

IJCH



Vol. 18 No. 1

January - June, 2006 - 281/282

ISSN - 0971 - 7587

The Indian Journal of Community Health

Official Publication of Indian Association of Preventive and Social Medicine (U.P. Chapter)



Published from :
Deptt. of Community Medicine
G.S.V.M. Medical College, Kanpur (U.P.)

With Best Compliments From :

- **ABEZ - Cap**
(Multi Vitamins)
- **AXIM - 250/500**
(Cefuroxime Axetil)
- **DEPIK - 25/75**
(Imipramine)
- **DEPIK - Plus/Forte**
(Imipramine + Diazepam)
- **FLUX- 20**
(Fluoxetine)
- **GESNIM-P**
(Nimesulide - 100 mg. + Paracetamol - 500 mg.)
- **PANTOPIK - 40/D**
(Pantoprazole)
- **TUK-TUK - Syp**
(Cyproheptadine)
- **MYGLO - CS Cap**
(Carbonil Iron)
- **OFBID - 100/200/400**
(Ofloxacin)

AARPIK

PHARMACEUTICALS PVT. LTD.

A-81, CORPORATE HOUSE, H.G. Highway, AHMEDABAD.

CONTENTS

Dr. Sandip Kumar

*Department of Community Medicine
Rural Institute of Medical Sciences & Research
Safai, Enam (U.P.)*

1.	EDITORIAL <i>V. K. Srivastava</i>	1
2.	IMPACT OF THE MOTHER LITERACY, OCCUPATION AND SOCIOECONOMIC STATUS ON THE NUTRITIONAL STATUS OF THE CHILDREN <i>H. Shanker, M. A Hassan, Nveen K. H., Shraddha Dwivedi</i>	3
3.	"A STUDY OF CHANGE OF POSTURE ON THE PULMONARY FUNCTION TESTS : CAN IT HELP COPD PATIENTS ?" <i>Jalaj Saxena, Sushma Gupta, Sonali Saxena</i>	10
4.	SOCIAL DETERMINANTS OF EXCLUSIVE BREAST FEEDING PRACTICES <i>S. K. Gupta, P. K. Goel, Surekha Kishore, A. B. Singh, J. Semwal</i>	13
5.	LEVEL OF KNOWLEDGE REGARDING RCH SERVICES AMONG SUBCENTRE HEALTH FUNCTIONARIES OF KALYANPUR BLOCK, KANPUR <i>S. K. Kaushal, S. C. Saxena, V. K. Srivastava, Seema Nigam, J. P. Srivastava</i>	18
6.	STUDY ON THE IMPACT OF VARIOUS INTERVENTIONS ON THE PREVALENCE OF NUTRITIONAL ANEMIA AMONG MEDICOS OF G.S.V.M. MEDICAL COLLEGE, KANPUR <i>R. P. Sharma, Sanjay Kawan, S. C. Saxena, Suresh Chandra, J. P. Srivastava, Naresh Pal Singh, D. S. Martolia</i>	23
7.	IMPACT OF IRON FOLIC ACID TABLET UTILIZATION ON THE PREVALENCE OF ANEMIA AMONGST MOTHERS UNDER RCH PROGRAMME <i>A. B. Singh, S. D. Kandpal, S. K. Gupta, R. Chandra, V. K. Srivastava, K. S. Negi</i>	31
8.	AN EVALUATION OF SHORT-TERM PROGNOSTIC SIGNIFICANCE OF VARIOUS CLINICAL PARAMETERS IN PATIENTS OF STROKE <i>Sonali Saxena, Shadab A. Khan, Jalaj Saxena</i>	37
9.	STUDY OF UTILIZATION OF ANC SERVICES BY ANTE-NATAL MOTHERS ATTENDING RHTC <i>Jayanti Semwal, Surekha Kishore, Khursheed Muzammil, Sonali Kar</i>	42
10.	A STUDY OF PREVALENCE OF OBESITY IN ADULT PUNJABI POPULATION <i>Pooja Goyal, R. K. Sachar, R. K. Soni</i>	46

EDITORIAL BOARD

Chief Editor

Dr. J. P. Srivastava

Editor

Dr. S. C. Saxena

Associate Editor

Dr. Suresh Chandra

Production Editor

Dr. Seema Nigam

Members of Editorial Board

Dr. S. K. Mehrotra

Dr. G. Singh

Dr. Ramesh Chandra

Dr. Deoki Nandan

Dr. J. V. Singh - Meerut

Dr. R. D. Bansal

Dr. S. D. Gaur

Dr. (Mrs) Ram Ram

Dr. O. P. Agarwal

Dr. J. V. Singh - Lucknow

Dr. V. M. Gupta

Dr. A. S. Padda

Dr. V. K. Srivastava - Lucknow

Dr. S. B. Dabral

Dr. Surya Bhushan

Dr. S.C. Mohapatra

Chief Administrative Officer

Dr. S. C. Gupta

Senior Administrative Officer

Dr. V. K. Srivastava (Finance)

Dr. R. P. Sharma (Advt.)

Administrative Officer

Dr. D. S. Martolia (News & Reviews)

Dr. Punit Varma (Statistical Cell)

Members of Advisory Board

Dr J. S. Mathur

Dr. M. Zaheer

Dr S. C. Gupta

Dr. I. C. Tewari

Dr. A. K. Govila

Dr Goapa Kothari

EDITORIAL**PROMOTING SAFE INJECTION PRACTICES : THE CHALLENGE AHEAD**

Injections are one of the most common health care procedures in the world. Global estimates range between 12 billion-16 billion injections each year¹. Most of the injections (90 to 95%) are given for therapeutic purposes and only 5 to 10% are given for immunization. It is estimated that worldwide every year a billion injections are given to women and children for immunization. Up to half of these injections are currently thought to be unsafe.

Due to the sheer burden of injections and the corresponding magnitude of unsafe injections, the proportion of blood borne pathogen transmission is much larger than is due to unsafe blood transfusion. Unsafe injections are responsible for million cases of Hepatitis B and C and an estimated one-quarter of a million cases of HIV annually. Worldwide 8 to 16 million hepatitis B, 2.3 - 4.7 million hepatitis C and 80,000 - 1,60,000 HIV infections are estimated to occur yearly from reuse of syringes and needles without adequate sterilization². In the less developed countries, the unsafe injection practices account for an estimated \$ 535 million in health care costs and result in nearly 1.3 million deaths a year.

In a developing country like India where unnecessary injections are common, the total burden of injections is estimated to be 3.7 billion injections per year³. Certain studies that have been carried out in India, along with anecdotal

evidence point towards a large number of unnecessary, inappropriate, unsafe injections and inadequate sharps waste management^{4,5}. A high proportion of injections given in India for immunization are unsafe due to reuse of needles/syringes. The popularity of curative injections remains high due to various factors influencing the behaviour of prescribers / injection givers as well as clients.

An important factor in improving injection safety is that of safe disposal of injection related waste. Although sharps waste constitutes a small proportion of all healthcare waste, it is associated with one of the highest hazards. Several studies have highlighted the problem of inappropriate sharps waste management. It had been observed that all the needles and syringes are not properly disposed of, and this generates a considerable risk for injury and infection and opportunities for reuse. The safe disposal of injection related waste in a cost effective, efficient and environment friendly manner is a challenging task, which so far has eluded solution on a large scale.

WHO has stated the element of a national strategy for the safe and appropriate use of injections that it should be viewed as a process by which a national standard is developed, the current situations is assessed, a plan is made, actions are implemented under continuous moni-

toring and an evaluation is done to measure progress⁶.

Issues related to unsafe injections are complex. Addressing prescription behaviour among prescribers and improving injection giving techniques among providers would require a multi pronged approach. The Safe Injection Global Network recommends a three part, multidisciplinary approach to achieve safe and appropriate use of injections. First, the behaviour of health care providers and patients must be changed to decrease injection overuse and achieve safety. Second, sufficient quantities of appropriate injection equipments and infection control supplies should be available. Third, a sharp waste management system should be set to ensure that disposable equipment is destroyed and properly disposed and not reused.

Considering the enormous burden of injections in the country, the magnitude of unsafe injections and the problem of unsatisfactory waste disposal, there is an urgent need to establish a mechanism by which these issues are addressed in a systematic and sustained manner. In this context, the medical college hospitals can play an important role in training the interns, the medical college hospitals can play an important role in training the medical and paramedical students, residents and thus associated with the

process and serve as a demonstration centre in giving safe injections.

References :

1. Hutin YJF, Hauri AM, Armstrong GL. Use of injections in healthcare settings worldwide, 2000 : Literature review and regional estimates. *BMJ*; 2003; 327: 1075-1078
2. Hutin Y JF, Chen RT. Injection safety-a global challenge. *Bull WHO*; 1999; 77: 787-788
3. India CLEN Program Evaluation Network, 'Assessment of Injection Practices in India'; Draft report: 2004
4. Ashwath D, Latha C, Soundarssanane M B & Wyatt H V . Unnecessary Injections Given to Children Under Five Years. *Indian J Pediatrics*; 1993; 60: 451-454.
5. Anand K, Pandey CS, Kapoor SK. Injection use in a village in North India. *Nat Med J India* 2001; 14: 143-144.
6. Dziekan G, Chisholm D, Johns B, Rovira J, Hutin YJF, The cost effectiveness of policies for the safe and appropriate use of injection in health care settings. *Bull WHO*; 2003; 81:277-285.

Prof. VK Srivastava
Prof. Ramesh C. Ahuja
King George's medical University
Lucknow



IMPACT OF THE MOTHER LITERACY, OCCUPATION AND SOCIOECONOMIC STATUS ON THE NUTRITIONAL STATUS OF THE CHILDREN.

H. Shanker*, M. A Hassan**, Nveen K. H.***, Shraddha Dwivedi****
Ex-Resident*, Assistant professor**, Resident***, Professor & Head****

Department of Community Medicine, Moti Lal Nehru Medical Collage, Allahabad

Abstract :

Topic :

Impact of mother literacy, occupation and socioeconomic status on the nutritional status of the children.

Research Question :-

1. What are the impact of mother's literacy on the nutritional status of the children.
2. To study the effect of mother's occupation and socio-economic status on the nutritional status of the children?
3. To suggest the various preventive measures to combat the nutritional problems.

Material and Methods :-

- a) **Study Design** : A stratified multistage random sampling.
- b) **Setting** : A sample of two blocks namely, Jasra in trans Jamuna area and Saidabad in trans Gangs area.
- c) **Participants** : Children below 6 years of age.
- d) **Sample Size** : 436 children below 6 years of age.
- e) **Study Variables** : Literacy, occupation and socioeconomic status.
- f) **Statistical Analyses** : By proportions and Chi-square test.

Results :-

The overall prevalence of malnutrition was found to be maximum in children of illiterate mother i.e 58.24 percent

Introduction :

Malnutrition stunts the mental and physical growth of one in three children in developing countries. One third of newborns start their life with low birth weight. More than half of young children below five years of age continue to suffer from moderate to severe malnutrition. Nearly 190 million children under five years of

age are chronically malnourished.

During 1995 more than 28 percent of children of the world under the age of five years were underweight for their age i.e. 2.9 percent in the developed countries and 31 percent in the developing countries¹. The problem is most widespread in South Asia. Majority of the malnourished children of the world are found in just three countries; namely, India, Pakistan and

Bangladesh.

India is the second most populous country of the world. Uttar Pradesh ranks first among the most populous states of India. The population of U.P is mainly rural, more than 70 percent people residing in villages. Mild, moderate and severe malnutrition are more common in eastern and central parts of U.P. The protein energy malnutrition in low birth weight children was 47 percent in rural and 50 percent in urban areas². Institute of Applied Statistics & Development Studies (IASDS 1995) in U.P revealed that 52 percent children were underweight and 22.4 percent were severely underweight. Stunting was observed in 59.3 percent of the children while 36.2 percent suffered from severe stunting. 19.5 percent were found to be wasted and 5.1 percent were severely wasted³. 42% of the total population of U.P lives below poverty line. Every third child is born with weight below 2500 grams and 73 percent of the mothers are illiterate⁴.

Women and children constitute a large and vulnerable group or special risk group of the population. The risk is connected with childbearing in case of women and growth, development and survival in case of infants and children. The problems affecting the mother and child health are multifactorial. By improving the health of the mother and child, we contribute to the health of the general population.

This study has been done with the following aims and objectives:

1. To study the effect of mother's literacy on

the nutritional status of the children.

2. To study the effect of mother's occupation and socioeconomic status on the nutritional status of the children.
3. To suggest the various preventive measures to combat the nutritional problems.

