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CONTENTS

Editorial: ROLE OF MEDICAL PERSONNEL IN PROMOTING i
 APPROPRIATE INFANT AND YOUNG CHILD FEEDING
 UNDAF Cluster on Hunger and Malnutrition

1.	EPIDEMIOLOGICAL CORRELATES OF UNDER-NUTRITION IN UNDER-5 YEARS CHILDREN IN AN URBAN SLUM OF LUDHIANA Paramita Sengupta, Nina Philip and A.I. Benjamin	1
2.	FACTORS AFFECTING CONTRACEPTION AMONG WOMEN IN A MINORITY COMMUNITY IN DELHI: A QUALITATIVE STUDY Neeti Rustagi, D.K.Taneja, Ravneet Kaur and G.K. Ingle	10
3.	OBSTETRIC AND PERINATAL OUTCOME OF TEENAGE AND OLDER PRIMIGRAVIDAS- A RETROSPECTIVE ANALYSIS Pikee Saxena, S. Salhan, B. Chattopadhyay, M.P.S. Kohli, D. Nandan and S.V. Adhish	16
4.	STUDY ON DELIVERY PRACTICES AMONG WOMEN IN RURAL PUNJAB Rajesh Garg, Deepti Shyamsunder, Tejbir Singh and Padma Avtar Singh	23
5.	MAINSTREAMING GENDER PERSPECTIVE IN THE NATIONAL HEALTH PROGRAMMES: THE CHALLENGES AHEAD L.K. Piang, Poonam Khattar and Deoki Nandan	34
6.	CORRELATES OF TOBACCO USE AMONG MALE ADOLESCENTS IN SCHOOLS OF HALDWANI, NAINITAL S. Awasthi, S.K. Jha, C.M.S. Rawat, S. Pandey and S.S. Swami	42
7.	STUDY ON IMMUNIZATION COVERAGE IN URBAN SLUMS OF AHMEDABAD CITY A.M. Kadri, Anjali Singh, Shikha Jain , R.G. Mahajan and Atul Trivedi	50
8.	KNOWLEDGE AND AWARENESS OF NURSING STUDENTS ABOUT HIV/AIDS Naveen K. Goel, Rahul Bansal, Rambha Pathak, H. K. Sharma, Monika Aggarwal and S.C. Luthra	55

Editorial

ROLE OF MEDICAL PERSONNEL IN PROMOTING APPROPRIATE INFANT AND YOUNG CHILD FEEDING

UNDAF Cluster on Hunger and Malnutrition*

Adequate nutrition during infancy and early childhood is essential to ensure the health, growth and development of children to their full potential. Nearly one-third of the under-five deaths in India are due to under-nutrition. There is evidence that adults who were malnourished in early childhood have impaired intellectual performance. Such adults may also have reduced capacity for physical work. If women are malnourished as children, their infants may have lower birth weights. The consequences of insufficient nourishment continue into adulthood and are passed onto the next generation perpetuating the cycle of intergenerational under-nutrition.

Optimal infant and young child feeding practices are the cornerstones of child care and development. According to the Lancet Series on Child Survival, infant and young child feeding ranks among the most effective interventions to improve child nutrition/health and reduce child mortality. The achievement of universal coverage of optimal breastfeeding could prevent 13 per cent of deaths occurring in below-five years children globally while appropriate complementary feeding practices would result in an additional 6 per cent reduction in under-five mortality. WHO and UNICEF have globally recommended optimal infant feeding in their Global Strategy. They include exclusive breastfeeding till 6 months of age including early initiation. Secondly, nutritionally adequate and safe complementary feeding starting from the age of 6 months with continued breastfeeding up to 2 years of age or beyond. In India, only 40.2 per cent of the children less than 3 years are breastfed within one hour of birth, 46.4 per cent of the children aged 0-5 months are exclusively breastfed, 24.9 per cent of the children aged 6-35 months are breastfed for at least 6 months and a miniscule 23.9 per cent of the children aged 6-9 months receive solid, semi-solid foods and breast milk. The reasons for such abysmally low levels, as per the recently concluded WHO-INCLIN qualitative study, points to myths/misconceptions amongst mothers and key decision-makers in the family with regard to the same as well as limited availability of time with the mothers for food preparation and feeding. An extensive body of research has demonstrated that mothers and other care-givers require active support for establishing and sustaining appropriate infant and young child feeding practices. However, this aspect of child health is often not well addressed in the basic training of doctors, nurses and other allied health personnel. Because of lack of adequate knowledge and skills, health professionals, in fact, are sometimes barriers to improved feeding.

The medical personnel have a key role in influencing key child care behaviours and practices of the mothers and child care providers. Practicing paediatricians, gynaecologists and general practitioners are frequently visited by mothers and children for routine care during sickness. There are opportunities of contact with the mothers which can optimally be utilized to give appropriate nutrition counselling that include

*UNDAF Cluster on Hunger and Malnutrition is chaired by the World Food Programme (WFP) and has WHO, UNICEF, FAO, Sol Ex and UNRCO as members.

ante-natal visits, during birth or immediate post-partum period, post-natal visits, healthy baby clinics and immunization visits, and sick child visits and their follow-up.

Ante-natal visits provide a unique opportunity to inform all pregnant women about the benefits and management of breastfeeding. Women need information about the benefits of breastfeeding and the risks of artificial or mixed feeding; optimal practices such as early skin-to-skin contact, exclusive breastfeeding, rooming-in, starting to breastfeed soon after delivery, and why colostrum is important; how the milk 'comes in', and how a baby suckles; and appropriate patterns of feeding.

With the rising institutional deliveries, the role of the maternity hospitals and the gynaecologist-pediatrician-nursing team becomes critical in improving breastfeeding practices. The maternity hospitals can become baby-friendly by implementing the successful breastfeeding practices such as having a written breastfeeding policy which is routinely communicated to the health care providers; training all the health personnel in implementing this policy; informing all the pregnant women and expected mothers about the benefits and management of breastfeeding; and helping mothers to initiate breastfeeding within one-hour of delivery. Other practices include demonstrating mothers appropriate way of breastfeeding; how to maintain lactation; rooming-in i.e. allowing mothers with their babies 24 hours a day; exclusive breastfeeding up to six months unless medically indicated; encouraging breastfeeding on demand; discouraging mothers to provide artificial tits or pacifiers to infants, encouraging mothers to give variety of nutrient-rich foods as the baby grows; etc.

In addition, the medical personnel and health facilities need to comply with The Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 as Amended in 2003 (IMS Act). The key action points for medical personnel involved in service delivery to children under-five years of age are growth monitoring and promotion; appropriate nutrition counselling; and referral of those requiring specialized care to appropriate facility.

Assessing a child's growth provides important information on the adequacy of the child's nutritional status and health. The child should be weighed and length/height measured during each visit to the facility. The weight for age/weight for height indicators should be assessed as per the WHO Growth Standards charts for girls and boys that have been adopted by India and used in the unified Mother and Child Protection Card by the Ministry of Health and Family Welfare as well as Ministry of Women and Child Development. The use of growth charts and plotting can help medical personnel to identify growth faltering in children and take corrective actions. Normally growing children follow trends that in general parallel the median and z-score lines. Most of the children will grow in a 'track' that is on or between the z-score lines and roughly parallel to the median; the track may be below or above the median. Sharp decline/incline in the child's growth line, flattening of the curve or crossing of z-score lines may indicate problems or suggest risks of malnutrition. Growth faltering is common in the first 2 years of life, and may be the first sign of inadequate feeding in an otherwise healthy child.

The post-natal visits are the times to encourage mothers, solve feeding problems if any and ensure continued exclusive breastfeeding for the first six months. These messages need to be reinforced during the immunization and well baby clinic visits.

Besides, mothers need to be counselled for timely initiation of the complementary foods at six months. During the period of complementary feeding, children are at high risk of under-nutrition. Complementary foods are often of inadequate nutritional quality, or given too early or too late, in too small amounts, or not frequently enough. Premature cessation or low frequency of breastfeeding also contributes to insufficient nutrient and energy intake in infants beyond 6 months of age.

Additionally some children in special situations may require special support in nutrition. These circumstances include babies who are low birth weight, malnourished, living in emergency situations or born to mothers living with HIV. In these situations, mothers require counselling and management by skilled personnel and may be referred to an appropriate facility. Medical personnel can utilize each and every contact point with the mothers and care-givers in assessing child's growth and giving age appropriate counselling on infant and young child feeding and care practices. The time invested in counselling mothers by medical personnel has shown to give returns in terms of improved nutritional status of the children.

