a group of 475 unselected children admitted to a hospital in Munich, Germany using cut off points defined by Waterlow (Wt/Ht <80th per centile) they found 61% of patients malnourished. With respect to age, the highest risk for malnutrition was found in infants (7.1%) and young children aged 2-5 years (4.3%). A similar prevalence rate of 7.1% & 8% respectively, using the same criterion was reposted more than 10 years ago by Hendricks et al[11] is a group of 268 children admitted in Boston, USA and by Hendrikse et al[12] in a group of 226 children admitted in Glasgow, UK.

Using the SD criteria – 2 for Wt/Ht, Moy et al[13] is the UK and Dogan et al[8] in Turkey found, 14 and 27.7% malnourishment respectively. In his study, a prevalence of 31.8% for malnutrition was found in a group of 170 children admitted to a tertiary center using percentage of ideal body weight less than 80%.

Hankard et al[10] and Marteletti et al[7] both performed a 1 day cross- sectional survey in a pediatric population admitted to medical or surgical units in France. Hankand et al[10] studied a group of 58 children older their 6 months and hospitalized for more than 48 hours and found 12% of the children to be mal monished, using the BMI criteria below -2 SD. Marteletti et al[7] found a prevalence of 11% in a group of 280 children. In conclusion from these studies a decrease in the prevalence of malnutrition is not noticed in the last 10 years, not even is the world's developed nations.

CHRONIC MALNUTRITION STUDIES

Only a few studies reported the prevalence of chronic malnutrition in hospitalized children. Hendricks et al[11] used the Waterlow criteria (<90% HFA) and reported 12.8% chronic malnutrition, whereas Hendriske et al[12] and Rocha et al[6] using HFA less than -2SD reported 8 to 18.2% chronic malnutrition, respectively. In several studies in children with an underlying disease, a high prevalence of chronic malnutrition is found. For children with various cardiac diseases, prevalence rates of between 24 & 44% were reported[14-17]. In pediatric malignancies, chronic malnutrition has hardly been reported. Yaris et al[18] reported a prevalence rate of 2.1%. In patients with chronic kidney disease, Sylvestre et al[19] and Perreira et al[20] found a HFA less than – 2SD in respectively, 64 and 63% of the patients.

The problem of under nutrition in India is one of alarming magnitude, but also of great complexity. The prevalence of underweight is among the highest in the world, nearly double that in Sub-Saharan Africa (43 Vs 23%) and the pace of improvement lags behind what might be expected given India's economic growth. While the aggregate levels of under nutrition are extremely high, the picture is further exacerbated by the significant inequalities across states and socio economic groups. Girls, rural areas, the poorest and scheduled tribes and castes are the worst affected. In Maharashtra, Bihar, Madhya Pradesh, Uttar Pradesh,

Orissa and Rajasthan more than one in two children are underweight[4]. Thus while under nutrition is a national problem, the problem is clearly more acute among certain groups, and inequalities in malnutrition appear to be increasing.

TAKE HOME MESSAGE

1. Improvement of nutrition remains the main pre requisite for the reduction of high infant and under five mortality rates.

2. In our country, under five malnourishment is especially high in girls, rural areas, the poorest and scheduled tribes and castes. Hence, they should be the immediate target for all government reforms at improving childhood nutrition.

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Sexual Assault to Women – A Burning Moral and Socioeconomical Issue

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ABSTRACT

Crime against women is a serious physical, mental, social and religious concern and considered as a violation of women basic human right. The aim was to highlight the cases of sexual violence in the Siliguri Police Commisionerate area and to analyze the data with respect to epidemiological and demographic presentation. The most affected age group was 10-18 years (62%). Majority of victims were unmarried (82%), student (60%) and of lower socioeconomic class (93%), majority being Hindu (84%) by religion. The highest number of victims was examined on the second day (56%). Majority knew the assailant (84%). Consented sexual intercourse was in majority of cases (57%). The study highlights the importance of addressing violence against woman, as not only an important health, but also a socioeconomical and moral aspect, which needs effective measures to improve the conditions of woman in our society.

Keywords*: Sexual violence, premarital sex, victim girl, Early Marriage, Assailant.*

INTRODUCTION

India is often described to be a country with a fast growing economy and progressive indicators of human development. However, over the last decade there has been a growing concern of increased reporting of sexual violence in India, which seems to contradict the first description.

The United Nations defines violence against women "any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life."[1] Sexual violence includes rape, defined as the physically forced or otherwise coerced penetration of the vulva, anus or mouth with a penis.[1]

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The data on sexual violence comes from police, clinical settings, nongovernmental organizations, and clinical research. The relationship between these sources and the global magnitude of the problem is like an iceberg in water, with only the tip of the iceberg being the cases that are reported to police, because many victims do not report for the reason that they are ashamed embarrassed or fear of being blamed.[2] The issues, including the levels, trends and regional patterns of premarital sex remains a poorly explored topic in India. According to the National Crime Records Bureau (NCRB) in India, there has been a startling increase of 1255.3 % in the number of rape cases registered in India from 1971 to 2013.

The present study is an epidemiological and demographical one, based on the alleged cases of sexual violence in Siliguri Police Commissionerate area, being brought by the police to the Department of Forensic Medicine, North Bengal Medical College, during the period April 2014 to March 2015. Many studies done about the sexual violence against the women in different places at different times, and those had been very diverse because of various definitions of sexual violence, different time of study, cultural and regional variations and different inclusion/exclusion

criteria. Moreover, no such study is available so far in Siliguri, which is one of the fastest growing city in last 40 years due to its geographical location.

AIMS AND OBJECTIVES

The emphasis of this study is to highlight the cases of sexual violence in the Siliguri Police Commisionerate area and to analyze the data with respect to epidemiological and demographic presentation, socio economic status of the victims, education and morale background of the victim, and response of the society towards them.

MATERIALS & METHOD

Data collected from all the victims of sexual assault who were brought to the Department of Forensic Medicine, North Bengal Medical College during the period 1st April 2014 to 31st March 2015 for examination. A predesigned, pretested and semi structured questionnaire was provided to them for collection of data. The victims who were illiterate were interviewed and their response was noted, whereas literate victims filled up their responses by themselves. The compiled data was analyzed using suitable statistical software. Ethical clearance was obtained from the competent authority after ensuring that the data collection would be anonymous; no photographs taken or any data procured which could reveal the identity of the victim. Proper Informed consent was taken from each victim before filling up the proforma.

RESULT AND ANALYSIS

Total 197 cases were studied, 62% of the cases were minor (10-18 years), followed by the age group of 19-27 years which constituted 29% of total cases. The youngest victim was 3 years old whereas the eldest being 39 years of age. Most of the victims were unmarried (82%). Hindu girls were mostly victimized (84%), followed by Muslims (15%) and Christian (1%). 29% of the study population had primary level of education, whereas, 32% of the study population had the level of secondary educational background and illiterate victims were of 19%. 40% of the victim girls in the study population were Students followed by unemployed 36%, followed by daily wage labour 9%, doing a job 9%, homemaker 6% and only 4% of the victims were recovered from red light areas those engaged as Commercial Sex Workers. Study reflects only 4% of girls were addicted to Alcohol. The victim girls knew offenders in majority of cases (85%), whereas 15% cases offender was totally stranger to the victim girl. Family member was found offender in only one cases. In study population, 57% of cases gave history of consented sexual intercourse out of which 9% of the reported cases are of mutual sexual intercourse before marriage and later denied marriage, and 48% are eloped from home, of whom most of the girls were aged between 13 to 18 years and the case reported by family member. Among the girls who had consented for sexual intercourse, only 15 girls were aware of the Contraception methods, STDs and HIV.

Majority of the girls eloped from home with so-called boyfriend for marriage and few cases for getting job and earn money. Only 87 cases were reported within 24 hours, in rest of the cases reporting were delayed by 2 to 3 days and sometimes even 10 to 15 days. Majority of delayed reported cases (56%) were due to fear and social stigma (24%), followed by peer pressure (26%) and the rest due to noncooperation from the police personnel. Half of the victims (50%) belonged to lower middle class, followed by Middle class (34%) and 9% to lower class. Only 7% of the victims belonging upper middle class.

DISCUSSION

In my study, victims' age ranged from 3 to 39 years. Majority of the victims (62%) were between 10-18 years of age. These results are in agreement with the study by Manzoor et al (62.2%) [3], Parveen et al (51.6%) [4], and Sarkar et al (68.9%) [5]. Das I, et. Al found 57.1% cases in 10-19 years age group.[6] In another study done by Sharma[7], the alleged rape victims were mostly girls of 15- 18 years. Adolescent victims were the most common victims (76.9%) in study of Malhotra.[8]

According my study, majority of the victims were unmarried (82%), which is in line with study of Al-Azad et al (78.69%)[9], Parveen et al (63.45%)[4] , and Das et al (76%)[10]. The greater involvement of unmarried victims depicts the typical characteristic of developing countries where the girl children are oppressed right from their birth both inside and outside their families.

All the victims were Hindu (84%) in our study. Das I et. al also reported similar Hindu predominance (52.4%)[6],which is in line with the population majority in our country. Most of the cases belong to middle and lower socioeconomic class (93%) thus supporting previous researches[12], linking low socioeconomic status and sexual assault.

In my study, significant relationship was present between the victim and the perpetrator. In about 85% of the perpetrators were known to the victim. This is in accordance with Parveen et al (59.1%) [4] and Hassan et al (57%).[13] Studies in India, Portugal, Malaysia, South Africa and Uganda showed that approximately 2 out of every 3 sexually violent acts are committed by someone acquainted to the victim. Thus, the study disproves the myth "strangers usually commit sexual violence".

My study deflects, majority (57%) of the victim girls had consented for sexual intercourse, out of which 9% later denied marriage, and 48% are eloped from home for marriage or getting job, among them 90% are minor girls and further reported by their family member. This observation arises the issue of 'pre-marital sex' and reflects increasing case burden in our police and judiciary.

One third of the victims (36.4%) were brought for medico legal examination within 48 hours. Similarly, one third of the cases were examined within 72 hours in study done by Sarkar et. al [5]. In study by Khan et al [16], 36.7% cases were examined within 6-24 hours.

I found that 44% of the cases reported early (within 24 hr. of incidence) for medical examination. Du Mont[17] reported that 40.1% of victims were examined within 2-6 hours of the incident. The early reporting may be due to awareness among urban population of the metropolitan cities. Whereas, more than half of the cases (56%) reported after 24 hr. The reason being, consented act of sexual intercourse over a period followed by refusal to marry by the boyfriend. Failure in mutual settlement between both the parties further delayed the lodgment of complaint, and so thus the medical examination. In this study, number of cases that reported early, is much higher than the observation done by Sukul, Chattopadhyay and Bose[10] where they found that 13.8% cases reported early for medical examination.

Only 4% of the victim girls were addicted to alcohol in my study. The reason behind the low incidence may be the socio-cultural pattern in our country.

The arranged marriage system still dominates Indian culture, and chastity is highly valued within it. According to societal and familial norms, premarital sex is not allowed, and families go to great lengths to protect the chastity of unmarried youth, especially girls. In this scenario, it is necessary to understand the linkages to premarital sex.

Whereas, Jejeebhoy's (2000)[14] showed that, the rates of sexually active unmarried girls and women ranged from 0-10%. In another review of studies on adolescent sexuality, Bhende (1994)[15] found that there were higher rates of sexual activity among poorly educated adolescents in a slum area of Mumbai than was directly reported by them

In the popular media, there is now a sense that sex before marriage is on the rise with the socio-economic changes brought about by globalization. The increasing exposure of youth to western culture is thought to have effected a change in moral attitudes towards sex before marriage. That premarital sex is entering popular culture was reflected in a mainstream Indian movie and TV serials, which had the protagonists, played by popular actors, living together and having a child before marrying each other. Further, certain trends such as the increase in urbanization, financial independence among young women through employment, and the age at marriage support this argument, as do studies gauging the attitudes of youth to premarital sexuality.

Mehta et al [11] found that, gifts of trinkets and even cash were given to the women in non-marital sexual relationships by their partners and that these were desirable, which suggest that economics can be a factor in such relationships.

It is important to study sexuality in the Indian context, and changes thereof, because the start of sexual activity coincides with the time that one transitions to adulthood and begins to take on adult roles. Sexual exploration should be entered into with full knowledge and awareness so that individuals can make healthy choices for themselves. In the absence of the ability to make healthy choices through lack of

knowledge or lack of power, or both, the consequences can be dire. These include sexual coercion, unwanted pregnancy, abortion and its consequences, and sexually transmitted diseases (STDs) (Mehta et al 2004[11]).

Societal control of the sexuality of unmarried girls results in a blinding lack of information on issues relating to it. Girls are unable to develop the ability to determine a healthy sexuality for themselves. Sexual expression in the absence of knowledge and the ability to make healthy decisions can result in sexual abuse and exploitation. With ever-increasing population, with degradation of socio-cultural and moral values, such incidences are increasing day by day in our country.

Table1: Distribution of the study population according to their age in years (n=197)

Age Group (yrs.)	No. of Cases	Percentage of Victim Girl
0-9	12	06
10-18	122	62
19-27	57	29
Above 27	06	03
Total	**197**	**100**

Table 2: Marital status wise distribution. (n=197)

Marital Status	No. of Cases	Percentage (%)
Unmarried	162	82
Married	35	18
Total	**197**	**100**

Table 3: Religion wise distribution (n=197)

Religion	No. of Cases	Percentage (%)
Hindu	166	84.5
Muslim	30	15.0
Christian	01	0.5
Total	**197**	**100**

Table 4: Distribution of the study population according to their Socioeconomic Status. as per Revised Modified BG Prasad's Scale , (n=197)

Monthly Per capita income	Frequency	Percent
>=5357 (Upper class)	0	0 %
2652-5356 (Upper Middle class)	14	7 %
1570-2651 (Middle)	67	34 %
812-1569 (Lower middle class)	98	50 %
<811 (lower class)	18	9 %
Total	**197**	**100 %**

Table 5: Relationship with offender.

Relationship with Offender	Total No. of Cases	No. of Cases	Perce-ntage
1. Unknown to Offender	30	-	15
2. Known to Offender	167	-	85
a) Friend		138	70
b) Neighbor		20	10
c) Others		08	04
d) Family member		01	01

Table 6: Time taken to report a case.

Time duration in reporting of incidence	Total No. of Cases	No. of Cases	Percentage (%)
Within 24 hrs.	87	-	44
More than 24 hrs.	110	-	56
i) Fear and stigma		47	24
ii) Family & Social cause		51	26
iii) Non-cooperation of Police		12	06

CONCLUSION

Victim girls usually belong to young age group between 10-18 years, majority being unmarried and belonging to lower socio-economic group. In our study, we found that most of the girls had voluntary sexual intercourse with their boyfriends and eventually eloped with them. Later on, their parents or guardians who did not approve to this relationship filed cases. At times, the boyfriend gave false assurance to the girl to marry her and did sexual intercourse frequently with her; on refusal the victim girl herself lodged complain against the boy. So the question arises how authentic were those allegations. Those cases are not only an un-necessary burden to the legal machinery and health care system, but also cause defamation and false criminal charges against an innocent man. Of course, there are also true rape cases and cases where girls were enticed to marriage by man under a false name and religion or even a married man pretended him as an unmarried person.

After understanding the different factors behind the sexual violence against the women, it is time to formulate preventive strategies with proper implementation along with remedial measures to decrease the magnitude of the problem to make the society a better place for future generation.

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Study of Certain Biochemical Parameters in Bone Diseases with Special Reference to Sickle Cell Anemia

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ABSTRACT

Background: The vasoocclusive process of sickle cell disease causes bone infractions, Osteomyelitis, Arthritis and many more complications. Inflammatory markers and other biochemical parameters could be explain the actual reason and proved helpful to overcome these complications.

Method: In this study we performed CRP, IL-6, TNF-α, Homocysteine along with other routine biochemical parameters in 30 Sickle cell patients presented with various bone complications and compared them with 30 age matched normal subjects.

Result: We found increased level of all inflammatory markers when compared to control group along with disturbed biochemical profile.

Conclusion: We concluded that high level of Inflammatory markers also predicts status of bone complications and helpful to assess the condition of patients.

Keywords: *Bone Disease, Sickle Cell, Inflammatory Markers.*

INTRODUCTION

Sickle cell patients often presented with bone involvement in acute as vasoocclusive crises as well as a source of chronic disability such as avascular necrosis. Bone and joint lesions are a frequent complication in patients with sickle cell disease. Infraction of bone marrow and adjacent body structure and multiple marrow infarcts are the main cause of pain. The painful vasoocclusive crisis and osteomyelitis are the most common complications which are requiring hospital admissions[1], Stress fractures[2], orbital compression syndrome[3], vertebral collapse[4] and bone marrow necrosis[5] are the other commonest complications associated with sickle cell disease . Hemoglobin S containing erythrocytes as well as complex involving activation and adhesion of leucocytes, platlets and endothelial cells played a major role in pathophysiology of microvascular occlusion[6]and it is particularly common in bone marrow and resulting in infarction[7]. Elevated levels inflammatory markers have been shown to be associated with an increased risk of adverse outcomes, including sickle cell disease. Interleukin-6 (IL-6), interleukin-1 (IL-1) and tumor necrosis factor-alpha (TNF-α) are cytokines that play a major role in bone remodeling, with several in vitro and rodent studies showing the involvement of inflammatory markers in the pathogenesis of osteoporosis.[8-9]

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METHOD

The study included 30 subjects with Homozygous Sickle cell Disease (Hb SS), and 30 age matched healthy controls (Hb AA). Informed consent was taken from all the subjects, in case of children, the

filled informed consent was taken from their parents.

Inclusion Criteria: Subjects with sickle cell disease, who were confirmed by solubility test and then Cellulose Acetate Electrophoresis, Normal healthy controls, not under any drug therapy, Above all subjects should be age in between 0 years to 20 years of both male and female and subjects with any bone complication due to sickle cell disease were included.

Exclusion criteria: Those subjects, who transfused blood within last 3 months, pregnant and breast feeding women, patients with diabetes mellitus, children with fever at presentation or a history of febrile illness within the preceding week of presentation, subjects with ongoing menstruation or with urinary tract infections, patients who experienced congestive cardiac failure and all paediatric patients with sickle cell anaemia (Hb SS) who showed features consistent with hypersplenism were excluded.

Solubility test was done for screening and followed by Hb Electrophoresis (Genio, Itly). ALP was assessed on Transasia EM 360 by Spectrophotometric method, CRP was done by Double polyclonal antibody sandwich enzyme immunoassay, Homocysteine, TNF-α & IL-6 was done by ELISA technique.

RESULTS

In the present study we included all the subjects who visited Department of Orthopedics, Govt. Medical College, Rajnandgon, Chhattisgarh as well as Chhattisgarh Institute of Medical Sciences, Bilaspur from January 2014 to July 2015. Total 30 patients were visited/hospitalized during this period. Out of 30 patients, male patients (n=19) and female (n=11) were gone through the study. The mean age group was 24±2. All analyzed parameters were found to be elevated when compared to control. Values are expressed as mean and SD. Alkaline phosphate was significantly increased ($p<0.0001$) when compared to control. All inflammatory markers were increased statistically significant (table 1).

DISCUSSION

Bone changes are common in SCD but the pathogenesis is not fully understood[10]. The severity of bone damage can be assessed easily by biochemical parameters. ALP is one of the biochemical parameter which indicates it very clearly. It is also a useful guide to monitor the progress in the management of bone pains in sickle cell anaemia[11]. Delayed growth and bone destruction may contribute to the elevated levels of alkaline phosphatase. Higher levels of alkaline phosphatase may be due to associated vasoocclussive crises involving the bones rather than pathology of the liver[12-13]. In the present study we found highly significant level of alkaline phosphatase in SCD when compare with normal ($p <0.001$). which is similar to a study conducted by Isichei UP[14] . Brody JI et al[15] studied behavior of ALP in sickle cell anemia patients and found Physical and biochemical criteria identified bone alkaline phosphatase as the principal, enzyme fraction that increases during symptomatic s ickle cell crises.

The bone resorption is exclusively due to the osteoclast cells.[16] Receptor activator of nuclear factor-B (RANK) and its functional ligand (RANKL) is the final common mediator of osteoclast clast function of pro-inflammatory cytokines and osteoclastogenesis can be regulated through the modulation of macrophage colony stimulating factor. In the present study Proinflammatory cytokine levels in serum, namely, IL-6,TNF-a, and CRP as a inflammatory marker measured in normal and sickle cell disease patients. We found significantly increased mean level of all three parameters when compared to control group. Crpziat et al[17], Taylor SC et al[18], Bourantas KL[19] Raghupathy R et al[20] and many other studies have shown increased levels of cytokines in serum even during the steady state of SCD with no any acute bone disease. It is believed that there are significant subclinical microvascular occlusions in steady state due to ongoing local tissue ischemia with necrosis. TNF-α promotes bone loss in various conditions such as inflammatory osteolysis, RA. It promotes formation of RANKL by stromal cells, which promotes osteoclast formation and activation.[21] Tomiyan et al[22] showed that increased level of CRP an acute phase marker, was associated with early stage of osteopenia. Ganesan K et al[23] and Koh JM et al[24] also reported same findings which are in positive agreement with the present study. In the positive agreement with Lowenthal et al[25], the present study we also found significantly increased level of homocystein when compared to control subject. During vasoocclusive crisis activation of blood coagulation and fibrinolytic systems play a key role behind it.[26]

Table 1 List of parameters assessed between cases and controls

S. No.	Parameter	Control	Cases
1.	ALP (IU/L)	76.06 ± 16.36	365.72 ± 8.3
1.	CRP (mg/dl)	1.78 ± 0.91	114.02 ± 9.76
2.	IL-6 (pg/ml)	89.94 ± 9.26	167.28 ± 39.39
3.	Homocysteine (μmol/L)	6.99 ± 1.78	22.13 ± 3.42
4.	TNF-α (pg/ml)	71.62 ± 7.48	81.96 ± 7.12

CONCLUSION

The vasoocclusive process of sickle cell disease causes bone infarctions. Undoubtedly we can say Inflammation has a major influence on bone metabolism. Inflammatory markers must be taken in to account for diagnosis as well as treatment protocol. Further study required in this field for complete understanding of the inflammation and inflammatory markers.

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Knowledge, Attitude, Ignorance and Practice of Obese Malaysians towards Obesity

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ABSTRACT

Malaysia has been characterized apical obese nation among the Asian countries. In 2010, the WHO has ranked Malaysia as the sixth country that has the highest obesity rate in Asia. Meanwhile, different aspects of obesity amongst the obese Malaysians has not been studied recently. Hence this study was designed to determine the intensity of obesity and knowledge, factors of rising obesity, awareness, reasons of ignorance and practice amongst obese Malaysians. This community based cross sectional study was conducted through questionnaire in various states of Malaysia in 2014. A purposive sampling method and software such as Microsoft Excel 2013, Prism 5.0 and SPSS 17.0 were used for statistical analysis. The reliability and construct validity was envisaged by Cronbach's alpha. Although obese Malaysians are aware about obesity and its complications their practice towards it is not extensive, so more awareness programs are needed to control the intensifying obesity in Malaysia.

Keywords: *obesity, Malaysia, awareness, ignorance, knowledge, attitude.*

INTRODUCTION

Obesity has become a preeminent global health challenge which has been an imperative risk factors for diseases such as diabetes and heart diseases. Although many initiatives have been taken by the respective government globally to restrict and circumscribe the pestilence of obesity but no national success stories have been reported in the past 33 years. News report suggest that Malaysia has been apical obese nation among the Asian countries. A survey showed that 49% of women and 44% of men in this country were found to be obese withal 45.3% of its population has been classified as heavy weight pursued by South Korea (33.2%), Pakistan (30.7%) and China (28.3%).[1, 2]

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According to the World Health Organization (WHO), obesity is defined as an individual having BMI equal to or more than 30 kg/m^2 or individual that has waist-hip ratio (WHR) of more than 1:0 for male and more than 0:85 for female. It is a multifactorial energy balance disorder due to excess calorie intake than energy output.[3]

Malaysia has been experiencing a rapid phase of industrialization and urbanization in past decades and has often been perceived as a role model for developing economies. Statistics shows rise in the size of the food importation bills for the last two decades due to high intake of energy, fats and sugars by the improved affluent society.[4] The last decade witnessed capacious clusters of western fast food outlets in Malaysia.[5] At the population level, a high prevalence of obesity results from a complex interaction between changes in the population's lifestyle, involving a higher energy and fat consumption and an increasingly sedentary existence,[6] the effects of these changes being particularly severe if the population has an inherited metabolic re disposition to fatness (a 'thrifty genotype').

According to the Malaysian Clinical Practice

Guideline (CPG), the initial approach to combat obesity would be lifestyle modification. Physical activity is considered an essential key in the management of obesity. It is prudent to include at least 45-60 minutes, of moderate intensity of activity per day or less duration of vigorous activity. Apart from that, it is implied to be abstemious and frugal in daily calorie intake.[7] The ministry has taken initiatives such as "My weight my health program", "Mysihat" to infuse the habit staying healthy among the denizens of Malaysia. Moreover, many campaigns has been persevered to create cognisance of obesity among the citizens of Malaysia. Unfortunately, obesity rate kept rising years by years.[8-10] Since, the prevalence of obesity is on the rise these days, it is important for both, the private and government sectors, to collaborate and tackle this health quandary. This warrants for a comprehensive national strategy for the obese population to be implemented, which would address both diet and activity contributors to the unwanted weight-gain. The Malaysian government has taken strong initiatives to reduce obesity percentage. However, these contrivance need to be inveterate and focused in order to harmonize the situation.

The present study was carried out to determine the intensity of obesity knowledge, factors behind rising obesity, awareness, reasons of ignorance and practice towards obesity amongst obese Malaysian society. These findings can provide baseline data with respect to the problem statement as well as identify the factors associated with it.