Materials and Methods :

The present study was conducted in the rural areas of Allahabad district during the year 2001-2002. A stratified multistage random sampling procedure was adopted to select study units. A sample of two blocks namely Jasra in trans Yamuna area and Saidabad in trans Ganga area were selected randomly as primary stage units. Within selected primary stage units a sample of villages were selected as secondary stage units. Within selected villages, children below six years of age were surveyed as ultimate study subjects.

Optimal sample size was calculated on the basis of pilot survey results wherein about 40.0 percent children under the age of six years were found to be malnourished in the community surveyed. Based on this, sample size with an acceptable error of 5 percent level of significance was obtained to be 436 children. The anthropometric measurements like weight, height and mid-arm circumference were taken for assessing the nutritional status of children. Enquiry regarding literacy status, occupation, and socioeconomic status of mother were also done. All the information was recorded on a predesigned and pretested proforma and

statistical analysis was done by proportions and tests of significance.

Results :

The overall prevalence of malnutrition was found to be maximum in children of illiterate mothers i.e. 58.24 percent, 28.0 percent in children whose mothers were educated up to primary school and only 2.86 percent in children whose mothers were educated up to high school level. None of the malnourished children were found in the mothers educated up to intermediated and above. Malnutrition was significantly associated with literacy status of the mother [$\chi^2 = 64.41, d.f=1; p<0.001$].

The overall prevalence of malnutrition was

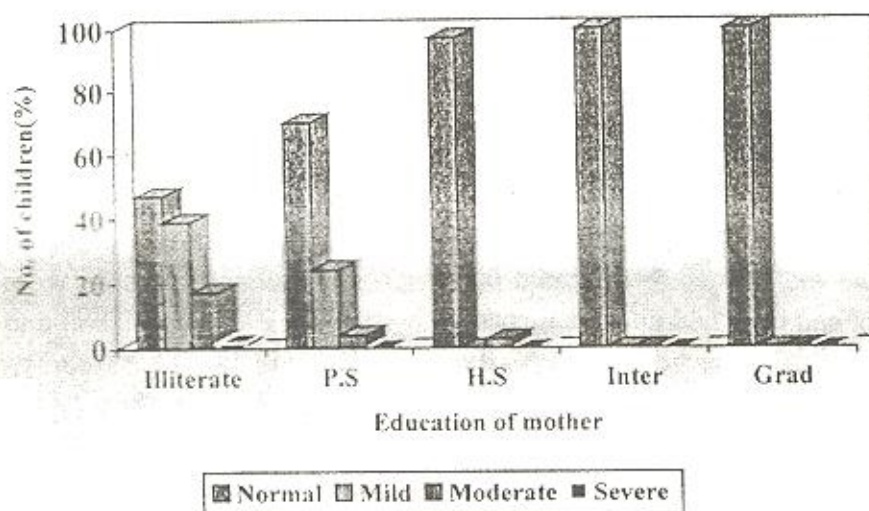
found to be maximum in children whose mothers were domestic workers i.e. 60.01 percent, followed by 56.20 percent in children of agricultural labourers and 34.1 percent in children whose mothers were housewives. No malnourished child was found with mothers in service. [$\chi^2 = 21.89; p<0.001$]. In other words, maximum number of malnourished children were found in working mothers (56.70 percent) and less in nonworking mothers (34.14 percent). This difference is statistically significant [$\chi^2 = 15.99, d.f=1; p<0.05$]. In terms of socioeconomic status, malnutrition was very much high in low socioeconomic status mothers (69%) in comparison to middle (25%) and high (6%). These differences were also found to be statistically significant [$\chi^2 = 19.22, d.f=2; p<0.001$].

TABLE - 1

Nutritional grades [weight for age criteria] of the children by education of the mother.

Grading of Malnutrition	Education of the mother					Total
	Illiterate	Primary School	High School	Intermediate	Graduate	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Normal	147 (41.76)	18 (70.00)	34 (97.14)	20 (100)	4 (100)	223 (51.15)
Mild	137 (38.92)	6 (24.00)	0	0	0	143 (32.80)
Moderate	61 (17.33)	1 (4.0)	1 (2.86)	0	0	63 (14.45)
Severe	7 (1.99)	0	0	0	0	7 (1.61)
Total	352 (80.73)	25 (5.73)	35 (8.03)	20 (4.59)	4 (0.92)	436 (100)

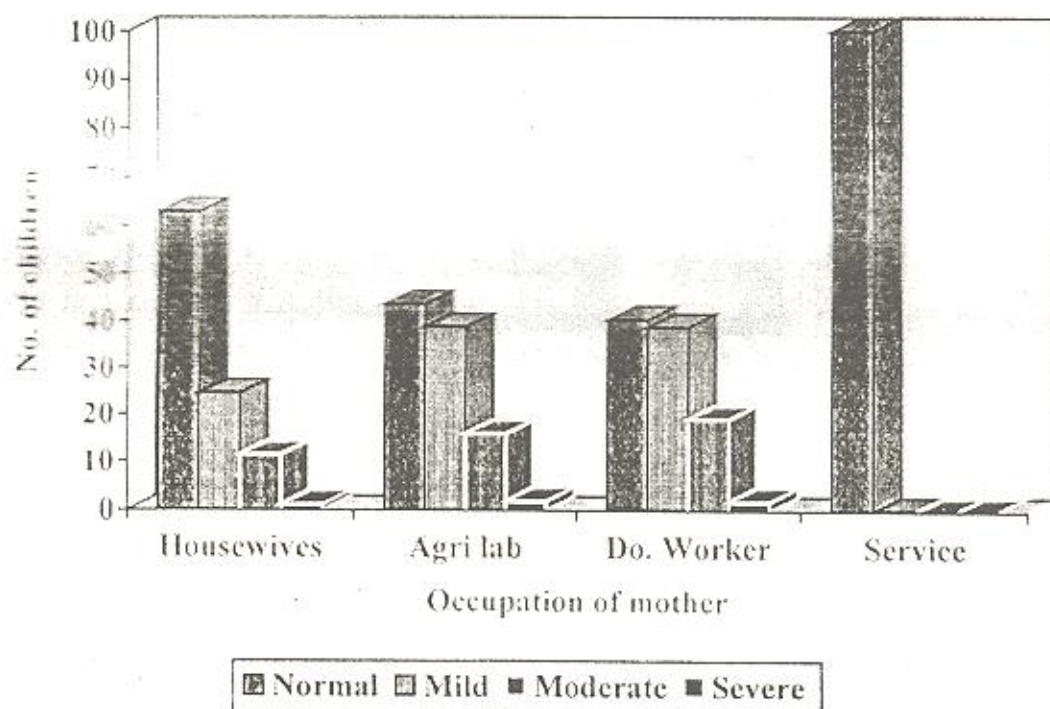
[$\chi^2 = 64.41, d.f=1; p<0.001$]



Bar diagram showing nutritional status of children and education of mothers

TABLE - 2
Nutritional grades [weight for age criteria] of the children by occupation of the mother.

Grading of malnutrition	Occupation of the mother				Total
	House wives	Agricultural Labourer	Domestic Workers	Service	
	No.(%)	No.(%)	No.(%)	No.(%)	No.(%)
Normal	110 (62.85)	90 (43.48)	21 (40.38)	2 (100)	223 (51.15)
Mild	43 (24.57)	80 (38.65)	20 (38.86)	0	138 (32.80)
Moderate	20 (11.43)	33 (15.94)	10 (19.23)	0	63 (14.45)
Severe	2 (1.14)	4 (1.93)	1 (1.92)	0	7 (1.61)
Total	175 (40.14)	207 (47.48)	52 (11.93)	2 (0.46)	436 100



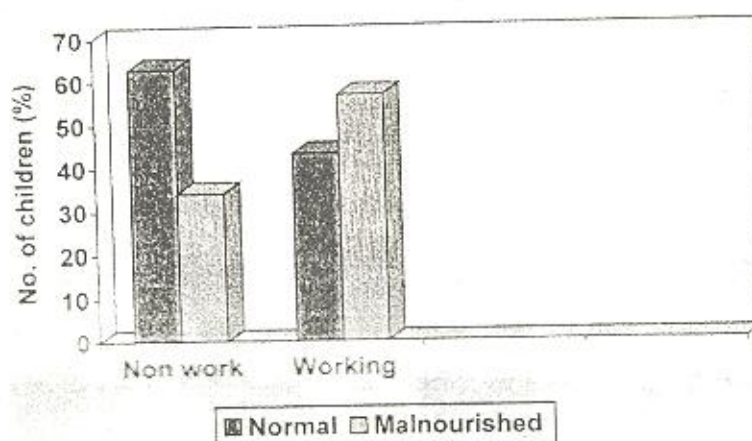
Bar diagram showing nutritional status of children and occupation of mothers

TABLE - 3

Nutritional grades [weight for age criteria] of the children by socioeconomic status

Socioeconomic status	Nutritional status		Total (100%) No. (%)
	Normal (73%)	Malnourished (27%)	
	No. (%)	No. (%)	
Low	147 (46)	81 (69)	228 (52)
Middle	127 (40)	29 (25)	156 (36)
High	45 (14)	7 (6)	52 (12)
Total	319 (100)	117 (100)	436 (100)

$[\chi^2 = 19.22, d.f=2; p<0.001]$.



Bar diagram showing nutritional status of children and working status of mothers

Discussion :

In this study the prevalence of malnutrition in children of illiterate mothers was 58.24 percent in comparison with the study of Institute of Applied Statistics & Development Studies (IASDS) in Uttar Pradesh 1995, which found that 56 percent of malnourished children were of illiterate mothers³. Similar study in the rural areas of Allahabad showed 62.98 percent malnutrition among children of illiterate mothers⁵. Similar results were found in the studies of Deoki Nandan (1979)⁶, Srivastav. V.K (1983)⁷ and Saxena.S.C (2003)⁸. Children of mothers who were housewives were less malnourished than the children whose mothers were either domestic workers or agricultural labourers. Comparable with the study of Institute of Nutrition & Food Hygiene, Chinese Academy of preventive medicine, Beijing, China (1999)⁹. Children of non-working mothers were better nourished than the children whose mothers were agricultural or self-

employed labourers. In the present study it was observed that there is association between socioeconomic status and malnutrition. Similar finding were also found in Srivastava V.K⁷.

Conclusion :

Literacy among mothers has significant impact on the nutritional status of their children. Educated mothers are able to provide proper childcare, understand nutritional aspects better than uneducated counterparts. They can also plan home economics thereby providing nutritious food at low cost. It results in better nutritional of their children.

Various occupations and socioeconomic status of the mother influence nutritional status of children in different ways. Mothers working in administrative, technical and other professional units have a higher yearly income and education level compared to agricultural labourers and domestic workers. Obviously it leads to adequate

nutrition and less malnourishment among their children. Housewives even if their per capita income is less are able to spend enough time for childcare and preparation of food, which is lacking in labourers. Literacy among housewives will be an added advantage as mentioned above, so their children are less malnourished than children of mothers who are labourers.

Recommendations :

The following steps must be taken for the betterment of nutrition in children:

1. Implementation of free and compulsory school education up to the age of 14 years through Sarva Shiksha Abhiyan placing more importance on girls' education.
2. Implementation of Government policy for more opportunities and reservation for women in various administrative, technical and other professional units thereby improving their economic status and standard of living of their families.
3. Health and nutrition education and teaching home economics to school children especially girls.

Rererences :

1. WHO (1996) The World Health Report 1996, Report of the Director General.
2. UNICEF: The Progress of the Indian States.
3. Institute of Applied Statistics and Development Studies (IASDS)-1995).
4. Nutritional Status of Women & Children in Uttar Pradesh-1999.
5. Bhupendra Tripathi (2004); Impact of interventions at community level through the MCHN project in the rural areas around Allahabad. Thesis for M.D (S.P.M) in Allahabad University.
6. Nandan Deoki, Singh J. V, Srivastava (1979). A study of some social factors related to protein energy malnutrition in rural population. Indian Journal of Community Medicine Vol IV No. 3,P 3-8.
7. Srivastava V.K (1983) Thesis for M.D. (S.P.M) in Kanpur University.
8. Saxena S.C, Saxena. P, Gupta S.C, Chandra.S,Sharma R.P (2003). Astudy of protein calorie malnutrition amongst under six children in slum area of Kanpur. Indian Jr. of Community Health Vol-15,no.2,July-December 2003, P 25-30.
9. Lu B, Zhai F, Jin S, Ge K (1999). Impact of maternal occupation on the dietary and nutritional status of preschool children. A case study in 8 provinces of China. Wei Sheng Yan Jiu (1999) Jan 30, 28(1);47-9.

"A STUDY OF CHANGE OF POSTURE ON THE PULMONARY FUNCTION TESTS : CAN IT HELP COPD PATIENTS ?"