EPIDEMIOLOGICAL CORRELATES OF UNDER-NUTRITION IN UNDER-5 YEARS CHILDREN IN AN URBAN SLUM OF LUDHIANA

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ABSTRACT

To determine the prevalence and risk factors of under-nutrition amongst under-five children living in an urban slum of Ludhiana, a cross-sectional survey of 200 randomly selected under-five children was carried out. The selected samples were taken out of the total 1450 children living in Field Ganj, an urban slum area of Ludhiana, Punjab. The median weight-for-age, height-for-age and weight-for-height of the NCHS standard were used as reference anthropometric indices. The findings reveal that 74 per cent of the children were found to be stunted, 42 per cent of them wasted and 29.5 per cent of them were under-weight. Female children, children aged 48-59 months, children born to older mothers aged 30-49 years, children with >3 siblings, low birth weight, those exclusively breast-fed for >6 months or <4 months, having an illiterate mother or unskilled labourer father were observed to be at the highest risk of being under-nourished. Birth spacing of <2 years, incomplete vaccination status, frequent infections and worm infestation were also found to be important predisposing factors for childhood malnutrition. The study demonstrates the multiple risk factors for childhood malnutrition, requiring a multi-pronged and multi-sectoral approach in the fight against the silent killer of childhood malnutrition.

Key Words: Under-five, Under-nutrition, Urban slum, NCHS standard.

Childhood and maternal under-nutrition is currently the single leading cause of the global burden of under-nutrition. In the year 2000, the fraction of total global health loss attributable to under-nutrition was 9.5 per cent while 14.9 per cent in high-mortality developing regions¹. The global community has set a target of halving the prevalence of underweight children by 2015 as a key indicator of progress towards the Millennium Development Goal (MDG) of eradicating extreme poverty and hunger. During 1996-2004, more than 26 per cent of the world's under-five years children were underweight for their age. The proportion ranged from one per cent in developed countries to 27 per cent in developing countries².

India is home to more than one-third of the world's under-nourished children. PEM has been identified as a major health and nutrition problem in India as well. It not only leads to childhood mortality and morbidity but also leads to permanent impairment of physical and possibly mental growth of those who survive³. In 2004, India had a prevalence of malnutrition in under-five children with 47 per cent underweight, 16 per cent wasted and 46 per cent stunted⁴. The state of Punjab is one of the most affluent and developed states in the country. Along with Haryana, it contributes to more than half of the country's central pool of grain. Yet the NFHS-2008 has shown an unacceptably

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high (37%) prevalence of under-five malnutrition in Punjab⁵. Environmental factors, infectious diseases, inadequate diet, and the handicaps of poverty appear to be far more important than genetic predisposition as determinants of childhood malnutrition. Therefore, the assessment of growth not only serves as one of the best global indicators of children's nutritional status but also provides an indirect measurement of the quality of life of an entire population⁶.

OBJECTIVES

The study was undertaken to:

- (i) find out the prevalence of under-nutrition amongst under-five year old children living in an urban slum of Ludhiana, and
- (ii) identify the major demographic, environmental and socio-economic risk factors associated with under-nutrition in the population under study.

METHODOLOGY

It is a cross-sectional, population-based, descriptive sample study. In this study, a sample of 200 children was selected through simple random sampling from a total of 1450 under-five children. The children were from Field Ganj area of Ludhiana, the urban field practice area of the Department of Community Medicine, Christian Medical College, Ludhiana, covering a population of about 20,000.

For calculating the required minimum sample size, the national prevalence of 47 per cent underweight⁴ was taken into account. To provide results within 10 per cent allowable error and 95 per cent confidence limit, the minimum sample size required was 99.64 (say 100). A pre-tested questionnaire was used to collect data after obtaining signed informed consent from the respondents. The respondents were the mothers of the under-five children. The immunization card of the children when available was also consulted to confirm vaccination status. The height/length was measured to the nearest 0.5 cm and the weight was measured with light clothing using Salter's scales and recorded to the nearest 0.5 kg. The median weight-for-age, height-for-age and weight-for-height of the NCHS standard was used as the reference anthropometric indices for this study⁷. Underweight is used here to indicate children whose weight was <75 per cent of the median weight-for-age value which is equivalent to 2nd and 3rd degrees of malnutrition according to Gomez classification⁸. Stunted refers to children whose height was <2 SD below the mean height-for-age value. This is an index of shortness and has been proposed as an indicator of chronic malnutrition. Wasted refers to children whose weight is <2 SD below the mean weight-for-height value. This is an index of thinness and is claimed to be an indicator of acute malnutrition⁹. The socio-economic status was measured by using Modified Prasad's Classification¹⁰. Because of small numbers of respondents in some socio-economic classes, they were grouped into three according to their monthly per capita income i.e. >Rs. 399, Rs. 240–399 and <Rs. 240 which corresponded to Class (I & II), III and (IV & V) of the socio-economic status respectively. A history of passing worms and/or the presence of pica with or without abdominal pain was taken as the criteria for worm infestation¹¹. Means, proportions, chi square test and Odd's Ratio were used for statistical analysis.

FINDINGS

The study sample comprised of 200 under-fives, 108 (54.0 %) boys and 92 (46.0 %) girls. The overall prevalence of underweight children was 29.5 per cent, stunting 74.0 per cent and wasting 42.0 per cent. Significantly more females (37.0 %) than males (23.1 %) were found to be underweight ($p = 0.033$). More females were also found to be stunted and wasted though the gender differences here were not statistically significant. The 48-59 months old had the highest proportions of underweight (42.0%), stunted (80.0 %) and wasted (62.0 %). The least affected were the infants in all categories. The differences were statistically highly significant for wasting ($p=0.007$). 6 (3.0 %) mothers were <20 years old, 174 (87.0 %) were 20-29 years old while the remaining 20 (10.0 %) were 30-49 years old. The mother's age at the child's birth did not appear to be a significant risk factor for underweight or wasting. Increasing maternal age at child birth was found to be significantly associated with stunting in the children ($p=0.019$). 94 (47.0 %) mothers had studied up to high school or above, 52 (26.0 %) up to middle school while 54 (27.0 %) were illiterate. The highest proportion of underweight, stunted as well as wasted children were found in illiterate mothers and the lowest in mothers with higher education. Hence, higher maternal education appears to be associated with better child nutrition and the differences were observed to be statistically significant ($p=0.004$) for underweight. The prevalence of underweight and of wasting (59.1 % for both) was the highest in children of unskilled labourers and the differences were statistically significant ($p=0.004$ and 0.029 respectively). Father's occupation did not appear to significantly affect stunting. The type of family, nuclear or joint, was also observed not to significantly affect child nutrition. Families with higher monthly per capita income had significantly lower prevalence of underweight children ($p=0.005$). Though the prevalence of wasting also showed a decline with increasing family income, the differences were not statistically significant. Family income did not appear to significantly affect stunting (Table 1).

TABLE 1
NUTRITIONAL STATUS OF UNDER-FIVES BY SOME SOCIO-DEMOGRAPHIC FACTORS

FACTORS	Underweight (n=59) No. (%)	Stunting (n=148) No. (%)	Wasting (n=84) No. (%)	Total (n=200)
Sex				
Male	25 (23.1)	76 (70.4)	42 (38.9)	108
Female	34 (37.0)	72 (78.3)	42 (45.6)	92
p value	0.033	0.205	0.334	
Age Group				
0-11 months	10 (27.8)	25 (69.4)	09 (25.0)	36
12-23 months	10 (25.0)	29 (72.5)	13 (32.5)	40
24-35 months	8 (22.2)	25 (69.4)	14 (38.9)	36
36-47 months	10 (26.3)	29 (76.3)	17 (44.7)	38
48-59 months	21 (42.0)	40 (80.0)	31 (62.0)	50
p value	0.258	0.761	0.007	

Mother's Age At Child's Birth				
<20 years	0 (-)	02 (33.3)	02 (33.3)	06
20-29 years	53 (30.5)	129 (74.1)	77 (44.2)	174
30-49 years	06 (30.0)	18 (90.0)	05 (25.0)	20
p value	0.274	0.019	0.232	
Mother's Education				
Illiterate	22 (40.7)	42 (77.8)	25 (46.3)	54
Middle school	20 (38.5)	39 (75.0)	24 (46.1)	52
High school & above	17 (18.1)	67 (71.3)	35 (37.2)	94
p value	0.004	0.674	0.437	
Father's Occupation				
Unskilled labour	13 (59.1)	16 (72.7)	13 (59.1)	22
Skilled labour	28 (23.9)	84 (71.8)	53 (45.3)	117
Others	18 (29.5)	48 (78.7)	18 (29.5)	94
p value	0.004	0.603	0.029	
Family Type				
Nuclear	15 (36.6)	34 (82.9)	16 (39.0)	41
Joint	44 (37.7)	114 (71.7)	68 (42.8)	159
p value	0.265	0.144	0.665	
Monthly Per Capita Family Income (Rs.)				
> 399	30 (22.2)	100 (74.1)	52 (38.5)	135
240-399	14 (42.4)	23 (69.7)	15 (45.4)	33
< 240	15 (46.9)	25 (78.1)	17 (53.1)	32
p value	0.005	0.740	0.292	

Findings in Table 2 reveal that while the prevalence of stunting was not found to be significantly associated with the number of siblings, the prevalence of underweight and wasting was found to be significantly higher in those with more siblings. Those with no siblings, had the lowest proportion of underweight children (12.8%), higher in those with 1-2 siblings (30.6%) and highest (51.7%) in those with >3 siblings. The differences were highly significant statistically ($p=0.001$). The prevalence of wasting in these groups was 25.5 per cent, 46.0 per cent and 51.7 per cent respectively ($p=0.028$). While the prevalence of underweight was found to be higher in those with a preceding birth interval of less than 2 years (44.4 %) as compared to those with a longer interval (29.6%), the differences in the prevalence of stunting and wasting in the two groups were low. The differences in the prevalence of all three indices were statistically insignificant. All three indices of under-nutrition were found to be higher in LBW children. Being born with low birth weight appears to carry a higher risk of being underweight in the first five years of life with the prevalence of underweight being observed to be significantly higher ($p=0.024$) in the LBW children. The highest prevalence of underweight, stunting as well as wasting was found in those who were exclusively breastfed >6 months, followed by those who received exclusive breastfeed for <4 months and lowest for those who were exclusively breastfed for 4-6 months.