MATERIALS & METHOD

The WHO criteria for obesity based on the BMI guidelines was used in this study. BMI equals weight in kilograms divided by height in metres squared (BMI = kg/m^2). Using BMI, it is possible to classify the degree of obesity by reference to internationally accepted ranges, commencing from underweight (BMI < 18.5 kg/m^2), normal (BMI 18.5–24.9 kg/m^2), overweight (BMI 25.0–29.9 kg/m^2) and obese (BMI ≥ 30 kg/m^2). [3]

This community based cross-sectional study was carried out in Perak and its adjacent states including Selangor, Penang and Pahang of Malaysia in the month of March-April 2014. There was no distinction between urban, semi-urban or rural areas as well as ethnicity. Whereas Malaysian citizens aged between 15-60 and BMI ≥ 30 kg/m^2 were included and foreigners were excluded from the study.

Information about the knowledge, attitude and practice towards obesity, its complications and factors responsible for ignorance were collected by using a self-administered structured questionnaire. The questionnaire was framed in both languages (English and Bahasa Malayu) to avoid difficulties for answering for those who were not good in English. Also an interviewer was involved for uneducated peoples to ensure they were not left out from the study. This was done to minimize nonresponse rate.

Sampling size

The numbers of respondents to be participated in the study were calculated by using sample size calculator Rao soft. Sample size was designed and constructed on the intention with response ratio 50%, confidence level 95% and margin of error 5%, the entire sample size necessary for this work was calculated was 377 as minimum. Nevertheless, 429 respondents contributed in the survey which pertains to be more than the intended sample size. Respondents were conveniently selected regardless of gender, ethnicity and occupation from the selected regions. The exclusion criteria were those who had communication barrier and or were not willing to participate in the study. Based on ethnicity included Malayu, Chinese, Indians and others (minor races and does included in above races) were included in the study. Study group or students, job group or professionals, business group and others (workers, not categorised under above occupations) were categorised based on occupation.

Sampling method

Purposive sampling (judgemental or selective sampling) was optimized. Random sampling was used to obtain representative sample of larger population and then those sample which do not meet criteria desired were filtered out.

Formation of questionnaires

The questionnaire enclosed denominations based on socio-demographic (gender, age, occupation, ethnicity), weight, height and body mass index

(BMI).

Questionnaire items were constructed in accordance with the work intentions. The survey entailed of four subdivisions with a sum of 20 questions. First set of four (4) of questions surveyed about the obesity and its complications using different options. Second set of three (3) questions analysed the aspects of rising obesity by using Likert scale. Third set of six (6) polar questions perused for the factors responsible for ignoring. Fourth set of seven (7) questions evaluated the attitude towards obesity and its effect on health and life styles/awareness of respondents.

Pilot test (Questionnaire validation)

The test is usually done to validate whether the respondents are able to comprehend the questions being asked. This test was carried out online by google drive forms to record and evaluate the responses in primary study, so that revision or necessary corrections can be done in the final questionnaire before using it on respondents. Peoples of similar category of respondents were mainly chosen for pilot test. The respondents for this test were the obese peoples from Ipoh city, Perak. The questions were slightly modified based on the responses of the pilot study.

Data collection method

The data was collected by distributing the questionnaire (English & Bahasa Malayu) online (by Google drive) from selected samples. In overall 429 responses were recorded. A cover letter was also provided to respondent stating the purpose, importance, data confidentiality of survey and finally sign and endorsed by respondent. The respondents who were voluntarily agreed to participate were asked to answer the questionnaire.

Data Management

The responses obtained after the survey was arranged according to different category. Microsoft office Excel 2013 and Graph pad Prism 5.0 were used for data entry and statistics purpose respectively. Chi square test was applied to measure the relationship between demographic features and various responses of study. The tests proved to be significant considering *P* value if less than 0.05. Cronbach's Alpha test was applied to measure the reliability and validity of the questionnaire by using SPSS 17.0.

RESULTS AND DISCUSSION

Reliability Test

Cronbach's Alpha is a faster and reliable method to calculate the questionnaire reliability. Report suggest the acceptable value of alpha, ranging from 0.70 to 0.95. The result of the reliability measure was observed as high in the range of 0.951 to 0.981 for respective variables (Table I). It is envisaged that all items contribute to the reliability and construct validity of the questionnaire.[11, 12]

Demographic data

Demographic classification of the observed data is presented in Table II. The results portray that ethnic Malays and females dominated the survey. Observational studies limn higher dietary energy density (DED) and merest physical activity as a potential contributing factors for weight gain and obesity.[13] The survey also epitomized that obesity was significantly rife among Malaysians aged 18 precisely significant among Malays. The exposition was also in accordance with study carried out in past.[14, 15]

Knowledge about Obesity and its complications

The survey also adduces the knowledge of obesity among gender and ethnic Malaysians. There was no significant association between the gender and knowledge of obesity and its complication. However, ethnicity was significantly associated with obesity awareness and its complications. It was stipulated that Chinese pursued by Malays are better aware among all ethnic groups.[16] Furthermore, majority of males considered obesity as an unhealthy condition emanating due to fat deposition and high calories intake. Whereas, females and ethnic Malays referred obese as chubby persons exuded due to excessive eating and physical inactivity. Majority of the respondents irrespective of gender and ethnicity accorded that obesity may lead to heart diseases.

Aspects of rising obesity

The survey adumbrates possible aspects of rising obesity in Malaysia. It was deduced that reasons

alluded for rising obesity were not statistically significant among genders but was associated significantly among opinions of ethnic Malaysians. Males and ethnic Chinese affirmed that availability of food round the clock may be a primary reason for poor eating habits which propounds for majority of Malaysians as obese, albeit females and Indians suggested junk food and carbonated drinks as the reasons for being obese.[17-19] Surge in obesity correlates with increased automobile usage among ethnic groups in Malaysia. Females and Malays 51.24 % & 51.52% respectively strongly agreed that use of automobiles imputes for rise in obesity. Although, males and Indians have a paradoxical opinion for the same.[20] A study suggested that efforts should be made to build walkable environments which may result in higher levels of physical activity and less driving and in slightly lower obesity prevalence for those preferring walkability.[21]

Factors responsible for ignoring obesity

Labor-saving technological advances such as computers, laptops, smart phones can be blamed for obesity epidemics.[22] The survey categorised professionals and students significantly associated with technological advances for ignoring obesity ($P<0.05$). It was also suggested that lack knowledge especially among all population was a strategic reason for obesity epidemic. Childhood obesity was significantly associated with majority of the categorised population. Majority of the business individuals accepted that they are not ashamed of being obese which can adjudged a serious problem and they should be educated about the consequences of being obese. The result was quite surprising when compared to previous study where obesity has been termed as a serious social stigma.[23]

Occupation and Ethnicity their attitude towards obesity

The study also encompasses the perspective of Malaysians towards obesity. The study was significantly associated with $P<0.05$. The population was perlustrated under different category. Business individuals and ethnic Chinese rarely checked their BMI. Students and Chinese preferred healthy precisely vegetables and fruits. Per contra, professionals, Indians and Malays cherished cheap and tasty food which often included rice, chicken and mutton. Professionals and Indians suggested lack of motivation was beholding them from carrying physical activities whereas Malays were observed to be confused about food and fitness. Surprisingly, professionals epitomized that any awareness program for obesity will not be positive.

Respondents and their tendency towards exercise

The study suggest that people age more than 45, probably among the business class and ethnic Indians performed exercise on daily basis.

Table I: Reliability Test

Variables	Cronbach's alpha	N of items
Knowledge of obesity	0.955	72
Aspects of raising obesity	0.981	72
Ignorance factors	0.951	72
Attitude and practice towards obesity	0.976	72

Table II: Demographic characteristics of respondents

Characteristics	Frequency (n)	Percentage (%)	BMI (Avg.)
Gender			
Male	189	44.05	31.76
Female	240	55.94	32.13
Age			
<18	33	7.69	31.94
18-30	201	46.85	31.48
31-45	135	31.46	32.26
>45	60	13.98	32.74
Occupation			
Study	135	31.46	31.00
Job	174	40.55	32.79
Business	90	20.97	31.81
Other	30	6.99	32.82
Ethnicity			
Malay	198	46.15	31.91
Chinese	108	25.17	32.00
Indian	111	25.87	32.60
Others	12	2.79	33.67

CONCLUSION

This study revealed that obese society of Malaysia has considerable knowledge of obesity and its complications but their practice towards it is not extensive. Their attitude and ignorance of obesity is highly significant. The Malaysian government has taken strong initiatives to reduce obesity percentage but still more programs are required to create awareness and to control the rising obesity in Malaysia and make it healthy nation in Asian region.

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Conflict of Interest

There is no conflict of interest among the authors.

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A Hospital based Cross- Sectional Study on Association between Reproductive Tract Infection and Sexual Practices among Ever Married Females Attending STI/RTI Clinic

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ABSTRACT

Background: Sexually transmitted infections/ Reproductive tract infections are the major public health problems and leading cause of morbidity among men and women in developing countries.

Aims & Objectives: To know the pattern of various sexual practices and its association with STI/ RTI among evermarried females.

Materials & method: A cross sectional study was carried out in STI/RTI Clinic of Urban Health Centre, Shivaji Nagar, Govandi, Mumbai, involving total 273 evermarried females who attended OPD from January to March 2012. Patients were interviewed on the basis of pretested and preformed questionnaire. Diagnosis of STI/RTIs was done by disease specific investigations.

Results: 87.5% of females having STI/RTI had history of first sexual act below 18 years of age. It also showed significant association between sexual practice other than vaginal practices (oral, anal) and STI/RTI. About 79.5% females presented with STI/RTI who were practicing sex during menstruation. Frequency of the sexual act was also associated with these infections.

Conclusion: The pattern of various sexual practices and its frequency associated with STI/RTI.

Keywords*: STI/RTI, Evermarried, sexual practices.*

INTRODUCTION

"Sexually Transmitted Infections/Reproductive Tract Infections (STIs/RTIs) are a major public health problem and a leading cause of morbidity among men and women in developing countries[1,2]. The importance of STIs has been more widely recognized since the advent of the HIV/AIDS epidemic and there is good evidence that the control of STIs can reduce HIV transmission[3].

The 2005 ICMR multicentre rapid assessment survey indicates that 12% of female clients and 6% of male clients attend the out-patient departments for complaints related to STI/RTI.[4] According to District Level Health Survey-3, 18.3% women reported some symptom of reproductive tract infections / sexually transmitted infection.[5]

The incidence of STI/RTI in women is highest in the age group of 15-24 years and it declines after this age group. The reasons for high incidence in this age group includes low levels of protective cervical antibodies, increased sexual activity, new influence of reproductive hormones causing vast changes in tissues that may lead to increased susceptibility to STI/RTIs.[6] Hormonal changes during menstrual periods can reduce acidity in the vagina, so increased chances of these infections. It has been well established that unprotected anal intercourse is the highest risk activity associated with sexual transmission of HIV and that the presence of a concomitant STI greatly increases this risk.[7] Therefore, the prompt recognition

and treatment of rectal STI has an important role in the prevention of HIV transmission. STI/RTI can be prevented by avoidance of sexual activity or the adoption of safer sex strategies, including mutual monogamy, non-penetrative sex, and the correct and consistent use of barrier contraceptive methods, particularly latex male condoms. Female condoms are also considered to offer protection from STI/RTI.[8]

In low-income countries, STI often go undiagnosed and untreated due to lack of knowledge and/or non-availability of healthcare facilities. Little emphasis on educational and other efforts to prevent infection occurring in the first place is one of common reasons why STI control programs often fail in low-income countries.[9] Absences of these infections are essential for the reproductive health of both men and women. Hence the present study was planned to find out the association between various sexual practices and STI/RTI.

AIMS AND OBJECTIVES

1) To know the pattern of various sexual practices.

2) To study the association of various sexual practices with STI/RTI among evermarried females.

MATERIALS & METHOD

A Cross-sectional study was conducted at STI/RTI clinic of Urban Health Centre (UHC) Shivaji Nagar, Govandi, Mumbai during the period from 1st January 2012 to 31st March 2012. This UHC is affiliated to Department of Community Medicine, Topiwala National Medical College and B.Y.L.Nair Hospital, Mumbai. This study was approved by Institutional Ethics Committee prior to commencement. Evermarried women belonging to age group of 15-45 years and willing to participate were included in the study. Unwilling, unmarried and patients who had undergone hysterectomy were excluded from the study.

Total number of 411 females attended STI/RTI Clinics. Out of 411 female patients 76 were excluded from the study as they did not fulfil the inclusion criteria and 62 were not willing for laboratory tests or internal examination or both. So, total 273 patients were enrolled in the study. Informed and written consent of study population was taken. The nature & purpose of the study was explained to the participant. The data was collected using a predesigned, pretested, semistructured questionnaire and interview method. The basic information about the sociodemographic characteristics was collected in terms of her name, age, education, occupation, type of family. Modified B.G.Prasad classification was used for the assessment of socioeconomic status. Detailed history and relevant information was collected regarding age at first sexual act, sex during menstruation, weekly frequency of sexual intercourse and other sexual practices (anal, oral) related to STI/RTI .

Detailed clinical examination was done. Specimen collection is done by using sterile bivalve cusco's speculum. Samples were collected for laboratory diagnosis of cervical and vaginal infection. Antiseptic preparation of the perineum and vulva was done. For vaginal swabs, two sterile cotton tipped swabs were inserted simultaneously in the posterior fornix of vagina and rubbed against the vaginal wall. The swabs were immediately transferred to the laboratory without delay for processing out of which one was sent for wet saline mount preparation to confirm Trichomoniasis or Bacterial vaginosis and other for KOH wet preparation to diagnose Candidiasis. Endocervical swab for gonococcal infection was obtained by inserting a sterile cotton swab into cervical canal and rotated for 30 seconds and withdrawn, smear was prepared and sent for Gram staining. Blood sample was collected for RPR and HIV testing for diagnosis of syphilis and HIV respectively. Diagnosis was confirmed by direct smear examination, Gram stain, and blood test report. Statistical analysis of collected data was done by using SPSS with frequency distribution and Chi Square test.

RESULTS

Total 273 evermarried women were examined and screened for STI/RTI . Overall prevalence of STI was (63.4%). According to Table 1, the present study showed that maximum number of participants were Muslim 237 (86.8%), unemployed 250 (91.57 %) and living in nuclear type of family 165 (60.4%). Maximum number of women 94 (34.4 %) were in the age group of 26-30 years followed by 87 (31.9 %)in the age group of 21-25 years, 53 (19.4 %)in the age

group of 31-35years , 28 (10.3%) in the age group of >36 years and 11(4 %) in the age group of 16-20 years . Overall prevalence of STI was 173 (63.4 %). High prevalence of STI was noted in Muslim 150 (63.3%), unemployed 159 (63.6%), illiterate 48(75.00%), SES class V 46(82.1%) , 112(67.9%) women who were residing in nuclear family and in the age group of 21-30 years 120 (81.63 .%). Fig 1 shows that that 51(73.9%) and 30(76.5%) females have suffered from STI / RTI, in whom the frequency of weekly sexual intercourse was more than twice a week and less than twice a week as compared to 87(55.1%) with a frequency of 1-2 per week and this association is statistically significant.

Table 2 shows that 44(89.8%) females who had suffered from STI /RTI were practising other type of sex (Oral, anal). About 35 (79.5%) females presented with STI/ RTI out of total of 44 females who were practising sexual intercourse during menstruation. Age at first sexual act was less than 18 years, in 126 (87.5%) of female age as compared to 47(36.4%) females who had their first sexual act equal and above 18 years of age. Statistically significant association of STI/RTI was present in the study with relation to age at first sexual act of women, practising sexual intercourse during menstruation and type of sexual practice.

DISCUSSION

There is association between the weekly frequency of sexual intercourse and STI /RTI. Similar findings were seen in a study done by Jasmin Helen Prasad.[10] Increase in frequency of intercourse lead to increase in estrogen level which might causes changes in cervix and prone to various STI/RTI and also lead to atypical changes in lower reproductive tract like abrasions, petechial lesions which increases the risk of contracting STI/RTI. Total 126 (87.5%) of participants were having STI / RTI who had history of their sexual act at less than 18 years of age. The association between the age at first sexual intercourse and problem of STI /RTI is statistically significant. The reasons for high incidence in this age group includes low levels of protective cervical antibodies, increased sexual activity, new influence of reproductive hormones causing vast changes in tissues that may lead to increased susceptibility to STI/RTIs. A cross sectional study was conducted to quantify the magnitude of the burden and risk factors of STI/RTI among pregnant women in Zimbabwe shows that for vaginal infections it was age at sexual debut; OR (95% CI) 1.60(1.06-2.42).[11] A study done by M.E.Duncan shows similar findings as the present study.[12] Intercourse during menstruation is a suggested risk factor for PID. Eschesbachet al[13]have done a case control study comparing 135 women with PID to 740 controls from STI clinic. They reported that vaginal intercourse during menses increased the risk for gonococcal and anaerobic and aerobic endogenous infection.

CONCLUSION

Age at first sexual act less than 18 years of age is responsible for STI/RTI. Penetrative sexual practice during menstruation is a risk factor for STI/RTI. Weekly frequency of sexual practices more than twice a week had a significant association with STI/ RTI. Other type of sexual practices i.e Oral and anal increases the risk of these infections.

RECOMMENDATIONS

The above conclusions indicate that there is a need for effective interventions and community based strategies for reaching youngsters at an early vulnerable age before they become sexually active and can lay the foundation for a responsible lifestyle. Efforts should be made to improve SES, literacy level with emphasis on dissemination of information regarding situations which increased risk of STI and promote IEC regarding STI to youth. STI messages should be available to all, especially to youth who are more vulnerable to infection. Above strategies should be used to bring change in sexual behavior among high risk population.

LIMITATIONS

Hospital based study, small sample size and limited study period are the_Limitations of this study.

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Table 1: Sociodemographic profile of study population.

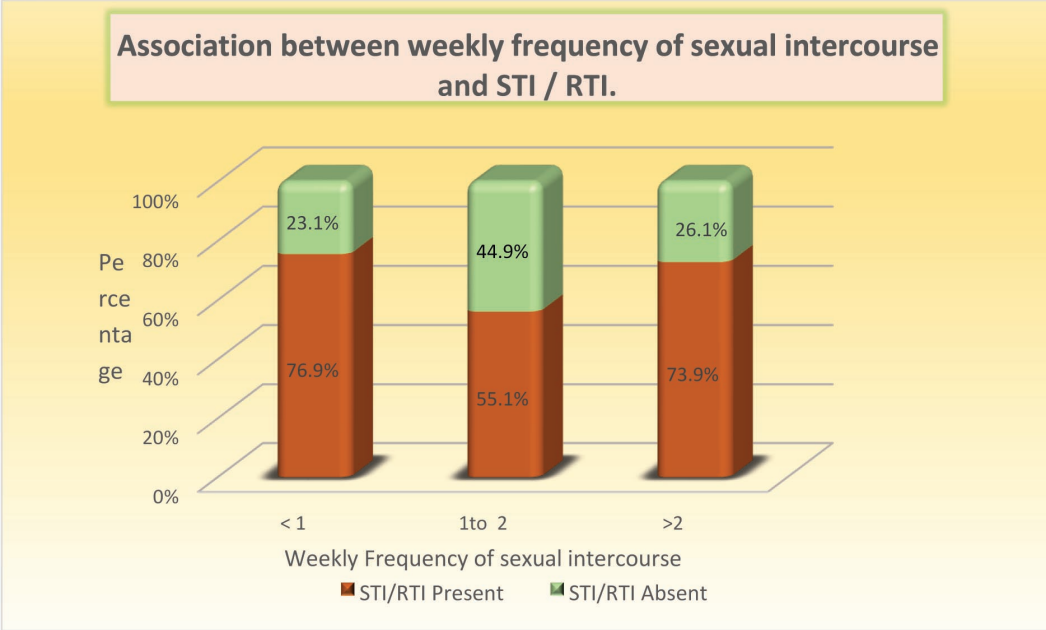
Sociodemographic profile			STI / RTI		X^2	p value
			Present	Absent		
Age in year		Total no	173(63.36%)	100(36.64%)		
	16-20	11	6 (54.5%)	5 (45.5%)	3.437	0.63
	21-25	87	58 (66.7%)	29 (33.3%)		
	26-30	94	62 (66.0%)	32 (34.0%)		
	31-35	53	33 (62.3%)	20 (37.7%)		
	36-40	21	11 (52.4%)	10 (47.6%)		
	41-45	7	3 (42.9%)	4 (57.1%)		
Religon						
	Hindu	36	23 (63.9%)	13 (36.1%)	0.005	0.945
	Muslim	237	150 (63.3%)	87 (36.7%)		
Type of family						
	Joint	90	52 (57.8%)	38 (42.2%)	4.044	0.132
	Nuclear	165	112 (67.9%)	53 (32.1%)		
	Three Generation	18	9 (50.0%)	9 (50.0%)		
Education						
	Illiterate	64	48 (75.0%)	16 (25.0%)	29.69	<0.001
	Primary	86	63 (73.3%)	23 (26.7%)		
	Secondary	83	51 (61.4%)	32 (38.6%)		
	HSC and above	40	11 (27.5%)	29 (72.5%)		
Ocupation						
	Skilled	7	3 (42.9%)	4 (57.1%)	0.06	0.794
	Semiskilled	12	9 (75.0%)	3 (25.0%)		
	Unskilled	4	2 (50.0%)	2 (50.0%)		
	Unemployed	250	159 (63.6%)	91 (36.4)		
SES						
	CLASS I	5	1 (20.0%)	4 (80.0%)	20.49	<0.001
	CLASS II	28	12 (42.9%)	16 (57.1%)		
	CLASS III	51	26 (51.0%)	25 (49.0%)		
	CLASS IV	133	88 (62.2%)	45 (33.8%)		
	CLASS V	56	46 (82.1%)	10 (17.9%)		

Table no 2: Distribution of study population according to sexual practices and STI

Sexual practices	**STI / RTI Present**	**STI / RTI Absent**	**Total**	**X^2**	**p value**
Age at first sexual act	No(%)	No(%)	**N0(%)**		
< 18 years	126 (87.5%)	18 (12.5%)	144 (100%)	76.44	<0.001
5 18 years	47 (36.4%)	82 (63.6%)	129 (100%)		
Total	173 (63.4%)	100 (36.6%)	273 (100%)		
Type of sexual practices*					
Vaginal/Anal/Oral	44 (89.8%)	5 (10.2%)	49 (100%)	18.75	< 0.001
Vaginal	123 (56.7%)	94 (43.3%)	217(100%)		
Total	167 (62.8%)	99 (37.2%)	266 (100%)		
Sex during menstruation					
Yes	35 (79.5%)	9 (20.5%)	44 (100%)	6.083	0.014
No	133 (59.9%)	89 (40.1%)	222 (100%)		
Total	168 (63.4%)	98 (36.6%)	266 (100%)		

*7 participants were widow, divorced or sexually inactive, so not included in analysis

Fig 1:



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Assessment of Knowledge Regarding Vaccine Preventable Diseases among Anganwadi Workers in District Amritsar, Punjab

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ABSTRACT

Background: Anganwadi worker (AWW) is a key functionary or key volunteer at Anganwadi centre to provide the package of services. Immunization is one of the very important health services under ICDS. The AWW should have adequate knowledge regarding each and every aspect of immunization. So the present study was conducted to assess the knowledge of AWW about the vaccine preventable diseases and the vaccine available for them under National Immunization Schedule.

Method: The present study was conducted in the Department of Community Medicine, SGRDIMSAR, Amritsar. A total of 189 AWW were chosen by stratified random sampling method. The data was collected from AWW using predesigned & pretested questionnaire. Pre-test & post- test assessment was done to assess the knowledge about vaccine preventable diseases and vaccine available for them. The data collected was analyzed using SPSS 20.0 version.

Results: The study reveals that 44.4% of the AWW were in age group of 31-40 years. 47.1% of AWW knew correctly about the number of diseases for which vaccine is available under National Immunization Schedule. The knowledge regarding various aspects of Vaccine preventable diseases was found to increase with increase in education level. There was improvement in the knowledge scores in the post test and the difference was statistically significant.

Conclusions: The AWW are the key persons who will promote the good practices of services related to ICDS to enhance the health and nutritional status among mothers and children. There is a need to provide quality training to AWW to increase their knowledge regarding the diseases and vaccines available for them.

Keywords: *Knowledge, AWW, Vaccine Preventable Diseases*

INTRODUCTION

Children in the age group 0-6 years constitute around 158 million of the population of India (2011 census). These Children are the future human resource of the country. Ministry of Women and Child Development is implementing various schemes for welfare, development and protection of children.

Launched on 2nd October, 1975, the Integrated Child Development Services (ICDS) Scheme is one of the flagship programmes of the Government of India and represents one of the world's largest and unique programmes for early childhood care and development. It is the foremost symbol of country's commitment to its children and nursing mothers, as a response to the challenge of providing pre-school non-formal education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality on the other.[1]

The ICDS seeks to lay a solid foundation for the development of the nation's human resource by providing an integrated package of early childhood services. These consist of (i). supplementary nutrition (ii). immunization (iii). health check-up (iv). medical

referral services (v). nutrition and health education for women and (vi). non formal education of children up to the age of 6 years, and pregnant and nursing mothers in rural, urban, slums and tribal areas.[2]

The Anganwadi, literally means courtyard play centre, is a child care centre, located within the village or urban slum area. AWW is a key functionary or key volunteer at Anganwadi centre to provide the package of services. The Anganwadi worker is middle or matriculate married woman, resident of the same village or community – chosen by the community and has received three months training for child and mother development.[3]

Immunization of infants protects children from seven vaccine preventable diseases – poliomyelitis, diphtheria, pertusis, tetanus, hepatitis B, tuberculosis and measles. These are major preventable causes of child mortality, disability, morbidity and related malnutrition.[4] In 2010 it was estimated that 1.7 million children died from vaccine preventable diseases.[5]

It was also noted that 19.3 million children had been incompletely vaccinated, leaving them susceptible to vaccine preventable disease mortality and morbidity. Approximately 50% of all under vaccinated children live in three countries, India being one of them.[6]

According to NFHS 3 less than half (44%) of children 12-23 months are fully vaccinated against the six major childhood illnesses: tuberculosis, diphtheria, pertussis, tetanus, polio, and measles. However, most children are at least partially vaccinated: only 5 percent have received no vaccinations at all.[7]

Anganwadi workers help in organization of outreach session and she maintains perfect records of immunization and know the left over children and pregnant women in her area.[3]

As AWW is the key person in ICDS programme for providing the services and the important health service under ICDS is Immunization. So the present study was aimed to know the knowledge of AWW about vaccine preventable diseases and the vaccines available for them.