Jalaj Saxena*, Sushma Gupta**, Sonali Saxena***

*Assistant Professor, **Professor,***Consultant cardiologist

Department of Physiology, G.S.V.M. Medical College, Kanpur
and
Ishwardevi Medical and Cardiology Center, Kanpur

ABSTRACT :

Objectives :

1. To know the pulmonary function tests in sitting, supine and standing postures in North Indian population
2. Is there any change in PFTs due to change in posture

Settings: Department of Physiology, **G.S.V.M. Medical College, Kanpur** and **Escorts Heart Centre, Kanpur**

Participants : 50 male and 30 female healthy, non-smoker volunteers comprising of 50 students of first year MBBS and 30 volunteers at Escorts Heart Centre, Kanpur

Measurements : PFTs, FEV1, FVC, FER, PEFR and TV

Statistical analysis : Students 't' test

Results: The FEV1, FVC and PEFR increased significantly from supine to sitting to standing posture in both males and females. The FER significantly increased only when moving from supine to sitting in both males and females. The TV increased significantly by moving from supine to sitting and also from supine to standing postures in both males and females.

Keywords: PFTs, Posture

Abbreviations : FEV1 - forced expiratory volume in 1st second, FVC-Forced expiratory ratio, PEFR - Peak expiratory flow rate, TV - Tidal volume, PFT - Pulmonary function tests, COPD - Chronic obstructive pulmonary disease.

Introduction :

The pulmonary function tests (PFTs) depend on factors like lung volumes, diameter of airways, the compliance of lungs and chest wall, movement of the diaphragm and the strength of the respiratory muscles. There are various studies on PFTs in sitting and supine postures¹ and a few in standing postures², which are from western countries. The present work, thus, had been planned to evaluate the effect of change of posture on PFTs in normal healthy volunteers in north Indian population which would provide the

data for reference values of Indian subjects.

Material & methods :

The present study was done on 80 healthy volunteers comprising of 50 young healthy first year MBBS students of **G.S.V.M. Medical College, Kanpur** and 30 healthy volunteers at **Escorts Heart Centre, Kanpur**. There were 50 males and 30 females. All were non smokers, healthy, between 18 - 24 years of age and were not having any complaints related to cardiopulmonary diseases.

The FEV1 (Forced Expiratory Volume in

1st second in L/1st sec), FVC (Forced Vital capacity in L), FER (Forced expiratory ratio of FEV1/FVC as %), Peak expiratory flow rate (PEFR as L/min) and TV (Tidal volume in ml) were measured by

spirometer. The readings were taken in standing, sitting and supine postures. The statistical analysis was done by students 't' test and $p < 0.05$ was taken as significant.

Observation and Results :

The physical parameters were according to the table 1.

TABLE - 1

Parameters	Male (n=50)	Female (n=30)
Mean age (years)	21.27 $\pm$ 1.46	19.56 $\pm$ 1.27
Height (cms)	171.2 $\pm$ 5.44	158.2 $\pm$ 4.13
Weight (Kgs)	61.07 $\pm$ 8.95	51 $\pm$ 5.28
Surface area (m ²)	1.71 $\pm$ 0.13	1.58 $\pm$ 0.08

The readings of various PFTs were according to table 2.

TABLE-2

Parameters	Sex	Standing	Sitting	Supine
FEV1	Male	3.39 + 0.42**	3.34 + 0.4*	3.08 + 0.39
(L in 1 st sec)	Female	2.53 + 0.39**	2.5 + 0.4*	2.28 + 0.37
FVC (L)	Male	4.07 + 0.51**	3.99 + 0.52*	3.73 + 0.48
	Female	2.89 + 0.41**	2.83 + 0.42	2.64 + 0.39
FER (%)	Male	83.13 + 3.63	83.3 + 3.84*	82.20 + 3.84
	Female	87.35 + 4.92	87.9 + 4.82	86.15 + 4.63
PEFR	Male	533.6 + 77.9**	520.4 + 77.5*	479.2 + 76.7
(L/min)	Female	350.45 + 66.35**	332.6 + 69.99*	305.9 + 62.03
TV (ml)	Male	499.33 + 49.68**	4494.0 + 54.11*	459.33 + 52.39
	Female	376 + 22.1**	371 + 23.8	346 + 28.3

*Significant increase from supine to sitting posture

**Significant increase from supine to standing posture

Discussion :

Our results are consistent with those recorded earlier^{2,3,4}. An increase in FEV1 and FVC

when moving from supine to standing in both sexes were also reported^{5,6,7}. The same increase in PEFR values as of our study were also reported earlier⁶. The increase in TV as in our study was also reported by other researchers^{8,9}. Various theories have been put forward by

different authors for changes noted by changing the posture. The diaphragm is at its lowest position in the thorax when the subject is erect and at its highest when the subject is supine explaining the changes of PFTs in different postures¹⁰. The ventilation in the supine posture is more uneven than in the erect posture. In the seated posture, effective muscle action was being applied to move the rib cage which was not applied in the supine posture and leads to smaller negative intrathoracic pressure in supine posture explaining the higher values of FEV1 in the sitting posture¹¹. The increased FER from supine to sitting posture stresses the need of change of posture from supine to sitting in patients of obstructive respiratory disease (COPD).

Conclusions :

1. All the mean values of FEV¹, FVC, PEFR and TV in the three postures were higher in males as compared to females.
2. The FEV¹, FVC and PEFR increased significantly from supine to sitting to standing postures in both males and females.
3. The FER significantly increased only when moving from supine to sitting in both males and females. **This stresses the need of change of posture from supine to sitting in patients of COPD.**
4. The TV increased significantly by moving from supine to sitting and also from supine to standing posture in both males and females.

References :

1. Michelis A, Decoster K, Derde L, VL-Eurinck C and Van De woestijne KP : Influence of posture on lung volumes and impedance of respiratory system in healthy smokers and non-smokers. *Jour Apple Physiol* 1991; 71 (1): 294.
2. Townsend MC : Spirometric forced expiratory volumes measured in the standing versus the sitting posture. *Amer Rev Respir Dis* 1984; 130: 123.
3. Vijayan VK, Kuppurao KV, Venkatesan P and Sankaaran K: Reference values and prediction equations for maximal expiratory flow rates in non-smoking normal subjects in Madras. *Ind J Physiol Physiol Pharmacol* 1993; 37 (4): 291.
4. Virani N, Shah B and Celly A : Pulmonary function studies in healthy non-smoking adults in Sri Aurobindo Ashram; Pondicherry. *Indian Jour Med Res.* 2001; 114 : 177.
5. Sasaki H, Hida W and Takishima T : Influence of body position on dynamic compliance in young subjects. *J Appl Physiol* 1977; 12:706.
6. Meysman M and Vincken W : Effect of body posture on spirometric values and upper airway obstruction indices derived from the flow-volume loop in young non-obese subjects. *Chest* 1998, 114:1042.
7. Vilke GM, Chan TC, Neumen T and Clausen JL: Spirometry . *Indian Jour Med Res* 2001; 114: 177.
8. Baydur A, Behrakis PK, Zim WA, Jaeger MJ, Weiner JM and Millic - Emili J : Effect of posture on ventilation and breathing pattern during room air breathing at rest. *Lung* 1987; 165: 34
9. Weissman C, Abraham B, Askanazi J, Milic-Emili J, Hyman AI and Kinney JM: Effect of posture on the ventilatory response to Co₂ *J Appl Physiol* 1982; 53: 761.
10. Livingstone J L: Variation in the volume of the chest with changes of posture. *The Lancet* 1928;214:754.
11. Rauwerda PE : Unequal ventilation of different parts of the lung and the lung and the determination of cardiac output. Thesis Gerningen, 1946

SOCIAL DETERMINANTS OF EXCLUSIVE BREAST FEEDING PRACTICES

S.K.Gupta*, P.K. Goel*, Surekha Kishore**, A.B.Singh***, J. Semwal****

Assistant Professor*, Professor **, Resident***, Associate Professor****

Deptt. Of Community Medicine, Himalayan Institute of Medical Sciences
Swami Rama Nagar Doiwala Dehradun (Uttaranchal)

Abstract :

Objectives :

1. To find out extent of exclusive breast feeding.
2. To study the factors affecting exclusive breast feeding practices.

Study design : Cross-sectional community based study

Study Period : November 2004 to April 2005

Setting : Slums of Rishikesh

Material and Methods : All the house holds of sheeshamjhari slum were included in the study. All available mothers of under 5 children were interviewed by house to house survey using predesigned and pretested questionnaire.

Participants: Mothers and under five children

Study variables: Exclusive breast feeding, religion, caste, family type, educational status.

Statistical analysis: Proportions, Chi-square test.

Results: Exclusive Breast Feeding was found to be 26.0% and Educational status of mother has significant influence on EBF.

Introduction :

Malnutrition of child begins from infancy itself, if the infant do not receive enough nutrients. This may be due to poor infant feeding because of poor knowledge about significance of breast feeding, especially of exclusive breast feeding.

The change in the infant feeding practice occurred initially in the industrialized countries. Soon the educated women in the

underdeveloped countries began curtailing duration of breast feeding¹⁻³. Soon uneducated poor women from urban and rural areas began to follow the footsteps of their more educated counterparts⁴⁻⁵. W.H.O. took the lead and recommended ten steps for promoting, protecting and supporting breast feeding⁶.

Exclusive breast feeding (EBF) takes care of two essential elements of newborn care-nutrition and infection control. EBF can save

many lives by preventing malnutrition and reducing the risk of infections and hypothermia. EBF should be practiced for at least four months and preferable six months in poor countries since they have a high risk of infection through contaminated water and food⁷. Exclusively breastfed babies do not require water even in hot climates⁸. Pre-lacteal feeds are not necessary as breast milk is easily digestible. Such feeds carry the risk of infection and also delays the establishment of lactation^{9,10}. In this study, it was attempted to find out the exclusive breastfeeding behavior and social factors affecting the exclusive breast feeding practices.

Material and methods :

This study was conducted in Shesham Jhari slum of Rishikesh. House to house survey was conducted and an oral questionnaire was used to collect the socio demographic data and information about exclusive breast feeding practices, total of 806 households were surveyed, 394 mothers having children under five years of age were found out of which only 361 mothers could give the information.

Results :

Table no.1 shows practices of exclusive breast feeding according to religion and caste. It can be seen that majority of mothers i.e. 94.7% are Hindu out of which 27.2% practiced

EBF and only 5.9% muslim mothers practiced exclusive breast feeding but this difference was found to be statistically insignificant. 27.7% mothers belonging to general caste and 15.4% from SC/ST practiced exclusive breast feeding but this difference was statistically insignificant.

The practice is seen increasing with educational status of mother (table 2). EBF practice is seen more in mothers who were educated upto post graduation (60%), Intermediate 41.2% and mothers educated upto to High School 34.6%. Only 19.4% of illiterate mothers practiced exclusive breast feeding and this difference was found to be statistically significant. ($p < 0.05$)

Table No. 3 depicts practice of exclusive breast feeding by type of family. It can be seen from the table that 31.8% of mothers belonging to joint family practiced EBF whereas only 24.7% from Nuclear family practiced EBF however this difference in practice of EBF was not found to be statistically significant ($p > 0.05$).

The number of siblings of children did not have any effect on practice of exclusive breast feeding. 28.8% of children having no sibling were exclusively breast fed where as 33.8% having one sibling had exclusive breast feeding and 27.5% of children with three siblings were exclusively breast fed.

TABLE - 1

Practice of Exclusive Breast Feeding by Religion and Caste

	Religion and Caste Mothers Interviewed		Exclusive Breast feeding	
	No.	%	No.	%
Hindu	342	94.7	93	27.2
Muslim	17	4.7	1	5.9
Others	2	0.6	0	0
	361	100	94	26
SC/ST	26	7.2	4	15.4
OBC	43	11.9	9	20.2
General	292	80.9	81	27.7
Total	361	100	94	26

 $\chi^2 = 4.18$ df 2 $p > 0.05$ EBF vs. Religion $\chi^2 = 2.71$ df 2 $p > 0.05$ EBF vs. Caste

TABLE - 2

Practice of Exclusive Breast Feeding by Mother's Education

	Educational Status Mothers Interviewed		Exclusive Breast feeding	
	No.	%	No.	%
Illiterate	170	47.1	33	19.4
Primary	34	9.4	8	23.2
Junior High School	60	16.6	16	26.7
High School	26	7.2	9	34.6
Intermediate	34	9.4	14	41.2
Graduate	32	8.8	11	34.4
PG	5	1.3	3	60
Total	361	100	94	26

 $\chi^2 = 13.18$ df 6 $p < 0.05$

TABLE - 3

Practice of Exclusive Breast Feeding by Type of Family

Type of Family	Mothers Interviewed		Exclusive Breast feeding	
	No.	%	No.	%
Nuclear	295	81.7	73	24.7
Joint	66	18.3	21	31.8
Total	361	100	94	26

$$\chi^2 = 1.26 \text{ df } 1 \text{ p} > 0.05$$

TABLE - 4

Practice of Exclusive Breast Feeding by No. Of Siblings

Siblings	Mothers Interviewed		Exclusive Breast feeding	
	No.	%	No.	%
0	52	14.4	15	28.8
1	133	36.8	45	33.8
2	84	23.3	13	15.5
3	40	11.1	11	37.5
4	32	8.9	6	18.7
5	14	3.9	3	21.4
6	6	1.7	1	16.7
Total	361	100	94	26

$$\chi^2 = 9.75 \text{ df } 6 \text{ p} > 0.05$$

Discussion & Conclusion :

In this study EBF practice is found to be 26.0% which is less as compared to an another study¹¹ which reported that 49.0% of urban mothers practiced EBF. This can be explained by the Illiteracy & unawareness prevailing in the slum area where this study has been conducted. Exclusive Breast Feeding was found slightly more

in general caste as compared to OBC and SC/ST but this relationship was not found statistically significant. Effect of type of family and number of siblings was not found to be a significant factor and this finding was in accordance with another study¹². In the present study literacy status of mother was the only factor which has shown significant effect on EBF practices.