The differences were statistically significant ($p=0.021$) for underweight. 96.5 per cent of the children were fully immunized for age, and only 7 children had incomplete immunization. All the three indices of under-nutrition were higher in incompletely immunized children. While cent per cent of the incompletely immunized children were stunted, the prevalence of underweight children was significantly higher in them ($p=0.020$). 80 (40.0 %) children had suffered from up to 2 episodes of acute infection, 72 (36.0 %) had 3-4 episodes and 48 (24.0%) had >4 episodes in the past 12 months. All the three indices of under-nutrition were higher in those who suffered more than 4 episodes of infections in the year; though the differences were statistically not significant. 19 (9.5 %) mothers gave history of worm infestation in their children. While all the three indices of under-nutrition were higher in those with worm infestation, the prevalence of underweight children was significant ($p=0.020$).

TABLE 2
NUTRITIONAL STATUS OF UNDER-FIVES BY SOME MCH FACTORS

FACTORS	Underweight (n=59) No %	Stunting (n=148) No. %	Wasting (n=84) No. %	Total (n=200)
Number of Siblings				
None	06 (12.8)	31 (65.9)	19 (40.4)	47
1-2	38 (30.6)	92 (74.2)	57 (46.0)	124
>=3	15 (51.7)	25 (86.2)	08 (27.6)	29
p value	0.001	0.147	0.190	
Preceding Birth Interval (N=125 *)				
< 2 years	12 (44.4)	23 (85.2)	09 (33.3)	27
>= 2 years	29 (29.6)	76 (77.5)	39 (39.8)	98
p value	0.145	0.387	0.541	
Low Birth Weight (n = 134^)				
Yes	17 (45.9)	30 (81.1)	17 (45.9)	37
No	25 (25.8)	71 (73.2)	38 (39.2)	97
p value	0.024	0.343	0.476	
Exclusive Breastfeeding				
< 4 mths	19 (35.2)	42 (77.8)	20 (37.0)	54
4-6 mths	32 (24.2)	94 (71.2)	55 (41.7)	132
> 6 mths	08 (57.1)	12 (85.7)	09 (64.3)	14
p value	0.021	0.380	0.182	
Vaccination Status				
Complete	56 (29.0)	141 (73.0)	81 (42.0)	193
Incomplete	03 (42.8)	07 (100)	03 (42.8)	07
p value	0.714	0.247	0.731	
History of Infections				
Upto 2 episodes/yr	20 (25.0)	57 (71.2)	28 (35.0)	80

3-4 episodes/ years	19 (26.4)	53 (73.6)	36 (50.0)	72
>4 episodes/ years	20 (41.7)	38 (79.2)	20 (41.7)	48
p value	0.104	0.611	0.173	
Worm Infestation				
Yes	10 (52.6)	15 (78.9)	09 (47.4)	19
No	49 (27.1)	133 (73.5)	75 (41.4)	181
p value	0.020	0.809	0.618	

*75 first-borns excluded

^Birth weight of 66 children was not available

DISCUSSION

The prevalence of underweight (29.5 %) which corresponds to 2nd and 3rd degree malnutrition of Gomez Classification, stunting (74.0 %) and wasting (42.0 %) found in the children under study is unacceptably high. The high prevalence of stunting indicates chronic malnutrition in these children. Significantly higher proportions of females were found to be under-weight ($p=0.033$) which conforms to the findings of most other researchers¹⁴⁻¹⁶ though Bhatia et al¹¹ found PEM to be more in males. The higher prevalence of underweight, stunting and wasting among females may be a reflection of preferential treatment of males and provision of better quality food and health facilities for them, and neglect of the female child.

The highest prevalence of all the three indices of under-nutrition was found in children aged 48-59 months and the lowest in the infants. A study in Tamil Nadu¹³ also reported similar findings, though other studies^{16,17} have found highest prevalence of malnutrition in children aged 12-23 months. This may be because breastfeeding during infancy protects infants to some extent while the 48-59 months old children start going to school, are away from home and maternal care for many hours in the day and as a result, may suffer from acute nutritional inadequacy ($p=0.007$ for wasting). The children born to older mothers have significantly higher prevalence of stunting ($p=0.019$). The mother's age does not seem to play a major role in the child being under-weighted or wasted. This study also identifies maternal education as a significant determinant of child nutrition with illiterate mothers having more underweight children ($p=0.004$). Benjamin and Zachariah¹⁴ also observed a highly significant inverse relationship between higher maternal education and childhood malnutrition. In the present study, 46.3 per cent children of illiterate mothers had wasting and 77.8 per cent had stunting. Other investigators^{12,18} have also reported similar findings.

Children of unskilled labourers were observed to have significantly higher chance of being under-weight as well as wasted. These findings are corroborated by a study in Jhansi¹⁸ also. Per capita income is observed to be a significant determinant ($p=0.005$) in the children being under-weight. Higher proportions of stunted as well as wasted children were also found to be more in the lower social classes. Clearly, richer is better. Benjamin and Zachariah¹⁴ also found poor family income as a risk factor for severe malnutrition. The risk of being underweight, stunted and wasted is all directly proportional to the number of siblings with maximum proportions in all categories

being found in children with ≥ 3 siblings. This is statistically significant for underweight ($p=0.001$) and for wasting ($p=0.028$). Benjamin and Zachariah¹⁴ also found an increasing prevalence of PEM with increasing number of siblings ($p=0.0001$).

The prevalence of underweight and of stunted was found to be higher in those with birth spacing of <2 years. Rayhan and Khan¹² also reported lower risk of being stunted and under-weighted among children with longer birth-interval. Increased birth-interval provides for better care of the children. All the three indices of under-nutrition were higher in those with LBW, and the differences were statistically significant for underweight ($p=0.024$). In a study by Rayhan and Khan¹², both bi-variate and multi-variate analysis indicated size of the baby at birth as an important risk factor for all these three indices of malnutrition.

The highest prevalence of underweight children was found in those who were not given supplementary feeding even after 6 months followed by those in whom weaning was started before 4 months of age ($p=0.021$). Hence, starting supplementation too early (before 4 months of age) or too late (later than 6 months of age) both carry a higher risk of malnutrition. A study in Delhi³ found a significant relationship ($p<0.05$) between those who were not exclusively breast-fed for the first 4 months of life and the malnourished. 96.5 per cent of the children in the present study were found with complete immunization for age. All the 7 children who were incompletely vaccinated were stunted. This may be because of proper vaccination protects a child from some infections and hence, from malnutrition. Children who suffered >4 infection episodes per year had the highest prevalence of all the three indices of under-nutrition. Other researchers^{14,15} have also reported a significant relationship between children with acute ailments and malnutrition ($p<0.001$). Although only 9.5 per cent of the children had history suggestive of worm infestation, it increased the risk of being underweight to almost double ($p=0.02$). Other researchers^{11,15} have also reported a significant relationship between worm infestation and PEM. De-worming in pre-school children in the slums of Lucknow resulted in weight and height gain among children who had a history of roundworm passage¹⁹.

CONCLUSION

The prevalence of underweight children (2nd and 3rd degree malnutrition), stunting and wasting in the population under study is high. Female children, 48-59 months old, those born to older mothers aged 30-49 years, those having >3 siblings, the LBW, those exclusively breast-fed either too long (>6 months) or too less (<4 months), children with an illiterate mother and unskilled labourer father were found to be at the highest risk of being under-nourished. Birth spacing of <2 years, incomplete vaccination status, frequent infections and worm infestation were also found to be important factors for childhood malnutrition. The present study demonstrates the multiple risk factors for childhood malnutrition, encompassing sectors other than health alone, including social and economic sectors, requiring action at all levels and a multi-pronged and multi-sectoral approach in the fight against the silent killer of childhood malnutrition.

Future community-based researches need to focus on how to deliver this multi-pronged and multi-sectoral approach. The main challenge is how to engage the stakeholders in an efficient way towards changing the face of urban slums and poverty.

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FACTORS AFFECTING CONTRACEPTION AMONG WOMEN IN A MINORITY COMMUNITY IN DELHI: A QUALITATIVE STUDY

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ABSTRACT

Substantial proportions of women from the Muslim minority community, who want to stop or delay childbearing, do not practice contraception. The choice of contraceptives available and the variable perception of risk involved with their use along with socio-religious barriers put most women in dilemma regarding adoption of a birth control method. A qualitative study using focus group discussions and in-depth interview of women having two or more children was conducted in an urban area of Central Delhi to explore the perception and attitude of women towards family planning and barriers to use currently available contraceptives. The findings reveal that majority of the women in the current study did not favour early age marriage and prefer smaller family size. However, attitude of husband and family was mostly considered to be unfavourable for the use of contraception and to limit the family size. Religious beliefs were the most commonly cited barrier to use contraceptives especially surgical sterilization. Other barriers include fear of side-effects about IUDs and prejudiced behaviour of health care providers. These women are in need of a contraceptive which they can use confidentially and is devoid of adverse effects. Education of women can help a lot in the long-term for improving women's reproductive health.