MATERIAL & METHOD

The present study was conducted in Department of Community Medicine, SGRDIMSAR, Amritsar. The training of Trainers for AWW's was held at Baba Farid University of health Sciences, Faridkot on "Comprehensive assessment of each child, provision of therapeutical services and provision of assistive devices along with couselling to parents and family training". All the medical colleges of Punjab participated in the training. The trained faculty of Community Medicine than provided training to AWW at SGRDIMSAR, Amritsar. The list containing the information (i.e.name, place of work) about AWW was received from CDPO. Total of 1800 AWW were to be trained but due to drop out only 1600 were trained. The total of 27 training sessions was held during the period from April to mid of May.

Seven AWW were selected by stratified random sampling technique from each training session. Thus total of 189 AWW were chosen as study sample. The data was collected from AWW using predesigned & pretested questionnaire. The nature and purpose of the study was explained to AWW. The study was carried out with AWW consent & cooperation. The basic information about AWW was collected in terms of name, age, education and experience. The data regarding diseases and vaccine available for them was also collected. The pretest assessment was carried out before providing the training and post test assessment was carried out after the training. Both the assessments were conducted using same questionnaire. One mark was given for correct response and zero for incorrect response. Total number of questions was 15 so maximum score was 15. The data collected was than analyzed using SPSS 20.0 version.

RESULTS

The study revealed that 44.4% of the AWW were in age group of 31-40 years whereas 33.9%, 11.1% and 10.6% were age group of 41-50 years, >50 years and 21-30 years respectively. 93 (49.2%) AWW had studied up to senior secondary, 80(42.3%) had studied up to matric whereas only 16(8.5%) were graduate and more. Out of 189 AWW 54% were having experience of >10years while 34.4% and 11.6% of AWW were having experience of 5-10 years and <5years.(Table 1)

47.1% of AWW knew correctly about the number of diseases for which vaccine is available i.e. 7. There was significant difference between qualification of

AWWs and their knowledge about number of vaccine preventable diseases (p=.002). Half of the AWW knew about the symptoms of poliomyelitis. On asking about the mode of transmission of measles 55% could correctly tell about coughing and sneezing, while 22% said its feco-oral route, 18% said its unsterilized needles and according to 4.8% it is through blood transmission. The correct age at which measles vaccine is given was known to 46.6% of AWWs while 25.9%, 24.9% and 2.6% said it is given at 8, 10 and 11months respectively. The knowledge of age at which measles vaccine is given increase with level of education (p=.011).

60.8% of AWW correctly knew that BCG is given at birth -1 year while 27.5% of AWW said that BCG can be given up to 2years and 6.3% and 5.3% said that it can be given up to 5 and 10 years respectively. There was significant association between experience of AWW and their knowledge about start of BCG vaccine (.010). Symptoms of tuberculosis were known to 49.7% of AWW out of whom 21.2% knew weight loss, 20.1% knew night sweating and 8.5% knew about fever as symptoms of tuberculosis. Highly significant association was found between level of education and knowledge about symptoms of tuberculosis (.000)

On asking about the symptoms of diphtheria, 32.8% of AWW told only difficulty breathing, 20.6% told fever and 13.8% told headache as its symptom. 32.8% of AWW knew about all the above symptoms of diphtheria. Less than half (43.4%) of the AWWs could correctly tell about number of doses of DPT vaccine. Among the AWW who didn't know 34.4%, 18.0% and 4.2% said that there are 6, 7 and 8 doses of DPT vaccine respectively.

Regarding tetanus more than half (63.5%) of AWW knew that it spread through unsterilized instruments and the rest (36.5%) of them said it can spread by coughing and sneezing. Out of 189 AWW 16.4% knew about spasm of body, 12.2% knew about difficulty opening mouth and 48.7% knew about both the above symptoms of tetanus. 22.8% didn't know about the symptoms of tetanus.

56.1% of AWW correctly knew about the mode of transmission of Hepatitis while others

(43.9%) said that it can be transmitted by coughing and sneezing. The initiation of Hepatitis B vaccine at birth was known to only 57.1% of AWWs. According to 20.6%, 14.3% and 7.9% HepB vaccine is started at 6months, 9months and 1 and ½ years respectively. On asking about the symptom of Vit A deficiency only 45% could correctly tell about night blindness while others told redness in eye (14.3%), swelling in eyes (11.6%) and blurred vision (29.1%). Total doses of Vit A was correctly known to only 50.3% of AWWs.

Only 45% of AWWs knew correctly about the gap between two vaccines i.e. 28 days. The others said the gap between two vaccines should be seven days (18%), fifteen days (13.2%) and twenty one days (23.8%). Education level of AWWs had a significant association with the knowledge about gap between the vaccines (p=.000)

As seen in Table 2, there was statistically significant improvement in the knowledge regarding vaccine preventable diseases and there vaccination schedule in post-test scores of AWW . The mean difference increased from 7.53 to 12.28 (between pre-test and post-test). The difference was statistically significant (p=0.000)

DISCUSSION

The study was conducted among AWWs in SGRDIMSAR, Amritsar. In the study the majority (44.4%) of the AWW were in age group of 31-40 years whereas 33.9%, 11.1% and 10.6% were age group of 41-50 years, >50 years and 21-30 years respectively. Similarly in study done by Sandhyarani and Usha Rao it was found that 60% of the respondents (49) were in the age group of 35yrs to 45yrs.[8] In our study 93 (49.2%) AWW had studied up to 12th, 42.3% had studied up to matric whereas only 16(8.5%) were graduate and more.

Out of 189 AWW's 54% were having experience of >10years while 34.4% and 11.6% of AWW were having experience of 5-10 years and <5years respectively. Similarly in a study conducted in Rural Field Practice Area of Hebbal, Gulbarga District it was found that 80% of AWW had work experience of > 5 years.[9] 47.1% of AWW in our study knew correctly about the number of diseases for which vaccine is available i.e. 7. Half of the AWW's knew about the symptoms in poliomyelitis. 55% of AWW could correctly tell about the mode of transmission of measles. The correct

age at which measles vaccine is given was known to 46.6% of AWWs. This is in contrast to the finding of a study done in Sundargarh District of Odisha where 93.3% had the correct knowledge about the measles vaccine.[10] 60.8% of AWWs correctly knew that BCG is given at birth -1 year while 27.5% of AWW said that BCG can be given up to 2years and 6.3% , 5.3% said that it can be given up to 5 and 10 years respectively . Symptoms of tuberculosis was known to 49.7% of AWWs out of whom 21.2% knew weight loss, 20.1% knew night sweating and 8.5% knew about fever as symptoms of tuberculosis. This is in contrast to the findings of study done in Lesotho where most of the respondents were able to identify constitutional symptoms of TB.[11]

On asking about the symptoms of diphtheria, 32.8% of AWW told only difficulty breathing, 20.6% told fever and 13.8% told headache as its symptom. 32.8% of AWW knew about all the above symptoms of diphtheria. Less than half (43.4%) of the AWW could correctly tell about the doses of DPT vaccine i.e. 5. In contrast to this 76.7% knew about the doses of DPT vaccine in a study done by Prasanti Jena.[10]

Regarding tetanus more than half (63.5%) of AWW knew that it spread through unsterilized instruments and the rest (36.5%) of them said it can spread through coughing and sneezing. Out of 189 AWW 16.4% knew about spasm of body, 12.2% knew about difficulty opening mouth and 48.7% knew about both the above symptoms of tetanus. 22.8% didn't know about the symptoms of tetanus. 56.1% of AWW knew about the mode of transmission of Hepatitis. In a study done in Moroccan health care workers there was overall (100%) awareness of acquisition of HBV infection through blood route.[12] The difference is may be due difference in profile of health care workers. In the present study the initiation of Hepatitis B vaccine at birth was known to only 57.1% of AWW.

About the symptom of Vit A deficiency only 45% could correctly tell about night blindness while others told redness in eye (14.3%), swelling in eyes (11.6%) and blurred vision (29.1%). It is in concordance with the findings of study done by Prasanti Jena in which 43.3% of AWW knew about the symptoms of Vit A.[10] Total doses of Vit A was correctly known to only 50.3% of AWWs. This is higher than the findings of a study done in an urban area of Maharashtra where only 19.77% knew about the number of Vit A doses.[13] Only 45% of AWW knew correctly about the gap between two vaccine i.e. 28 days.

There was statistically significant improvement in the knowledge regarding various aspects of vaccine preventable diseases in post-test scores of AWWs . The difference was statistically significant (p=0.000)

Table 1: Socio-demographic Profile of Anganwadi workers

		Frequency	Percentage
Age in years	21-30	20	10.6
	31-40	84	44.4
	41-50	64	33.9
	>50	21	11.1
Qualification	Matric	80	42.3
	Senior secondary	93	49.2
	>=graduate	16	8.5
Medium	English	127	67.2
	Punjabi	62	32.8
Experience (in years)	<5	22	11.6
	5-10	65	34.4
	>10	102	54.0

Table 2: Pre and Post test Comparison of Knowledge scores of Anganwadi Workers

Knowledge scores	Mean	Mean Difference	Standard Deviation	Standard error of mean	t value	p value
Pre-test	7.53	4.746	2.710	.197	57.771	.000
Post- test	12.28		2.601	.189		

Table 3: Relation between Education level and Knowledge regarding various aspects of immunization

Question asked	Response of AWW	Education level of AWW			P value
		Matric	Senior secondary	=>graduate	
No. of diseases covered under NIS	Know	14	63	12	.002*
	Don't Know	66	30	4	
Age at which measles vaccine given	Know	29	53	5	.011**
	Don't know	51	40	11	
Age at which BCG is given	Know	38	64	14	.001*
	Don't know	42	29	2	
Symptoms of tuberculosis	Know	27	57	11	.000*
	Don't know	53	36	5	
Mode of transmission of tetanus	Know	38	72	10	.000*
	Don't know	42	21	6	
Symptoms of tetanus	Know	25	56	11	.000*
	Don't Know	55	37	5	
Initiation of Hepatitis B vaccine	Know	27	66	15	.000*
	Don't Know	53	27	1	
Gap between two vaccines	Know	19	59	7	.000*
	Don't Know	61	34	9	

*highly significant at 0.05 level

**significant at 0.05 level

CONCLUSIONS

The study findings highlights that the AWW lack the adequate knowledge about the vaccine preventable diseases. The AWW are the key persons who will promote the good practices of services related to ICDS to enhance the health and nutritional status among mothers and children. There is a need to provide quality training to AWW to increase their knowledge regarding the diseases and vaccines available for them. Regular supervision is also required to effectively implement the ICDS programme.

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Conflict of Interest: None

Ethical approval: The study was approved by the Institutional Ethics Committee.

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A Study of Factors Affecting Health Seeking Behavior for Childhood Illnesses

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ABSTRACT

Introduction: Childhood illnesses present a major public health challenge for developing countries like India which is aggravated by a suboptimal health seeking behaviour by the parents or guardians. Appropriate medical care seeking could prevent a significant number of child deaths and complications.

Objectives: The present study aims to determine the factors affecting health seeking behavior for childhood illnesses, thereby improving child survival.

Method: This was a cross-sectional study carried out between November 2012 and May 2013. Recruited were patients 2 months to 5 years of age who presented to the outpatient department and emergency of Pediatric Department, Rama Medical College, Hospital and Research Centre, Hapur. Their health seeking behavior for child's illness and the factors affecting it were analyzed.

Results: Out of 222 patients, 29.3 % came to us directly, 70.7% had shown to at least one health care provider before, out of which 30% had shown to more than one health provider before coming to us. The health seeking behavior of the caretakers was influenced by the area of residence, type of family, father's and mother's educational status, family income, birth order and parity, type and severity of illness and availability of health care services in proximity.

Conclusion: For the preventable childhood illnesses with existing interventions, appropriate health seeking behaviour is low. Intervention programs focusing on educational improvement of the caretakers, introduction of community based integrated management of childhood illness and diversification of income sources are likely to contribute to improve the health seeking behaviour and child survival.

Keywords: *Health seeking behaviour, child survival, India.*

INTRODUCTION

Child health a priority area for governments, policy makers and international agencies, a critical area of discussion in international forums, as well as a subject of great social appeal, continues to be in a process of refinement. Child health indicators from developing countries provide a clear signal that even though there has been considerable improvement in the state of child health over years, each year about 13 million infants and children die in developing countries (1,2). The majority of these deaths are due to infections, parasitic diseases, and many if not most of the children die malnourished. Effective child survival strategies need to be aggressively implemented in the developing counties to improve the well being of children. Following an integrated approach to the management of childhood illness provides an opportunity to increase the effectiveness of the delivery of primary health care services through the efficient use of case management interventions. However the potential impact of the approach to morbidity & mortality depends ultimately upon its

use. In recent years, epidemiologists & social scientists have focused attention to study the religionship between illness & health seeking behavior (3,4). The literature points to inadequate utilization of health services as a significant contributor to mortality and morbidity in these resource poor settings.

Inadequate financial resources and an under-resourced healthcare system contribute to delay in accessing medical facilities. These two cardinal factors, however only partially explain the observed trends in low uptake of optimal treatment patterns (5) Studies indicate that a range of other factors such as the relatively low status of women (6), cultural beliefs and practices (7) perception of the cause of the illness (8), severity of the illness (9), age, sex, birth order of the child, mother's education, father's education, number of children in the family, monthly per capita income (10) may contribute to this delay for parents to access medical care for their children. These observations point to the central role of socio- cultural factors in determining health seeking behaviour (HSB)

Appropriate medical care seeking could prevent a significant number of child deaths & complications due to ill health. Understanding impediments to optimal HSB could greatly contribute to reducing the impact of severe illness on children's growth & development.

The present study therefore aims to determine factors affecting HSB for child hood illnesses, thereby improving child survival.

MATERIALS & METHOD

The study was conducted in the Department of Pediatrics, Rama Medical College Hospital and Research Centre (RMCHRC) over a period of seven months, from November 2012 May 2013. All patients between the age of 2 months and 5 Years who presented to the outpatient department and emergency of the department of Pediatrics, RMCHRC were included in the study

Data was collected using in depth interviews. Following informed consent procedures, parents were interviewed and the answers recorded in a pretested structured questionnaire to ensure standardization. Information was collected regarding the patient's name, age, sex, weight, temperature, address, birth order, mother's and father's educational status, number of persons and children in the family, monthly percapita income, type of family, type of residence (urban / rural), severity of the illness, type of the illness, type of care sought before coming to RMCHRC and reason for using the type of care. An attempt was then made to assess the health care seeking behavior by the caretakers and the socio-behavioural determinants of the HSB.

RESULTS

A total of 222 patients between the age of 2months and 5years who presented to the Department of Pediatrics RMCHRC from November 2012– May 2013 were included in the study. An attempt was made to assess the level and nature of HSB of the caretakers and the predictors (clinical & socio behavioral determinants) of HSB.

Out of 222 patients 65 (29.3 % came to us directly, 157 (70.7%) had shown to at least one healthcare provider before coming to us, out of which 30 (19.1%) had shown to more than one healthcare provider before coming to us. Out of 157 patients 14% were taken to a traditional healer, 26.4% to an unqualified doctor, 35.4% to a private practitioner and 19.1% to a government hospital. Drug store was utilized in a very small number (5.1%) of patients. Thus private practitioner was the favored first healthcare provider (35.4%) followed by unqualified doctor (26.4%) before coming to us.

Six categories of disease were reported among children in this study. These included respiratory illness, diarrhoea, malnutrition, anaemia, measles and febrile diseases (cases with fever as one of the presenting complaints). Malnutrition and anaemia were present in combination with other diseases in 97% of cases.

Findings indicate that age and sex of the child had no significant association with the health care provider visited.

There was statistically significant association between the use of health care provider and area of residence of the patient. Utilization of private practitioner was higher among urban families than their rural counterparts (37.3% vs 20.5%) (p= 0.008).

Majority of the cases going to unqualified doctor and traditional healer belonged to joint family (57.6% and 59.1% respectively) while large number of those who went to private practitioner belonged to nuclear family (64.7%).

Father's educational status was seen to be significantly associated with the use of private practitioner (p=0.00) with majority of the people going to private practitioner, being of educated class.

Mother's educational status was seen to be significantly associated with the utilization of private practitioner (p=0.00) with majority of the mothers going to private practitioner being educated.

There was statistically significant association between health care provider visited before coming to us and family income. Majority of the people who went to unqualified doctor had income less than or equal to Rs. 2000 (42.5%) (p= 0.00) and those who went to private practitioner had income more than Rs. 4000 (39.7%) (p= 0.002).

There was statistically significant association between the use of unqualified doctor and parity (0.001) and birth order of the child (p=0.00)

Majority of the cases of respiratory illness (35.3%) and febrile disease (32.1%) in our study were taken to a private practitioner while those of measles were shown to a traditional healer (66.7%) before coming to us. Majority of the cases of diarrhoea (35.7%) came to us directly.

The caretaker's responses and actions were also influenced by their perception of severity of the illness with majority of the cases of severe disease being taken to medical doctors.

Apart from the above, a mother's HSB was also influenced by proximity to the health facility.

DISCUSSION

The results of our study show that on the whole children suffer from a number of ailments which include- respiratory illnesses, diarrhea, malnutrition, anemia, measles and febrile disease.

On studying the factors affecting the HSB (which is the action taken by people when dealing with an illness) it is seen that HSB is influenced by a multiple number of factors. Some of these factors are predisposing factors such as age, gender, occupation, education and some are enabling factors such as proximity to the health facility and income.

In our study private practitioner was the favored first healthcare provider (35.4%) followed by unqualified doctor (26.4%) before coming to us. Our study is comparable to the study by Amarasiri de Silva et al (11) which showed that a large percentage of people with sick children who sought outside care used private doctors in the area. Pandey (12) showed that district hospitals stood out as the most preferred source, as 52 (45.2%) of the children used it as the first step. Other sources of health care were health centre (10.4%) home care (25.2%), General practitioners (10.4%) and Drug stores (8.7%) In the study by Goldmann & Heuveline (13) traditional healer was consulted in 13.1% patients. In the study by Amina Abubakar (14), biomedicine (hereby used to refer to both attendance to clinics and home treatment using drugs bought over the counter in shops) was their first preference for treatment In the study by MB Sudharsanam (15), all parents sought allopathic system of medicine for sickness About 65% of them sought private care. Sur et al (16) found that in Kolkata 60% only went for allopathic system and 35% for private care for diarrhoeal episodes for the child.

The factors affecting the health seeking behaviour were type of the illness, severity of the illness, type of family, father's and mother's educational status, parity and birth order of the child, family (per capita) income and area of residence.

Majority of the cases of respiratory illness (35.3%) and febrile disease (32.1%) in our study were taken to a private practitioner. Majority of the cases of diarrhoea (35.7%) came to us directly, while those of measles were shown to a traditional healer (66.7%). Study by Grace M Mbagaya (10) should that in general; families are more likely to seek treatment when a child experiences fever, diarrhoea and vomitting compared to coughs, colds & skin infections. This may due to these illness being considered severe, as the effects of dehydration are immediate and detectable. Tassema and others made similar observations in Ethiopia (17). Study by Amina Abubakar (14) showed that psychological and psychiatric problems were presented to traditional

healers. Goldman & Heuveline (13) showed that children experiencing fevers & especially fever and gastrointestinal symptoms were more likely to be taken to a biomedical healthcare provider than children with respiratory or other symptoms.

In the study by Webair HH (9), medical care was sought significantly more when the illness was perceived as severe (POR 5.39, 95% CI: 2.81- 10.33) and when the child had difficulty of breathing (POR 2.93, 95% CI 1.10- 7.80)

In the study by Grace M Mbagaya (10), most mothers did nothing as their first response to the symptom of illness experienced by their children regardless of perceived severity. Only when the illness progressed and children were unable to eat or play, then mothers were likely to take action. The decision to seek help was most often precipitated by the impairment of the child's daily activities or fear of severity.

Our study showed statistically significant association between the HSB and the area of residence. Utilization of private practioner was higher among urban families than their rural counterparts (37.3% vs 20.5%). Aung et al (18) in their study found that the utilization rate of private health clinics by urban and rural mothers were 78% and 20% respectively. But for the utilization of government health facilities, it was higher among rural mothers than their urban counterparts (65.5% vs 24%). Private practioners were identified as favorite health providers especially in urban areas.

In our study majority of the cases going to unqualified doctor and traditional healer belonged to joint family (57.6% & 59.1% respectively) while majority of those going to private practitioner belonged to nuclear family (64.7%). Thus people living in nuclear families had better health seeking practices as compared to joint families. This may be due to the counselling and advice given by elders within the family this finding is consistent with that of Amina Abubakar (14)

Mother's & father's educational status was significantly associated with HSB in our study with majority of the people going to traditional healer and unqualified doctor being uneducated & those using private practitioner being educated. Maternal education is one variable which has been examined as a possible determinant of HSB through which maternal behaviors may influence probabilities of child survival (10). The education of the mother is associated with a greater commitment to the care of the child. Study by Webair HH (9) also showed that the caretakers sought medical care significantly more when they had a higher level of school education.

Our study showed statistically significant association between the use of unqualified doctor and parity & birth order of the child. Vaahtera et al (19) studied the health seeking behavior during acute episodes of diarrhoea, ARI and malaria and showed that the amount of morbidity was associated with the number of siblings. Reyes et al (20) assessed the variables significantly associated with death due to ARI and showed that being a child of first birth order showed a protective effect against the risk of death. Study by MB Sudharsanam (15) showed no association between parity and birth order and HSB.

In our study, statistically significant association was seen between health seeking behavior and family income. This is similar to the study by Schellenberg et al (21) who showed that wealthier families are more likely to bring their sick children to a health facility. They have knowledge about the general danger signs. Study by Amarasiri et. al (11), showed that resorting to care does not have any significant relationship to socioeconomic status. Care seeking was not found to be any less among children and families who were less well off. This study showed that good access to health care is not limited by socioeconomic factor. This contradictory result may be due to the affect of other variables on the health seeking behaviour. In the study by MB Sudharsanam (15) poor socioeconomic status had no influence on HSB as inspite of low socioeconomic status, caretakers sought private care. Pillai et al (22) have reported that there was an association between socioeconomic status and HSB with low socioeconomic status people seeking frequently the government health care.

Our study showed no significant association between the age of the child & HSB. Goldman and Heuveline (13) showed that infants are more likely to be seen by health care providers Taffa et al (23) found in Nairobi that HSB was more for children below one year. Study by MB Sudharsanam (15) showed that age

group did not influence health seeking.

Our study demonstrated no significant association between the sex of the child and the health care provider visited. Hasan et al (24) had shown significant association between health seeking behaviour and sex of the child. Goldman and Heuveline (11) demonstrated no significant sex difference in health seeking behaviour. Pillai et al (21) revealed no gender difference in seeking treatment. MB Sudharsanam (13) reported no gender difference in seeking treatment. Our study could not be compared with the above studies since it included only the cases who had come to a health care facility and missed the cases who stayed at home.

CONCLUSIONS

The conclusion drawn from the present study is that the sociobehavioural factors significantly associated with the health seeking behavior of caretakers of sick under- five children were- area of residence (urban/ rural), type of family, father's educational status, mother's educational status, family income, parity and birth order of the child. The patients from nuclear families, living in urban areas, with educated mother and father, with low parity and birth order and a higher family income were taken to better health care services while their counterparts were taken to unqualified doctors and/ or traditional healers.

Our study, thus, shows that there is a great need of improving the health care seeking behaviour of the communities.

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Review of Selective Primary Health Care Efforts in an Urban Health Center Area in Guntur City of Andhra Pradesh

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ABSTRACT

Background: Soon after the Alma Ata conference, Comprehensive Primary health Care (CPHC) was assailed as not 'feasible' and Selective PHC (SPHC) was offered as an intervening option. The UNICEFs GOBI programme included limited interventions of proven efficacy linked with appropriate technology; growth monitoring, oral rehydration, breast feeding, immunisation, food supplementation, family planning and female literacy. Though there has been focus by governments on GOBI related activities over the years, health issues continue unabated even in the area of child health. **Method:** A cross sectional study was done from September to December 2012 involving a population of 15000 (2845 families) served by the Israilpet Urban Health Center (UHC)in Guntur City. A house to house search for mothers with children 1-2 years yielded 242 respondents. This group of mothers was selected for the following reasons: Good recall of health related activities of their children and Completion of primary immunisation (6 VPDs). After obtaining consent, a pretested questionnaire was administered to Mothers of 1-2 year children regarding utilization of maternal care services and GOBIFFF activities **Findings:** Though utilisation of core activities like Immunisation seem good (93.3 % fully immunized), in depth knowledge on basic health issues and the demand for health care is poor. Regular house visits by health workers is still necessary to ensure child immunisation. Growth monitoring card was present only with 22.0% of the mothers and entries made in only 9 cards. Many mothers were found to have poor knowledge about ORS and its preparation. The private health sector is being utilized more (71.0% availed antenatal and intra natal care in private sector).Though couple protection rates are improving, the unmet need for family planning is on the rise as only 4.0% were following any spacing methods. **Conclusion:** Even among the GOBI activities, only some aspects are occurring in the community. Growth monitoring is still meager. Utilisation of immunisation and tubectomy services are mainly due to the efforts of health workers and continue to depend on their inputs. The increasing role of the private sector and the unmet need of family planning services have to be addressed. On the whole the original spirit of self determination envisioned at Alma Ata has been lost over the years.