References :

1. Data T, George S. Trends in Breast feeding Impression from an uneducated community. Indian pediatrics 1981. 18:655-60.
2. Walia BNS, Gambhir SK, Sron SR, Choudary S. Decline in breast feeding – Indian pediatrics 1987;24:879-88.
3. Baun SN, Breast feeding trends & influencing factors, Indian child health 1992;3:39-46.
4. Kushwaha KP, Mathur GP, Prakash O. Infant feeding practices of periurban areas of Gorukhpur Indian pediatrics 1987;24:899-901.
5. Khan M.E. Breast feeding and weaning practices in India – Asia specific population Journal 1990. 5:71-88.
6. World Health Organisation. Protecting, Promoting and supporting breast feeding – the special role of maternity services 1989.
7. Govt. of India, CSSM Review. Exclusive breast feeding, Issue 7, New Delhi: Ministry of Health and Family Welfare: 1993.1-2.
8. Brown KH, Agnitta R, Black CHR, L Open R. Milk consumption and hydration status of exclusive breast fed infants in warm climate – Indian J Paediatrics 1986. 108:577-680.
9. Icenaulamhe AK. O. Prelacteal feeds & breast feeding problems India J Paediatrics 1987. 54:84-96.
10. Narayan I. Breast feeding . A guide to practitioners and peripheral field personnel. India paediatrics 1980. 17:531-7.
11. A.A Kameswararao. Breast Feeding Behaviour of Indian Women. IJCM 2004;2:62-64.
12. Suvra Pathi, B. C Das. Breast feeding practices in a rural ICDS Block of Khalikote, South Orissa. IJCM, 2005. 30,154

The tariff for the advertisement are as follows :-

	<u>Half yearly</u>
1. Back Cover Page	Rs. 3,000/-
2. Title Cover (Inner)	Rs. 3,000/-
3. Back Cover (Inner)	Rs. 3,000/-
4. Ordinary Full Page	Rs. 1,500/-
5. Ordinary Half Page	Rs. 750/-

Note : Amount payee Draft should be sent in favour of
"Indian Journal of Community Health", payable at Kanpur.

LEVEL OF KNOWLEDGE REGARDING RCH SERVICES AMONG SUBCENTRE HEALTH FUNCTIONARIES OF KALYANPUR BLOCK, KANPUR

S.K.Kaushal*, S.C.Saxena****, V.K. Srivastava***, Seema Nigam**, J.P. Srivastava*****

Resident*, Asstt. Professor**, Associate Professor***, Professor****, Professor and Head*****

Department of Community Medicine, G.S.VM.Medical College, Kanpur, U.P.

Abstract :

Research Question: What is the level of knowledge among sub centre level health functionaries regarding RCH services?

Objectives :

- 1) To assess the level of knowledge among sub centre level health functionaries.
- 2) To identify weaker areas of RCH related knowledge
- 3) To suggest areas of relevant knowledge improvement.

Setting : Sub Centre

Study Design: Cross Sectional

Participant : BHW-F (ANM), BHW-M (Multi Purpose worker Male)

Study Period : Jun to Dec'2004

Study Variable : RCH Programme, Antenatal, Natal, Post Natal Services, Immunization, Contraceptive.

Statistical Analysis : Percentage

Result : Knowledge regarding new component like adolescent health, RTI/STD/HIV/AIDS was found poor. Level of knowledge regarding management of ARI, Vit A supplementation, Post natal care, New born care, emergency contraceptive was found to be unsatisfactory.

Introduction :

Women in reproductive age group and children up to age of adolescent constitute the major bulk of total population. Health services targeting these groups are at high priorities because of high age and cause specific mortality rate of this population group. Causes of these mortalities are largely preventable by readily available cost effective interventions³. Various programme have been conceived for delivery of health programme

towards mother and children and latest one in series in RCH programme, launched in year 1997. In the governmental rural health setup, the ANM is the health functionary closest to community. ANM is found at sub centre along with multipurpose workers who deals mainly with malaria, sanitation and to a small extent family welfare. The domain of ANM usually consists of half a dozen villages, one of which is sub center village. She visits to villages and houses for providing service, giving medicines, tendering advices to men, women and children

keeping touch with PHC/CHC and even district hospital for attending meetings, procuring essential supplies and performing other odd jobs. The ANM is responsible for RCH programme implementation at grass root level². The out come of RCH services were directly related with performance and knowledge of RCH services packages for beneficiaries of the ANM. The study was designed to assess their knowledge level regarding RCH services.

Methology :

Observations :

The study was carried out amongst all sub centre health functionaries in Kalyanpur block, Kanpur consisting of 1 CHC and 4 PHCs. These health functionaries were of the level of BHW-female (ANM-24) BHW-Male (5) total of 29 such workers. Out of these four workers (2 female and 2 male) could not be contacted in inspite of repeated attempts. Their level of knowledge was obtained by interviewing them on a pre-designed questionnaire. Obtained responses were tabulated and conclusions drawn.

TABLE -1
Knowledge about type of services under RCH Programme

Items	Knowledge	
	(n)	Correct (%)
Services for pregnant mothers	25	100
Family Planning	25	100
Immunization to the children and women	25	100
RTI/STD detection and referral	17	68
Management and referral in case of childhood illness	19	76
Adolescent Health	3	12

Figure-1-Knowledge about New Component of RCH programme.

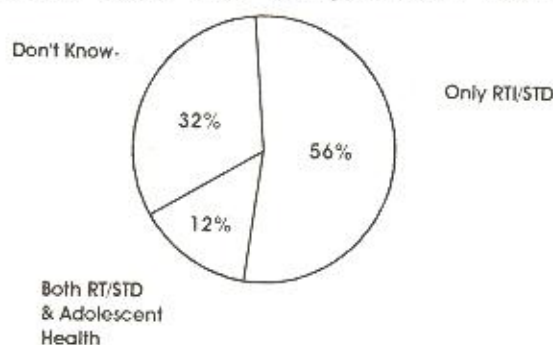


TABLE - 2
Knowledge about services for mothers

Items	Correct	Knowledge Partially correct	Incorrect	Total
Minimum ANC Checkup	25(100)	0(0)	0(0)	25(100)
Gestational period for ANC Checkup	7(28)	18(72)	0(0)	25(100)
Activities During ANC Checkup	13(52)	12(48)	0(0)	25(100)
Pregnancy Related advices	21(84)	4(16)	0(0)	25(100)
IFA supplementation	25(100)	0(0)	0(0)	25(100)
Safe delivery practices	24(96)	1(4)	0(0)	25(100)
Tetanus protection	17(68)	8(33)	0(0)	25(100)
Post Natal Checkup	23(92)	2(8)	0(0)	25(100)
Post Natal Advices	6(24)	19(76)	0(0)	25(100)

(figure in parenthesis shows the percentage)

TABLE - 3
Knowledge about contraception

Items	Correct	Knowledge Partially correct	Incorrect	Total
Type of conventional contraceptive	25(100)	0(0)	0(0)	25(100)
Indication of OCP	25(100)	0(0)	0(0)	25(100)
Indication of IUD	25(100)	0(0)	0(0)	25(100)
Indication for permanent contraception	0(0)	0(0)	0(0)	25(100)
Emergency contraceptive	18(72)	7(28)	0(0)	25(100)

(figure in parentheses shows the percentage)

TABLE - 4
Knowledge about childhood Immunization

Items	Knowledge			Total
	Correct	Partially correct	Incorrect	
Immunization Schedule	20(80)	5(20)	0(0)	25(100)
Route of administration	25(100)	0(0)	0(0)	25(100)
Cold Chain	17(68)	8(32)	0(0)	25(100)
Dose of Vit A supplementation	19(76)	6(24)	0(0)	25(100)
Quantity of Vit A dose	9(36)	16(64)	0(0)	25(100)

(figure in parenthese shows the percentage)

TABLE - 5
Knowledge about Childhood illness

Items	Knowledge			Total
	Correct	Partially correct	Incorrect	
Symptom of ARI	25(100)	0(0)	0(0)	25(100)
Signs of Pneumonia	3(12)	22(88)	0(0)	25(100)
Managment of ARI	0(0)	25(100)	0(0)	25(100)
Symptoms of Diarrhoea	11(44)	14(56)	0(0)	25(100)
Signs of Dehydration	5(20)	20(80)	0(0)	25(100)
Management of Diarrhoea	23(92)	2(8)	0(0)	25(100)

(figure in parenthesis shows the percentage)

Results and discussion :

All respondent knew about services for pregnant women, family planning and immunizationservices but poor knowledge were observed for adolescent heath (12%), referral and detection of RTI/STD (68%) and for management and referral of childhood

illness (76%). As figure shows 32% of respondent did not know the new components of RCH programme and only 12% of respondent knew about both new component of RCH programme that is i.e. RTI/STD and adolescent health. Knowledge was found poor in areas like gestational period of ANC checkup and post natal advices for mother.

Only 24-28% of respondents knew these components correctly. Rest other components were almost well known except for activities to be performed during ANC checkups which was correctly known to only 52% of respondent. Ramarao et al (2001)¹ reported that knowledge regarding ANC services among ANM was unsatisfactory as about half of the ANM did not have correct knowledge. Knowledge about contraception was found to be good except for emergency contraceptive which was correctly known to only 72% of respondent. 20% of respondent did not know correctly the immunization schedule while only 68% knew correctly about the cold chain. As far as Vit A is concerned, 76% of respondent correctly knew the doses of Vit A supplementation while only 36% of respondent knew the correct quantity of Vit A dose to be given to different age group of children. None of the respondent knew correctly about management of ARI while only 12% knew correctly the sign of Pneumonia. 80% of respondent did not know correctly sign of dehydration while only 44% of respondent knew correctly about symptom of diarrhea. Khan et al (1996)⁴ reported that overall the technical knowledge of the ANMs was poor.

Conclusion :

Peripheral level health functionaries were having very little knowledge related to their new responsibilities in implementation of the RCH programme. Satisfactory level of knowledge was prevailing in areas of childhood immunization, contraceptive, antenatal care

and natal services. Level of knowledge was unsatisfactory or very poor in the areas such as management of ARI, quantity of Vit A doses, Post Natal Care, New Born care and adolescent health

Recommendation :

It may be suggested that peripheral level health functionaries are required to be re-oriented about the identified areas of deficiencies in their knowledge specially items to be performed during post natal care, new born care, management of ARI and Vit A supplementation, Adolescent health and management of RTI/STD.

References :

- 1) **Ramarao S, Caleb L, Khan M K, Townsend JW:** Safer maternal health in rural Uttar Pradesh : Do Primary health services contribute? Health Policy and Planning, 16(3),256-263,2001
- 2) **Nagdev DA:** Reproductive and child health care in rural, India: Role of ANM, International Conference Melbourne 1-3 May, 2002
- 3) **Park K:** Park's Text book of Preventive and Social medicine 18th Edition.383, 2005.
- 4) **Khan M E, Ramarao S, Caleb L, Gupta R B, Swaroop S, Mishra A:** Rapid appraisal of IPP-VI training of ANMs in Uttar Pradesh. The population council, India. SIPSA Lucknow. 4-6, 1996

A STUDY ON THE IMPACT OF VARIOUS INTERVENTIONS ON THE PREVALENCE OF NUTRITIONAL ANEMIA AMONG MEDICOS OF G.S.V.M. MEDICAL COLLEGE, KANPUR

R.P.Sharma***, Sanjay Kawan*, S.C.Saxena****, Suresh Chandra***, J.P.Srivastava*****,
Naresh Pal Singh*, D.S. Martolia**

Resident*, Assistant professor**, Associate Professor***, Professor****, Professor & Head*****

Department of Community Medicine, G.S.V.M.Medical College, Kanpur

Abstract :

Research Question :

What is the impact of various interventions on the prevalence of nutritional anemia among medical students?