Key Words: Women, Minority community, Contraception, Family size, Barriers.

India is slowly but steadily moving towards the goal of replacement levels of fertility with decreasing birth rate and increasing contraceptive prevalence. However, despite increased awareness and use, significant unmet need of contraception still exists¹⁻³. Studies have revealed that religion of an individual is a strong predictor for taking decision on adopting contraception, especially sterilization^{4,5}. 52 per cent of the Muslim women were reported to use contraceptives as compared to 68 per cent among Hindus and 73 per cent among Sikhs³. The unmet need for family planning (both spacing and limiting) was reported to be 16.1 per cent among Muslim women against the average of 8 per cent women in Delhi. Further, prevalence of female sterilization is the lowest in Muslims (11.5%) as compared to other religions (24.5% in Hindus and 24.7% in others)³.

OBJECTIVES

The current qualitative study was conducted among Muslim women in an urban area of Central Delhi with the following objectives:

- (i) To explore the perception and attitude of Muslim women towards family planning and currently available contraceptives; and

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- (ii) To assess the facilitating factors and barriers that determines adoption of contraception especially of terminal methods.

METHODOLOGY

The study was carried out during September 2008-February 2009 in the Central district of Delhi, an urban field practice area of a medical college. The area has a predominantly Muslim population from the lower socio-economic status. The men in the area are generally engaged in unskilled and semi-skilled activities for their livelihood like petty shop keepers, labourers, mechanics while most of the women are housewives. A number of public and private health agencies cater to the area.

To elicit the perception of Muslim women and their attitude towards family planning and currently available contraceptive methods and barriers to contraception, focus group discussions (FGDs) were conducted. These were carried out among women in the reproductive age group who had two or more children and have not accepted terminal methods of contraception as identified by the eligible couple register of the area. They were contacted and requested to participate in the FGDs with the help of female health workers and anganwadi workers of the area. Women without partners i.e. widowed, separated or divorced were excluded. Venues for focus groups were anganwadi centres and houses of the participants. A total of five FGDs were conducted and further FGDs were stopped as responses were being repeated. Each group consisted of 7 to 9 participants. A total of 36 women participated in the FGDs.

A team of a moderator and recorder, who were trained public health personnel, conducted the study with the help of topic outline guides for FGDs that included issues such as early marriage of daughters, ideal family size, knowledge and perception about currently available contraceptives and facilitating factors and barriers influencing their use. The moderator explained the study objectives to each group and participants were assured of their anonymity and confidentiality. The sessions were conducted in the local language; responses were manually recorded. The moderator ensured that good interaction occur among the individuals within the group and between the groups and the moderator. Thematic data analysis were done and frequency of responses was estimated from all focus group discussion sessions. To elicit facilitating factors for sterilization, in-depth interviews were carried out with the Muslim women who had undergone sterilization. For this purpose, thirty-six women were identified from the eligible couple register of the study area. A semi-structured questionnaire was prepared to assess their knowledge, and previous experience of contraceptives and factors that facilitate their adoption of sterilization. Sixteen of these women were interviewed, and further data collection were stopped because of repetition of responses. Ethical approval for the study was granted by the departmental ethical committee. Informed verbal consent was obtained from the women respondents who agreed to participate in focus group discussions and in-depth interviews.

FINDINGS

Views on early marriage of daughters

Most of the participants (43/52) agreed that early marriage of daughters is not advisable as it leads to a lot of difficulties in managing family and children. Television was found

to be an important source of information regarding problems of early marriage. Majority of the participants (39) stated that girl and boy should be married only when they are mature enough to take care of the family though a few study subjects revealed that 'finding of a suitable mate' may result in the early marriage of daughter. One study subject mentioned that "Some parents, especially of lower economic status, start worrying about marriage soon after the birth of a daughter." Only three participants felt that daughters should be sufficiently educated before marriage, so that they can be independent, if desired; and claimed that they unlike their parents "won't let their daughters suffer due to early marriage."

Awareness and practices of women and their families about contraceptives

Except two participants, all the remaining 50 women agreed that large family size is undesirable because it leads to poor quality of life, increased expenditures and deterioration of women's health. Meanwhile, the two study subjects said that they never intended to limit their family size as "It all depends on God" and "age-gap of three years still existed between their children without the use of any contraceptives." Majority of the participants (45) though were aware of one or more modern methods of contraception but their actual use was found to be very low among them. Condoms were ever used by some (18) participants and were procured by their husbands.

It was also observed that women resort to varied measures on their own to limit the number of births due to lack of family/husband support. Two women revealed of using emergency contraceptive pills 1-2 times per week as a substitute for regular contraceptives. "Over the counter availability and easy to use" were cited as the preferred reasons but they were unaware of its effectiveness and possible side-effects after repeated use. Three participants revealed of getting their pregnancies terminated without informing their husbands or taking oral abortifacients during pregnancy because of their inability to visit any health facility for termination as they were "Not allowed to leave the house". In case of husband's disapproval, the help of females in the neighbourhood and maternal family was sought. One participant confirmed the use of birth control pills without informing her husband or other family members. Only two women revealed of ever using intra-uterine devices. While one woman experienced no problem another reported "backache and difficulties in doing house work" after putting IUD.

Barriers for limiting the use of contraceptives

Thirteen women expressed that despite repeated requests, they couldn't convince their spouses to regularly adopt any contraception. It was observed that their husbands were either illiterate or educated below primary level. Many women (32) stated that their husbands and other family members (especially mother-in-law) forbade them to use any family planning method as "personal problems and ill health should not interfere with religious norms". Some said that it was wrong to use contraceptives without the consent of the husband. Few of them mentioned about the insensitive nature of the husbands regarding their health and ill treatment "in form of physical violence and verbal threats" they endured on discussing issues related to family planning.

Most of the participants (33) claimed that sterilization to limit family size was prohibited as per their religious and socio-cultural practices as sterilized women are considered “impure for the last rites”. Participants with higher literacy status reported that their desire to limit family size is opposed by their husbands because of similar beliefs. Preference for male child was found to be another important reason to have more children. Few (7) participants disclosed that pressure from family members plays a prominent role in having more children. Few of them stated “waiting for birth of a son” and “other couples in the family have three to four children” as the reasons or barriers in convincing husband/family members for adopting any contraceptive method. Indifferent attitude of health care providers and long waiting time at health care facilities also prevent women to actively seek contraception related advices. Few participants stated “hospital staff never listen to their queries before giving any advice” and “ill treat when they come to know we have so many children.” Myths about pills or Intra Uterine Devices (IUDs) were also explored during the FGDs. Friends and relatives were cited as the most common sources of information on IUDs. Fear of weight gain, infection, irregular menstrual cycles and inability to take daily dose were the perceived barriers for adopting pills as family planning method.

Many participants (29) hesitated to use intra uterine devices. Pain, bleeding disturbances, infection, discomfort with regular checking of thread and doubts about method reliability were the common concerns. Myths about Cu-T being “displaced into abdomen leading to surgery” were also stated as barriers for its use. Most of the women (31) expressed the need for improved range of contraceptives which they can use without their husband’s consent and are free of complications as they believed that ill effects of contraceptives limit their capacity to do household work.

Facilitating factors for contraception

Among the women who had not adopted sterilization, only a few (7/36) were able to persuade their husband for contraception even against the wishes of the other family members. They were educated up to high school or above. Facilitating factors for adoption of sterilization were studied among women who had undergone tubectomy. Seven out of sixteen women had no facilitating factor and had undergone tubectomy after caesarean deliveries and they were explained by the hospital staff that repeated pregnancy would risk the life of the mother. Interestingly, few (5/16) women claimed that repeated abortions and not being able to take proper care of children are also forbidden as children are “God’s gift” and thus, contraceptive measures like surgical sterilization are justified to regulate fertility after having desired number of children. “Difficult to meet the needs” and “deterioration of health after repeated abortion” was cited by only four women as a reason for adopting sterilization after having large number of children. They also revealed that it was difficult to persuade their husbands to give their consent for sterilization while rest of the family members and in-laws were not informed.