Keywords: *Selective PHC, Immunisation, growth monitoring, breast feeding, ORS, GOBI.*

INTRODUCTION

The Alma Ata conference put forth the proposal of the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. Primary health includes at least: education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care including family planning; immunization against the major infectious diseases; prevention and control of endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs[1].

Three key ideas permeate the Alma Ata declaration: "appropriate technology," opposition to medical elitism, and the concept of health as a tool for socioeconomic development [2].

In the aftermath of the Alma Ata conference, three types of Primary Health Care (PHC) have been identified. Comprehensive PHC (CPHC) and Basic PHC (BPHC) both have a wide scope of activities; BPHC however does not include water and sanitation activities. Only one year after the Alma Ata conference, CPHC was attacked as not 'feasible' and Selective PHC (SPHC) was offered as an interim alternative. SPHC only addresses 5 to 8 diseases, almost all of them falling within the realm of pediatrics [3].

Primary health care though seen as the right approach to the health problems of the world, seemed utopian in its concept requiring large financial and other inputs over long periods of time. A selective approach was then mooted as more cost-effective. On the basis of high morbidity and mortality and of feasibility of control, a circumscribed number of diseases were selected for prevention. The principal recipients of care would be children up to three years old and women in the childbearing years [4].

In 1979, UNICEF promoted the CHILD SURVIVAL REVOLUTION highlighting strategic vertical programmes within Primary Health Care (PHC) under the label Selective PHC. The UNICEF's GOBI-FFF programme included limited interventions of proven efficacy linked with appropriate technology; growth monitoring, oral rehydration, breast feeding, immunisation, food supplementation, family planning and female literacy. Though there has been focus by governments on GOBI related activities over the years, child health continues to be an issue. Three million children die every year of vaccine preventable diseases; a majority of them in developing countries. Though India started a family planning programme in 1951, there are still 35 million people who are not using any method of contraception. An efficient maternal care programme will go a long way towards improving the overall health of women and that of society as a whole. Community participation can be assessed by the involvement of beneficiaries in planning, contribution of resources and finally utilisation. The focus is on: reduction of maternal deaths through safe delivery mechanisms, infant survival, and effective Family Planning. The gap between women's reproductive intention and their contraceptive behavior (KAP - gap) is also called the unmet need for family planning. The family planning programme continues to be plagued by many issues. A large number of pregnancies continue to be unplanned and the contraceptive needs of millions of women in India remain unmet. Adolescents and men are mostly unaddressed. Contraceptive choice remains conspicuous by its absence, as is quality of care within the programme [5].

Chau CN suggests that giving emphasis to a limited number of specific child care activities in communities is more likely to result in lasting change. GOBI was a limited approach to child health and survival as it focused on a narrow number of interventions. The success of the GOBI program was due to its simple focus on a limited number of health issues [6].

It has been found that maternal education levels, knowledge, attitudes and practices (KAP) are significantly and independently associated with children's' nutritional status. The areas significantly associated with nutritional status concern nutritional requirements of children, nutritional value of foods, immunisation, hygiene, oral rehydration and diarrhea [7].

The aim and objective of this study is to evaluate the utilization and outcome of selective PHC services like maternal care services and GOBIFFF (growth monitoring, oral rehydration, breast feeding, immunisation, food supplementation, family planning and female literacy) activities in an Urban Health Center (UHC) area.

MATERIALS & METHOD

This cross sectional study was conducted from September to December 2013 in the Israilpet Urban Health Center (UHC) in Guntur city of Andhra Pradesh which serves a largely slum dwelling populace. The field service area of the UHC serves a population of 15,000 (2845 families). A house to house search for mothers with children 1-2 years yielded 242 respondents. This group of mothers was selected because they would have a better recall of the health related services given to their children including completion of primary immunisation (6 Vaccine

preventable diseases). After an informed consent was taken from the mothers, a predesigned and pretested questionnaire was administered to them regarding utilisation of maternal care services and GOBIFFF activities. Data was entered in Excel and analysed with Epi Info statistical package for percentages and parametric tests like chi square test where feasible.

FINDINGS: The women included in the study were all from the urban slum of Israilpet in Guntur city. Most of the women (93%) were between the ages of 20 to 30 years and were housewives (95%). 52% of the husbands were unskilled or semi skilled workers. Birth order of 3 or more was seen only in 6% of the women. Health seeking behaviour showed that women who were educated more than secondary level preferred private health care facilities (64.1, χ 9.69, p <0.0001). Husbands whose occupation was above skilled workers also preferred private health care facilities to govt. (71%, χ 17.72, p <0.00002).

65.4% of deliveries done in private sector were by C-section as against 42.1% in Govt. sector which was significantly associated (χ 12.35, p<0.00044, OR 0.38 CI 0.22 to 0.68). Despite the suspicions of the people who use the service, that many private providers of health care perform unnecessary diagnostic tests and surgical procedures, residents are choosing the private sector in overwhelming numbers. This is because the public alternative is so much worse, with interminable waits in dirty surroundings with hordes of other patients. Many medicines and tests are not available in the public sector, so patients have to go to private shops and laboratories [8]. The appropriate role of the private sector is influenced by; the ability of the government to provide effective stewardship and regulation, the health care financing environment, and the organization of the public health sector [9].

There were no postnatal house visits done by any health worker. 84.0% of the mothers were 21-30 years of age. Growth monitoring card was present only with 22.0% of the mothers and entries made in only 11 cards.

Advocacy and support for growth monitoring as a programme can be looked upon as a child rights viewpoint and also serves as a source of information for parents and caregivers. It can bring importance to growth as a measure of nutrition and health and makes growth faltering visible and thereby prompt necessary action. How can government keep parents responsible as the ultimate "duty-bearers" in ensuring optimal health and nutrition of children, if they do not have the necessary information? [10].

Immunisation card was available with 37.2% mothers only. Infant immunisation was well utilized in the study population 93.3 % are fully immunized while 6.6% are partially immunized. Regular house visits by health worker is linked with better immunisation knowledge. The few who were partially immunized were due to poor literacy and negligence. 93.0% of women had given colustrum though they were not adequately aware of its importance. Breast feeding within the stipulated time was seen in 53.3% only. However 91.30% of the women gave exclusive breast feeding for 6 months. Illiterate mothers were found to have poor knowledge about ORS and its preparation. Wherever ORT has been available and used appropriately it has brought about reduction in diarrhea-specific mortality rate. However maternal understanding and practice of ORT was frequently incorrect, limiting its effectiveness [11].

45.46% of mothers are not following any of the family planning methods (Temporary /permanent). Of the 100 women with one child, 9 underwent tubectomy and 9 were using IUD, condom or pills. The remaining 82 women are unprotected. Of the 142 women who had 2 or more children, 114 underwent tubectomy. None among the remaining 28 (19.7%) women are following spacing methods. 64.23% tubectomy operations were done in the Government health sector. The reasons mentioned for their husbands not undergoing vasectomy are: she feels that vasectomy is not safe, her mother-in-law does not allow her son to go for vasectomy and that her husband will not be able to work after the vasectomy. Association is noted between the education received regarding FP practices and knowledge regarding awareness of FP and Vasectomy.

Family Planning today is no longer about controlling numbers. Instead, it is a basic human right closely linked to the empowerment of women, whose availability can avert thousands of maternal deaths, improve the health of mothers and their babies, and pull communities out of poverty. The large unmet need for family planning in the country stands at

an estimated number of 32 million or 13 per cent of currently married women who want to limit their children but are not using any method [12].

CONCLUSION

Acceptability of health care services and practices especially those of MCH in India, though utilized well, is by and large still influenced by cultural taboos and ignorance. After several years of investment in vertical interventions, preventable diseases remain a major challenge for developing countries. The selective model has not responded adequately to the interrelationship between health and socioeconomic development, and a rethinking of global health policy is urgently needed [13].

Though on one hand UNICEF's GOBI is seen as the leading edge of Primary Health care, on the other hand it undermines processes such as local definition of health needs and local organization to demand for health rights in several ways [14].

It is clear that services have to still be supplied to people and the demand for the same is not very evident. The spirit of the concept of Primary Health care as visualized by the leaders at Alma Ata leaned towards a people driven programme for health care. It emphasized the need for changes in people's knowledge, attitudes and practices regarding health care and encouraged the ideas of self governance and monitoring. PHC in so far re-defines the role of medicine and looks at health in a holistic way. Medicine is being de-mystified and individuals and communities are encouraged to take over responsibility for their own health [15].

The government health services are still driven by the activities of the health personnel rather by the demands of the people. However there is an increasing trend towards the private sector which may lead to more out of pocket expenses to the family. The large number of c-sections in the private sector is alarming and the indications for the same must be looked into. Utilisation of Immunisation services was good mainly due to the efforts of the health workers. Immunisation and family planning programmes are heavily dependent on the effectiveness of the ANM in terms of house visits and health education Poor Family planning knowledge is related to the inadequate health education efforts of the health worker. Poor awareness and acceptance of spacing methods contributes to the unmet need for family planning. Vasectomy for their men folk as a means of permanent contraception is still not acceptable to most women.

The health of children is much entwined with the health of their parents, and one cannot expect to achieve significant strides in the health of one group without the other.

The study shows that though KAP regarding GOBIFFF activities was good in the community in-depth knowledge was lacking. Due to the above, the ANM's visits to the houses for health education and motivation continue to be important. Growth monitoring as an activity in MCH is still lagging behind. Though awareness about ORS is good a large number of women still do not know its correct method of preparation. The practice of ORS is significantly linked to mother's literacy status. Breast feeding is not being established within 1 hour as advised. This is also influenced by the increased number of deliveries by caesarian section. The patient's lack of practical knowledge, and paternalistic role of health providers in directing patient care, leaves patients vulnerable to low-quality treatment, excessive use of diagnostics, and over-prescription.

Food supplementation is not reaching a good number of pregnant women. Efforts are needed to shift the focus from public responsibility to individual responsibility and from health system focus to community focus.

The challenges are to move away from a narrow technical bio-medical model of health to a broader social determinants approach and ensuring that the role of the State in the provision of welfare services is not further weakened. If PHC is to remain relevant in today's context, the challenge also lies in finding ways to develop local community commitments especially in terms of empowerment [16].

Table 1: Growth monitoring (GM)				
	No	**%**		
Growth monitoring card present with mother (n 242)	54	22.31		
Entries made at least once in above GM cards (n 54)	11	20.37		
Weight checked by ANM according to mother	204	85.54		
Mother knows importance of GM	145	59.9		
Table 2: Oral Rehydration Therapy				
	No	**%**	**Chi Square**	**p value**
Occurrence of diarrheal episodes in their children	213	88.02		
Awareness about ORS	200	82.67		
Correct knowledge about preparation of ORS (n 200)	189	94.5		
Poor literacy in mother and poor ORS awareness (n 51)	17	33.3	4.94	<0.02
Poor literacy in mother and poor ORS preparation(n 51)	14	27.45	5.05	<0.02
Table 3: Breast Feeding				
	No	**%**		
Breast feeding given (n 242)	230	95.04		
Colustrum given (n 230)	224	92.6		
Correct knowledge about importance of colustrum	39	16.11		
Breast feeding initiated in right time	129	53.3		
Breast feeding initiated in right time (normal delivery, n111))	46	41.44		
Breast feeding initiated in right time (Caesarian delivery, n131)	83	63.35		
Awareness given on BF during ANC	128	52.89		
Exclusive BF for 6 months (n 230)	210	91.3		
Weaning started at 6 months	171	70.66		
Table 4: Immunisation				
	No	**%**		
Fully immunised children	226	93.39		
Partial immunisation (measles not given)	16	6.61		
Delayed immunisation	71	29.34		
Immunsation card present	90	37.19		
Knows about immunisation day at center (Wednesday)	169	69.83		
Knows about immunisation outreach day (Saturday)	46	19.01		

Table 5: Family Planning (FP), Food supplementation & Female literacy				
	No	**%**	**Chi Square**	**p value**
Low education levels in the mothers	51	21.07		
Food supplement received by mother	139	57.44		
Family planning education received	98	40.5		
No FP methods being followed	110	45.46		
Knowledge about ideal family size of 2 children	215	89		
Ideal gap between pregnancies (2 to3 years)	143	59		
Correct knowledge about best spacing method	77	32		
Correct knowledge on best FP method in newly married	40	17		
ANMs education efforts & FP knowledge (n 99)	78	78.78	22.3	<0.00

RECOMMENDATIONS

More inputs are needed in encouraging growth monitoring as a participatory programme with the mothers. Improving practical knowledge about breast feeding, ORS, immunisation etc. is needed among the beneficiaries for better health care seeking and utilisation. The health education component of MCH services should be improved in terms of house visits. Audit of indications for C-sections both in private and governmental health sectors is needed. Motivation for Family Planning practices especially temporary methods is still lagging behind. There is a need to popularize spacing methods as a means to delay the 2nd child and improve maternal outcomes and reduce the unmet need for family planning. Misconceptions about vasectomy must be corrected. Finally there is a need to bring back the concepts of empowerment and self determination affirmed at Alma Ata when Primary Health Care approach was first advocated.

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Pattern of Ear Diseases among Pediatric ENT Patients: An Experience from a Tertiary Care Hospital, Hapur, India

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ABSTRACT

Introduction: Ear diseases in children are a major public health concern in developing countries. The problem is compounded by the fact that the children are economically dependent on their parents who are largely poor which tends to delay early presentation to the hospital. These diseases can have sequelae if not treated early which may cause increased morbidity, hearing disability and even mortality.

Objective: This study was done to find out the pattern of ear diseases in pediatric age group attending Ear, Nose and Throat OPD in a tertiary care hospital in India.

Method: This is a hospital based prospective study done in pediatric patients (below 18 years of age) attending ENT OPD of Rama Medical College, Hospital and Research Centre, Hapur between January 2013 to June 2013. The diagnoses were made on the basis of history, clinical examination and otoscopic examination. The results were expressed in numbers and percentages.

Results: Out of 1140 pediatric ENT patients, 628 had ear diseases, 58.1% were males and 41.9 % were female. Wax (36.4%) was the commonest diagnosis followed by Chronic suppurative otitis media (23.2%), Acute otitis media (13%) Otitis media with effusion (9.2%) and Otitis externe (8.4%). The other conditions were otomycosis, foreign body in the ear and preauricular sinus in descending order in our study.

Conclusion: Ear diseases are the most common conditions in ENT OPD among pediatric age group. Wax, CSOM, AOM, OME and otitis externa (OE) are the most common ear diseases. Improvement of socioeconomic status and healthcare facilities will be helpful in reducing the prevalence of ear diseases.

Keywords: *Ear diseases, children, wax, CSOM, AOM.*

INTRODUCTION

Ear diseases in children have been found to be a major public health problem in developing countries. These diseases can have sequelae if not treated early which may cause increased morbidity, hearing disability and even mortality. Hearing impairment obstructs the overall development of a child. Identifying these conditions early and treating them can reduce these unwanted sequelae.The present study was carried out to find out the pattern of ear diseases in pediatric ENT patients is a Tertiary Care Hospital of Hapur ,India.

MATERIALS & METHOD

This hospital based prospective study was carried out between January 2013 to June 2013 in the Ear, Nose and Throat (ENT) Department of Rama Medical College, Hospital and Research Centre, Hapur, India. All Patients 18 years of age or younger presenting with ear diseases in the ENT outpatient were included in the study. The data was recorded in a proforma and physical examination was done.

Otoscopic examination was done using Welch Allyn otoscope.

Wax obstructing at least one quadrant of pars tensa was considered as significant and included in the study. Chronic suppurative otitis media implies to a permanent abnormality of the pars tensa or pars flaccida. Acute otitis media was diagnosed with either history of ear ache, fever, impaired hearing or otorrhoea and examination of tympanic membrane showing intensely red or bulging tympanic membrane or perforation. Otitis media with effusion was diagnosed if there was visible retraction and change in color (dullness) of tympanic membrane and its mobility on pneumatic otoscopy.

The study proposal was reviewed and approved by Rama Medical College, Hospital and Research Centre Ethical Committee. Informed consent was taken from guardians participating in this study. Results were expressed in numbers and percentages.

OBSERVATIONS

1140 patients 18 years of age or younger presented to the ENT OPD. Of them, 628 had ear disease. 365 (58.1%) were males. 263 (41.9%) were females. The male to female ratio was 1.4:1.The most common diseases were wax (36.4%) followed by chronic suppurative otitis media (23.2%), acute otitis media (13%), otitis media with effusion (9.2%) and otitis externa (8.4%). The other conditions were otomycosis, foreign body in the ear and preauricular sinus in descending order in our study.

DISCUSSION

Ear diseases in children are a major public health problem in developing countries.

This study indicates that wax (36.4%) followed by CSOM (23.2%), AOM (13%), OME (9.2%) & otitis externa (8.4%) were the most common ear diseases in pediatric population attending the ENT OPD of the hospital.

Wax (36.4%) was the most common diagnosed ear disease. This is similar to the finding of Sigdel B et al (1) and Rijal AS et al (2) who reported the prevalence rates of 33.4% and 40.2% respectively.

Adhikari et al (3) found that wax impaction is the most common finding in pediatric population attending health camps in Nepal (62%). However Okafor (4) in his study found wax impaction to be the third most common ear disease in the south eastern part of Nigeria. Hatcher et al (5), Elango et al (6) and Minza et al (7) reported prevalence rates of impacted wax ranging from 8.6% to 28.2%. Jacob et al (8) and Sharma et al (9) reported wax as the most common cause of hearing impairment, which accounted for 29.8% and 50.0% cases respectively.

Chronic suppurative otitis media is one of the most common ear diseases (10, 11) in many of the developing countries. It has been found to be second only to common cold as a cause of infection in childhood (12). It is the most common cause of persistent mild to moderate hearing impairment in children and young adults (13).

The etiology and pathogenesis of otitis media are multifactorial and include genetic, infections, allergy, environmental, social and racial factors and Eustachian tube dysfunction (14) high rates of CSOM have been attributed to overcrowding, inadequate rates of nasopharyngeal colonization with potentially pathogenic bacteria and inadequate or unavailable health care (15).Poverty is a major risk factor in developing countries and certain neglected populations (15). Poor living conditions, overcrowding, poor hygiene and nutrition have been suggested as a basis for the widespread prevalence of CSOM in developing countries. (16). Okafor et al found that the majority of the patients with chronic ear disease came from communities living in subsistence agricultural or slum areas of the cities (10).

Potential loss of hearing because of otitis media has important consequences on the development of speech & cognitive abilities , including academic performance of children(17).

During the recent decades the incidence of CSOM has dramatically declined due to improvements in housing, hygiene and antimicrobial chemotherapy (18).The prevalence of CSOM varies in different countries, different populations and ethnic groups.

Our study showed 23.2% of ear diseases pediatric patients to be suffering from CSOM (70% had tubotympanic type and 30% had attico-antral disease). This is similar to the finding of Sigdel B who showed the prevalence of CSOM to be 24.3% (72% had

tubotympanic and 28% had attico-antral disease)(8).

Previous studies by Adhikari et al in Kathmandu district revealed that 5.4% of the children had CSOM (19) another study by P. Adhikari showed that 7.6% of the children had CSOM (20). The study of Ologe and NWAWALO et al found the prevalence of CSOM to be 6.0% in rural government primary schools while 0% in the children of urban private schools (17). OKEOWO et al (21) observed a statistically significant difference in the prevalence of CSOM among the rural children (3.6%) and urban school children (0.6%). Similarly the prevalence of CSOM done in government school children as quoted by Rupa et al (22) was 6.0%, Kamal et al (23) was 7.3%. Prevalence of CSOM among school children at Narayanganj by Chowdhury & Salauddin et al (24) was 4.3%. Maharajan et al (14) showed the prevalence of CSOM to be 13.2% while Biswas et al (13) showed 12.4%, Morris et al (25) showed 15% , Okur et al (26) had 10.4% The prevalence of CSOM in urban school children quoted by Minija et al was 1.3% and 9.4% in urban school children (27). Most of these studies were done in school children but our study was based on patients attending the hospital.

In our study AOM was the third most common ear disease. This is similar to the study by Sigdel B et al (13%)(8) and Akinpelu et al(7.0%) (28). The study by Prakash Adhikari (29) revealed that 1.4 % of school going children of Kathmandu valley had AOM. It was the fourth most common ear disease in children.

OME is one of the most common causes of hearing impairment and one of the most frequent reasons for elective admission to hospital for surgery during childhood. Our study gave the prevalence of OME to be 13%. According to Adhikari et al (3) the prevalence among rural Nepalese school children was 4.7%. Study done in Nigeria revealed that 5.3% of children had OME (28). Sigdel B (1) found that 9.4% of cases had OME but Kishve et al (30) found it to be 20% in a rural medical college in India.

Otitis externa, otomycosis, aural foreign bodies and preauricular sinus were the common diseases in descending order in our study. This is similar to the findings in the study by Sigdel B et al(1).

Our study showed that 55% of Pediatric ENT patients had ear diseases which is comparable to the study done by Sigdel B et al (57.8%) (1) and Awan Z et al (47%)(31).

CONCLUSION

Ear diseases contribute significantly to the existing burden of health problems in our environment.Wax followed by CSOM, acute otitis media and otitis media with effusion and otitis extrna are the most common ear diseases in children attending the pediatric ENT OPD. The possibility of low level of public enlightenment, financial constraints and lack of time or negligence of health are important contributing factors.

Increasing health education, improvement of socioeconomic status and health care facilities will be helpful in reducing the prevalence of otological diseases in developing countries like India.

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Conflict of Interest: None

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Effect of Acute Stress on Cardiac Output and Systemic Peripheral Resistance in Obese Young Adults

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ABSTRACT

Obesity is major problem in present population especially in children and young adults. Obesity is a state of excess adipose tissue mass. Stress is inevitable in the present scenario. Obesity adversely affects almost all the systems of the body including cardiovascular and respiratory system and reduces exercise tolerance & stress tolerance. Exposure to sudden extreme stress is commonly seen in medical students. Therefore the present study was conducted to assess the effect of acute stress on cardiac output and systemic peripheral resistance in obese young adults. Sixty asymptomatic healthy male medical students, aged 17-25 years, participated voluntarily in the present study. Subjects were divided in to two groups of 30 each. Group A comprised of non- obese (BMI<25, control group) and group B comprised of obese subjects (BMI> 30). Cold pressor test (CPT) was used to induce acute stress which involves immersion of hand in cold water of 8^{o}c for 2 minutes. Cardiac output and peripheral resistance were measured by using Impedance Cardiovasograph (Nivomon). All the parameters were recorded before and immediately after cold pressor test in both the groups. Results showed significant increase in cardiac output and systemic peripheral resistance ($p<0.05$) immediately after exposure to cold stress for two minutes in comparison to baseline parameters in both the groups, however this increase was more significant in group B ($p<0.01$) than control group ($p<0.05$). On comparison of parameters before CPT and 5 minutes after CPT, no significant difference was observed in parameters including cardiac output and systemic peripheral resistance ($P>0.05$) in control group but these were significantly higher in obese subjects of group B. Results show greater increase in cardiac output and systemic peripheral resistance in obese on exposure to acute stress and delayed recovery to baseline values in comparison to non obese.

Keywords: *Cold Pressor Test, Cardiac Output, Systemic Peripheral Resistance.*

INTRODUCTION

Obesity is state of excess of adipose tissue. Body mass index (BMI) closely correlates with excess adipose tissue. It is calculated by dividing measured body weight in kilograms by the height in meters squared. Body mass index (BMI) of 30 is most commonly used as a threshold for obesity in both men and women. While BMI <25 is considered as normal. Obese people with increased abdominal circumference (> 102 cm in men and 88 cm in women) or with high waist–hip ratios (> 1.0 in men and > 0.85 in women) have a greater risk of diabetes mellitus, stroke, coronary artery disease, and early death than equally obese patients with lower ratios. Visceral fat within the abdominal cavity is more hazardous to health than subcutaneous fat around the abdomen [1, 2]. Obesity is associated with significant increases in both morbidity and mortality. Obesity may lead to hypertension, type 2 diabetes mellitus, hyperlipidemia, coronary artery disease, degenerative joint disease, and psychosocial disability metabolic syndrome (including three or more of the following factors: elevated abdominal circumference, blood pressure, blood triglycerides, and fasting blood sugar, and low high-density lipoprotein [HDL] cholesterol). Obese patients also have a greater risk of pulmonary functional impairment including sleep apnea, endocrine abnormalities, proteinuria, and increased hemoglobin concentration. Patients with obesity have increased rates of major depression and binge eating disorder [3, 4]. Stress is inevitable in the present

environment. As obese are more susceptible to develop hypertension in future, so it may be assumed that stress tolerance might be altered in obese. Cold pressor test is an autonomic function test which is used to assess the hypo or hyper reactivity of sympathetic nervous system in response to stress. In this test; cold water of 8^{o} C is used to induce experimental stress. Immersion of hand in cold water activates afferent pain and temperature neurons which results in stimulation of sympathetic efferent neurons. Leblank first reported the use of cold pressor test in fishermen. Cold pressor test represents a wide spread neurogenic stimulation of multiple components of cardiovascular system [5-7]. In obese people, blood pressure may be increase in future due to increase in cardiac output leading to increased systolic blood pressure or it may be due to increase in systemic peripheral resistance leading to increased diastolic blood pressure. Both cardiac output and systemic peripheral resistance are regulated by autonomic nervous system. Any increase in sympathetic activity will lead to increase in cardiac output and systemic peripheral resistance [8-10]. Cardiac output and peripheral resistance can be measured non-invasively by using Impedance Cardiovasograph (Nivomon, L&T Medical's). It is a Non Invasive vasography monitoring system. It measures the Cardiac Output (CO) and Blood Flow Index (BFI) of the patient non-invasively. It computes the Cardiac Output (CO), Stroke Volume (SV), Systemic Vascular Resistance (SVR), Cardiac Index (CI), Stroke volume Index (SI), Systemic Vascular Resistance Index (SVRI), Pulse Rate (PR) and various other cardiovascular parameters. As obesity is very common in medical students and they also face significant number of stressors therefore the present study aims the to study the effect of acute stress on cardiac output and systemic peripheral resistance in obese young adults.