Objectives :

1. To study the prevalence of nutritional anemia among medical students.
2. To study the impact of interventions like deworming, iron and folic acid supplementation and nutrition and health education on the prevalence of nutritional anaemia among medicos.

Study Design : Prospective study

Study Setting : Department of Community Medicine, GSVM Medical College, Kanpur

Study Subject : Under-graduate MBBS students belonging to admission years of 2000, 2001, 2002.

Study Period : March 2002 to May 2003

Study Variables : Age, sex, dietary habits, Hb - concentration

Statistical Analysis : Percentage and chi-square test.

Results :

Out of 496 volunteered students, 335 (67.5%) were males & 161 (32.5%) were females. Overall prevalence of anemia was 23.9%. Among total anemic cases, 89.0% had mild grade anemia. Out of total anemic cases, 89.9% (males 84.4% & females 93.2%) were having nutritional anemia while 10.1% had non-nutritional anemia. Prevalence of nutritional anemia was 21.5% (42.8% in females & 11.3% in males). Nutritional anemia was 45.1% in vegetarians & 8.41% in non-vegetarians. Among 5.6% students with history of passing worms in stools, 46.4% were nutritionally anemic. At end of 3 months of first phase of interventions (Deworming + health and nutrition education) only 7.5% nutritionally anemic cases had shown increase in Hb concentration while at end of 6 months of second phase of interventions (iron & folic acid tablets supplementation + health and nutrition education), 78.5% anemic cases had shown increase in Hb concentration and became non-anemic. 12.85% nutritionally anemic cases remained anemic even after 6 months of interventions.

Introduction :

Nutritional anaemia has been defined by WHO as "a condition in which hemoglobin concentration of blood is lower than normal as a result of deficiency of one or more

essential nutrients, regardless of the cause of such deficiency." In this condition, the hemoglobin concentration can be raised by supplementing haematinics.

Nutritional anaemia is a world wide problem with the highest prevalence in developing countries. It is especially found among women of child bearing age, young children and during pregnancy & lactation. By far the most frequent cause of nutritional anaemia is iron deficiency, less frequently folate and vitamin B 12 deficiencies. Iron deficiency results from inadequate nutrient intake or excessive loss of iron from the body. Poor bio-availability of iron, blood loss during menstruation, parasitic infections and birth of children at close interval of time are common causes of anaemia.

Among medical students, varied socio-economic background and dietary pattern is likely to have an impact over the nutritional status particularly nutritional anaemia. Against this background, the present study was carried out among the students of GSVM Medical College, Kanpur to assess the magnitude of nutritional anaemia and the impact of various interventions on its prevalence.

Material and methods:

The present study was carried out among the undergraduate MBBS students belonging to entrance year 2000, 2001 and 2002 from march 2002 to may 2003. The students were contacted during their respective lecture classes and were explained in detail about the aims and objectives of the study. Pre-designed and pre-tested questionnaire was distributed to get filled by students

themselves. All queries raised regarding the topic were discussed and settled on the spot.

Hemoglobin estimation of all the study population was performed to assess the status of anaemia by Sahli's method. Grading of anaemia was done according to DeMayer's (1989) criteria---

<u>Grades of Anemia</u>	<u>Hb Concentration (gm/dl)</u>
Mild	10 - 12 (Females) 10 - 13 (Males)
Moderate	7 - 10
Severe	<7

Nutrition & health education and administration of one dose of deworming drug (Albendazole 400 mg) to all the students constituted initial intervention. Repeat hemoglobin estimation was done 3 months later in students diagnosed initially as nutritionally anemic. The nutritionally anemic students were now given iron and folic acid tablets for 3 months and simultaneously health and nutrition education was continued as earlier. Again 3 months later (6 months from the baseline) repeat hemoglobin estimation was done.

Observation & Discussion :

Out of 496 volunteered students, 335 (67.5%) were males & 161 (32.5%) were females. Among them, 10.6% were in the age-group less than 20 years, 88.1% were in the age-group 20-25 years and 2.3% aged more than 25 years.

TABLE - 1
Sex wise prevalence of anemia in the study population

Sex	Anemia cases		Non-Anemia cases		Total	
	No.	%	No.	%	No.	%
Male	45	13.4	290	86.6	335	100.0
Female	74	45.9	87	54.1	161	100.0
Total	119	23.9	377	76.1	496	100.0

$\chi^2 = 63.1$ d.f.=1 $p < 0.05$

Table-1 shows that anemia was highly prevalent in females (45.9%) as compared to males (13.4%). This difference in relation to sex was found to be statistically significant ($p < 0.05$). Rawat et al (2000) has reported 34.5% prevalence of anaemia in adolescent girls.

The majority of the anemic students (89.0%) had mild grade anemia while 11.0% had moderate anemia. None of the anemic student was found to be severely anemic.

Higher proportion of females (14.9%) had moderate degree of anemia as compared to males (4.5%). The proportion of mild, moderate and severe anaemia as reported by rawat et al (2002) in adolescent girls was 55.2%, 40.8% and 4.0% respectively. The National Pilot programme on control of micronutrients (2000) reported prevalence of mild & moderate anemia taken together in 19-45 years females as 82.7% and severe anemia as 6.4%.

TABLE - 2
Distribution of anemia cases according to type of anemia

Type of Anemia	Males		Females		Total	
	No.	%	No.	%	No.	%
Nutritional	38	84.4	69	93.2	107	89.9
Non-nutritional	7	15.6	5	6.8	12	10.1
Total	45	100.0	74	100.0	119	100.00

$\chi^2 = 2.36$ d.f. = 1 $p > 0.05$

Table-2 shows that among total 119 cases of anemia, majority (89.9%) were suffering from nutritional anemia and

remaining (10.1%) from non-nutritional. This difference in distribution of anemia cases in relation to sex was statistically insignificant ($p > 0.05$).

TABLE - 3
Sex wise prevalence of nutritional anemia in students

Sex	Students with nutritional anemia		Students without nutritional anemia		Total	
	No.	%	No.	%	No.	%
Male	38	11.3	297	88.7	335	100.0
Female	69	42.8	92	57.2	161	100.0
Total	107	21.5	389	78.5	496	100.0

$\chi^2 = 85.9$ d.f. = 1 $p < 0.05$

Table-3 shows that prevalence of nutritional anemia was higher in females (42.8%) as compared to males

(11.3%). The association between nutritional anemia and sex was found to be statistically significant ($p < 0.05$).

TABLE - 4
Prevalence of nutritional anemia in study population according to type of diet

Type of diet	Students with nutritional anemia		Students without nutritional anemia		Total	
	No.	%	No.	%	No.	%
Vegetarian	80	74.76	97	24.93	177	35.6
Non-vegetarian	27	25.23	292	75.06	319	64.4
Total	107	100	389	100	496	100.0

$\chi^2 = 90.7$ d.f. = 1 $p < 0.05$

Table-4 shows that the prevalence of nutritional anemia was much higher (45.1%) in vegetarians as compared to (8.4%) in non-vegetarians. This difference in relation to the type of diet consumed was found to be statistically significant ($p < 0.05$). The higher

prevalence of anemia in vegetarians could be due to poor bioavailability of non-heme iron and presence of inhibitors of iron absorption in vegetarian food and other unexplained factors.

TABLE - 5
Prevalence of nutritional anemia according to history of passing worms

History of passing worms	Students with nutritional anemia		Students without nutritional anemia		Total	
	No.	%	No.	%	No.	%
Present	13	46.4	15	53.6	28	100.0
Absent	94	20.0	374	80.0	468	100.0
Total	107	21.5	389	78.5	496	100.0

$\chi^2 = 10.8$ d.f.=1 $p < 0.05$

In table-5, prevalence of nutritional anemia was higher (46.4%) in those with history of passing worms than those with no history (20.0%). This difference was found to be statistically significant ($p < 0.05$). The parallel

observation was found by Rawat et al (2000) who reported 53.6% of the prevalence of anemia in those adolescent girls who had history of worm infestation.

TABLE - 6
Distribution of nutritionally anemic students responding to various interventions during follow-up

Stages of follow up	Males (n=38)		Females (n=69)		Total (n=107)	
	No.	%	No.	%	No.	%
Increase in Hb at end of 3 months following first phase of interventions	9	23.7	14	16.8	23	21.5
Increase in Hb at end of 6 months following second phase of interventions	34	89.5	60	86.9	94	87.9

Table - 6 shows that at the end of three months, 23.6% the males and 16.8% of females showed and increase in Hb concentration following the first phase of interventions (deworming and nutritional & health education). Overall 21.5% showed an increase in Hb concentration at the end of 3

months. At the end of 6 months following second phase of interventions (iron & folic acid tablets supplementation and nutritional & health education), 87.9% of anemic students showed increase in Hb with males 89.4% & females 86.9% Rest of the 13 students (12.1%) showed no increase in Hb.

TABLE -7
Impact of various interventions on nutritional anemia in the study group

Sex	Nutritionally anemic students before the interventions		Nutritionally anemic students after the interventions	
	No.	%	No.	%
Males	38	35.5	4	10.53
Females	69	64.5	9	13.04
Total	107	100.0	13	12.15

Table - 7 shows that even after 6 months of interventions, 4 (10.5%) of nutritionally anemic males remained anemic as compared to 9 (13.04%) of nutritionally anemic females. Overall 12.15% remained anemic even after interventions while other 87.85% attained normal hemoglobin level.

Recommendations :

In the light of the findings of the present study, following measures can be suggested for the prevention & control of nutritional anemia among the medical students.

1. Hemoglobin estimation of the medical students at the time of entrance to Medical College and later on at appropriate intervals.
2. Procurement and distribution of deworming drugs and iron and folic acid tablets in therapeutic doses to the cases suffering from the nutritional anemia.

3. Efforts to motivate medical students for the intake of balanced diet by making change in their dietary pattern.
4. Health & nutrition education to be imparted among the youngsters especially females regarding prevention of anemia

References :

1. Agarwal KN (1998): assessment of prevalence of anaemia in response to daily/ weekly iron supplementation in adolescent girls (10 to 18 years) from urban slums in North-east Delhi, 1996-1998 study sponsored by UNICEF-India.
2. Baker SJ, De-Mayer EM,: Nutritional anemia-its understanding and control with special references to the work of the WHO; American J. Clinical Nutrition; 1979;32:368-417
3. DeMayer E and M Adiels Tegman (1995): the prevalence of anemia in

- world; World health statistics, Quarterly, 38: 302-316.
4. DeMayer EM (1989): preventing and controlling iron deficiency anemia through primary health care, WHO, Geneva;8-26.
 5. Indira Chakravarty & Kalpana Ghosh: Micronutrient malnutrition-Present status and future remedies; Journal of Indian Med. Assoc.,98, No.9, Sep 2000:539 -542.
 6. K Park: Park's textbook of preventive and social medicine, 18 th edn. (2005):pp 444-451, 465-466.
 7. Kapoor G, Anaja S: Nutritional disorders in adolescent girls; Ind. J.Pead.,1992; 29:969-973.
 8. Mahapatra SC,Gaur SD: Effects of periodic deworming on Hb. Level of a rural community in Varanasi, UP; Ind. J. pp 17-22,42-48.
 9. National family Health Survey-2, UP (1998-1999); Population Research Centre, Lucknow University, Lucknow.
 10. Rawat (2000): An epidemiological study of anemia in adolescent girls in rural area of Meerut; Thesis submitted for MD in Comm. Med; CCS University, Meerut.
 11. WHO (1968): Tech. report series, No. 405
 12. WHO (1975) Tech. report series, No 580
-

SUBSCRIPTION FORM

Please find here with my subscription for the year of **INDIAN JOURNAL OF COMMUNITY HEALTH**. I enclose my remittance for one year / life membership amount Rs..... by Cash / Draft / Cheque No. dated..... of Bank.

Name :

Address :

City/ Pin Code

Phone & Mobile No.

email address

Signature

Please return to :

Dr. J.P.Srivastava

Professor and Head

Chief Editor, IJCH

Deptt. Of Community Medicine, G.S.V.M. Medical College, Kanpur - 208002 (U.P.)

Phone : 0512 - 2535591

Note :- (1) Account payees Cheque / Draft should be sent in favour of
"INDIAN JOURNAL OF COMMUNITY HEALTH"
payable at Kanpur.

(2) Please Tick (✓) in the appropriate box.