DISCUSSION

The study reveals that most of the women from the Muslim community favour smaller family norm and higher age of marriage for girls. Knowledge of the study subjects regarding one or more modern methods of contraception was nearly universal which is similar to the findings of NFHS-3³. However, family pressure and lack of cooperation/

objection by the husbands and stated religious sanctions do not permit them to adopt contraceptives. Some earlier studies have reported that both being Muslim and residence in a district where more than 20 per cent of the populace is Muslim, significantly lowered the rate of adoption of female sterilization^{4,6,7}. A sizeable proportion of women had fear and myths about IUDs which were mainly based on information received from friends and relatives. Similar findings were observed in other studies where IUD acceptance was facilitated thorough counselling by health care staff and impeded by both fear and disapproval of friends, relatives and neighbours. Personal experiences and stories from social networks proved to be more salient than medical opinions in shaping safety perceptions^{6,8-10}. Here exists a strong need to overcome these through appropriate communication as majority of the women expressed the need for contraceptives that are free of complications and can be used without the consent of their husbands. Health care staff also needs to be sensitized to their problems and motivated to adopt friendly behaviour as a section of these women avoided health facilities due to ill treatment by the staff. This is essential to overcome the undesired behaviour of the health staff based on the prejudice that they have too many children. In a study from Bangladesh, it was noted that better field worker's performance was associated with decreased religious opposition⁵.

In addition to these, awareness and availability of injectable and emergency contraceptive methods need to be increased to further their use by these women. Education of women in this community also empowered them to take decisions regarding adoption of contraception. Literacy of high school and above among women positively influenced the use of contraceptives. Other studies also reported that low level of education, particularly among women is one of the major reasons behind high fertility and low contraceptive use¹¹⁻¹². A community-based study carried out in rural Bangladesh revealed that the husbands' preference for additional children diminishes as wives' level of education increases¹³. Therefore, special efforts are to be made towards promotion of girls' education in this community for ensuring reproductive health in the long-term. It was also observed in the current study that lower literacy among husbands leads to decreasing adoption of contraception which was similar to the findings of NFHS-3³. A study conducted among Turkish men regarding family planning revealed higher education of men leads to increase in knowledge and adoption of contraceptives¹⁴. In most of the women who had undergone sterilization, no facilitating factor could be elicited as it was resorted mainly due to health reasons e.g. caesarean operation. The sentiment among the few adopters of sterilization that it's adoption is justifiable to regulate fertility rather than undergoing repeated abortions or being not able to take proper care of children needs to be explored further for its utility in the family welfare programme. In a community-based study carried out among Muslim women in Tanzania, it was reported that perceptions of Islamic rules about family planning are inconsistent. Individuals are able to define their own approach by manipulating the rules and resisting them¹⁵.

CONCLUSION

The study brings out the unmet need for contraception among Muslim women. In view of the prevailing religious sanctions, oppositions by family members and husbands; there is a need to increase awareness in the community as well as to ensure the availability of contraceptives which these women can use confidentially as per their choices. Misbelieves and fears about intra-uterine devices also need to be

overcome along with supportive behaviour of health personnel. Increased awareness and availability of methods that do not involve partner consent like injectables and emergency contraception must be prioritized. In the long-term, education of the girl child and male involvement in family planning will empower women to take decisions about their reproductive health.

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OBSTETRIC AND PERINATAL OUTCOME OF TEENAGE AND OLDER PRIMIGRAVIDAS- A RETROSPECTIVE ANALYSIS

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ABSTRACT

Teenage girls are twice as likely to die of pregnancy and childbirth related complications as compared to older women. Existing literature shows that under-utilization of ante-natal care by adolescent mothers rather than maternal age is an important factor which determines the outcome of teenage pregnancy. To compare the maternal and perinatal outcome amongst primigravida teenage and older (20-29 years) mothers, and to evaluate the effect of ante-natal care on maternal and foetal health; this analytical study of hospital records was conducted at the Safdarjung Hospital, New Delhi. It was found that the number of booked women in both the age groups was not statistically different. There was no significant effect of ante-natal care on the occurrence of anaemia, PIH, preterm births, or low birth weight babies. Ante-natal care significantly reduced the severity of anaemia and incidence of intra-uterine deaths. It was also observed that with improvement of the general health and nutrition of the girl child, increasing the age of marriage and subsequent childbearing along with timely and quality ante-natal care reduce the incidences of anaemia, PIH, IUGR, foetal loss and LBW babies.

Key Words: Teenage pregnancy, Ante-natal care, Anaemia, Primigravida.

Pregnancy and childbirth is a universally celebrated event. Pregnancy is a physiological state of stress on the body and by itself makes women prone to many disorders and diseases. This, coupled with the complications of pregnancy can have various severe deleterious effects on the health of the mother and the foetus. WHO report 2005 shows that one woman die of pregnancy and childbirth related complications every minute, i.e. more than half a million every year¹. When girls become mothers before they are physically and emotionally ready, the results are even more tragic. One in every ten births worldwide is to a mother who is still herself a child². Worldwide more than 13 million adolescent girls give birth each year, with more than 9 out of 10 births taking place in the developing world³. Complications from pregnancy and childbirth are the leading causes of death of young women aged 15-19 years in the developing world⁴. Girls in their teens are twice as likely to die of pregnancy and childbirth related complications as compared to older women⁵. Research suggests that very young mothers aged 10-14 years have a maternal mortality rate which is 5 times higher than the MMR for the women aged 20-24 years. Babies born to girls in their teens face a 50 per cent higher risk of dying of before they reach one year than babies born to women in their twenties. Worldwide, an estimated 70,000 girls³ and one million infants born to young mothers

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die of each year due to pregnancy and childbirth-related complications⁶. Despite the rising age of marriage and laws prohibiting early marriage, half of all Indian women aged 20-24 years got married by the time they were 18 and a quarter by the time they were 15. The median age at marriage for girls in India is 16 years⁷.

In fact, in spite of the Child Marriage Restraint Act 1978, a substantial proportion of rural marriages in India continue to take place when the girl is around 15 years. Early marriage coupled with an ingrained Indian tradition (and an unsaid requirement) to bear a child within 1-2 years of marriage (to be accepted by the in-laws) puts undue pressure on the married teenage girl to bear a child. Besides affecting the young girls, early marriage and motherhood can have a profound negative impact on the newborn. Children born to children are more likely to be delivered prematurely and with low birth weight, and are more likely to die of in the first month of life; less likely to get adequate health care and nutrition; less likely to get good education and are more likely to be impoverished throughout life. Moreover, in developing countries, these effects can be more deleterious to the health of the mother as the woman's physical development tends to be slower and menarche tends to be relatively late. Maternal and pre-natal morbidity in teenagers is influenced by medical complications like anaemia, toxemia, cephalopelvic disproportion, haemorrhage and social problems like wedlock pregnancies. When faced with unwanted pregnancies, teenage girls are more likely to die in comparison to other women. Some even opt for an illegal abortion despite the imminent health risks. So, they need to avoid pregnancy and must seek early pre-natal care.

The normal mode of delivery is common in teenagers in comparison to older mothers, probably because of higher number of low birth weight babies. The foetal outcome is significantly worse in teenage mothers with high incidence of intra-uterine growth restriction, still-births, peri-natal mortality and low birth weight babies⁸⁻¹¹ though conflicting reports do exist. It is known that providing good quality ante-natal care to the pregnant women decreases the incidence of complications, and improves in general, the outcome of pregnancy. The existing literature on the effects of ante-natal care on teenage-pregnancy complications suggests that underutilization of ante-natal care by adolescent mothers rather than maternal age is an important factor which determines the outcome of teenage pregnancy¹².

OBJECTIVE

The study was undertaken to compare the maternal and foetal outcome between teenage mothers and older mothers, and the impact of ante-natal care on pregnancy and childbirth-related complications.

METHODOLOGY

This is an analytical study of hospital records of VMMC and Safdarjung Hospital, a large tertiary care hospital located in South Delhi and catering to a huge population from Northern India. Primigravida teenage girls (study group) and those between 20-29 years (control group) delivering at VMMC and Safdarjung Hospital during a period of one year were considered for the study. The sample size was estimated by the formula $N = (Z^2 \times p \times q) \div d^2$, where $z = 1.96$ at 95 per cent level of significance, $p = 0.19$ (which is the prevalence of teenage pregnancy at 19% as per NFHS-II). $q = 1$

–p, i.e. 0.81, $d = 0.03$ (which is the margin of error at 3%) and therefore, $n = (1.962 \times 0.19 \times 0.81) \div 0.032 = 683$.

Safdarjung Hospital has two labour rooms. Teenage girls delivered in Labour Room II and those aged 20–29 years delivered in Labour Room I. Data were collected from the labour room registers for a period of one year. A systematic random sampling method was adopted. The first page was selected randomly by first selecting the month and then date by using two different notes of five rupees. The random date, thus, selected was 4th March. Following this, the entries of deliveries in every-third page were collected. To minimize the seasonal bias, data for the whole year were taken. The criteria taken for inclusion in the study were pregnancies up to 29 years of age, primigravida and singleton pregnancies. The criteria for exclusion in the study were pregnancies in women aged above 29 years, multigravida and multiple pregnancies.

Data analysis were done using the SPSS software 10.1 (Statistical Package for Social Sciences). Simple frequency tables were prepared and relationships between variables were studied using appropriate statistical methods. Chi-square test was used to find out the association between variables like maternal age and complications, ante-natal care and complications, etc.

FINDINGS

A total of 859 primigravida mothers were studied that included 164 primigravida teenage mothers (study group) and 695 primigravida mothers in the 20–29 years age group (control group). The mean age of teenage mothers was 18.6 years with the median being 19 years. For the age group 20–29 years, the mean age was 22.4 years with median age being 22 years. The number of booked women in both the age groups were not statistically different, $p = 0.271$ (50.9% in study group compared to 55.7% in older mothers).