MATERIAL & METHOD

The present study was conducted in the department of physiology, Saraswathi Institute of Medical Sciences, Hapur. Sixty asymptomatic healthy male medical students, aged 17-25 years, participated voluntarily in the present study, undertaken, to assess the effect of acute stress on cardiac output and systemic peripheral resistance in obese young adults. Subjects were divided in to two groups of 30 each. Group A comprised of non- obese (BMI<25, control group) and group B comprised of obese subjects (BMI> 30). Experiment procedures were in accordance with the ethical committee on human experimentation. Study was carried out at ambient temperature with minimal external or internal sound disturbances in the room. Subjects reported to laboratory 2 hours after light lunch. They were explained in detail about the experimental procedure. Informed consent was taken from all subjects. Subjects were asked to lie in supine position and to take rest for 10 minutes. Systolic blood pressure (SBP), diastolic blood pressure (DBP) and heart rate (HR) were recorded by using automatic digital sphygmomanometer. Subjects were connected to Impedance Cardiovasograph (Nivomon) via color coded 8 leads of NICO patient cable. Leads were connected at their respective locations as given below:

1. Red leads (I1 and I1′) -Behind the ears (Top pair)
2. Yellow leads (V1 and V1′) -Roof of the neck (Second pair)
3. Violet leads (V2 and V2′) -Level of xiphisternum (Third pair)
4. Green leads (I2 and I2′) End of ribcage or >5 cm from third pair (Bottom pair)

Cardiac output, peripheral resistance and other parameters were recorded using Impedance Cardiovasograph (Nivomon). Subjects were asked to dip left hand in cold water at 8^{O}c for two minutes. Above mentioned parameters were recorded again immediately and 5 minutes after removal of hand from cold water.

All data were collected and statistical analysis was done by One-Way ANOVA and Tukey post Hoc tests using the window SPSS Statistics 17.0 version.

FINDINGS

Table 1: Comparison of cardiac output, systemic peripheral resistance and other cardiovascular parameters before and after Cold Pressor Test (CPT) in Group A (non obese)

S.N.	Cardiovascular parameters	Before CPT	Immediately after CPT	5 minutes after CPT
1	Systolic blood pressure (SBP) (mm Hg)	112.21±4.52	134.42±3.12*	111.11±2.42#
2	Diastolic blood pressure (DBP) (mm Hg)	71.12±2.64	85.32±4.52*	71.32±4.12#
3	Heart rate (HR) (per minute)	71.22±1.12	80.4±3.26*	72.48±2.13#
4	Cardiac Output (CO) (L/min)	5.22±0.14	6.04±0.16*	5.26±0.12#
5	Stroke volume (SV) (ml/ beat)	71.04±1.62	76.31±1.54*	72.14±1.32#
6	Systemic Peripheral Resistance (SPR) (dyne.sec/cm^5)	1350.22±18.92	1388±16.54*	1360.1±17.52#

*Comparison between before CPT and immediately after CPT, *p<0.05 (significant)
#Comparison between before CPT and 5 minutes after CPT, #p>0.05 (non significant)

Table 2: Comparison of cardiac output, systemic peripheral resistance and other cardiovascular parameters before and after Cold Pressor Test (CPT) in Group B (obese)

S.N.	Cardiovascular parameters	Before CPT	Immediately after CPT	5 minutes after CPT
1	Systolic blood pressure (SBP) (mm Hg)	128.21±5.74	158.42±3.12**	138.42±5.32^
2	Diastolic blood pressure (DBP) (mm Hg)	78.12±2.66	95.32±6.25**	86.32±6.22^
3	Heart rate (HR) (per minute)	75.22±1.12	85.42±3.62**	82.34±4.12^
4	Cardiac Output (CO) (L/min)	5.02±0.14	6.64±0.16**	5.82±0.32^
5	Stroke volume (SV) (ml/ beat)	66.04±0.62	78.31±1.54**	72.22±3.22^
6	Systemic Peripheral Resistance (SPR) (dyne.sec/cm^5)	1370.22±18.92	1403.88±16.54**	1390.56±10.34^

**Comparison between before CPT and immediately after CPT, **p<0.01
^Comparison between before CPT and 5 minutes after CPT, ^p<0.05

Table -1 shows comparison of parameters before and after cold pressor test in group A (non obese). Immediately after exposure to cold stress for two minutes, there was significant increase in cardiac output and systemic peripheral resistance (p<0.05). SBP, DBP, heart rate and stroke volume also increased significantly (p<0.05). On comparison of parameters before CPT and 5 minutes after CPT, no significant difference was observed in parameters including cardiac output and systemic peripheral resistance (P>0.05).

Table -2 shows comparison of parameters before and after cold pressor test in group B (obese). Immediately after exposure to cold stress for two minutes, there was significant increase in all cardiovascular parameters including cardiac output and systemic peripheral resistance (p<0.01). On comparison of parameters before CPT and 5 minutes after CPT; cardiac output and systemic peripheral resistance were significantly higher (p<0.05) along with SBP, DBP, heart rate and stroke volume (p<0.05).

CONCLUSION

Obesity can result from increased energy intake, decreased energy expenditure, or a combination of the two. In presence of nutritional abundance and a sedentary lifestyle adipose energy stores increase and lead to obesity. Body weight regulation or dysregulation depends on a complex interplay of hormonal and neural signals. Alterations in stable weight by forced overfeeding or food deprivation induce physiologic changes that resist these perturbations: with weight loss, appetite increases and energy expenditure falls; with overfeeding, appetite falls and energy expenditure increases. This latter compensatory mechanism frequently fails, however, permitting obesity to develop when food is abundant and physical activity is limited. Body weight is regulated by both endocrine and neural components that ultimately influence the effector arms of energy intake and expenditure [1].

As obesity develops as result of imbalance involving neural and endocrine component, other neuro-endocrine mechanisms may also alter. These may lead to increase susceptibility to stress. Present study has proven the fact that in response to acute stress; increase in cardiac output and systemic peripheral resistance was more significant and recovery to baseline value was also slow; as after 5 minute in recovery period cardiovascular parameters fail to reach the baseline value. This indicates that there is some deviation of sympatho vagal balance towards sympathetic side in obese, which might be responsible for higher chances of development of hypertension in obese.

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Conflict of Interest: Nil

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Ethical Clearance: Procedures followed in the present study were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed concent was obtained from the subjects.

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A Study of Non-specific Cervical Smooth Muscle Dilators in Acceleration of Labor

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ABSTRACT

Objective: To compare and evaluate the efficacy of drotaverine hydrochloride and valethamate bromide for effective cervical dilatation in labor.

Method: Total of 100 patients (aged 20 to 30 years) including both primigravidae and multigravidae in first stage of labor, were divided randomly into two groups with 50 patients in each. The drotaverine (D) and valethamate (V) groups were given intravenously, 40 mg Drotaverine hydrochloride to the former with every 2 hours for a maximum of 3 doses and 8 mg Valethamate bromide to the latter with maximum of 6 doses half an hour apart.

Results : In primigravidae and multigravidae the average duration of active phase is shortened by 3 hours with 1.92 cm/hour cervical dilatation in drotaverine group and 1 hour 45 minutes with 1.44 cm/hour in valethamate group (p value <0.05). There was no significant difference in the duration of second and third stages in both groups. No obstetrical complications or major side effects observed in both groups .

Conclusion: Drotaverine accelerates labor better than of valethamate. The reduction of pain during labor is better with drotaverine when compared with valethamate.

Keywords: *Cervical dilatation, drotaverine, valethamate.*

INTRODUCTION

Both the obstetrician and the laboring woman would like to accomplish the delivery in the shortest possible time without compromising the maternal and fetal safety. Hence, along with early amniotomy and early administration of oxytocin, to accelerate labor many advise the use of antispasmodic agents like drotaverine, hyoscine butylbromide, dicyclomine valethamide bromide etc. to hasten the first stage of labor [1]. Among these drugs we selected two drugs drotaverine hydrochloride (DH) and valethamate bromide (VB) to compare their efficacy in accelerating the rate of cervical dilatation.

DH is an isoquinoline derivative and its chemical name is 3, 4, 6, 7 tetraethoxy-1 benzyl 1, 2, 3, 4 tetrahydro isoquinoline hydrochloride [2]. It is a unique smooth muscle relaxant and acts by inhibiting phosphodiesterase-IV enzyme that results in increased cAMP [3]. VB is an anticholinergic smooth muscle relaxant. It is an ester with chemical name ethanaminium N, N diethyl N-methyl 2(3 methyl-1-oxo-2 phenyl pentyl) bromide. It acts by competitively inhibiting the muscarinic receptors of smooth muscle cells followed by inhibition of phospholipase C and decreases intracellular calcium [4,5]. The effects of DH and VB have superiority over other smooth muscle relaxants routinely used in clinical

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practice, easy available even in rural setup, cheap and have no proven adverse effects on mothers, fetuses and the new born. The objective of this study was to compare and evaluate the efficacies of DH and VB

METHOD

The study was conducted in Kamineni Institute of Medical Sciences, Sreepuram, and Naketpally over a period of 1 year from November 2013 to November 2014. This is a prospective comparative study involving two groups of patients. 100 patients with 38-41 weeks of gestational age were selected. They were divided into two groups randomly with 50 patients in each group: Group-D : Each case received 2ml of injection drotin containing 40mg DH intravenously, dose repeated after 2 h if necessary upto a maximum of 3 doses. Group-V: These cases received 2 ml of injection epidosin containing 8mg of VB intravenously every half an hour up to a maximum of 6 doses. Institutional ethics clearance was obtained before the start of study.

After considering inclusion criteria and after taking informed consent, patient was examined in detail at 80% effacement and 3-4 cm cervical dilatation with adequate uterine contractions. The drug was given intravenously. These patients were monitored for vital data, rate of cervical dilatation, injection dilatation interval, mode of delivery, duration of second and third stages of labor, neonatal outcome, side effects to drug and patient's satisfaction regarding pain reduction

The results were tabulated and analyzed. SPSS for Windows Version 10.0 (SPSS Inc., USA) was used for the statistical analysis. The Chi square/and the Fisher's exact tests of significance were used wherever they were applicable and P –values less than or equal to 0.05 were considered significant.

RESULTS

The age distribution in both groups is comparable i.e. between 20 to 30 years.

Table 1. Duration of active phase of labor in D – group and V- group

Gravida	< 2 Hours		2 – 4 Hours		4 – 6 Hours		6 – 8 Hours	
	D group	Vgroup	Dgroup	Vgroup	Dgroup	Vgroup	D group	V group
Primigravida (n=24)	3	1	15	6	5	15	0	1
Secondgravida (n=15)	3	3	11	7	1	7	0	0
Thirdgravida (n=11)	6	3	5	8	0	0	0	0

D group , 14% of patients had active stage duration of <2 hours , 63% of them had 2-4 hours and 23% of patients had 4-6 hours in primigravida. In secondgravidae , 21% of patients had duration of active phase of <2 hours, 73% of them had duration of 2-4 hours, and in 6% of secondgravidae the duration of active phase was 4-6 hours. While in 55% of thirdgravidae the duration of active phase was <2 hours and 45% of them had duration of active phase of 2-4 hours . V group , 4% of patients had the duration of active phase of <2 hours, 26% of them had the duration of 2-4 hours, and in 67% of primigravidae the duration was 4-6 hours. In 3% of primigravidae the duration of active phase was 6-8 hours. In Secondgravida of V-group, 17% of preganant women showed the duration of active phase to be <2 hours, 42% of them had the duration of active phase of 2-4 hours and in 41% of pregnant women h the duration was 4-6 hours. Thirdgravida of V group, 27% of them had the duration of <2 hours and 73% patients showed the duration of active phase to be 2-4 hours (Table 1).

Table 2. Duration of second and third stage of labor in D- group and V-group

SECOND STAGE	Gravida	< ½ Hour		½ - 1 Hour		1 – 2 Hours	
		D group	V group	D group	V group	D group	V group
	Primigravida	4	2	18	17	1	2
	Secondgravida	11	11	4	6	0	0
	Thirdgravida	8	7	3	4	0	0

Table 3 Duration of third stage of labor in D- group and V-group

THIRD STAGE	Gravida	0-10 Min.		10-20 Min.	
		D group	V group	D group	V group
	Primigravida	21	19	2	2
	Secondgravida	15	16	0	1
	Thirdgravida	11	11	0	0

D-group: In second stage of labor, 17%, 78% and 5% of primigravidae exhibited the duration of < ½ hour, ½ - 1 hour and 1 - 2 hours respectively. While 73% and 27% of secondgravidae had the duration of < ½ hour and ½ - 1 hour, respectively. So in 73% and 27% of thirdgravidae, the duration of second stage were < ½ hour and ½ - 1 hour. In third stage of labor, 91% and 9% of primigravidae, the duration was 0-10 minutes and 10-20 minutes respectively. But 94% and 6% of secondgravidae the duration of third stage were 0-10 minutes and 10-20 minutes. But, 100% of thirdgravidae had the duration of third stage of 0-10 minutes (Table 2 and Table 3).

V- group: In second stage of labor, 9%, 81% and 10% of primigravidae had the duration of second stage of < ½ hour, ½ - 1 hour and 1 - 2 hours respectively . While 65% and 35% of secondgravidae, the duration of second stage were < ½ hour and ½ - 1 hour respectively. Additionally, in 64% and 36% of thirdgravidae the duration of second stage is < ½ hour and ½ - 1 hour (Table 2). In third stage of labor, 90% and 10 % of primigravidae the duration of third stage were 0-10 minutes and 10-20 minutes respectively. While in 94% and 6% of secondgravidae the duration of third stage were 0-10 minutes and 10-20 minutes. Further in 100% of thirdgravidae the duration of third stage was 0-10 minutes (Table 2 and Table 3).

Table 4. Apgar scores of neonates between D and V groups

Gravida	APGAR SCORE					
	8 - 10		6 – 8		< 6	
	D group	V group	D group	V group	D group	V group
Primigravida	22	19	2	3	0	0
Secondgravida	15	17	0	0	0	0
Thirdgravida	11	11	0	0	0	0

APGAR score for D group , 92% and 8% of primigravidae had a score of 8-10 and 6-8 respectively. While 100% of secondgravidae and thirdgravidae patients had a score of 8-10 (Table 4) . The APGAR score in 86% and 14% of primigravidae in V group had 8-10 and 6-8 respectively. While 100% of secondgravidae and thirdgravidae of V-group had a score of 8-10 .

Table 5: Comparison of active stage of labor between D and V groups

Gravida	<2 hours		2-4 hours		4-6 hours		6-8 hours	
	D group	V group	D group	V group	D group	V group	D group	V group
Primigravida	14	4	63	27	21	68	0	4
Secondgravida	21	17	73	41	6	41	0	0
Thirdgravida	54	27	45	72	0	0	0	0

Values expressed in percentage

Table 6 Comparison of second stage of labor between D and V groups

Gravida	½ hour		½ - 1 hour		1-2 hours	
	D group	V group	D group	V group	D group	V group
Primigravida	17	9	78	81	5	10
Secondgravida	73	65	27	35	0	0
Thirdgravida	73	64	27	36	0	0

Values expressed in percentage

Table 7 Comparison of third stage of labor between D and V groups

Gravida	½ hour		½ - 1 hour	
	D group	V group	D group	V group
Primigravida	91	90	9	10
Secondgravida	94	94	6	6
Thirdgravida	100	100	0	0

Values expressed in percentage

In primigravidae the duration of active phase is 3 hours 6 minutes and cervical dilatation rate is 1.92 cm/hour in D group. But it is 4 hours 14 minutes and 1.44 cm/hour in V group. In secondgravidae, the duration of active phase is 2 hours 28 minutes and cervical dilatation rate is 2.46 cm/hour in D group whereas it is 3 hours 12 minutes and 1.86 cm/ hour in V group. In thirdgravidae the duration of active phase is 2 hours 10 minutes and cervical dilatation rate is 2.76 cm/hour in D group ,but it is 2 hours 21 minutes and 2.52 cm/hour in V group. (Table 5)

The total number of cases in D group with injection, dilatation interval was less than 4 hours which was significantly more than V group .

In D group the average duration of second stage is 39.5 minutes in primigravidae, 24.26 minutes in secondgravida and 24.5 minutes in thirdgravida. In V group average duration of second stage is 44 minutes in primigravidae and 28.8 minutes in secondgravidae, and 24 minutes in thirdgravidae (not significant). Even there was no statistical difference in the duration of third stage in both groups (Table 6 and Table 7).

DISCUSSION

In our study we compared the effect of DH and VB on cervical dilatation, duration of second and third stages of labor. After intravenous(IV) administration the drotaverine is rapidly absorbed and has half life is 12 minutes, reaches maximum concentration in 45 minutes. The primary elimination half life is 2.4 hours. It doesn't cross placental barrier and metabolised by liver. It is excreted through urine and faces as unchanged drug [6,7]. After IV of valethamate action starts with in 5-10 minutes. Its plasma half-life is 4 hours. It crosses the placental barrier and is secreted in breast milk, but has no proven deleterious effects on fetus and baby. It is metabolized by liver and excreted in urine as both unchanged drug and metabolites [4,5]

The administration of smooth muscle relaxants in first stage of labor at an appropriate time and dilatation phase can reduce the duration of labor successfully while providing pain reduction.

Ever since Farkas et al (1967) [8] concluded that drotaverine relieves the cervical smooth muscle spasm, many obstetricians used drotaverine for accelerating labor and proved it as an effective cervical dilator. Our study also proved the same.

In a study done by Sharma et al (2001) [9] with drotaverine and valethamate in acceleration of labor, he concluded that both are effective but drotaverine accelerated labor more rapidly. The injection dilatation interval was significantly reduced with drotaverine 193.96 minutes (3 hours 13 minutes) in contrast to valethamate bromide group 220.68 minutes (3 hours 40 minutes)

In a study conducted by S.L Mishra et-al (2002) [10] it was proved that drotaverine is highly effective cervical dilating agent compared to valethamate.

The average duration of 3 cm to full cervical dilatation was 3 hours 25 minutes (205 minutes) in primigravidae and 1 hour 45min (105 minutes) in multigravidae with drotin and 4 hours 35 minutes (275 minutes) in primigravidae and 3 hours 30min (210 minutes) in multigravidae with epidosin. They concluded that both the drugs were effective but epidosin was better in multigravidae.

In the study conducted by Monika Soni et al (2008)[11] and C Madhu et al (2009)[12] they proved that both drugs were effective in cervical dilatation but drotaverine hydrochloride is better to valethamate .

The mean duration of active phase was 186.3 minutes (3 hours 6 minutes) with drotaverine and 254.2 minutes (4 hours 14 minutes) with valethamate in primigravidae and 140.76 minutes (2 hours 20 minutes) with drotaverine and 172.82 minutes (2 hours 52 minutes) with valethamate in multigravidae. The rate of cervical dilatation is 1.92 cm/hour and 2.58 cm/hour with drotaverine in primigravidae and multigravidae respectively whereas it is 1.44 cm/hour and 2.19 cm/hour with valethamate in primigravidae and multigravidae respectively. Both drotaverine and valethamate are effective in cervical dilatation but drotaverine is superior to valethamate. The data from the studies of J.B Sharma et al[9], S.L Mishra et al[10] and C.Madhu et al[12] support this findings.

There is no significant difference in the duration of second and third stages with both the drugs and no increase in obstetrical complications. This is supported by the studies done by Sharma et al[9], Anju et al[13] and C. Madhu et al[12]. Some obstetricians have reserved opinions that the cervical spasmolytic action of drotaverine could weaken the uterine contractions thus delaying the progress of labor. However no studies are available in defense of such opinions. But our study and previous studies proved that drotaverine had no such effect.

In our study 6% of cases in valethamate group had vomiting, tachycardia and dryness of mouth. In drotaverine group patients had no complaints. Our findings are consistent with the findings of Anju et al[13], S.L. Misra et al[10] and Monika et al[11].

The APGAR scores were also not effected in both groups. Multigravidae expressed definite satisfaction with pain experience compared to their previous labor pains. This is more with drotaverine than valethamate. The sum effect of reduction in total duration of labor reduced the maternal morbidity and did not adversely affect the fetal outcome. The process of labor as such becomes less anxious and less painful experience fulfilling the aim of the obstetrician and desire of the patient.

Both the drugs are easily available even in rural

set up, less expensive, easy to administer, no need of anesthetist and easy to monitor with less side effects.

CONCLUSION

Our study found an increasing role of drotaverine hydrochloride in reducing the total duration of labor, hastening cervical dilatation, ensuring smooth progress of labor with good maternal and fetal outcome. It is concluded that overall efficacy of drotaverine was superior than the valethamate bromide.

Conflict of Interest Statement: We declare that we have no conflict of interest

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Prevalence of Risk Factors in Patients with Myocardial Infarction

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ABSTRACT

Introduction: Cardiovascular diseases constitute the leading cause of death in men in economically developed countries. It is estimated that there were approximately 46.9 million patients with cardiovascular disease in India during the year 2010. **Material and methods**: The study was undertaken in prospective manner at Swaroop Rani Nehru Hospital, Allahabad, affiliated to Moti Lal Nehru Medical College, Allahabad. 97 patients with myocardial infarction were taken in to consideration. 9 patients did not give the consent so total of 88 patients were included in the study**. Results:** Out Of total patients 72 were males. Mean age of the patients was 55.13. Eighteen patients (20.45%) were known hypertensive. (22.73%) of the patients were found to have diabetes mellitus. 46 patients used to smoke. All the smokers were males. Out of the smokers 14 expired. Relation between smoking and mortality was found to be significant with p=.0410. 37 (42%) of the patients were having sedentary lifestyle out of whom 26 were males and 11were females .19 patients had history of prior MI out of them 14(19.45%) were males and 5(31.25%) were males. A significant relation was found between prior MI and mortality (p= .0141). **Conclusions:** There is an increasing epidemic of non communicable diseases in developing countries. It is seen that preventable risk factors play an important role in heart diseases. These factors increase the risk of mortality. So efforts should be done to prevent these risk factors at primodial and primary level only.

Keywords*: Risk factors, Prevalence, myocardial Infarction.*

INTRODUCTION

Cardiovascular diseases constitute the leading cause of death in men in economically developed countries. In women it is the second or third leading cause. Fifty percent of these diseases are preventable[1]. The current epidemic of non-communicable diseases in India is attributed to increased longevity and lifestyle changes resulting from urbanisation.[2]

It is estimated that there were approximately 46.9 million patients with cardiovascular disease in India during the year 2010.Cardiovascular diseases are responsible for about 25% of the DALYs lost due to non-communicable diseases in SEAR countries. Of these IHD accounts for about 40% of DALYs lost.[3] The link between smoking and heart disease has been well described in populations all over the world[4].

It is now generally agreed that diet governs many situations favouring the onset of 'heart disease' particularly coronary heart disease. Of the factors associated with CHD (e.g. Plasma cholesterol, high blood pressure, cigarette smoking, lack of physical activity) plasma cholesterol has a very high statistical significance with the incidence of CHD[3].

Primordial prevention in cardiovascular diseases consists of prevention of development of coronary risk factors in population /community. Generally primordial prevention should begin during childhood, continue through adolescents, youth and later years of life[5].

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Cigarette smokers are twice as likely as nonsmokers to have a heart attack and are more likely to die from a heart attack than nonsmokers. Patients who continue to smoke in the presence of already established coronary heart disease are at increased risk for repeated myocardial infarction and sudden cardiac death. Physical inactivity is at least responsible for a twofold increase in the risk of coronary events. Drinking too much alcohol can increase blood pressure and lead to other heart problems. But drinking moderate amounts of alcohol seems to lower the risk of heart disease. Moderate means an average of one drink per day for women or two drinks per day for men. Diabetes mellitus is a metabolic disease in which the body does not produce or effectively use insulin. Even if you maintain good control of your blood sugar, your risk of heart disease is higher than someone who does not have diabetes. About 60% of patients with diabetes die of heart disease and/or stroke.[6]

MATERIAL & METHOD

The study was undertaken in prospective manner at Swaroop Rani Nehru Hospital, Allahabad, affiliated to Moti Lal Nehru Medical college, Allahabad. All the cases of acute Myocardial Infarction admitted in the ICCU during the period from 1StJune, 2003 to 31st July 2004 were taken in to account. 97 patients with myocardial infarction were taken in to consideration. 9 patients did not give the consent so total of 88 patients were included in the study. Pre-designed questionnaire, which was pre tested was used to collect the information. Verbal consent was taken from the patients after explaining the purpose of the study. Questionnaire consisted of question regarding demographic profile of patients, risk factors of heart diseases and past history of MI. Follow up was done to know the outcome of cases. The data collected was analyzed by using SPSS.

RESULTS

The study was undertaken at Swaroop Rani Nehru Hospital, Allahabad, affiliated to Moti Lal Nehru Medical College, Allahabad during the period from 1StJune, 2003 to 31st July 2004. Total of 88 patients were included in the study. Out of 88 patients 72 were males and rest were females. The majority of patients were in 5th and 6th decade of age. Mean age of the patients was 55.13. Out of total 5 were < 40 years while 31, 28, 19, and 5 patients were in age group of 41-50, 51-60, 61-70 and >70 years respectively. The education profile of the patients revealed that 9 (10%) were illiterate, 52(59%) were ≤ matric and 27 (30%) were > matric. (Table no. 1)

Increased body mass index was found in 16 (18%) of the patients. Out of them 11 were females and 5 were males. 18 patients (20.45%) were known hypertensive. Out of them 4 were females and 14 were males. Out of the patients who had hypertension 3 expired and 15 were discharged. Relation between hypertension and mortality was found to be significant (p=.02). Twenty (22.73%) of the eighty eight patients were found to have diabetes mellitus. Among those 16 (22.22%) were males and 4 (25%) were females. Out of the total diabetic patients 6 expired. Relation between diabetes mellitus and mortality was found to be significant with p=0.019.