Single Issue

☐

Rs. 175/-

Annual

☐

Rs. 250/-

Life Membership

☐

Rs. 1000/-

IMPACT OF IRON FOLIC ACID TABLET UTILIZATION ON THE PREVALENCE OF ANEMIA AMONGST MOTHERS UNDER RCH PROGRAMME

A.B. Singh*, S.D. Kandpal**, S.K.Gupta***, R.Chandra**, V.K Srivastava#, K.S Negi***

Resident*, Professor**, Assistant Professor***, Professor# (KGMU)

Deptt. Of Community Medicine, HIMS, Dehradun (Uttaranchal).

Abstract :

Research question: What is the effect of IFA Tablet utilization on prevalence of anemia.

Objectives:

- 1- To study the utilization of IFA tablets among pregnant and lactating women in Dehradun district.
- 2- To study the association of anemia with IFA tablet utilization.

Study design: Cross-Sectional study.

Setting: Twenty villages of Doiwala Block, Dehradun

Participants: Pregnant and lactating women.

Study period: Junary 2004 to Feb 2005.

Statistical Analysis : Percentage, Chi-square test.

Results: Prevalence of anemia among those women who had not received Iron Folic Acid tablets was found to be 77.9% as compared to 57.7% among those women who had received the IFA tablets.

Key Words: Anemia, Prevalence, Pregnant women. Lactating women, IFA tablet.

Introduction:

Anemia is a Greek word "meaning (an = not, haemia = blood) i.e. not having blood. "Anemia is not a diagnosis in itself but merely an objective sign of presence of disease." WHO has defined Nutritional Anemia as "a condition in which the hemoglobin content of the blood is lower than normal as a result of one or more essential nutrients, regardless of the cause of such a deficiency"

Prevalence of anemia in pregnant women is very high. District Nutrition Survey data of 1999-2000 by the ICMR showed that the pregnant mothers of Himachal Pradesh,

Uttar Pradesh, Bihar, Assam and Kashmir had 61%, 79%, 84%, 91% and 97% prevalence anemia respectively². Ray et al³ in 2000 carried out one study in the three divisions of West Bengal and observed that it varied from 66% to 95.38% with an average of 85.98% in a recent study done by Shail Tetel⁴ in Delhi the prevalence of anemia in pregnant women was 80.6%. Thus it is of public health significance. The overall picture is more or less same throughout the country.

Assessments of the performance and impact of countrywide iron supplementation programmes are also disappointingly few.

Operational research is frequently directed towards specific aspects such as experimental delivery strategies or treatment with new formulations of iron. Other studies have evaluated the impact of iron supplementation in small scale and time-limited implementation projects. Often under semi-experimental conditions.⁵

National Nutritional Anemia Prophylaxis programme (NNAPP) has been in operation in our country since 1970 but its evaluation by ICMR had shown that the programme failed to make any major impact in reducing the incidence of anemia in India⁶. In 1990 the National Nutritional Anemia prophylaxis Programme (NNAPP) was renamed as National Nutritional Anemia Control Programme (NNACP) where the beneficiaries and dose schedule were revised. In 1992, the policy on Nutritional Anemia Control was made an integral part of the Child Survival and Safe Motherhood Programme⁷. In 1997 with the inclusion of CSSM in the Reproductive and Child Health Programme (RCH) the nutritional anemia control has achieved further priority⁷.

Under RCH programme all the pregnant women must be given Iron Folic Acid (IFA) tablets for prevention and treatment of anemia. The prophylactic doses specified in the existing policy that is 1 tab containing 100mg of elemental iron & 500mcg of folic Acid is considered adequate. It is suggested that a

minimum of 100 tablets to be consumed during each pregnancy, for severely anemic pregnant women 2 IFA tabs are recommended daily⁷.

The impact of the Government's RCH Programme has been limited, due to poor supply and distribution of iron supplements. Dearth of adequate research work in the field of logistics of IFA has resulted in poor accomplishment of the targets of anemia. Utilization of services by the beneficiaries is also far from satisfactory. The latter is believed to be due to above mentioned factors.

Uttaranchal is one of the few states in the country having high maternal mortality rate⁸. Only 38.5% of the pregnant mothers in Uttaranchal receive IFA supplement, which is much lower than the National average of 57.6% (NFHS II 1998-99).⁹

Therefore keeping these factors in view this study was conducted to study the utilization of IFA tablets and its effect on prevalence of anemia.

Material and Methods :

The present study was conducted among pregnant women with current pregnancy of more than 6 months and Lactating Mother with child aged up to 6 months of age during the period, January 2004 to Feb 2005. Based on the knowledge that about 50% of women in the country are anemic, it was calculated that a sample size of 400 will provide an estimate of prevalence with 10% allowable error.

A multistage random sampling technique was applied in the present study for the selection of villages. Doiwala Block of District Dehradun was chosen for the study, since it is the field practice area of the Department of Community Medicine, H. I. M. S., Dehradun. Twenty three subcentres of CHC Doiwala were included in the study. Out of 10 randomly selected subcentres, villages were arranged according to their position to the sub centre into two groups viz. the sub centre village and the village away from sub centre. In the third stage, from each sub centre, two villages i.e. one sub centre village and one village from the remaining group were selected randomly. Thus two villages from each of the ten subcentres totaling twenty villages were selected for the study. From every village 10 each of pregnant and lactating women were randomly covered from different house holds. The women were interviewed using a pre-structured, pre-tested schedule. Hemoglobin estimation was done by hemocue technique. Anemia was classified as per WHO criteria. Data compilation and analysis was done by SPSS package.

Results :

The table 1 shows the status of anemia in pregnant and lactating women by their receipt of Iron Folic Acid tablets. 61.5% pregnant women replied that they had received IFA tablets. Prevalence of anemia among those

women who had not received Iron Folic Acid tablets was found to be 77.9% as compared to 57.7% among those women who had received the IFA tablets. This difference in prevalence of anemia was found to be statistically significant ($p < 0.05$). Among the lactating mothers 86.5% had not received any IFA tablet. Prevalence of anemia was found to be 68.8% in those lactating mothers who had not received any IFA tablet as compared to 48.1% among those who had received these tablets. This difference was found to be statistically significant ($p < 0.05$).

According to table-2, Prevalence of anemia was found to be 40.3% in those pregnant women who had received 100 tablets as compared to 54.9% among women who received 31-60 tablets and this difference was found to be statistically significant ($p < 0.05$).

Prevalence of anemia was found to be 32.0% in those pregnant women who had consumed 100 tablets as compared to 84.4% among those who consumed 1-30 tablets and 75.0% among those who did not consume any tablet. This difference in the prevalence of anemia according to the consumption of IFA tablets was found to be statistically significant ($p < 0.001$), however this difference was statistically not significant in lactating mothers (Table-3).

Discussion :

In the present study prevalence of anemia was found to be 65.5% in pregnant and 66% in lactating mothers and 61.5% pregnant women replied that they had received IFA tablets where as in an another study done by Jayanti et al¹⁰ it was only 19.4% in the pregnant women and dropped to 7% in case of lactating mothers but according to NFHS II 38.5% of the pregnant mothers in Uttaranchal receive IFA supplement which is much lower than the National average of 57.6%⁹. In the present study 13.5% of lactating mothers received the IFA tablets of which 81.5% consumed the tablets received by them. prevalence of anemia among those women who had not received Iron Folic Acid tablets was found to be 77.9% as compared to 57.7% among those women who had received the IFA tablets. The present study reveals that out of 61.5% pregnant women who received the IFA tablets only 3.3% did not consume any tablet, 56.1% partially consumed them and the complete consumption of 100 tablets was found only in 40.6% of women. Our findings of complete consumption of IFA tablets is almost similar to the findings of Integrated Nutrition and Health Programme by CARE in U.P. (40.0%) and the results (41%) revealed by study done by Jayanti et al¹⁰. NFHS II 1998-99 reported that mothers in U.P received IFA supplements for only 32% of births. This level is much lower than the national average of

58%, and is lower than any other state except Bihar. Amongst these 32% mothers only 64% received at least 3 months supply and 73% consumed the entire supplement given to them. In other words only 15% of the total population of ANC consumed the full dose of 100 tablets⁹. The mid term evaluation report of Integrated Nutrition and Health Programme by CARE 1999 in U.P showed that out of the 45% of pregnant women who had received IFA tablets only 7% had received more than or equal to 90 tablets. Of these 45% pregnant women only 40% consumed the tablet they had received with only 4% consuming equal or more than 90 tablets¹¹.

The above study shows the need for sensitizing about the magnitude of the problem of anemia and its ill effect on mother & child and imparting knowledge on IFA tablets with special reference to consumption of tablets.

Acknowledgement :

The authors are thankful to State Nutrition Resource Centre, Lucknow for providing Hemocue instrument for Hb analysis.

References :

1. World Health Organization, Technical Report Series;1968.
2. District nutrition Project Micronutrient deficiency disorders in 16 districts of India; Part I. Report of an ICMR task

- Force study; 2001.
3. Galloway Rae. Iron Supplementation for Women: Step Child or Crown Prince? National Council of Applied Economic Research Harvard Institute of International Development; 2001.
4. Shail T, Singh C, Goindi G. Prevalence of anemia amongst pregnant mothers and children in Delhi. Indian J Pediatr 2004; 71: 946.
5. Pappagallo S, Bull D L. Operational problems of an iron supplementaion programme for pregnant women: an assessment of UNRWA experience. Bulletin of the World Health Organization. 1996; 74 (1): 25, 33.
6. "Evaluation of the nutritional anemia prophylaxis programme" An ICMR task force study, New Delhi; 1989.
7. Basic guide to Reproductive and Child Health Programme. 1997; 7-27.
8. Health and Population policy of Uttaranchal. Department of Medical Health and Family Welfare, Government of Uttaranchal; 2002.
9. National Family Health Survey- 2, 1998-1999, International Institute for Population Sciences, Mumbai.
10. Tuladhar M, Jayanti, Townsend John, Haider N. Iron Supplementation: Knowledge, Perception and usage among Pregnant women in Rural India 1997: Technical Paper 9, Population Council Operation Research and Technical assistance Project: New Delhi.
11. CARE. Integrated nutrition and health programme-Mid term evaluation report of Uttar Pradesh 1997:21-29.

TABLE - 1

Prevalence of Anemia in Mothers by receipt of IFA tablets

IFA tablets received	Prevalence of Anemia					
	Pregnant		Lactating		Total	
	Examined No.(%)	Anemic No.(%)	Examined No.(%)	Anemic No.(%)	Examined No.(%)	Anemic No.(%)
Yes	123 (61.5)	71(57.7)	27(13.5)	13(48.1)	150(37.5)	84(56.0)
No	77(38.5)	60(77.9)	173(86.5)	119(68.8)	250(62.5)	179(71.6)
Total	200(100.0)	131(65.5)	200(100.0)	132(66.0)	400(100.0)	263(65.7)
	$\chi^2 = 8.55$, df = 1, p<0.05		$\chi^2 = 4.43$, df = 1, p<0.05			

TABLE - 2

Anemia in mothers by number of IFA tablets received

Prevalence of Anemia						
Total tablets received	Pregnant		Lactating		Total	
	Examined No.(%)	Anemic No.(%)	Examined No.(%)	Anemic No.(%)	Examined No.(%)	Anemic No.(%)
1-30	2 (1.6)	1 (50.0)	5 (18.5)	4 (80.0)	07 (4.7)	05 (71.4)
31-60	51(41.5)	39 (76.5)	9 (33.3)	3 (33.3)	60 (40.0)	42 (70.0)
61-90	8 (6.5)	6 (75.0)	6 (22.2)	2 (33.3)	14 (9.3)	08 (57.1)
100	62 (50.4)	25 (40.3)	7 (26.0)	4 (57.1)	69 (46.0)	29 (42.0)
Total	123 (100.0)	71 (57.7)	27 (100.0)	13 (48.1)	150 (100.0)	84 (56.0)

$\chi^2 = 16.06$, df = 3,

p < 0.001

$\chi^2 = 3.57$, df = 3,

p > 0.05

TABLE - 3

Anemia in mothers by number of IFA tablets consumed

Prevalence of Anemia						
No.of tablets consumed	Pregnant		Lactating		Total	
	Examined No.(%)	Anemic No.(%)	Examined No.(%)	Anemic No.(%)	Examined No.(%)	Anemic No.(%)
None	4(3.3)	3(75.0)	5(18.5)	5(100.0)	9(6.0)	08(88.9)
1-30	32(26.0)	27(84.4)	5(18.5)	3(60.0)	37(24.7)	30(81.1)
31-60	24(19.5)	17(70.8)	9(33.3)	3(33.3)	33(22.0)	20(60.6)
61-90	13(10.6)	8(61.5)	6(22.2)	2(33.3)	19(12.7)	10(52.6)
100	50(40.6)	16(32.0)	2(7.4)	0(0.0)	52(34.6)	16(30.8)
Total	123(100.0)	71(57.7)	27(100.0)	13(48.1)	150(100.0)	84(56.0)

$\chi^2 = 8.55$, df = 4,

p < 0.001

$\chi^2 = 8.84$, df = 4,

p > 0.05

AN EVALUATION OF SHORT-TERM PROGNOSTIC SIGNIFICANCE OF VARIOUS CLINICAL PARAMETERS IN PATIENTS OF STROKE

Sonali Saxena*, Shadab A. Khan**, Jalaj Saxena***

* Consultant Cardiologist, ** Professor (Medicine), *** Assistant Professor (Physiology)

Ishwardevi Medical and Cardiology Centre, Kanpur

J.N. Medical College, A.M.U., Aligarh and G.S.V.M. Medical College, Kanpur

ABSTRACT :

Objectives : To predict the short-term prognostic significance of various clinical parameters at the time of admission in patients of stroke.