Anaemia is defined as blood hemoglobin level of less than 11 gm % (WHO). In India, ICMR defines anaemia as hemoglobin less than 10 gm %. Anaemia is further divided into three grades, as 8–10 gm% as mild anaemia, 5–8 gm% as moderate anaemia and <5 gm% as severe anaemia. It was found that anaemia was present in 52.4 per cent of the teenage mothers and 59.1 per cent of the women in the control group (Table 1). Even among unbooked and booked categories, the older mothers tended to have high rates of anaemia. There was no significant effect of ante-natal care on the occurrence of anaemia in these women in either age group. However, ANC was seen to reduce the severity of anaemia among mothers by decreasing the number of women having moderate to severe anaemia (Table 2).

TABLE 1
EFFECT OF ANC ON ANAEMIA AND PIH IN TEENAGE AND OLDER MOTHERS

Age	ANC	Anaemia	PIH
15–19 years	Unbooked	53.8%	33.7%
	Booked	51.8%	27.7%
20–29 years	Unbooked	59.4%	25.3%
	Booked	58.9%	26.6%

TABLE 2
EFFECT OF ANTE-NATAL CARE ON SEVERITY OF ANAEMIA

Ante-natal Status	No/Mild- anaemia	Moderate/Severe Anaemia
Unbooked	273 (88.9%)	34 (11.1%)
Booked	352 (93.8%)	23 (6.1%)

Pregnancy Induced Hypertension (PIH) was seen in 27.4 per cent of mothers. Only 26.6 per cent of mothers in the control group had PIH whereas a larger proportion of teenage mothers (30.5%) suffered from PIH, thus, establishing that teenage mothers are more prone to develop PIH than older mothers ($p=0.317$). However, there was no significant difference in the occurrence of PIH amongst the booked and unbooked mothers, the incidence being 27.7 per cent and 27.1 per cent respectively ($p=0.845$). ANC reduced the incidence of PIH from 33.7 per cent in unbooked teenage mothers to 27.7 per cent in booked teenagers ($p=0.403$) (Table 1).

Findings given in Table 3 show no significant effect of either age or ante-natal status on the occurrence of jaundice. All the cases of ante-partum haemorrhage (APH) occurred in the older mothers and none in teenage mothers. An equal number of cases occurred in the booked and unbooked mothers. Teenage mothers had lower incidence of preterm births (29.9%) as compared to older mothers (32.4%) though the difference was not significant ($p=0.538$). ANC reduced the occurrence of preterm births from 34.6 to 29.7 per cent, $p=0.124$ (Table 4). ANC brought down the number of preterm deliveries in both the age groups. Older mothers were more prone to deliver preterm though the results were not statistically significant. When analyzed for age, it was seen that 33.9 per cent and 30 per cent of teenage mothers and older mothers had low birth weight (LBW) babies respectively; the difference not being statistically significant ($p=0.413$). It was observed that ANC reduced the incidence of LBW significantly from 35.7 per cent in unbooked mothers to 27.1 per cent in booked mothers ($p=0.025$) (Table 4).

TABLE 3
EFFECT OF MATERNAL AGE ON DIFFERENT COMPLICATIONS DURING PREGNANCY

Age (years)	Anaemia	PIH	Jaundice	Pre-term Birth	LBW	IUD	IUGR	APH	Cong. Anomaly	Instrumentation	Abnormal Presentn.
15-19	52.4%	30.5%	0.6%	29.9%	33.9%	4.3%	5.5%	0	0.6%	6.6%	4.3%
20-29	59.1%	26.6%	2.7%	32.4%	30%	8.2%	4.6%	1.43%	1.5%	4.9%	5.2%
p value	0.118	0.317	0.105	0.538	0.413	0.084	0.633	0.112	0.114	0.409	0.533

TABLE 4
EFFECT OF ANC ON PREGNANCY-RELATED COMPLICATIONS

ANC	Jaundice	Pre-term	LBW	IUD	IUGR	Congenital Anomalies
Unbooked	2.3%	34.6%	35.7%	10.1%	3.4%	1.8%
Booked	2.3%	29.7%	27.1%	5.3%	6%	1.1%
p value	-	0.124	0.025	0.009	0.075	0.104

There were a total of 64 cases of foetal losses out of which 7 were from teenage pregnancies accounting for 4.3 per cent of teenage pregnancies and 57 from older mothers accounting for 8.2 per cent ($p=0.084$). There was a significant effect of ante-natal care on reducing the incidence of foetal loss ($p=0.009$) (Table 4). Intra-uterine growth retardation (IUGR) was present in 5.5 per cent of teenage pregnancies and in 4.6 per cent of older mothers ($p=0.633$). Maternal age was not found to be associated with the occurrence of IUGR. 3.4 per cent of unbooked mothers and 6 per cent of booked mothers had IUGR ($p=0.075$) although the difference was statistically not significant (Tables 3 and 4). This could be due to the increased number of referred cases of IUGR among those receiving ANC.

No significant effect of ANC was seen in decreasing the incidence of congenital anomalies in either group. The incidence of instrumentation was slightly higher in the older mothers though the difference was statistically not significant ($p=0.409$), neither was there any difference between booked and unbooked mothers on the occurrence of instrumentation during delivery (Table 3). Heart disease, fever and others were less in numbers to make any comparisons. Caesarean section was not considered for the study as the samples were taken from Labour Room 2 where all the teenage pregnancies were delivered vaginally and the labour room records did not contain the outcome of deliveries conducted in the OT. Also there were cases where the mothers were directly shifted to the OT for surgery without coming to the Labour Room first, like from casualty and wards.

DISCUSSION

The age group of 15-19 years account for 19 per cent of the total fertility of the country with about 58 per cent of the total adolescents commencing childbearing (NFHS I)¹³ and almost 23 per cent of the women aged 15-19 years give birth to a second child by the time they are 20 years old (NFHS II)⁷. There was no difference in availing of ante-natal services by the two groups, with 50.9 per cent and 55.7 per cent of teenage and older mothers being booked respectively. The finding is similar to the study done by S. Chabra⁹. The prevalence of anaemia was higher in the older mothers as compared to the teenage mothers. This could be because of the cases being referred. Another constraint of the study was that as it was based on records, there was no insight regarding the gestational age when first and subsequent ANC was taken, number of ANC visits and also regarding the quality of ANC received by the patient. Timing and quality of ANC has been shown to effect the course of pregnancy. Also the compliance of the ante-natal mothers in taking IFA tablets is not known which can impact the anaemic status. The results are similar to the findings of a study by S. Ziadeh¹⁴. However, the result is contrary to the findings of studies done by V. Verma et al⁸, S. J. Kore et al¹⁵ which showed an increased incidence of anaemia in teenage mothers as compared to older mothers.

The teenage mothers were more prone to develop PIH, a finding similar to those of M.S. Chahande et al¹⁶ and Pal et al¹¹. APH was not seen to be associated with maternal age. The findings are similar to those of S. Ziadeh¹⁴. There was no significant association between maternal age and preterm births which is similar to the findings by Gordon C. S. Smith and Jill P. Pell¹⁷ though studies of V. Verma et al⁸ and Chahande¹⁶ point to the contrary. V. Verma et al⁸ in their study in Mumbai showed that the incidence of preterm labour was significantly higher in the teenage group. One possible cause is

the immaturity of the organs of young women. The findings of the current study may again be influenced since Safdarjung Hospital is a tertiary level referral centre.

The incidence of IUD in teenage mothers was 4.3 per cent as compared to an increased incidence in older mothers of 8.3 per cent. This may be attributed to an increased level of anaemia in older mothers. This is in contrary to the findings of other studies by S. Ziadeh¹⁴ and Philip R. Wayatt¹⁸ which show an increased incidence of IUD in teenage mothers. There was a slightly higher incidence of LBW babies among teenage mothers (33.9%) as compared to older mothers (30%), the difference not being statistically significant ($p=0.413$). The findings are similar to those of Bradford et al¹⁹ and Zlathnik et al²⁰. ANC was seen to reduce the incidence of LBW significantly from 35.7 per cent in unbooked mothers to 27.1 per cent in booked mothers ($p=0.025$). The results are similar to the findings of an earlier study by Orhan Bukulmez et al²¹. It has been seen that good ANC and early detection and treatment of complications like anaemia and PIH improve both maternal health and birth weight of the babies.

CONCLUSION

From the above study, it can be concluded that maternal medical complications were not significantly different between the teenage and older mothers assuming the socio-economic status of both the groups as similar. The reason for this could also be because the median age of the teenage group was 19 and most of the adverse complications of pregnancy have been observed in less than 15 years age group. Improving the general health and nutrition of the girl child, increasing the age of marriage and subsequent childbearing along with timely and quality ante-natal care reduces the incidence of anaemia, PIH, IUGR, foetal loss and LBW babies.