46 patients used to smoke. All the smokers were males. Out of the smokers 14 expired. Relation between smoking and mortality was found to be significant with p=.0410. Tobacco chewing was observed in 50 patients. Out of them 42 (58.34%) males and 8 (50%) females chewed tobacco. Out of total patients 50 males were alcoholic. 37 (42%) of the patients were having sedentary lifestyle out of whom 26 were males and 11were females.

On asking the past history 19 patients had history of prior MI out of them 14(19.45%) were males and 5(31.25%) were males. A significant relation was found between prior MI and mortality (p= .0141).

DISCUSSION

The present study was done in prospective manner at Swaroop Rani Nehru Hospital, Allahabad. In the study the male female ratio was 4.5 :1. In a study done in rural Lucknow 54.7% were males. (7).Mean age of the patients presenting with acute Myocardial Infarction was 55.06 ± 9.69. Braat et al (1983) reported that the mean age of the patients with inferior wall infarction was 57 ± 9.4 and male female ratio was 3.09:1 (8). In a study done by Deshpande and Dixit it was observed that, the maximum number of cases of A.M.I. was in the age group of 51 to 70 years (59.55%). The cases were predominantly males with male to female ratio being 2.57:1. (9). The education of the patients revealed that 9 (10%) were illiterate, 52(59%) were ≤ matric and 27 (30%) were > matric

Increased body mass index was found in 16 (18%) of the patients . Similarly in a study in Lucknow 15.3% respondents were having increased BMI (7). In our study 46 (52.2%) patients were chronic smokers and all of them were males. It is a well known fact that smoking increases the risk of coronary artery diseases as well as mortality from it. In our study the mortality in smokers was about 2.34 times higher than in non smokers. In a study done in rural Lucknow 27.9% were smokers (7). Tobacco chewing was observed in 50 patients. Out of them 42 (58.34%) males and 8 (50%) females chewed tobacco. Out of total patients 50 males were alcoholic. . In our study 42% of patients were having sedentary life style. Similarly 37% of respondents were having sedentary lifestyle in a study done in Lucknow (7). In a study done in Kerala physical activity was found to be very uncommon. (10)

18 patients (20.45%) were known hypertensive. Out of them 3 expired and 15 were discharged. Relation between hypertension and mortality was found to be significant (p=.02). in a study done by Mahmood SE et al 20.9% there were 20.9% hypertensive patients(7). Twenty (22.73%) of the eighty eight patients were found to have diabetes mellitus. Among those 16 (22.22%) were males and 4 (25%) were females. Out of the total diabetic patients 6 expired. Relation between diabetes mellitus and mortality was found to be significant with p=0.019.

In our study, it was observed that patients who already had an infarction in the past had a significantly higher mortality than those who don't (42.10% vs 15.94%, p <.05).

Table No. 1 Sociodemographic profile of patients

Particulars		Frequency	Percentage
Sex	Male	72	81.8
	Female	16	18.2
Age	≤40	5	5.68
	41-50	31	35.53
	51-60	28	31.82
	61-70	19	21.59
	≥71	5	5.68
Education	illitrate	9	10.2
	≤ Matric	52	59.0
	>Matric	27	30.6

Table No. 2 Risk factors present in the subjects

Risk factor	No.	Percentage
Hypertension	18	20.45
Diabetes Mellitus	20	22.73
Smoking	46	52.27
Tobacco	50	56.82
Prior CAD	19	21.59
Physical Activity	19	21.59
Increased BMI	16	18

Table No. 3 Relation of risk factors with mortality

Risk factors		Expired	Discharged	
Hypertension	Present	3(16.67%)	15(83.33%)	P=.02
	Not present	8(11.4%)	62(88.57%)	
Previous MI	Present	8(42.10%)	11(57.90%)	P=.014
	Absent	11(15.94%)	58 (84.06%)	
Smoking	Present	14 (30.43%)	32(69.57%)	P=.04
	Absent	6(14.29%)	36(85.71%)	
Diabetes	Present	6(30.00%)	14 (70.00%)	P=.019
	Absent	13 (19.11%)	55 (80.89%)	

CONCLUSIONS

There is an increasing epidemic of non communicable diseases in developing countries. It is seen that preventable risk factors play an important role in heart diseases. These factors increase the risk of mortality. So efforts should be done to prevent these risk factors at primodial and primary level only. Health education should be given to the school children to adopt the healthy lifestyle so that there is no risk of heart diseases in the future.

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Ethical Clearance: Ethical approval was taken from ethical committee of Moti Lal Nehru Medical College before starting the study .

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To Analyse the Outcome of Sutureless Conjunctival Autograft Fixation Using Oozing Blood as Tissue Adhesive in Pterygium Surgery

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ABSTRACT

Purpose: The aim of this study is to analyze the results and complications of suture less and glue free conjunctival auto graft fixation using oozing blood as tissue adhesive in pteygium surgery.

Material and methods: 72 consecutive eyes of 70 patients with primary pterygium were enrolled for this study. Pterygium cases were operated under Peribulbar anesthesia with sutureless conjunctival autograft and oozing blood clotted over the bare area was used for graft fixation. Eye patch was removed on next day. Follow up was done on day 1, day3, day 7, 3weeks, 3months, 6months and 1year. All patients were examined for sub-conjunctival haemorrhage, graft oedema, graft retraction, graft loss, recurrence rate and any other complications.

Results: The mean age of the patients was 45 years (range 32-58 yrs). About 60% of which were males. Medial edge graft retraction was seen in 26(36.11%) cases. Total graft edema, sub-conjunctiva graft hemorrhage and recurrence were observed in 12(16.66). 9(12.50) and (1.42%)cases respectively. No graft loss was noted during 1 year follow up period. This graft has all the benefits of synthetic glue with no drawbacks.

Conclusions: Sutureless and glue free conjunctival autograft fixation using oozing blood as tissue adhesive is a safe, effective and economical option for the management of pterygium..

Keywords: *Pterygium, conjunctival autograft, oozing blood, Peribulbar anaesthesia, sub-conjunctival haemorrhage, graft oedema, graft retraction, graft loss.*

INTRODUCTION

Pterygium is a common disorder in many parts of the world, with reported prevalence rates ranging from 0.3% to 29% (Moran & Hollows, 1988; Taylor et al, 1984)[1]. Pterygium surgery remains an enigma through years because of its recurrences. Limbal conjunctival auto graft is currently the most popular surgical procedure as it has been suggested that including the limbal stem cells act as a barrier to the conjunctival cells migrating onto the corneal surface. In 1985, Kenyon et al [2] used conjunctival auto graft for the treatment of recurrent and advanced pterygium. The most common method of autograft fixation is suturing, with drawbacks of prolonged operating time, postoperative discomfort, suture abscesses, buttonholes, and granuloma formation which usually requires a second operation for removal. Recent reports favor the use of fibrin glue [3, 4] above sutures with less surgical time, better comfort, reduced complication and recurrence rates but this plasma-derived fibrin glue has the potential risk of prion disease transmission and anaphylaxis in susceptible individuals. Sutureless 'laissez-faire' grafting has been used successfully in gingival grafts.[5] and represents a similar mucosal membrane tissue environment to the conjunctiva of the eye and has no complications of glue.

MATERIAL & METHOD

A prospective, noncomparative and interventional study was carried out in 72 eyes of 70 patients having primary nasal pterygium requiring excision. Surgical intervention require in patients had one or more of the following: diminution of vision either because of induced astigmatism or encroachment onto the papillary area, marked discomfort, marked cosmetic deformity and irritation unrelieved by medical management, limitation of ocular motility secondary to restriction or documented progressive growth towards the visual axis so that ultimate visual loss could reasonably be assumed.

SURGICAL STEPS

After Peribulbar anaesthesia using 2% xylocaine, head and body of pterygium is dissected from the cornea using cresent blade and dissected 4mm from the limbus, down to bare sclera. Only the thickened portions of the conjunctiva and the immediate adjacent Tenon's capsule showing tortuous vasculature are excised. Haemostasis is allowed to occur spontaneously without the use of cautery and any active bleeding was stopped by direct temponade. If no blood is available over bare sclera, small perforating veins and capillaries are purposely fractured to encourage a thin layer of fresh blood to cover the bare sclera. Once the pterygium & conjunctiva were excised, the bare area of sclera was measured with castoviejo callipers. 0.5mm oversized and thin conjunctival graft with limbal stem cells was taken from superolateral quadrant. The cunjunctival graft was fashioned over oozing blood in the bare area and point to point apposition was affected by holding the edges with forceps for adequate time to fix the graft. Check the graft for residual bleeding which can relift the graft; small central haemorrhages are tamponaded with direct compression using non-toothed forceps.

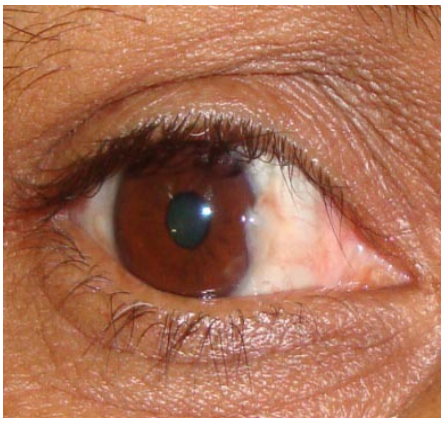

Fig.1 Shows Pre-op case of pterygium

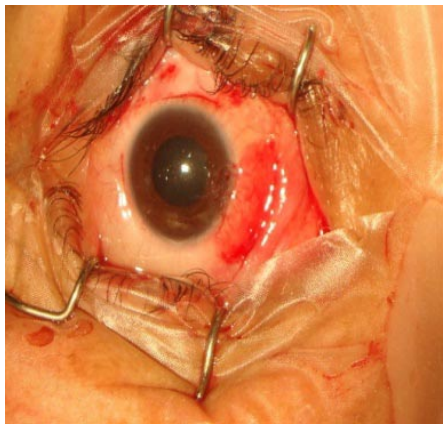

Fig.2,shows Intra-op case of pterygium

Fig 3 shows First post-op day

POSTOPERATIVE REGIMEN

After removal of the patch, the patient was advised not to rub the eye and topical Flurometholone eye drops were administered six times a day which was tapered over 6 weeks. Moxifloxacin eye drops were instilled four times a day for 2 weeks. The patients were followed up post operatively on day 1, day3, day 7, 3weeks, 3months, 6months and 1 year. Refraction was performed at 6 weeks.

This study is carried out between October 2012 to oct 2013 at Saraswathi Institute of Medical Sciences and Hospital Hapur. Signed informed consent had taken from all patients having pterygium and all patients received a sutureless and gluefree autologous conjunctival graft.

Patients who were not come for follow up and living within adjacent areas, these patients were contacted by telephone and asked for further follow-up examination to complete their datas. Those who came for follow up were then examined using slit lamp. After taking signed consent, photographs were taken for record of any pterygium complications, recurrences, and graft loss. Recurrence was defined as the presence of fibrovascular tissue regrowth extending beyond the surgical limbus onto clear cornea as agreed by Sebban and Hirst.[9] All patients were examine for pre-operative and post-operative

visual acuities to see the improvement after removal of pterygium.

RESULTS

72 eyes of 70 patients of primary pterygium underwent conjunctival autologous graft fixation after pterygium excision.

Table: 1

Patients profile and surgery details	
Mean age (years)	45
Male:female	43:27
Mean surgical time (min)	20±5
Mean follow up (months)	9.8

As shown above in table 1, mean age of patients were 45yrs (32-58yrs)) years, about 43 (60%) were male and rest 27 (40%) were females. Mean follow-up time was 9.8 months. The mean surgical time was 20±5. All patients had signed informed consent.

Table: 2 Complications

SN	Complications	patients	%
1	Medial edge graft retraction	26	36.11%
2	Graft edema	12	16.66%
3	Sub-conjunctival graft hemorrhage	9	12.50%
4	Recurrence	1	1.42%

As shown above in table 2 medial edge graft retraction, graft edema, sub-conjunctival graft hemorrhage and recurrence were observed in 26 (36.11%), 12 (16.66%), 9 (12.50%) and 1 (1.42%) patients respectively. Graft retraction was seen usually after one week. The graft edema observes 2nd or 3rd day and disappeared by the end of 7th postoperative day. None of the patients developed button hole of conjunctival graft, injury to medial rectus, excessive bleeding, dellen, pyogenic granuloma, symblepharon formation or scleral necrosis. No graft loss was noted during 1 year follow up period. There were no intra- or post-operative complications requiring further treatment. Most of the patients were complaining of mild pain on bandage removal and this pain get subsided on subsequent visits. Pain did not increase on subsequent follow up. Post-operative visual acuity was not affected in most of the patients and cosmetically these patients were satisfied.

Fig.4, Shows graft retraction

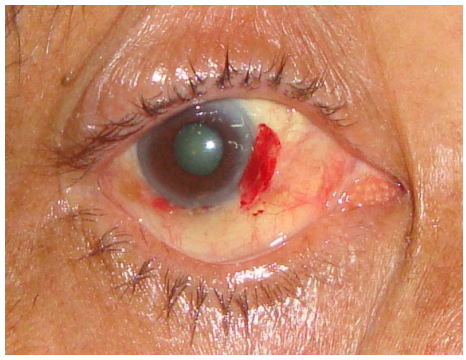

Fig.5, shows subconjunctival haemorrhage

DISCUSSION

Pterygium surgery remains an enigma through years because of its recurrences. Various adjunctive therapies like radiotherapy, antimetabolite or antineoplastic drugs, conjunctival flap, amniotic membrane, lamellar keratoplasty, conjunctival and limbal conjunctival grafts have been proposed to prevent recurrence. Current management of primary and recurrent pterygium surgery is excision with conjunctival auto graft, first done by Kenyon et. al. in 1980.[2] Usually the pterygium recurrences occur within the first 6 months after surgery. (Adamis et al., 1990).[6] Conjunctival autografts are associated with recurrence rates of 2-39% that are comparable to that of Mitomycin-C and beta-irradiation, without the attendant risk of sight-threatening complications (Ang et al., 2003).[7] The limbal conjunctival autograft has a recurrence rate ranging from 0-15% (Du et al., 2002; Al-Fayez, 2002)[8]. Though it has been suggested that limbal conjunctival grafts are more effective than conjunctival autografts, it is technically more demanding and there is added risk of limbal damage. Uy HS, Reyes JMG, Flores JDG, Lim-Bon-Siong R. demonstrated less recurrence rate with glue than with sutures and suggested that immediate adherence of the graft and lack of postoperative inflammation may inhibit fibroblast ingrowth and

reduce the recurrence.[9]

The main issue in using commercial fibrin glue, despite viral inactivation techniques, is transmission of infectious agents like Human Infection of parvovirus B19 (HPV B19) and prions [10](Foroutan et al, 2011). In addition, three cases of anaphylactic reaction have been reported after use of TISSEEL fibrin sealant which was possibly due to bovine protein aprotinin, used as an antifibrinolytic agent (Oswald et al, 2003)[11]. Foroutan et al (2011) prepared autologous fibrin glue and used tranexamic acid as a antifibrinolytic agent to tide over the problem of disease transmission and anaphylaxis respectively. Autologous fibrin, though much safer, is yet to be used widely because of the time taken to procure the fibrin and lack of laboratory facilities at all centers[10].

In our series only one eye (2.5%) had a recurrence. Foroutan et al (2011) had a recurrence rate of

13.33% (2 eyes out of 15) in three year follow up with autologous fibrin[10]. Using similar procedure as ours, Wit et al (2010) had no recurrence in 15 eyes with a mean follow up of 9.2 months. The authors suggested that apposition of the lids to the bulbar conjunctiva provides a natural biological dressing and confers a unique wound healing environment. Apart from a physical barrier, the lids provide compression, a smooth frictionless surface, and a vascular bed with immune capability in close proximity to the injury site. Graft retraction, was seen in 26 eyes (36.1%) in our series as seen with synthetic glue or other series with autoblood.[12] It did not affect the final position of the graft. Graft retraction occurred in 20% cases in Foroutan et al (2011) series[10]. Tan (1999) advocated that risk of graft retraction could be minimized with meticulous dissection of subepithelial graft tissue[13]. Wit et al (2010) postulated that suture less and glue free graft resulted in an even tension across the whole of the graft interface and no direct tension on the free graft edges resulting in reduced stimulus for the formation of subconjunctival scar[12]. 0.5mm oversized and as thin as possible conjunctival graft is taken to prevent the risk of graft retraction as described by Tan et al[13].. The preference for the site of donor graft in our series was superior as this area gets covered by the upper lid resulting better cosmesis and healing. Some authors prefer inferior bulbar conjunctiva, considering that the superior conjunctiva may be required for a future filtration surgery (Broadway et al, 1998)[14]. None of our patients developed other complications like corneal ulcer, scleral melting, conjunctivitis, dellen, symblepheron formation, excessive bleeding, injury to medial rectus muscle, secondary glaucoma, iritis, corneal perforation, corneal ulcer etc.

CONCLUSIONS

Glue free conjunctival autograft fixation using oozing blood as tissue adhesive is a safe, effective and economical option for the management of pterygium.

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Conflict of Interest: No

Source of Funding: No

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A Clinico-Radiological Study of Portal Hypertension

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ABSTRACT

Objective: To evaluate sonographic signs of portal hypertension

Method: This cross sectional study comprised fifty cases suspected of having portal hypertension admitted in Pediatrics, Medicine and Surgery Departments of Muzaffarnagar Medical College between 01 September 2014 and 31 March 2015. All the patients were examined clinically and radiological investigations i.e. plain x-ray abdomen, barium swallow and ultrasound of abdomen were done in all cases along with splenovenography & computerised axial tomography in few selected cases.

Results: Common clinical manifestation were anemia (84%) followed by splenomegaly (78%), hematemesis (40%), abnormal distension (36%), pain in abdomen (34%) and ascites (26%). Barium swallow showed presence of esophageal varices in 41 cases (82 %). Sonography showed dilated portal vein in 68 % cases and dilated splenic vein in 52 % cases.

Conclusion: Modern gray scale ultrasound is a detailed, noninvasive method of demonstrating vascular networks in the abdomen including portal venous system, caliber of portal vein, portal vein invasion by tumour, portal vein thrombosis / aneurysm, in distinguishing pre-sinusoidal block from intra-hepatic and post-sinusoidal block and in demonstrating varices and collateral pathways.

Keywords: *Portal Hypertension, Splenomegaly, Hematemesis, Ultrasound, Barium Swallow.*

INTRODUCTION

Portal hypertension is defined as elevation of portal pressure to above 10 – 12 mm of Hg due to pre-hepatic, intra-hepatic or post-hepatic obstruction in blood flow through liver. Common manifestations of this condition are hematemesis, splenomegaly and ascites. The commonest cause is cirrhosis of liver, though variety of causes can lead to portal hypertension. Radiological investigations like barium swallow, ultrasound and CT scan play a very important role in the diagnosis and management of such cases.[1,2]

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MATERIAL & METHOD

Fifty cases suspected of having portal hypertension admitted in Pediatrics, Medicine and Surgery Departments of Muzaffarnagar Medical College from 1st July 2014 to 31st March 2015 were included in the present study.

All the patients were examined clinically and related investigations were done prior to the study. Relevant history i.e. chief complaints, past history, family history and personal history were taken and recorded.

Clinical examination was done in each case followed by relevant pre-procedure investigations. The data was recorded and analysed. Radiological investigations i.e. plain x-ray abdomen, barium swallow and ultrasound of abdomen were done in all cases along with splenovenography & computerised axial tomography in five selected patients considered for surgical management and to confirm the exact site

of block.

OBSERVATIONS

Distribution of the cases according to age & sex is depicted in table 1. As clearly shown, the maximum number of cases were in 11 – 20 years age group (n= 12, 24 %) followed by 41 – 50 years age group (n= 11, 22 %). Male to female ratio was 2:1 in the present series.

Table 2 shows various clinical features, viz presenting symptoms, relevant past history and important clinical signs at the time of presentation. It is clearly seen that maximum cases presented with hematemesis (40%) followed by abnormal distension (36%) and pain in abdomen (34%). Past history of jaundice and alcoholism was present in 18% and 10% cases respectively and that of umbilical sepsis in 2% cases in present series. Anemia was present in 84% cases followed by splenomegaly (78%) and ascites (26%).

Barium swallow showed presence of esophageal varices in 41 cases (82 %) while no varices were found in 9 cases (18 %). Fundal varices were seen in only 8 cases (16 %).

Sonographic signs of portal hypertension were studied in all cases. Liver size was reduced in 7 cases (14 %), normal in 38 cases (76 %) and increased in 5 cases (10 %). Dilated portal vein (> 13 mm in diameter) was found in 34 cases (68 %) and dilated splenic vein (> 10 mm in diameter) was seen in 26 cases (52 %). Splenomegaly was seen in 42 cases (84 %). Periportal, perisplenic and epigastric collaterals were seen in 37 cases (74 %). Ascites was present in 13 cases (26 %).

Table No. 1 : Age & Sex Distribution

		Number of Cases	Percentage
Age in Years	0 -10	4	8
	11-20	12	24
	21-30	9	18
	31-40	8	16
	41-50	11	22
	>50	6	12
Sex	Males	34	68
	Females	16	32

Table No. 2 : Clinical Presentation

		Number of Cases	Percentage
Symptoms	Hematemesis	20	40
	Abdominal Distension	18	36
	Pain in Abdomen	17	34
	Malena	10	20
	Lump in Left Hypochondrium	8	16
	Fever	7	14
	Oedema over Feet	6	12
	Jaundice	4	8
	Dyspnea	2	4
	Bleeding Tendency	1	2
Past History	Jaundice	9	18
	Alcoholism	5	10
	Umbilical Sepsis	1	2
Signs	Anemia	42	84
	Splenomegaly	39	78
	Ascites	13	26
	Oedema over Feet	5	10
	Jaundice	4	8
	Visible Veins over Abdomen	5	10
	Hepatosplenomegaly	2	4

DISCUSSION

The commonest age group present in patients with portal hypertension is 11-20 years (24%) in the present series. This lower age incidence of extrahepatic portal vein obstruction has been well documented by several authors.[3,4,6] Male predominance, found in this study, has also been reported by Gorka *et al* and several other authors.[5,6]

Usual clinical presentation are hematemesis, malena, signs/symptoms of anemia or hypersplenism, chronic diarrhoea, splenomegaly and distended thoracic or abdominal veins.[1,2] Jaundice and ascites does not occur in 17 cases with extra-hepatic obstruction.[6] The age of onset of post-omphalic pyelothrombosis is early (average age- 3 years), but when it follows general infection or is idiopathic, the clinical presentation can be delayed even upto adolescence (average age- 8 years).[2,6]

Various investigators have measured portal vein and its tributaries (superior mesentric and splenic vein) sonographically. Normal portal vein was found between 11-13 mm and splenic vein was found upto 10 mm. In our series, adopting the above criteria, portal vein calibre was found more than 13 mm in 68% of cases and that of splenic vein more than 10 mm in 52% of cases. Calibre of PV and SV may be normal or even diminish as blood flow is diverted to opened collateral veins. Thus diameter of PV and SV alone are not reliable indicator of of severity of portal hypertension.[8,10]

Barium swallow examination showed varices in 82% of cases, normal in 18% (consistent with endoscopic findings). In one case, barium swallow was superior and in another, endoscopy was superior showing limitation of each procedure.[5,7,9]

The impeded hepatofugal flow of blood in portal hypertension results in development of various collateral venous pathways. Demonstration of dilated coronary vein (> 4mm) within the lesser omentum as well as gastro-esophageal varices are most common and reliable sonographic findings in patients with portal hypertension.[9]

In our study on ultrasound, only 26% cases showed gastro-esophageal varices while 74% of cases having sonographic evidence of portal hypertension, showed gastro-esophaeal varices on esophagogram. In 8 cases, barium swallow was normal though ultrasound showed evidence of portal hypertension, showing superiority of ultrasound over barium swallow. However in 5 cases, barium swallow was superior than ultrasound in showing gastro-esophageal varices. Ultrasound failed to demonstrate them either due to technically inadequate scans (due to obesity, ascites, bowel gas etc.) or their small size.[7,8,9]

Another limitation is in case of pre-hepatic obstruction, ultrasound failed to demonstrate thrombus, which was clearly seen as radiolucent filling defect on splenovenogram. Dilatation of portal and splenic vein were observed in both methods though measurement with ultrasound are more reliable; as the measurement made on splenoportovenography were modified according to geometric factors.[8]

CONCLUSIONS

The present study was done with special reference to abdominal sonography. The study suggests that modern gray scale ultrasound provides a detailed, noninvasive method of demonstrating vascular networks in the abdomen including portal venous system, caliber of portal vein, portal vein invasion by tumour, portal vein thrombosis / aneurysm, in distinguishing pre-sinusoidal block from intra-hepatic and post-sinusoidal block and in demonstrating varices and collateral pathways.

Barium-swallow examination is a simple, useful, routine screening procedure for detection of esophageal varices.

Though all above mentioned modalities are useful in the diagnosis of portal hypertension, none of them is diagnostic; each modality being complementary to each other. The present study had a limitation of small sample size. To corroborate all the findings better, one should have a larger sample size.

Contributors: Each contributor was actively involved in all aspects of writing of the research paper, i.e. concept of the study, collection of the material, preparation of the manuscript and its intellectual content.