Setting: Department of General Medicine, J.N. Medical College, A.M.U., Aligarh

Participants : 100 patients of stroke (Cerebro-vascular accident) comprising 54 males and 46 females.

Clinical Parameters : Admission Blood Pressure, Side of paralysis, Extent of Paralysis, Gastro-intestinal Haemorrhage, Level of consciousness at the time of admission.

Statistical Analysis : 'Z' test ($Z \geq 1.96$).

Results : The admission B.P. was raised in 75% of patients. The mortality was significantly high (57.1%) in the severe grade B.P. while recovery was significantly high (64.3%) in mild or moderate grade B.P. patients. The left sided paralysis was having significantly high mortality of patients (49%) while recovery was significantly high (56.2%) in the patients with right sided paralysis. The paralysis with Grade 0 power was in 58% of stroke patients and was associated with significantly high (53.4%) mortality while 100% recovery was found in patients with power grade 4 and 5 at the time of admission. The G.I. haemorrhage was associated with 5% of patients but mortality was significantly high (100%) in these patients. The level of consciousness of grade I was highest (34%) while mortality was significantly high (100%) in the patients admitted with grade 3 level of consciousness. The recovery was significantly high (92.9%) in the patients admitted with grade '0' level of consciousness.

Key Words: Stroke, B.P., Paralysis, G.I. Haemorrhage, Consciousness.

Abbreviations : B.P. – Blood Pressure, H.T.- Hypertension, G.I.- Gastro-intestinal.

INTRODUCTION :

Stroke or cerebro-vascular accident is one of the neurological diseases causing death. There are many variables which at the time of admission directly or indirectly affect the overall outcome in patients of stroke.

MATERIAL AND METHODS :

The present study was done on 100 patients of stroke admitted in the in-patient

department of Medicine Ward at J.N. Medical College, Aligarh Muslim University, Aligarh. The patients taken were presenting within 24 hours of onset of symptoms. The follow up time of patients was taken as 30-days in which mortality, morbidity and recovery was ascertained. Only those patients who stayed in the hospital for 30 days or who came for follow-up after discharge upto 30 days of onset of stroke were included in this study.

The clinical parameters taken were age, sex, admission blood pressure, side of paralysis, extent of paralysis, gastro-intestinal haemorrhage and level of consciousness at the time of admission.

The statistical analysis was done by 'Z' test and $Z \geq 1.96$ was taken as significant.

The 30-day outcome of the 100 patients of stroke showed that 34 patients died (mortality), 21 had the same status (morbidity) while 45 patients recovered (recovery). The mean age of the patients was 57.44 ± 13.88 years with 54 males and 46 females.

OBSERVATION AND RESULTS :

TABLE - 1
Sex with Outcome of Stroke

Outcome Sex	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Male (n=54)	16 (29.6%)	11 (20.4%)	27 (50%)
Female (n=46)	18 (39.1%)	10 (21.7%)	18 (39.1%)

TABLE - 2
Admission Blood Pressure with Outcome of Stroke

Outcome Admission B.P.(mm of Hg)	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Normal(n=25)($\leq 89 / \leq 139$)	6 (24%)	10 (40%)	9 (36%)
Mild Hypertension(n=12)(90-99 / 140/159)	-	4 (33.3%)	18 (64.3%)*
Moderate H.T. (n=28)(100-109/160-179)	8 (28.6%)	2 (7.1%)	18 (64.3%)*
Severe H.T.(n=35) ($\geq 110 / \geq 180$)	20 (57.1%)*	4 (11.4%)	11 (31.4%)

TABLE - 3
Side of Paralysis with Outcome

Outcome Side of paralysis	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Right (n=54)	9 (18.8%)	12 (25%)	27 (56.2%)
Left (n=46)	25 (49%)*	9 (17.6%)	17 (33.%)
No paralysis (n=1)	-	-	1 (100%)

TABLE - 4
Extent of Paralysis with Outcome

Outcome Extent of paralysis (Grades of Power)	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
0(n=58)	31 (53.4%)*	14 (24.1%)	13 (22.4%)
1(n=7)	2 (28.6%)	1 (14.3%)	4 (57.1%)
2(n=10)	-	1 (10%)	9 (90%)
3(n=15)	1(6.7%)	5 (33.3%)	9 (60%)
4(n=9)	-	-	9 (100%)
5(n=1)	-	-	1 (100%)

TABLE - 5
Gastro-intestinal Haemorrhage with Outcome

Outcome G.I. Haemorrhage	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Present (n=5)	5(100%)*	-	-
Not present(n=95)	29(30.5%)	21(22.1%)	45(47.4%)

TABLE - 6
Level of consciousness at admission with Outcome

Outcome Level of Consciousness	Mortality (n=34)	Morbidity (n=21)	Recovery (n=45)
Grade 0 (n=14)	-	1(7.1%)	13(92.9%)*
Grade 1(n=34)	2(6.9%)	5(14.7%)	27(79.4%)
Grade 2(n=22)	2(9.1%)	15(68.2%)	5(22.7%)
Grade 3(n=30)	30(100%)*	-	-

DISCUSSION :

The 30 day outcome of high mortality was reported earlier also^{1,2}. The admission raised B.P.³ was associated with greater mortality^{4,5}. The incidence of left sided paralysis was more and was associated with high mortality^{6,7,8}. The incidence of gastro-intestinal haemorrhage was found to be associated with high mortality and is reported earlier also^{9,10}. The grades of level of consciousness also can predict the prognosis in patients of stroke as grade '0' level was associated with recovery while grade 3 level of consciousness with high mortality^{1,11,12}.

CONCLUSIONS :

1. The admission B.P. was found to be increased in 75% of patients. The mortality was significantly high (57.1%) in the patients having severe hypertension at the time of admission indicating bad prognosis. Patients with mild or moderate hypertension were having high recovery (64.3%) ,thus have good prognosis.
2. The left sided paralysis was associated with significantly high (49%) mortality indicating poor prognosis. The recovery was significantly high (56.2%) in stroke patients with right sided paralysis. The patients with no paralysis showed 100% recovery.

3. The extent of paralysis with grade '0' power was in 58% of stroke patients and was associated with significantly high (53.4%) mortality while 100% recovery was found in patients with power grade '4' and '5' at the time of admission.
4. The gastro-intestinal haemorrhage was found in only 5% of patients but with significantly high (100%) mortality showing worst prognosis.
5. The level of consciousness of grade '3' patients had significantly high mortality (100%) indicating worst prognosis while in the patients with grade '0' level of consciousness , recovery was significantly high (92.9%).

REFERENCES :

1. Kawahata N : Cerebrovascular disease in the elderly- Clinical study of 31 cases with acute intracerebral haemorrhage. *Rinsho Shinkeigaku* 1990 July; 30(7): 713-7.
2. Daverat P, Castel JP, Dartigues JF, Orgogozo JM: Death and functional outcome after spontaneous intracerebral haemorrhage. A prospective study of 166 cases using multivariate analysis. *Stroke* 1991 Jan; 22(1): 1-6.
3. Britton M, Carlsson A, deFaire U: Blood

- Pressure course in patients with acute stroke and matched controls. *Stroke* 1986 Sept-Oct; 17(5): 861-4.
4. Carlberg B, Asplund K, Hagg E : The prognostic value of admission blood pressure in patients with acute stroke. *Stroke* 1993 Sept. 24(9): 1372 – 5.
5. Terayama Y, Tenahashi N, Fukuuchi Y, Gotoh F: Prognostic value of admission blood pressure in patients with intracerebral haemorrhage. *Keio Cooperative stroke study. Stroke* 1997 June, 28(6) : 1185-8.
6. Chambers BR, Norris JW, Shruvell BL, Hachinski VC: Prognosis of acute stroke. *Neurology* 1987 Feb, 37(2) : 221-5.
7. Anderson CS, Jamrozik KD, Stewart Wynne EG: Predicting survival after stroke: experience from Perth Community Stroke Study: CL in Exp Neurol. 1992, 29:117-28.
8. Beneditti MD, Beneditti M, Stenta G, CostaB, Fiaschi A: Short term prognosis of stroke in a clinical series of 94 patients, *Ital J Neurol Science* 1993 Mar; 14(2): 121-7.
9. Masten, MG and Bunts RC: *Arch Intern Med* 1934, 54, 916.
10. Doig A, Shafar J : Gastric haemorrhage in acute intracranial vascular accidents. *Q J Med* 1956, 25; 1-17.
11. Mase G, Zorzon M, Biasutti E, Tasea G, Vitrani B, Cazzato G : Immediate prognosis of primary intracerebral haemorrhage using an easy model for the prediction of survival. *Acta Neurol Scand* 1995 Apr.; 91(4): 306 – 9.
12. Ribeiro JA, Pereira S, Basto MA, Pontes C : The initial loss of consciousness in spontaneous subarachnoid haemorrhage. What does it mean ? *Acta Med Port*, 1998 Dec 11(12) : 1085 – 90.



STUDY OF UTILIZATION OF ANC SERVICES BY ANTE-NATAL MOTHERS ATTENDING RHTC

Jayanti Semwal*, Surekha Kishore**, Khursheed Muzammil***, Sonali Kar***

Associate Professor*, Prof. & Head**, P.G.Student***

Department of Community Medicine, HIMS, Dehradun (Uttaranchal)

Abstract :

Research question : What is the utilization rate of ANC services by antenatal Mothers?

Objectives: To assess the level of utilization of ANC services among antenatal mothers.

Study Design : OPD based cross-sectional study.

Setting: Rural Health Training Center (RHTC) Rajeev Nagar, Doiwala, Under Department of Community Medicine, HIMS, Jolly grant, Dehradun.

Participants: Antenatal mothers attending OPD at RHTC.

Study Period : January 2004 to December 2004.

Study Variable : Early Registration, T.T. Immunization, Anemia, IFA, High risk.

Statistical Analysis: Percentage, Chi-square.

Results : From a total of 51 ante-natal mothers registered at RHTC, 31 (60.8%) and 20 (39.2%) were found to be multipara and primipara respectively. T.T. Immunization Coverage was found to be 78.4% , 31(60.78%) of pregnant mothers visited twice and 29 (56.86%) visited thrice or more. IFA distribution was 100% Mild anemia was found in 22 mothers, moderate in 4 and only one case of severe anemia was found. 34 (66.66%) mothers were found to be illiterate and majority of mothers were found to be from low socio economic status i.e, 40 (78.43%). A total of 8 (15.68%) antenatal mothers were found to be under high risk category and were referred to HIMS for regular follow-up.

Conclusion : Much more is needed to improve the coverage of full ANC package because a healthy mother is the sign of a healthy society.

Introduction :

No country, state, district, village, society, religion, caste and creed can claim to be healthy by undermining the health of antenatal mothers. The states of Bihar, MP, Rajasthan, Uttar Pradesh including Uttaranchal are known as BIMARU states as lagging behind in performance level of antenatal service coverage in comparison with the national average. These state accounts for 45% of the India's population and about 60%

of total births and about 43% of population of these states live below the poverty line as against about 1/3rd of the country as a whole. These states have significant contribution in the population explosion of India due to early marriages, large reproductive age group size and high fertility rate (1).

This study was undertaken with the view to assess the status of immunization of

T.T & ANC among pregnant women in the registered areas of RHTC. Rajeev Nagar, Under Department of Community Medicine, HIMS, Jolly Grant, Dehradun.

Material & Methods :

The study was carried out between January 2004 to November 2004 in all the ANC cases reported at RHTC from its field practice areas of Dehradun. This was an OPD based cross sectional study, undertaken by Interns, PG,s & MSW,s (Female). Relevant data on proper filling of ANC card and her registration and check ups was compiled. All the information related to ANC was collected on a separate ANC register for the purpose of study. Date of registration, age, number of ANC visits, number of T.T. doses given, number of IFA supplied, parity, any obstetrical history, anemia (hemocue method was used for hemoglobin estimation), educational status, social economic status, religion, caste, high risk groups was noted during the study. The data thus collected was analyzed accordingly.