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STUDY ON DELIVERY PRACTICES AMONG WOMEN IN RURAL PUNJAB

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ABSTRACT

Achieving 80 per cent institutional deliveries and conducting 100 per cent deliveries by trained personnel have been considered crucial amongst the national socio-demographic goals for 2010 set-up by Government of India. But the studies in India show that majority of the births particularly in the rural areas are still delivered at home. A study was, thus, planned with the objective of assessing the delivery practices and the factors associated with it in Verka block, Amritsar (Punjab). The study was conducted in 2005-2006 covering 1000 respondents in 20 villages through door-to-door interview. About two-thirds (625, 66.1%) of the deliveries were found to have taken place at home. The most common reasons cited for home delivery were traditional attitude (539, 86.2%) and economic reasons (84, 13.4%). More than half of the deliveries (497, 52.6%) were observed unsafe. The study concluded that home and unsafe delivery is still widely prevalent in the rural areas of Punjab and is significantly more among the elderly and less educated females. The traditional attitude of preference of home delivery needs to be changed through innovative health education programmes and provision of quality maternal and child health services.

Key Words: Home deliveries, Institutional deliveries, Health personnel, Education, Traditional attitude, Post-natal care.

“No country sends its soldiers to war to protect their country without seeing to it that they will return safely, and yet mankind for centuries has been sending women to battle to renew the human resource without protecting them.”- Fred Sai, former president of the International Planned Parenthood Federation¹.

According to the Article 25 of the universal declaration for human rights of 1948, motherhood and childhood are entitled to special care and assistance¹. The vision of the World Health Organization (WHO) in ‘Making Pregnancy Safer’ is ‘a world in which skilled care at every birth is ensured for all women’. The three ‘pillars’ of the agenda were family planning, skilled care during pregnancy particularly during delivery and emergency obstetric care to deal with complications. While approximately half of the world’s women have a skilled birth attendant present during delivery, this proportion is highly skewed; while three quarters of urban women have an attended birth, only about one-third of rural women have an attendant during delivery.

Safe delivery is defined as institutional deliveries plus deliveries conducted at home but by skilled staff and do not include deliveries by trained birth attendant (dais)².

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But the international definition of skilled attendants disqualify either the trained birth attendants (TBAs) or the 18-months trained Auxiliary Nurse Midwives (ANMs)³. In developing countries, many women are assisted in delivery by trained birth attendants or relatives while many deliver alone. Only 53 per cent of the pregnant women in developing countries have the assistance of skilled health personnel (a midwife or doctor) and only 40 per cent give birth in a hospital or health centre.

Each year, approximately eight million women suffer from pregnancy-related complications and over half a million women die of these complications. Of all maternal deaths occur in developing countries; Africa and Asia have a lion's share of over 90 per cent. Two-thirds of maternal deaths in 2000 were occurred only in 13 of the world's poorest countries. During the same year, India alone accounted for one quarter of all maternal deaths⁴. For every woman who dies during pregnancy, approximately 30 more women suffer injuries, infections and disabilities during pregnancy or childbirth accounting at least 15 million women a year. The cumulative total of those women affected has been estimated at 300 million, or more than a quarter of adult women in the developing world¹. An estimated 15 per cent of the pregnant women experience life-threatening complications that require emergency care, yet there are almost no data on the proportion of women with access to such care. As many as 40 per cent of the pregnancies require some form of special care.

According to the Census of India (2001), nearly three-fourths (72.2%) of the Indian population lives in rural areas in about 5.5 lakh villages and many with poor communications and transport facilities⁵. Reproductive health and basic health infrastructure and services often do not reach the villages and thus vast numbers of people cannot avail of these services⁶. Out of the Central Government's total Family Welfare budget during the period 1997-'98 to 2003-'04, an amount of Rs. 2,531 crores was spent on activities that have a direct impact on maternal health, accounting for 9.7 per cent of the total budget and Rs. 17 per capita per annum for women in the age group of 15-49 years. Due to this scarce funding, not only do people incur household expenditures for these critical services but also resort to various irrational health seeking behaviours that may not result in achieving the stated goals⁷. For example, a survey of households conducted at Jaipur (IIHMR, 2000) showed that on an average, each married woman in the age group of 15-49 years spent an average of Rs. 400 for Reproductive and Child Health (RCH) services (amounting to 10 days wage); with urban households spending Rs. 604 and rural households about Rs. 292. An estimated amount of Rs. 835 was spent for delivery, Rs. 440 for treatment of Reproductive Tract Infection (RTI) and Rs. 60 for child care. The study also showed that the reluctance of women for institutional deliveries and the persistently high proportion of domiciliary deliveries are driven by cost factors. While delivery in a public hospital costs an average of Rs. 601, about Rs. 3593 in a private hospital delivery at home costs only Rs. 93. The major item of expenditure was also found to be drugs which constituted around 62 per cent⁷. Also, many other studies conducted in the country show that majority of the births, more particularly in the rural areas, are still delivered at home and India has to go a long way to achieve the universalization of institutional deliveries⁸.

The pattern for deliveries attended by trained personnel in different countries again shows wide differences as DPR Korea and Mongolia reported 100 per cent coverage; Myanmar and Sri Lanka indicated a coverage of over 90 per cent; India, Indonesia, Maldives and Thailand reported a moderate coverage of around 40–80 per cent and

Bhutan reported a coverage of 16 per cent while Bangladesh and Nepal reported a coverage of less than 10 per cent⁹. Such a low coverage of delivery by skilled personnel means a high maternal mortality. The main causes are known, and more than 80 per cent of the maternal deaths could be prevented or avoided through actions that are proven to be effective and affordable, even in the poorer countries of the world. For example, surveys conducted in Egypt had shown that the quality of care provided to the women is a key determinant in maternal outcome and that simple change in practice can save many lives¹⁰.

In India, among the National Socio-Demographic Goals for 2010, certain goals are directed towards safe delivery viz. to achieve 80 per cent institutional deliveries and 100 per cent of deliveries by trained personnel by 2010. To promote institutional deliveries, provision has been made under the current Reproductive and Child Health (RCH) Programme to give additional honorarium to the staff to encourage round the clock delivery services at Primary Health Centres (PHCs) and Community Health Centres (CHCs), strengthened supply of drugs, skilled manpower on contractual basis and transport facilities to assist women in need⁸. But despite so many efforts, institutional deliveries account only 40.7 per cent of the total deliveries in India and 52.5 per cent in Punjab (the rural figure was 48.4%)¹¹. Keeping in view all these factors, the present study was planned with the objective to assess the delivery practices in rural areas of Punjab and the factors associated with it.

METHODOLOGY

The present cross-sectional analytical study was carried out in Verka block of Amritsar district, Punjab, during 3 November 2005 to 19 December 2006. Verka block is the rural field practice area attached to the Department of Community Medicine, Government Medical College, Amritsar. Amritsar is one of the 20 districts of Punjab and has a population of 21,52,182¹². The Verka Community Health Centre (CHC) is situated at 7 kms away from the Amritsar city. The population of the Verka block was 2,19,555 as of mid-2005 with a total of 94 villages.

The villages to be studied were selected by the standard cluster sampling technique¹³. Twenty village clusters were selected for the study. The date of visit was planned in consultation with the medical officer/multi-purpose health worker - male/female (MPHW-M/F) of the village. Then, on the pre-appointed date, help of the local elected bodies (Panchayati Raj Institutions- PRIs) members was taken as their support made the respondents more receptive and thus, helped in smooth conduct of the study. Selection of houses was done through systemic random sampling. If no female was present in the selected house at the time of visit, then next house was taken into consideration. Thus, in each cluster, 50 females were interviewed, each from a separate household. Out of 1000 females studied, 46 had never been pregnant and 9 females were pregnant for the first time. So, they were excluded from the study, thus the total number of sample respondents came to 945.

The respondents were informed about the purpose of the study. They were assured about confidentiality and written consent was obtained. A pre-tested questionnaire was used and the questions asked were in the local vernacular language and about their socio-demographic data, delivery practices and the associated factors. The information, thus, obtained was converted into computer-based spreadsheets.

Percentages, proportions and chi-square test were applied wherever relevant. $P < 0.05$ was considered to be significant. Ethical clearance for conducting the study was taken from the ethical committee of the institution i.e. Government Medical College, Amritsar, with the assurance that confidentiality would be maintained and the information obtained for this study, would not be used for any other purpose except for academics.

FINDINGS

The demographic profile of 1000 respondents showed that 423 (42.3 %) were in the age group of 26–35 years. 200 (20.0%), 242 (24.2 %), 90 (9.0 %), 45 (4.5 %) were in the age group of 18-25 years, 36–45 years, 46–55 years, and 55 years and above respectively. Education-wise, 223 (22.3 %), 113 (11.3 %), 230 (23.0 %) and 24 (2.4 %) of the respondents were educated up to primary, middle, higher secondary, and graduates or above respectively while 410 (41.0 %) were illiterate. Majority i.e. 913 (91.3%) of the respondents were housewives. 850 (85 %) respondents reported of having the nearest health facilities within 2 kms. distance.

Out of 945 respondents who delivered a baby, about two-thirds i.e. 625 (66.1%) of the respondents reported of home delivery and 320 (33.9%) reported of institutional delivery. Out of 320 institutional deliveries, 166 (51.9%) were conducted in private hospitals and 154 (49.1%) in government health centres. Among those who had home delivery (625), the most reason to prefer home delivery was traditional attitude 539 (86.2%) followed by economic reasons 84 (13.4%). Only 2 (0.3%) respondents stated that the place for institutional delivery was far way.