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Conflict of Interest: None

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Ethical Clearence: Taken from ethical committee of the institute and the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000.

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A Study of Anemia in Infancy and Childhood with Special Reference to Iron Profile

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ABSTRACT

Objective: To evaluate serum iron profile in anemia of infancy and childhood.

Method: This cross sectional study comprised outpatients and inpatients anemic children aged from 6 months to 12 years in the Department of Pediatrics, Muzaffarnagar Medical College Muzaffarnagar, between 01 September 2014 and 31 March 2015. Comparison of Hemoglobin, Hematocrit, Serum Iron, Total Iron Binding Capacity and Serum Ferritin levels of 80 anemic patients was done with equal number of matching controls.

Results: Anemic children had significant reduced iron stores (serum iron and ferritin levels) with increased TIBC when compared with controls. However, in the control group, there were 3 cases touching borderline serum ferritin levels, though showing normal levels of serum iron and TIBC.

Conclusion: Serum ferritin is an important tool to pick up latent iron deficiency and is more useful for evaluation of iron stores than serum iron and TIBC for detecting iron deficiency and even when the levels of these indices were normal, serum ferritin levels tend to be low, showing deficient or potentially deficient iron stores.

Keywords: *Anemia, Iron deficiency, Serum Iron, Serum Ferritin, TIBC.*

INTRODUCTION

Anemia is defined as a reduction of the red blood cell volume or hemoglobin concentration or both, below the range of values found in healthy children of that age (Hb < 11gm %, in 6 mo- 6 years & Hb < 12 gm % in 6-12 years)[1]. Anemia is a major hematological disorder requiring hospital admission. It is estimated that about 30% of the world's population and 50 % of the population in India is anemic and majority of these anemias are caused by nutritional deficiencies, the commonest being iron deficiency[1,2,3]. The data on stainable and biochemically determined tissue-iron collected recently also demonstrates that even the apparently normal Indian subjects have low tissue iron values[4].

In view of the wide variation in etiology of anemia seen in different communities and because of paucity of literature on iron deficiency anemia with quantitative estimation of iron stores in North India, we decided to study the incidence of anemia in infancy and childhood, with a particular reference to the iron deficiency in the pediatric age group.

MATERIAL & METHOD

The present cross sectional study initially consisted of 200 infants and children attending the out-patients or admitted to wards in the Department of Pediatrics, Muzaffarnagar Medical college, Muzaffarnagar from 01 September 2014 to 31 March 2015. Hemoglobin estimation was done in all these cases and 110 cases, having hemoglobin less than 11 gm/dl were selected for the study. However, out of these, 8 cases were found to have hemolytic

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anemia, 12 were having chronic infection, while the blood samples of 10 patients were hemolysed. So, ultimately, the remaining 80 cases were taken as the study sample. Eighty children of same age and sex distribution were taken as controls, all of whom had normal hemoglobin and nutrition.

A detailed history pertaining to presenting complaints, illness in past like episodes of diarrhea, infections or hemorrhages was recorded. A detailed dietary history of each child was recorded, especially in relation to the duration of breastfeeding and initiation of complimentary feeding. The socio-economic status and dietary habits of the family were also noted. A complete physical examination was done to assess the degree of anemia and presence of lymphadenopathy, hepatomegaly, splenomegaly and heart murmur. The children with neoplastic and bleeding disorders were excluded from this study.

The investigations carried out in the children (of the study group and of the control group) were, Hemoglobin (Hb), Hematocrit (PCV), RBC count and indices, Peripheral blood smear, Reticulocyte count, Total & differential leucocyte count, Stool examination, Serum iron (S. iron), Serum ferritin (S. ferritin) and Total iron binding capacity (TIBC). Bone marrow examination and Fetal hemoglobin were done in selected cases.

RESULTS

In the present study, incidence of anemia was found to be 55 % in infants and children (110 out of 200). As can be seen in table 1, maximum number of anemic children were in the age group of 6 months to <3 years (n=48, 60%) with males clearly outnumbering females (55% vs 45%). Most of the anemic children belonged to low socio-economic status (n=70, 87.5%). Only 7 (8.75%) and 3 (3.75%) children out of 80 anemic children belonged to middle and high socio-economic groups. On assessment of nutrition in anemic group, 30% cases (n=24) were of grade I, 40% cases (n=32) of grade II and 20% & 10% cases were of grade III and grade IV PEM respectively.

Table 1: Age and sex distribution of anemic cases (n=80)

Age Group	Male	Female	Total Number	Percentage
< 6 months	5	4	9	11.25
6 mo- < 3 yrs.	26	22	48	60.00
3 yrs. - < 6 yrs.	4	3	7	8.75
6 yrs. – 12 yrs.	9	7	16	20.00
Total	**44**	**36**	**80**	**100.00**

Table 2 shows that the children in the study group had significantly reduced Hb, PCV and red cell indices (MCH, MCV, MCHC). They also had reduced RBC count than controls but it was not statistically significant (p value > 0.05). In peripheral blood smear, microcytic-hypochromic anemia was seen in 60% of the cases, 18.5% had dimorphic picture and 11.25% had macrocytic-hypochromic with hypersegmented neutrophil type picture

Table 2: Hemoglobin, PCV and RBC indices in anemic cases and controls

Investigation	Study Cases		Controls		Z-Score	p value
	Range	Mean± SD	Range	Mean± SD		
Hb (gm%)	2.0-10.0	7.18± 2.37	11.0-15.0	12.6±1.03	5.25	< 0.01
PCV (%)	8-40	26.33±8.27	35-46	40.5± 2.50	36.06	< 0.001
RBC count (million/mm^3)	1.5-6.18	3.37±0.89	3.9-5.82	4.74±0.52	1.27	> 0.05
MCH (pg)	8.0-40.6	21.56±5.67	26.5-4-34.6	30.33±2.05	9.93	< 0.001
MCV (fl)	65-80	76.85±8.78	80-90	87.21±1.02	31.4	< 0.01
MCHC (%)	20-30 %	26.81±5.49	29-33 %	31.13±1.75	5.08	< 0.01

Table 3 shows iron profile of the anemic children and children in the control group. It can be clearly seen that anemic children had significantly reduced S. Iron and S. Ferritin levels with increased TIBC, when compared with controls. The mean serum ferritin level was significantly reduced in anemic children (range=1-45 ngm/ml, mean 21.55 ± 20.83 ngm/ml) than controls (range=11-100 ngm/ml, mean 38.28 ± 28.28 ngm/ml).Serum ferritin levels had no significant correlation with hemoglobin levels or sex of the anemic children. In the control group, there were 3 cases touching borderline levels of 11 ngm/ml. These are the cases which have potential for developing iron deficiency. In anemic children 76% had serum ferritin levels 1-10 ngm/ml.

Table 3: Iron profile of anemic cases and controls

Investigation	Study Cases		Controls		Z-Score	p value
	Range	Mean±SD	Range	Mean±SD		
S. Iron (ug%)	10-180	64.51±49 .66	50-140	83.89±24.04	3.14	< 0.01
TIBC (ug%)	200.5-900.4	557.14±201.15	100.4-300.2	204.8±60.20	14.8	< 0.001
S. Ferritin (ng/ml)	1-45	21.55±20.83	11-100	38.28±28.98	4.87	< 0.01

DISCUSSION

Anemia is a major hematological disorder, often requiring hospital admission. Anemia may be caused not only by a deficiency of iron (or less often, of other nutrients) but also by other conditions, e.g., malaria, hookworm disease in tropical climate. Other chronic infections also play an important role in the causation of anemia[1].

Iron deficiency anemia is the most prevalent type of anemia all over the world, particularly in developing countries like India[1,3]. Young children and pregnant women are the most affected population groups. It mainly occurs in low socio-economic status population due to factors like maternal ill health, undernutrition, faulty feeding knowledge with inadequate feeding provisions. Delayed initiation of supplementary foods, for economic reasons or ignorance tells on maternal health and the health of the child[5]. As the maternal stores of iron diminish, the infant gets less of this essential material for the synthesis of hemoglobin. Iron deficiency anemia has its impact on psychological and physical development, behavior and work performance. The continued occurrence of a preventable disease in such a large number of children is a serious public health problem[9].

Anemia is extremely common in childhood. Sixty five percent of all children admitted in hospital for hematological disorders had anemia as the presenting complaint. There is evidence that 50 % of Indian population is anemic[3]. The incidence of anemia is slightly less in this study (55%) and also in other recently conducted studies, may be because of increasing awareness of nutrition by parents and other factors like parent education, health education, immunization and early weaning[5].

The present study underlines the role of S. ferritin as an important tool for the diagnosis of iron deficiency anemia and this has been found superior to S. iron and TIBC, especially for detecting potentially deficient iron stores even before the development of anemia. This has been supported by several other studies done in the past[4,6,7,8].

CONCLUSIONS

The present study was done with special reference to iron stores. The study suggests that serum ferritin assay is the most important tool for evaluation of iron stores; it is more useful than S. iron and TIBC as it picks up even latent iron deficiency.

The present study had a limitation of small sample size. To corroborate all the findings better, one should have a larger sample size to establish the correlation between the iron indices and serum ferritin level in children.

CONTRIBUTORS

Each contributor was actively involved in all

aspects of writing of the research paper, i.e. concept of the study, collection of the material, preparation of the manuscript and its intellectual content.

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Effectiveness of Comprehensive Intervention Package among Adolescent Girls with Anemia

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ABSTRACT

Objective: Evaluate the effectiveness of comprehensive intervention package among anemic adolescent girls enrolled in weekly iron folic acid supplementation. **Material and methods:** An evaluative research approach with experimental pretest posttest control group design was used. The sampling technique was probability simple random sampling. Data was collected from 30 anemic adolescent girls enrolled in weekly iron folic acid supplementation from selected schools of Coimbatore. The data collected regarding demographic data, anthropometric measurement, and quality of life. Blood sample was collected from each subject to estimate the hemoglobin and serum feritin estimation. Modified Harvard step test was carried out to assess the physical work capacity and Ravens progressive matrices test was done to assess the level of cognitive function of the subjects. **Results:** The result of the study revealed that the significance difference between the mean pretest and posttest values of the outcome variables in the experimental group was statistically tested using paired 't' test and was found to be highly significant at 0.05 level of significance. The significance difference of the mean posttest scores of outcome variables between experimental and control group was statistically tested by using independent't' test and found that a highly significant difference was present. **Conclusion:** Therefore, the study concluded that comprehensive intervention programme was effective in controlling anemia among anemic adolescent girls.

Keywords: *Comprehensive intervention package, anemia, WIFS, adolescent girls.*

INTRODUCTION

Anemia is a widespread public health problem with major consequences for human health as well as social and economic development[1]. Adolescents are one of the major risk groups for anemia. The prevalence of anemia among adolescents is 27% in developing countries and 6% in developed countries[2]. India has very high prevalence of adolescent anemia. According to NFHS-3 about 56% of girls and 30% of boys suffer from some form of anemia[3]. Prevalence of anemia is higher in girls in low socioeconomic status; in addition it gets precipitated by blood loss during menstruation[4]. Anemia in India primarily occurs due to iron deficiency and is the most widespread nutritional deficiency disorder in our country today[2]. Iron deficiency anemia is the most common nutritional disorder in the developing world and the most common cause of nutritional anemia in young children and women of reproductive age[5]. Low dietary intake of inadequate bio-available iron is believed to be the principal cause of iron deficiency anemia in the developing country like India[1].

Iron deficiency anemia during adolescence can result in impaired physical growth, poor cognitive development, reduced physical fitness, and work performance and lower concentration on daily tasks[6]. Regular consumption of iron-folic acid supplements along with health and nutrition education to improve over all dietary intake and promote consumption of iron rich foodstuffs are essential for prevention of iron deficiency anemia in adolescent girls and boys. Thus

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the researcher planned to evaluate the effectiveness of comprehensive intervention package among the school going adolescent girls and to reduce the prevalence of the anemia.

STATEMENT OF THE PROBLEM

"A study to evaluate the effectiveness of comprehensive intervention package on cognitive function, hematological parameters, physical work capacity and quality of life among adolescent girls with anemia enrolled in WIFS (weekly iron folic acid supplementation) from the selected schools of Coimbatore".

OBJECTIVES

1. Assess the prevalence of anemia among adolescent girls

2. Find out the pre test and post test scores of selected outcome variables among anemic adolescent girls regarding comprehensive intervention package.

3. Evaluate the effectiveness of comprehensive intervention package on selected outcome variables regarding the management of anemia.

HYPOTHESES

H1-There is a significant association between the prevalence of anemia and socio-demographic variables.

H2-There is a significant difference between mean pretest and mean post test scores of selected outcome variables in the experimental and control group.

H3-There is a significant increase in the post test scores of selected outcome variables between experimental and control group.

RESEARCH METHODOLOGY

An evaluative research approach with quasi experimental, pre-test post test control group design was adopted for the study. In the present study population comprises 30 anemic adolescent girls from selected schools of Coimbatore. Probability random sampling method was used to select the schools to identify the anemic adolescent girls. Hemoglobin (cyanmeth hemoglobin method) was estimated for all the adolescent girls from the selected schools and only the mild and moderate (Hb 7 to 11gms) anemic adolescent girls who fulfilled the inclusion criteria were randomly selected for the study (15 in experimental group and 15 in control group). The tool consist of 5 sections:-Section (A):-Demographic profile, anthropometric assessment and menstrual history data, Section (B):- Ravens standard progressive matrices test to assess the cognitive function, Section(C):-Hematological parameters including the estimation of Hemoglobin and serum ferittin level, Section (D):- Modified Harvard step test to find out the physical work capacity and Section (E): -Modified SF-36 Questionnaire to assess the quality of life. Data was analyzed using descriptive and inferential statistics.

RESULTS

Section –A:-Description of patterns of socio-demographic data, BMI, menstrual pattern

Table 1.Frequency and percentage distribution of anemic adolescents according to socio-demographic variables (n=30)

S. No	Demographic variables	Experimental Group		Control Group	
		N	%	N	%
1	Age in Years				
	a. 11-13 Yrs	5	33.33	1	6.66
	b. 14-16 Yrs	10	66.66	14	93.33
2	Birth order				
	a. first	6	40	11	73.34
	b. Second	6	40	2	13.33
	c. third and above	3	20	2	13.33
3	Number of siblings				

Cont... Table 1. Frequency and percentage distribution of anemic adolescents according to socio-demographic variables (n=30)

	a. one		10		66.67		11		73.34	
	b. two		2		13.33		2		13.33	
	c. three and above		2		13.33		2		13.33	
	e. nil		1		6.67		0		0	
4	Type of family									
	a. nuclear		10		66.67		6		40	
	b. joined		3		20		8		53.33	
	c. extended		2		13.33		1		6.67	
5	Nature of family									
	a. united		14		93.33		15		100	
	b. separated		1		6.66		0		0	
6	Religion									
	a. hindu		14		93.33		12		80	
	b.christian		1		6.66		2		13.33	
	c.muslim		0		0		1		6.66	
7	Dietary habits/types of diet									
	a.vegetarian		4		26.66		7		46.66	
	b.non vegetarian		11		73.33		8		53.33	
8	Monthly income									
	a.upto 5000		13		86.67		13		86.67	
	b.5001-10000		2		13.33		2		13.33	
9	Place of residence									
	a.urban		15		100		7		46.66	
	b.rural		0				8		53.33	
10	Source of information regarding anemia and its management									
	a. elocctronic media (TV, Internet ,etc..)		6		40		4		26.66	
	b. printed meterials (magazines, news paper etc..)		3		20		1		6.66	
	c. personal (parents, teachers, neighbour et...)		6		40		10		66.66	
11	Education of parents									
	I. father	II. mother	I	II	I	II	I	II	I	II
	a. Illiterate	a. Illiterate	1	2	6.66	13.33	2	3	20	20
	b. Primary	b. Primary	8	3	53.33	20	6	4	26.66	26.66
	c. High School	c. High School	4	6	26.66	40	7	7	46.66	46.66
	d. Higher Secondary	d. Higher Secondary	2	4	13.33	26.66	0	1	6.66	6.66
12	Occupation of parents									
	I.Father	II.mother	I	II	I	II	I	II	I	II
	a.coolie	a.coolie	8	3	53.33	20	13	11	73.33	73.33
	b.technical	b.technical	0	0	0	0	1	1	6.66	6.66
	c.professional	c.professional	1	2	6.66	13.33	0	0	0	0
	d.business	d.business	2	0	13.33	0	1	0	0	0
	e.others	e.house wife	4	10	26.66	66.66	0	3	20	20

Table – 2 Frequency distribution and percentage of subject according to BMI (n=30)

Sl. No	BMI	Experimental gp				Control gp			
		Pre test		Post test		Pre test		Post test	
		N	%	N	%	N	%	N	%
1	18.5 to 22.9[normal]	4	26.6	4	26.6	3	20	3	20
2	23 to 24.9[over weight]	0	0	0	0	1	6.6	1	6.6
3	< 18.5[underweight]	9	60	9	60	10	66.6	10	66.6
4	>25[obese]	2	13.3	2	13.3	1	6.6	1	6.6

Table- 2 shows that 9(60%) &10(66.66%) of samples of both experimental and control group were underweight and 4(26.67%) & 3(20%) of experimental and control group were normal and only 2(13.33%) &1(6.67%) of samples of experimental and control group were obese.

Table -3 Frequency distribution and percentage of subject according to their menstrual pattern (n=30)

Sl. NO	Menstrual pattern	Experimental Group				Control Group			
		Pre test		Post test		Pre test		Post test	
		N	%	N	%	N	%	N	%
1	Age at menarchy								
	a. <8 Yrs	1	6.6	1	6.6	0	0	0	0
	b. 9-12 yrs	5	33.3	5	33.3	5	33.3	5	33.3
	c.13-16yrs	9	60	9	60	10	66.7	1	66.7
2	Blood flow								
	a. < 3 days	2	13.3	5	33.3	2	13.3	2	13.3
	b. 3 to 5 days	11	73.3	9	60	8	53.3	8	53.3
	c. 6 to 7 days	2	13.3	1	6.6	5	33.3	5	33.3
3	Duration of menstrual cycle								
	a. <28 days	3	20	3	20	7	46.7	7	46.6
	b. 28 to 31 days	8	53.3	10	66.7	5	33.3	7	46.6
	c. more than 31 days	4	26.7	2	13.3	3	20	1	6.7
4	Regularity of menstrual cycle								
	a. Regularly regular	3	20	5	33.3	12	80	12	80
	b. Regularly irregular	8	53.3	6	40	1	6.7	1	6.7
	c. Irregularly regular	4	26.7	4	26.7	2	13.3	2	13.3
5	Amount of bleeding								
	a. Heavy	4	26.7	3	20	5	33.3	5	33.3
	b. normal	9	60	10	66.7	10	66.7	10	66.7
	c. scanty	2	13.3	2	13.3	0	0	0	0
6	Frequency of napkin change								
	a. 2 to 3 hrs	13	86.7	13	86.7	9	60	9	60
	b. 4 to 5 hrs	1	6.6	1	6.6	6	40	6	40
	c. 6 to 7 hrs	1	6.6	1	6.6	0	0	0	0
7	Presence of menstrual abnormality								
	a. yes	6	40	5	33.3	3	20	3	20
	b.no	9	60	10	66.6	12	80	12	80
8	Frequency of napkin change during menstrual abnormality								
	a.2 to3 hrs	4	66.7	3	60	1	33.4	1	33.4
	b.4 to 5 hrs	2	33.3	2	40	1	33.3	1	33.3
	c.6 to 7 hrs	0	0	0	0	1	33.3	1	33.3
9	Hormonal therapy								
	a. yes	0	0	0	0	0	0	0	0
	b.no	15	100	15	100	15	100	15	100
10	Iron & vitamin supplement								
	a. yes	11	73.3	15	100	7	46.7	7	46.7
	b. no	4	26.7	0	0	8	53.3	8	53.3

o From the above mentioned table it is observed that 9 (60%) in experimental group and 10(66.67%) in control group girls attained menarche at 13 – 16 years of age.

o 11(73.34%) girls in the experimental group had menstrual blood flow between 3 to 5 days in pretest and it was reduced to 9(60%) in post test. In control group 8(53.34%) girls had the blood flow for 3 to 5days and there was no difference between pretest and posttest.

o In experimental group 8(53.33%) had 28 to 31 days menstrual cycle in pretest and changed to 10(66.67%) in posttest. Where as in control group 5(33.33%) had the cycle of 28 to 31 days in pretest and changed to 7(46.67%) in posttest.

o 3(20%) of girls in experimental group had regular cycle in pretest and 5(33.33%) had regular cycle in post test, in control group 12(80%) of subjects had regular cycle and there was no change between pretest and posttest.

o In experimental group 9(60%) subjects had normal blood flow in pretest and changed to 10(66.67%) in posttest. In control group 10(66.67%) had normal blood flow in both pretest and posttest.

o 6(40%) experimental group subjects had menstrual abnormality in pretest and 5(33.33%) in posttest. In control group only 3(20%) had menstrual abnormality both in pretest and posttest.

o In experimental group 11(73.33%) subjects were taking iron & vitamin supplement in pretest 15(100%) in posttest. In control group only 7(46.67%) subjects were taking iron & vitamin supplement in both pretest and posttest.

Section –B

Findings related to the effectiveness of comprehensive intervention package on selected outcome variables regarding the management of anemia

Table -4: Comparison of mean values in the experimental group before and after the intervention

(n=30)

Variables	Test	Mean	SE	Mean difference	Paired 't'	P value
BMI	Pre test	18.37	1.01	0.33	5.76 (d.f=14)	0.001
	Post test	18.69	0.96			
Hb	Pre test	9.33	0.27	1.16	19.33	0.001
	Post test	10.49	0.22			
Serum ferritin	Pre test	65.53	14.52	32.97	4.42	0.001
	Post test	98.50	15.40			
Pulse rate	Pre test	132.40	2.36	6.13	6.71	0.001
	Post test	126.27	2.39			
No of steps	Pre test	80.93	2.95	5.33	7.92	0.001
	Post test	86.27	2.53			
RPM Score	Pre test	26.07	1.60	5.67	19.72	0.001
	Post test	31.73	1.67			
Qol Score	Pre test	187.87	4.25	9.26	6.09	0.001
	Post test	197.13	4.08			

Table:- 4 shows that the mean post test values of the outcome variables such as BMI, Hb, Serum feritin, Pulse rate, number of steps in step test, RPM score and Quality of life were significantly higher than the mean pretest values. The difference was statistically significant (P<0.001).

Table 5:- Comparison of mean values in the control group before and after the intervention

(n=30)

Variables	Test	Mean	SE	Mean difference	Paired 't'	P value
BMI	Pre test	18.21	1.00	0.03	1.00 (d.f=14)	0.33 N.S
	Post test	18.24	0.99			
Hb	Pre test	8.92	0.11	0.006	0.13	0.90 N.S
	Post test	8.93	0.08			
Serum ferritin	Pre test	41.33	4.10	1.33	0.84	0.41 N.S
	Post test	42.67	3.84			

Pulse rate	Pre test	126.47	3.60	0.67	2.00	0.06 N.S
	Post test	127.13	3.39			
No of steps	Pre test	80.73	3.06	2.20	1.27	0.22 N.S
	Post test	82.93	2.27			
RPM Score	Pre test	29.80	2.01	1.00	1.90	0.07 N.S
	Post test	30.80	2.12			
Qol Score	Pre test	192.87	5.78	0.87	0.31	0.77 NS
	Post test	192.00	4.09			

Table 5:- Depicts that the mean post test values of the outcome variables such as BMI, Hb, Serum feritin, Pulse rate, and number of steps in step test, RPM score and Quality of life were slightly increased. But the difference was not statistically significant.

Table 6:- Comparison of mean values among adolescent girls in the experimental and control groups after the intervention (n=30)

Variables	Group	Mean	SE	Mean difference	Unpaired 't'	P value
BMI	Experiment	18.69	0.96	0.45	0.32	0.75 NS
	Control	18.25	0.99			
Hb	Experiment	10.49	2.22	1.55	6.55	0.001
	Control	8.93	0.08			
Serum ferritin	Experiment	98.50	15.40	55.83	3.52	0.05
	Control	42.66	3.84			
Pulse rate	Experiment	126.27	2.39	0.87	0.21	0.84 NS
	Control	127.13	3.39			
No of steps	Experiment	86.27	2.53	3.34	0.98	0.34 NS
	Control	82.93	2.27			
RPM Score	Experiment	31.73	1.67	0.93	0.35	0.73 NS
	Control	30.80	2.12			
Qol Score	Experiment	197.13	4.08	5.13	0.89	0.38 NS
	Control	192.00	4.08			

From the above table it was observed that after the intervention, the mean BMI, pulse rate, number of steps in step test, RPM score and Quality of life among the girls in the experimental was slightly increased than control group. But the difference was not statistically significant. The mean Hb and serum feritin values in the post test were significantly higher among the girls in the experimental group compared to those in control group ($P<0.001$ and $P<0.05$ respectively).

CONCLUSION

Nutritional anemia in India is common morbidity seen in late adolescent and young female population. Comprehensive intervention strategies are essential to combat the problems of iron deficiency anemia among adolescent girls such as impaired physical growth, poor cognitive development, reduced physical fitness, and work performance and lower concentration on daily tasks. The present study findings showed that there was significant increase in outcome variables in experimental group and no change in control group. There was statistically significant changes observed after the intervention between control and experimental group in changing the values of hemoglobin and serum feritin level. Thus it was concluded that comprehensive intervention strategies in reducing IDA and it's effect among adolescent girls.

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Perspectives of Strange Environmental Stressors among Hospitalized Children at AIMS, Kochi

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ABSTRACT

Introduction: Common fears of childhood which includes fear of separation, loss of control and bodily injury, mutilation or harm. Hospitalization does affect the child's control over decisions related to his/her own body.