Results :

Table -1 : From the total 51 registered ANC cases about 86.27% were Hindus. Most of the pregnant mothers were illiterate (66.66%) and maximum are from low socioeconomic status (78.43%) as per modified prasad,s classification. About 60.7% pregnant mothers were multipara and 29.3% were anemic. About 15.68% were found to be

under high risk group.

Table-2 : About 56.8% pregnant mothers were registered within 12-16wk at RHTC but T.T.-1 and T.T.-2 / Booster were taken by only 47% and 37% respectively. Surprisingly 21.56% didn't turned up for T.T. immunization despite the advise given to them. IFA tablets were given to all of registered ANC cases (100%) which are very high as compared to the national level (72.5%). Full ANC package was availed by 47.05% from a total of 51 pregnant mothers.

Discussion :

Early registration (in the first trimester) is very important in the early screening of high risk groups and their referral. Unlike 100% IFA full course, the T.T immunization was not fully satisfactory in the present study and lack of information, motivation and certain obstacles were accountable for that. Though all the ANC facilities were available at RHTC but for the 100% coverage of full ANC package, acceptance of this information, education and communication was lacking among the community. Illiteracy was the main obstacle found in this study as also revealed in other studies, to be held responsible for inadequate utilization of ANC services(4). The illiteracy in the present study was found to be 66.66% as compared to 46% at the national level. Despite high illiteracy level, about 47% full ANC coverage was observed in the

registered pregnant mothers; this achievement of the RHTC with limited staff cannot be ruled out although it includes literate pregnant mothers too. Padam Singh et al reported the same (4).

As revealed in reports of Routine Evaluation (1997-98) MOHFW, GOI, this study also emphasizes that the education enhances the knowledge of utilization of ANC services by pregnant mothers (5). Local community participation and education is vital in understanding the importance of IEC activities, breaking the obstacles and hence in 100% ANC utilization.

References :

1. Coverage Evaluation Survey (1999); Institute for Research in Medical
2. Sunder Lal, Satish Kapoor, Brij Mohan Singh, M.S. Punia, coverage and quality of mother and child health services at sub centre level. IJCM, Vol-26 (1), Jan-March 2001.
3. Govt. of India, Manual of Decentralized Participatory Planning in Family Welfare Program, New Delhi. Ministry of Health and Family Welfare; 1996.
4. Padam Singh, R.J.Yadav. Status of antenatal coverage in four states. Health and Population-Perspectives and Issues, 24 (3): 148-156, Jul-Sep, 2001.
5. Evaluation of Routine Immunization (1997-98): Ministry of Health and Family Welfare, Government of India. Statistics, ICMR, New Delhi.

TABLE-1
Characteristics of pregnant women reported at RHTC (%).

S.No.	Characteristics	Number	(%)
1	ANC's	51	100
1	Religion		
	-Hindu	44	86.27
	-Muslim	05	9.8
	-Others	02	3.9
2	Caste		
	-General	21	41.17
	-OBC	30	58.82
	-SC	0	0

3	Educational Status		
	-Literate	17	34.34
	-Illiterate	34	66.66
4	High Risk Groups	08	15.68
5	Socio Economic Status		
	-Upper	Nil	0
	-Middle	11	21.56
	-Lower	40	78.43
6	Parity		
	-Primi	20	39.21
	-Multipara	31	60.79
7	Anemia	27	53.0
	-Mild	22	81.48
	-Moderate	4	14.8
	-Severe	1	3.7

TABLE - 2

Comparision of RHTC with India level regarding ANC services

S.No.	Antenatal care	RHTC (%)	INDIA (%)
1.	3 or more ANC visits	56.86	40.9
2.	Tetanus toxoid		
	-T.T-1	47.05	86.4
	-T.T-2/Booster	31.37	77.9
	-None	21.56	13.5
3.	IFA	100	72.5

■

A STUDY OF PREVALENCE OF OBESITY IN ADULT PUNJABI POPULATION

Pooja Goyal, R.K. Sachar, R.K. Soni

Deptt. of Community medicine, DMC.& Hospital, Ludhiana

Introduction :

Obesity has reached epidemic proportions globally with more than 1 billion overweight, Atleast 300 million of them are clinically obese and is a major contributor to the global burden of chronic disease and disability (1). Long considered a buy product of modern life in rich, developed contries, obesity is spreading to developing contries as well. Two critical factors that have influenced this explosion are changes in dietary patterns and levels of physical activity. The latest list of morbidity associated with obesity includes about forty diseases. Though, prevalence of co-morbidities of obesity is quite high among adults in India yet there are relatively less reliable and representative data available. Hence, this study was carried out.

Material & Methods :

It was a community based, cross sectional study conducted in field practice areas at Rural Health Centre (RHC), Pohir and Urban Health Centre (UHC), Kirti Nagar attached to the department of Community Medicine, DMC & Hospital Ludhiana.

Field practice area of RHC is composed of 10 villages serving a total population of 20,450. The Urban health Centre covers ten colonies having a total populaation of 20.645.

Sample size was calculated by using the formula :
$$n = 4pq / L^2$$

With prevalence of obesity in India as 9% and allowable ever as 5%, minimum sample size deduced was 178. But the study included a total sample of 541 subjects out of these 207 subjects were selected from rural area and rest 334 were selected from urban area. Among 207 subjects from rural area, 103 were males and 104 were females. Similarly among 334 subjects selected from urban area, 160 were males and 174 were females respectively.

Proportionate sample of population was taken from each village in rural and every colony in urban area. Among them systematic random sampling was done and adults who had completed 20 years of age till Dec. 31, 2002 were considered for study.

Body Mass Index (BMI) expressed by Kg/m2 was used for classification of obesity and the subjects were classified as per WHO criteria (2).

Classification	BMI
Under Weight	<18.50
Normal weight	18.50 - 24.99
Over weight	>25.00
Pre-obese	25.00 - 29.99
Obese class-I	30.00 - 34.99
II	35.00 - 39.99
III	>40

A standard weighing machine was used

for measurement of weight. It was regularly standardized by putting a known weight of 20 kg over it. For measurement of height a flexible, non stretchable measuring tape was used.

Observations :

TABLE - 1

BMI wise distribution of subjects

BMI	No. of subjects	%
<18.50	56	10.4
18.50-24.99	240	44.3
25.00-29.99	165	30.5
30.00-34.99	56	10.4
35.00-39.99	19	3.5
>40	5	0.9
Total	541	100.00

TABLE - 2

BMI wise distribution of subjects in relation to area

BMI	Urban	Rural
<18.50	36 (10.8)	20(9.7)
25.00 - 29.99	98 (29.3)	67 (32.4)
30.00 - 34.99	33(9.9)	23 (11.1)
35.00 - 39.99	8(2.4)	11(5.3)
>40	5(1.5)	-
Total	334	207

Figures in parentheses indicate Percentages

Average BMI $\pm$ SD 24.49 $\pm$ 5.45, $p > 0.58$

TABLE - 3

BMI wise distribution of subjects in relation to sex

BMI	Male	Female
<18.50	38(14.4)	18(6.5)
18.50 - 24.99	114 (43.3)	126(45.3)
25.00 -29.99	73 (27.8)	92 (33.1)
30.00 - 34.99	27(10.3)	29(10.4)
35.00 - 39.99	10 (3.8)	9(3.2)
>40	1(0.4)	4(1.4)
Total	263	278

Figures in parentheses indicate percentages

Average BMI $\pm$ SD 23.99 $\pm$ 5.20, 25.15 $\pm$ 5.31, $p < 0.01$

Results & Discussion :

Among the study subjects, overall prevalence of overweight (BMI 25.00 - 29.99) and obesity (BMI>30) was 30.5% and 14.8% respectively. Other studies by Gopinath et al (3) in urban Delhi adults, Zargar et al (4) in Kashmir valley adults and Sood et al (5) in Simla town, adults reported prevalence of obesity being 27.8%, 15.0% and 21.5% respectively. However, all of the above three studies have used a cut off of BMI > 25 which would suggest that the true prevalence of obesity may be overestimated in these reports.

Estimated prevalence of overweight Class I and Class II obesity was higher in the

rural area being 32.4%, 11.1% and 5.3% as compared to the urban area, which were 29.3%, 9.9% and 2.4% respectively. Also average BMI was slightly higher in the rural area (24.75) than the urban area (24.49) and this difference was not found to be statistically significant ($p>0.58$).

Overweight (33.1%) class I obesity (10.4%) and morbid obesity (1.4%) was more prevalent in females as compared to males being 27.8%, 10.3% and 0.4% respectively. The average BMI in females (25.15%) was found to be higher than that of males (23.99) and this difference was statistically significant ($p<0.01$). The results are in agreement with studies conducted by Gopinath et al (3) and Zargar et al (4).

Among the various morbid conditions, which are continuously crippling the mankind, Obesity is increasing at an alarming rate and the observations of the present study also support this fact. Promotion of healthy diets and improved opportunities for physical activity could be the best solution to the problem.

References :

1. Google site: <http://www.who.int/hpr/gsf/obesity.shtrmn> (obesity and overweight)
2. Physical status: The use and interpretation of anthropometry Report of a WHO Expert Committee, Geneva, World Health Organization, 1995 (Technical report Series, No. 854): 329.
3. Gopinath N, Chadha SL, Jain P et al: An epidemiological study of obesity in adults in the urban population of Delhi. *J. Assoc. Physicians Ind.* 1994; 42: 212 - 215.
4. Zargar AH, masoodi SR, Laway BA et al: prevention of obesity in adults - an epidemiological study from Kashmir valley of the Indian Subcontinent. *J. Assoc. Physicians Ind* 2000; 48: 1170-1174.
5. Sood K, Gupta K, Ahluwalia K et al: An epidemiological study of obesity in Shimla own. *Ind j. med Sciences* 1996; 50 12: 362 -364.

With Best Compliments From :

LUPIN

Introduces

Ecef D

(Cephalexin 750 mg. extended release tablets)

India's patented OD cephalexin*

R_x

1 Tab Ecef OD

⇒ Cephalexin 250 mg. t.i.d.

2 Tab Ecef OD

⇒ Cephalexin 500 mg. t.i.d.

**In RTI, UTI, STI, Post Surgical Infections,
Bone & Joint Infections**

From The Makers of : R-CINEX E

By Courtesy : Dr. V. K. Srivastava, G.S.V.M. Medical College, Kanpur

TLS GROUP

Total Library Solutions (India) Pvt. Ltd. Total I.T. Solutions Pvt. Ltd. Total e. Publishing Pvt. Ltd.

TLS Group, comprising of Total Library Solutions (India) Pvt. Ltd., Total I.T. Solutions Pvt. Ltd. & Total Publishing Pvt. Ltd. is endeavouring to provide information solutions on a variety of media.

Headquartered at New Delhi, we operate out of 7 other marketing locations through the country. TLS has carved an esteemed position in providing comprehensive quality information solutions (print/web-based/CD based) to a large number of prestigious Academic and Research Libraries in India as well as other SAARC countries. Some of the customers we serve include IIT's, IIM's, IIITs, DRDO, ICAR, CSIR Labs, central & State Universities, Medical & Engg. Colleges etc.

Products & Services

- Print / Online Journals Subscription Services
- Databases Subscription Services
 - Dialog Databases - CD/DVD ROM & Online
 - INSPEC on CD ROM
 - Business Monitor Online
- Digital Library Solutions
 - TLSS (Total Library Software System)
 - EJ-Server (Web-based e Journals Portal)
 - Library Digitization, Archiving and Management Solutions
 - Database Creation, Data Entry Services
- Library Security and Inventory Solutions
 - Electromagnetic Security Solutions
 - RFID Inventory Solutions
 - bar Coding Solutions
- E-Books
 - Nellibrary - an OCLC e content Division offers e books in subjects like IT, Technology Agriculture, Business & Management etc.
 - Taylor & Francis e books collection (Engineering, Computer Science & I.T., Applied Science, Law, Medicine)
 - Oxford Online Products (OED, Oxford Scholarship, Oxford Reference Online)
- Microsoft e-Learning Library (MELL)
- e-Publishing Solutions
- Library Digitization & Archiving Management Solutions

Corporate Office : WZ-248, IIInd Floor, Plot No. 7, Inderpuri, New Delhi-110012
Tel. : 91-11-25832289 / 25836316 / 25836593 / 25833253 Fax : 91-11-25831779
Mobile : +91 9312220913, +91 9811114737, +91 9811009398, +91 9350318334
E-mail : tls@vsnl.com

Locations : New Delhi, Kolkata, Guwahati, Mumbai, Hyderabad, Bangalore, Chennai, Lucknow
www.tlsindia.com, www.ejservet.com

By Courtesy : Dr. S.C. Saxena, Professor, G.S.V.M. Medical College, Kanpur