Method: The qualitative approach, exploratory research design was chosen. The tools used were Dichotomous Questions, NAVAS (Noise Assessment Visual Analogue Scale), Photographs images, Rank Order and Forced Choice Questions. The study was conducted among 100 Hospitalized Children (HC) used non probability purposive sampling technique to select the children.

Results: The children 49 of them had previous exposure and 51 of them were new experience of hospitalization. Researchers were asked the opinions about existing ventilation, all (100)of them preferred open ventilation in day time but nearly half of them (52) liked closed ventilation in night. Perspectives of Strange Environmental Stressors (SES)was assessed by the use of selected photographs images - to choose in color of the unit, bedding, uniform and light set up. Most of them have chosen blue color is their favorite. Procedure room and indoor play room they have selected fantasyimagery. Hospitalequipments, supplies and utensils they have chosen fashionable, picturized items. A question was asked regarding what causes fear and stress during their hospitalization, majority of them reported such a manner, afraid of strange of any equipment's , threatened pain in invasive procedures, scared in white uniform nurses talk and touch.

Conclusion: The study findings revealed that, children's perspectives is different, and too depth to visualize in each and everything. Especially where they spend time even if it is hospital, they are expecting fantasy environment they didn't think as adult about the importance of hospital, treatment, health..

Keywords: *SES– Strange Environmental Stressors, HC– Hospitalized Children, NAVAS– Noise Assessment Visual Analogue Scale.*

INTRODUCTION

For children, hospitalization is a stressful event that can cause anxiety.[1] The new environment, unfamiliar faces, different routines, medical and surgical procedures are all frightening and distressing to the child. Hospitalization can be emotionally traumatic to the child.[2] The child's response to hospitalization depends on the developmental stage and coping mechanisms, parent-child bonding, sibling, peer relationships, cultural and religious influences, previous experience with hospitalizations, nature of illness and child's perspectives.[3]

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Assumptions

1. Environmental stressors prevent the speedy

recovery from the disease and treatment.

2. Stress - free environment promotes minimal hospital stay and good prognosis.
3. Noise causes irritability and disturbed sleep.
4. Noise free environment provides comfort to the child.
5. The image of white uniform cause pre-determined fear and anxiety of the children.
6. Colour uniform may give the impressionof child to get nonspecific image of the professional.
7. Stressors cause stress and anxiety which triggers the depletion of immune system.

METHOD & MATERIALS

Qualitative approach using descriptive exploratory design was adopted for the present study. The setting was Amrita institute of medical sciences, Kochi which is a 1500 bedded super speciality hospital. The study was conducted 50 bedded pediatric ward in B-Block. The subjects for the study were hospitalized children who have admitted at least 2 days. Non probability purposive sampling technique was used for the selection of subjects. Hundred HC were selected from pediatric ward, who met with the inclusion criteria. Data collection period was 4 months from 15-12-2014 to 17-04-2015.

The data collection instrument includes three tools. **Tool 1** Section A includes demographic variables like age, gender, religion, education and period of hospital stay. Section B includes dichotomous questions related on physical environment consisting of 4 questions regarding ventilation, lighting arrangements, sleep pattern and noise in the pediatric ward. NAVAS used for assessing noise in existing unit, a scale from 0-100 where divides 0-20, 20-40, 40-60, 60-80, 80-100 in mm. 0-20 represents calm and quiet, 20-40 represents mild noise, 40-60 represents moderate noise, 60-80 represents severe noise and 80-100 represents extreme noise. This tool was developed by the researchers. **Tool 2** Photograph images - used on children's perspectives of strange hospital environmental stressors in pediatric unit. This photograph images nurse uniform, supplies and equipment of 18 itemswas used with permission and unit setting designed and took photographs fromChild health lab, Amrita College of nursing. **Tool 3** It consists of Forced Choice Questions and Rank Order questions on experiences of hospital environment. These 2 tools by variousexperts' contribution in this field considered and developed the tool. The data was analyzed in descriptive and inferential statistics.

RESULTS & DISCUSSION

The first objective of the study was to identify the strange environmental stressors among hospitalized children.

The researchers used Dichotomous-Yes or No questionnaire to identify the strange stressors among HC. The questions on physical environment in which it consists of questions under each heading regarding ventilation set up, sensory perception of lighting arrangements, sleep wake pattern and noise disturbances in the pediatric unit.

In the present study shows that all children 100 (100%) preferred windows opened during the day. But in night preferred 52 (52%) of them closed and 48 (48%) opened window system.The study results was supported by the study conducted by Jane Coad, Paula Hicks, and MicheleGlackenonYoung.[4] children's perspectives of ideal physical design features for hospital-built environments. The purpose of the study shared young children's perspectives of what constitutes ideal physical design features for hospital-built environments. Emergent findings revealed three broad themes: personal space, physical environment and access. This study findings is important for nurses, clinicians and environmental designers because it outlines what a supportive child health care environment should constitute. Hospital environments need to be constructed not just to be child friendly, but also respect children's right to dignity, privacy, family support and self-control. Regarding children's opinions on *sensory perception* of existing *Lighting Arrangements* in pediatric unit 79(79%) not feel discomfort when the light is ON during the day time. When the light is ON while sleeping, 96(96%) of them feels discomfort. Among this, 71 (71%) of them liked dimmed light.. Regarding opinions on *Sleep Wake Pattern* in existing pediatric unit (45%) of them have sleep disturbances and 55 (55%) they have no disturbances during their sleep hours. 61 (61%) of them won't wake up in the midnight. Among 71 (71%) of them have disturbed sleep due to pain or discomfort and 58 (58%) children

have disturbed sleep occasionally. Children's opinions on *Noise Disturbances* in existing pediatric unit 95 (95%) children get discomfort by hearing loud noise. 95 (95%) of them get disturbed by noise while sleeping.

(n = 100)

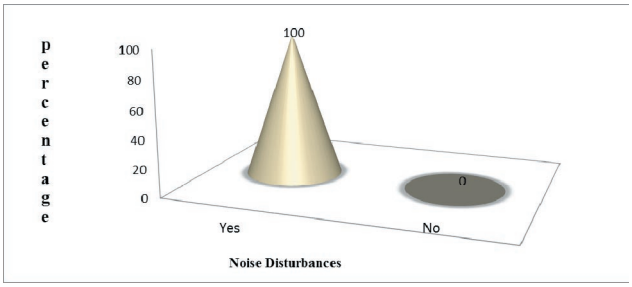

Figure 1: Percentage distribution of children's opinions on *Noise Disturbances* in existing pediatric unit

(n = 100)

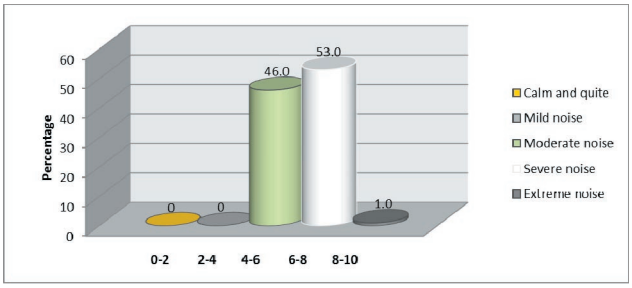

Figure 2: Noise Assessment during day time (NAVAS)

(n=100)

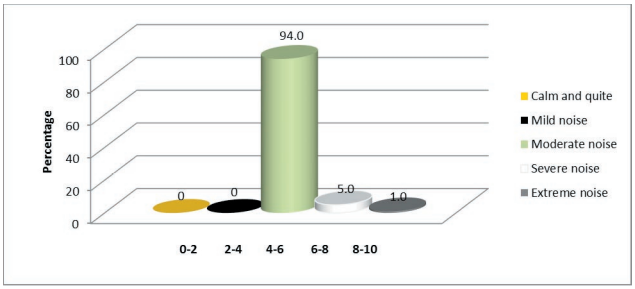

Figure 3: Noise Assessment during night time (NAVAS)

The second objective of the studydetermines the perspectives of SES among HC by using Photographs images.

In the present study shows children's perspectives of strange environmental stressors based on the *preferred color of the pediatric unit setting*, 63 (63%) preferred blue color unit setting, none of them preferred white and 28 (28%) of them preferred multi-color setting images. Inbedding, blue colorpreferred 58 (58%) and 33 (33%) of them chosen pink .None of them preferred the white color bedding in pediatric unit. For the color of the lighting arrangements 51 (51%) of them preferred color background with bright light. For the design and color of the play room, 49 (49%) children preferred design 4 image. For the design and color of the procedure room design, 52 (52%) of them preferred design 4 image. For the color of the nurse's uniform they 58 (58%) preferred blue.

(n=100)

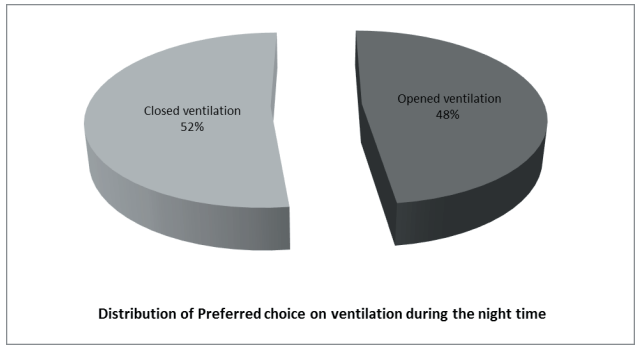

Figure 4: Percentage distribution of children's perspectives of SES based on the preferred choice on ventilation during night time in pediatric unit

The present study results were supported by the study conducted by Imelda Coyne[5] on 'Children's experiences of hospitalization'. The children identified a range of fears and concerns, which included: separation from parents and family; unfamiliar environment; investigations and treatments; and loss of self-determination. The findings clearly indicated that children need adequate information tailored to their needs, that their views are sought in the planning and delivery of their care and that hospital environments need to be made more child-centered.

In the present study shows based on the *preferred designs of equipment's photographs images used* in the pediatric unit, 29 (29%) children preferred yellow colored stethoscope and 61 (61%) of them preferred multi colored stethoscope. For the thermometer design, 94 (94%) of them preferred cartoon thermometer for the design of procedure tray, 66 (66%) they preferred pictured tray. For the design of IV stand 57 (57%) children preferred cartoon stand image. Regarding*designs of utensils photographs images used* in the pediatric unit, for the ounce glass 57 (57%) children preferred cartoon glass. For the design of cup, 49 (49%) of them chosen cartoon cup, for the design of bedside table, they 40 (40%) preferred blue color table. For the mug design, 37 (37%) of them liked flowered mug, 31 (31%) pictured mug and 31 (31%) were selected cartoon mug. For the design of bucket images, 50 (50%) ticked cartoon image. For the

waste bin image, 41 (41%) of them liked cartoon bin and 58 (58%) designed bin image.

The present study results were supported by the study conducted by KokabBsiri-Moghaddam, Mahdi Basiri-Moghaddam, Leila Sadeghmoghaddam, and FazlollahAhmadi[6]were conducted on 'The Concept of Hospitalization of Children from the View Point of Parents and Children'. The experience of hospitalization in children can be considered as a process of effort for returning to health and, on the whole, the regaining of the individual's status in the world. Nurses can ease this process by showing the importance of experience and feelings of individuals at the time of hospitalization and help people to adapt themselves to their new surroundings.

The third objective of the study was to explore the experiences of hospital environment among HC.

In the present study explore the children's experiences when the *Child entered* in existing pediatric unit, 88 (88%) of them felt fear. All 100 (100%) of them verbalised nurse as a strange woman when the nurse approached them, they didn't like their touch and talk. The present study results were supported by the study conducted byKateBishop[7]on 'considering Art in a Hospital Environment from Children's and Young People's Perspectives'. In the case of paediatric hospitals, it is unlikely that 'art' which is simply a graphic treatment applied to key surfaces throughout the hospital environment, could function in the ways that children and young people have identified in research as being valuable in their experience of hospitalization. This one environmental attribute will be used to understand some of the key components of a hospital environment involved in children's feeling of well-being from their perspectives. The finding supports a recommendation for treating the hospital setting as a gallery space rather than a residential space; allowing the disjunct that will occur between some artwork and the building itself to be seen as positive in patient experience in paediatric settings rather than as a negative on aesthetic grounds.

In the present study finding on the *children's Ranked their Experiences of hospital stay in Order of first three statements*, 66 (66%) children preferred experiences as they selected statement first one, fear and anxiety of strange hospital environment, second was 45 (45%) of them tickedthe opportunity to mingle with peers, and thirdly 38 (38%) of them answered utilized play room facilities as available.

In the present study shows based on the children's *Suggestions* in *Rank Order* for implementing in the existing pediatric unit, the children orderly reported that the play room should be created in fantasy and fashionable. The present study results were supported by the study conducted by McKenzie S, Norrish S, Parker L and Frampton I [8]on 'Young people and healthcare. Experience of the hospital environment' in National Health Service policy in the UK recommends that the hospital built environment should cater for the needs of younger and older children, adolescents and carers. Results suggest that a pediatric ward designed specifically for adolescents was experienced positively by participants. Other areas of the hospital serving a wide age range of patients (Emergency Department and Radiography, for example) were not experienced as positively. Implications for hospital design, staff training and future research are explored.

The fourth objective of the study was to find the association between the environmental stressors of HC and selected demographic variables.

In the present study there was a significant association found between color of the play room and education of the children ($p=<0.05$). and color of the procedure room and the period of the hospital stay. There was no association found between the stressors and other demographicvariables. The present study result was supported by the study conducted by Sandra A. Sherman, MardelleMcCuskeyShepley, and JamesW.Varnion[9]'Children's Environments and Health-Related Quality of Life: Evidence Informing Paediatric Healthcare Environmental Design'. Results suggest beneficial outcomes are associated with access to nature, reduced noise, and reduced crowding.

CONCLUSION

The study findings revealed that, children's perspectives is different, and too depth to visualize in each and everything. Especially where they spend time even if it is hospital, they are expecting fantasy environment they didn't think about as adult the importance of hospital, treatment, health. Researchers suggesting even a small unit or ward in a hospital,

the setting of pediatric unit should be therapeutic in nature such as noise free, optimum lighting, opened ventilation and Child friendly atmosphere to be considered before planning.

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Ethical Clearance: Obtained from Thesis Review Committee, Amrita Institute of Medical Sciences, Kochi, Kerala.

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Factors Influencing Honour Killings: Need for State Intervention for Reformation

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ABSTRACT

Violence strikes women from all kinds of backgrounds and of all ages. It can happen at work, on the street, or at home. Violence against women is a global phenomenon prevalent in all societies, but differs in its form from one society to another, depending on the level of development and the extent of patriarchal control within the family, as this system prevailed in human societies what is the definition of honour killing and what leads families to commit this heinous crime so that they can protect their family honour? Is this practice prevalent only in India or is it prevalent in other parts of the world also? What are the misconceptions regarding honour killing and what are the solutions to stop this crime from spreading? These are the questions that this article seeks to find an answer to the barbaric practice of honour killing also known as honour murder i.e. the killing of a member of a family or social group by other members, due to the belief of the perpetrators that the victim has brought dishonour upon the family or community which is on rise in recent days.

Keywords: *Honour Killings – Heinous Crime – Dishonour Killings – Barbaric Practice.*

INTRODUCTION

Honour killing is defined as a death that is awarded to a woman of the family for marrying against the parent's wishes, having extramarital and premarital relationships, marrying within the same gotra or outside one's caste or marrying a cousin from a different caste. Honour killing is different from the dowry deaths that are also a very common practice in India as, in the case of dowry deaths, the perpetrators of that action claim that they have not been given enough material rewards for accepting the woman into the family. In that case there is a lot of harassment from the in-laws and more times than one, it has been noted that the wife commits suicide rather than being killed by the in-laws, though it has to be said that she has been mentally killed, if not physically. We have had a tradition of honour killing. This tradition was first viewed in its most horrible form during the Partition of the country in between the years 1947 and 1950 when many women were forcefully killed so that family honour could be preserved[1]. During the Partition, there were a lot of forced marriages which were causing women from India to marry men from Pakistan and vice-versa. And then there was a search to hunt down these women who were forced to marry a person from another country and another religion and when they returned home they were killed so that the family honour could be preserved and they were not declared social outcastes from their region. At that time, the influence of religion and social control was much greater and hence there were at least a couple of honour killings a day, if not more. The partition years can be seen to be the beginning of the tradition of honour killing on a large scale. It's worth mentioning here that Honour Killing is not specifically related to India only. There are various misconceptions regarding the practice of honour killing. The first misconception about honour killing is that this is a practice that is limited to the rural areas. The truth is that it is spread over such a large geographical area that we cannot isolate honour killings to rural areas only, though one has to admit that majority of the killings take place in the rural areas. But it has also been seen recently that even the metropolitan cities like Delhi and Tamil Nadu are not safe from this crime because 5 honour killings were reported from Delhi and in Tamil Nadu; a daughter and son in law

were killed due to marriage into the same gotra. So it can be seen clearly that honour killing is not isolated to rural areas but also to urban areas and as already pointed out, it has a very wide geographical spread. The second misconception regarding honour killing is that it has religious roots. Even if a woman commits adultery, there have to be four male witnesses with good behaviour and reputation to validate the charge. Furthermore only the State can carry out judicial punishments, but never an individual vigilante. So, we can clearly see that there is no religious backing or religious roots for this heinous crime. How to prevent such a thing from happening? First of all, the attitude and mentality of the people to be changed. And when we talk about the mentality, we mean to say that parents should accept their children's wishes regarding marriage as it is they who have to lead a life with their life partners and if they are not satisfied with their life partner then they will lead a horrible married life which might even end in suicide. Secondly, we need to have stricter laws to tackle these kinds of killings as this is a crime which cannot be pardoned because. Humans do not have the right to write down death sentences of innocent fellow humans[2].

Women are often subjected to violence due to the prevailing cultural norms and socialization patterns in South Asia in general, and in India in particular. Despite India's efforts to pursue several policies for empowering women, violence against women is widespread. In India where almost half of the population is women, they have always been ill-treated and deprived of their right to life and personal liberty as provided under the constitution of India. Women are always considered as a physically and emotionally weaker than the males, whereas at present women have proved themselves in almost every field of life affirming that they are no less than men due to their hard work whether at home or working places[3].

HONOUR KILLING: ORIGIN AND DEVELOPMENT

Historically there are no definitive explanations regarding the origins of "honour killings". In the south Asian continent some scholars claim the practice originated with various Baloch tribes of Balochistan and spread to other countries as they migrated to different parts of the country. Colonial records on the then Balochistan clearly mention the custom of "honour killing". It is possible that such customs were later adopted in regions of Pakistan and India later on. Even recently in 2008, Israr Ullah Zehri, a Pakistani politician in Balochistan, defended the honour killings of five women belonging to the Umrani tribe by a relative of a local Umrani politician. Zehri defended the killings in Parliament and asked his fellow legislators not to make a fuss about the incident. He said, "These are centuries-old traditions, and I will continue to defend them. Only those who indulge in immoral acts should be afraid. Although the origin might be disputed, one can clearly see the plausibility of the occurrence of honour killing since the status of women was already very low in such patriarchal societies. In modern India, there have been thousands of crimes of honour across the country. Ranging from hundreds of incidents of killings, rape and mass murder to protect honour. The brutal murders of Harpreet Kaur, daughter of famous Punjab (India) politician Bibi Jagir Kaur, Nirupuma Pathak who was a young JNU (Jawaharlal Nehru University), Delhi student and the countless victims of the khap across the northern Indian heartland are few glaring example. These examples are symbolic of the lack of a specific socio-cultural identity among those who kill in the name of honour. The problem cannot be categorized to one specific caste or region; rather it is a cultural problem that persists across borders and beyond religion. Analysis of the social aspects of 'honour crimes' indicates that they cut across class lines and are perpetuated by feudal structures that intend on retaining their social and political hold over local communities[4]. The 2002 and 2003 reports of the United Nations Special Rapporteur on violence against women, and other available data also show that honour killing is not restricted to the Muslim communities. It is paramount to realize the cross-cultural dimension of honour killing. It is not restricted by class, caste, region or religion. Thus, stereotyping these crimes to certain ethnic group or religion seems counterproductive to the goals of preventing such crimes. From the prospective of legal developments in Pakistan and India, the 1860 British Penal Code introduced the notion of 'modesty', and related concepts of 'chastity', 'enticement' and 'abduction', as part of the larger framework of collective 'honour'. Women's chastity

and modesty were to be protected against violation by any male outside the relationship of a legal valid and socially accepted marriage, on the premises that women's vulnerability and the need for its protection by men. While this same vulnerability was actually the result of generations of foul treatment, denial of education, voting rights and any say in the household decisions by the male members of the family itself. These laws clearly display a heavier emphasis on the collective rights as opposed to the individual rights of the women. However, post-independence the courts in these countries are now witnessing a shift back to individual rights[5].

HONOUR KILLING: A GLOBAL ISSUE

Honour killing which is also known as honour murder is the killing of a member of a family or social group by other members, due to the belief of the perpetrators that the victim has brought dishonour upon the family or community. Honour killings are directed mostly against women and girls, but have been extended to men. In other words it is defined as a death that is granted to a woman of the family for marrying against the parent's desires, having extramarital and premarital relationships, marrying within the same gotra or outside one's caste or marrying a cousin from a different caste. This is a practice that spread over such a large geographical area that we cannot isolate. Honour killings are the most widespread in Pakistan. A report by the Human Rights Commission of Pakistan (HRCP) states that 647 women were killed in the name of honour in 2009, up by 13 per cent from 2008 when 574 such killings were reported. A June 2008 report by Turkey's Human Rights Directorate says that in Istanbul alone, there is one honour killing every week and over 1,000 were killed during the last five years. In India, honour killings are happening with regularity in Punjab, Haryana and western Uttar Pradesh. These are socially sanctioned by caste panchayats and carried out by mobs with the involvement of family members. There are many factors and reasons why people or family members decide to kill their child or family member in the name of preserving their family honour[6].

HONOUR KILLING PRACTICE IN INDIA: FACTORS AND REASONS

1. **Patriarchal Traditions:** Since India is the land where patriarchal systems are deep rooted, woman has no right to take individual decisions on her own. If at all taking any step without father's consent, he acts as a dictator rather than a care giver forgetting the human relations. Because our socialization process inculcating the traits of innocence and obedience to girl and dominance and powerfulness to boy since their childhood. Hence automatically they tend to exhibit the same at the later ages.

2. **Caste:** Though the Constitution of India clearly stated that there must not be any discrimination on the basis of caste, creed and sex, society is still giving importance to caste. Sociologists also believe that the reason why honour killings continue to take place is because of the continued rigidity of the caste system. Many honour killings occurring due to the casteism in India. Parents feel that marrying outside of their own caste is dishonour to the family and brings the family's status down in the eyes of society.

3. **Power Inequalities:** In a society where women are highly honoured since ages and regarded as goddess, wisdom and Shakti, the same women are brutally killed on the name of honour. In majority of the cases, it is power relations where women are expected to be submissive and subordinate. If at all she comes out of that ceiling she will be punished. This is happening if she decides to get married with a person whom she desires. Family expects a girl to listen whatever they say for the benefit of the family prestige. They forget the fact that girl is also a human being having her own likes and dislikes.

NEED FOR STATE INTERVENTION FOR REFORMATION

The vulnerability of women around the world to this type of violence will only be reduced when these patriarchal mind-sets are challenged and effectively confronted. Research from around the world points to the fact that violence against women can only be combated if there is a healthy partnership between women's groups and the state apparatus. While women's groups must protect their independence, on certain issues they have to work effectively with the criminal justice system, joining forces to protect the rights of women victims. State authorities without ignoring their obligation shall prosecute honour killings for strategic reformation of the society by taking the following measures:

1. Placing serious penal sanctions against such crimes, taking administrative measures to prevent the crime, and ensure conviction.

2. Active police, local government and the entire government apparatus committed towards this goal.

3. Imparting education that shuns the violence against women, de-objectifies them and recognizes the Kantian thought of the moral autonomy of the people at large, especially people from rural areas.

4. Reaching out to women of all ages and from all walks of life, to make them realize that they are equal to men.

5. Caste, community, region, and other peripheral factors play an important role in the Indian marriage system. But it is the need of the hour to change the mind-set of the parents for leading happy life.

6. Women to become powerful, women must be empowered to tackle the problems. Economic empowerment will definitely builds confidence to fight against the evils.

7. Since there is no specific law to deal with honour killings, this kind of murders come under the general categories. Hence active law enforcement and serious strict sanctions is the only solution to this most dishonourable practice.

8. State and Media can play a bigger role in fighting against casteism and consequences of anti-social practices which throws human kind into troubles. Various women pro legislations must be informed to women folk to build confidence to lodge a complaint if at all they come across any danger as the no evil can be curbed without reporting.

9. Apart from legislations to effectively curb honour related crimes, it is equally important that the steps should be taken to organise counselling programmes for the village communities and the youth[7].

CONCLUSION

The poor existing social conditions have aggravated crimes against girls and women beginning even from before birth, in the form of foeticide, infanticide, dowry deaths and honour killings. In the recent past, there appears to be a substantive increase in the number of honour killing which are considered particularly vicious among crimes against women. Women are the victims of many forms of inequalities and violation of basic rights. Recently, there has been a spate of honor killings in the country and this has led the government to decide what laws should be put in place to stop this heinous crime. The usual remedy to such murders is to suggest that society must be prevailed upon to be more gender-sensitive and discard prejudice of caste and class. Efforts should be made to sensitize people on the need to do away with social biases. Although the country is yearning for legal reforms, the process is painfully slow. The legislation drags their feet when it comes to going against customs since they know that any such manoeuvre could lead to political suicide. The village level police and local courts protect themselves under the umbrella of themselves being part of society and unable to oppose alone the will of the people. Perhaps, the route for positive transformation is presently entrenched with deep obstacles. Nevertheless, this transformation is possible if efforts are made for changing the mind-set of the people and better trained to distinguish crimes of honour from other domestic crimes.

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Conflict of Interest - Nil

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