When the place of delivery was correlated with the age group of the females, it was found that institutional delivery was reported in 66 (43.1%) of the women in the age group of 18-25 years as compared to 56 (23.2%) in the age group of 36-45 years (Table 1) and this indicates that institutional deliveries were more in the comparatively younger age groups ($p < 0.001$). When the place of delivery was correlated with the education status of the females, it was found that 80 (20.0%) women who were illiterate and 58 (27.5%) women who had primary education opted for institutional delivery in comparison to 119 (58.0%) women with higher secondary education and 17 (80.9%) women with graduation or above ($p < 0.001$, significant) (Table 2).

TABLE 1
PLACE OF DELIVERY BY THE AGE OF RESPONDENTS (N=945)

Age (years)	Home (%)	Institutional (%)	Total (%)
18-25	87 (56.9)	66 (43.1)	153 (100.0)
26–35	248 (59.3)	170 (40.7)	418 (100.0)
36–45	185 (76.8)	56 (23.2)	241 (100.0)
46-55	71 (79.8)	18 (20.2)	89 (100.0)
55 & above	34 (77.3)	10 (22.7)	44 (100.0)
Total	625	320	945 (100.0)

Chi square= 36.50, d.f.=4, $p < 0.001$, significant

TABLE 2
PLACE OF DELIVERY BY THE EDUCATIONAL STATUS OF RESPONDENTS
(N=945)

Educational Status	Home (%)	Institutional (%)	Total (%)
Illiterate	320 (80.0)	80 (20.0)	400 (100.0)
Primary	153 (72.5)	58 (27.5)	211 (100.0)
Middle	62 (57.4)	46 (42.6)	108 (100.0)
Higher Secondary	86 (41.9)	119 (58.1)	205 (100.0)
Graduate and above	4 (19.1)	17 (80.9)	21 (100.0)
TOTAL	625	320	945

Chi square= 116.16, d.f.=4, $p < 0.001$, significant

Data given in Table 3 show that 448 (47.4%) females were found to have safe deliveries while 497 (52.6%) females had unsafe deliveries. It was observed that 429 (45.4%) deliveries were conducted by trained birth attendants, 262 (27.7%) by doctors, 147 (15.6%) by private nurses, 68 (7.2%) by untrained dais and 39 (4.2%) by Multi-purpose Health Worker– Female. When correlated with age group, it was observed that 114 (33.7%) women in the age group of 26-35 years had got their deliveries done by a doctor as compared to 49 (20.3%) women in the age group of 36-45 years. Deliveries conducted by untrained dais were observed only in 4 (2.6%) women in the age group of 18-25 years as compared to 30 (22.5%) women in the age group of 46-55 years (Table 4). Thus, it is clear that a significantly more percentage of deliveries were conducted by untrained dais in the elder age group as compared to women in the younger age group ($p < 0.001$, significant).

TABLE 3
DISTRIBUTION OF MOTHERS ACCORDING TO THE PERSON WHO
CONDUCTED THE DELIVERY (N=945)

Sl. No.	Person who conducted delivery	Number (%)
1	Trained Birth Attendant	429 (45.39)
2	Doctor	262 (27.72)
3	Private Nurse	147 (15.55)
4	Untrained Dai	68 (7.19)
5	ANM	39 (4.16)
	Total	945 (100.0)

When correlated with educational status of the females, it was observed that the delivery conducted by a doctor was observed in 61 (15.3%) illiterates, 45 (21.3%) women with primary level education as compared to 120 (53.1%) women who had education up to twelfth or above. Deliveries conducted by untrained dais were observed only in 4 (1.8%) women who had education up to twelfth or above in comparison to 49 (12.2%) illiterate women (Table 5). Hence, it again reflects that education is an important factor in choosing the person for conducting the deliveries more in favour of health personnel ($P < 0.001$). Only 69 (7.3%) respondents were visited by health personnel

after delivery for post-natal care and 876 (92.7%) respondents reported that nobody from the government health services visited them after delivery.

TABLE 4
TYPE OF ATTENDANT CONDUCTING DELIVERY BY THE AGE OF MOTHERS
(N=945)

Age (years)	Doctor (%)	Trained Dai (%)	Untrained Dai (%)	Private Nurse (%)	ANM (%)	Total (%)
18-25	49 (32.0)	62 (40.5)	4 (2.6)	33 (21.6)	5 (3.3)	1 5 3 (100.0)
26-35	141 (33.7)	176 (42.1)	15 (3.6)	70 (16.8)	16(3.8)	4 1 8 (100.0)
36-45	49 (20.3)	135 (56.0)	19 (7.9)	27 (11.2)	11 (4.6)	2 4 1 (100.0)
46 & above	23 (17.3)	56 (42.1)	30 (22.6)	17 (12.8)	7 (5.3)	1 3 3 (100.0)
Total	262	429	68	147	39	945

Chi square= 96.18, d.f.=12, $p < 0.001$; Significant.

ANOVA						
Source of Variation	SS	df	MS	F-ratio	P-value	F crit
Age	10129.35	3	3376.45	4.006*	0.0344422	3.4902948
Assistance for conducting deliveries	25458.5	4	6364.625	7.55**	0.0027966	3.2591667
Error	10113.9	12	842.825			
Total	45701.75	19				

TABLE 5
CORRELATION BETWEEN TYPE OF ASSISTANCE RECEIVED DURING DELIVERY AND EDUCATIONAL STATUS OF RESPONDENTS (N=945)

Educational Status	Doctor (%)	Tained Dai (%)	Untrained Dai (%)	Private Nurse (%)	ANM (%)	Total (100%)
Illiterate	61 (15.3)	234 (58.5)	49 (12.2)	48 (12.0)	8 (2.0)	400
Primary	45 (21.3)	103 (48.8)	12 (5.7)	36 (17.0)	15 (7.1)	211
Middle	36 (33.3)	41 (37.9)	3 (2.8)	21 (19.4)	7 (6.5)	108
Higher Secondary & above	120 (53.1)	51 (22.6)	4 (1.8)	42 (18.6)	9 (4.0)	226
Total	262	429	68	147	39	945

Chi square= 181.25, d.f.=12, $p < 0.001$; Significant.

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Educational status	8800.95	3	2933.65	1.678586	0.224261	3.490295
Assistance for conducting deliveries	25458.5	4	6364.625	3.641732*	0.036432	3.259167
Error	20972.3	12	1747.692			
Total	55231.75	19				

DISCUSSION

In the present study, 590 (59.0 %) respondents were found to be literate. According to census 2001, the literacy rate in Punjab is 69.95 per cent with the Amritsar district having the corresponding figure of 67.85 per cent. The literacy rate in rural Amritsar is 60.65 per cent and by gender, it is 67.83 per cent for males and 52.69 per cent for females¹⁴. In the current study, only 33.9 per cent of the respondents reported of having institutional deliveries. Similar results were also observed by Iyengar et al (34%) in rural Rajasthan¹⁵ and Yadav et al (34.1%)¹⁶. According to NFHS-III, the percentage of deliveries in health facilities increased steadily from 26 per cent in NFHS-I to 34 per cent in NFHS-II and 41 per cent in NFHS-III¹⁷. However, the observation in the present study is much less than the figures of NFHS-III in India (total: 40.7%; rural: 31.1%) and Punjab (total: 52.5%; rural: 48.4%)^{11,17}. More institutional deliveries were also found in another study by Gupta et al in East Delhi (55%)¹⁸ and Pandey et al in Uttaranchal (48.54%)¹⁹ which may be attributed to the reason that these studies were conducted in urban areas as compared to the present study conducted in rural areas. Besides, there is more concentration of health services in urban areas as compared to rural areas.

In the present study, about half of the institutional deliveries were conducted in private hospitals which is much less in comparison to the figures of NFHS-II (79%) for Punjab²⁰ and a study by Pandey et al (62%) in Uttaranchal¹⁹. As observed in the present study, the institutional delivery was reported in 66 (43.1%) of the women in the age group of 18-25 years. According to NFHS-II, institutional deliveries opted by women aged less than 20 years was 48.9 per cent and in the age group of 20-34 years it was 36.1 per cent in Punjab²⁰. In the present study, it was found that 80 (20.0%) illiterate women in Punjab preferred institutional deliveries while the corresponding figure in NFHS-III is 30.8 per cent¹¹. More institutional deliveries were found among educated females in the present study which is similar to the findings of NFHS-III (78.1%) in Punjab¹¹, Pandey et al in Uttaranchal¹⁹ and Iyengar et al in rural Rajasthan¹⁵.

It was observed that about half (47%) of the deliveries were safe which was similar to the findings of NFHS-III for India (total 48.3%, rural 39.1%)²¹, NRHM (42.3%)²² and a study by Iyengar et al in rural Rajasthan (50%)¹⁵. However, the NFHS-III reported 67.4 per cent safe deliveries in rural Punjab¹¹. According to a report of Population Reference Bureau, births attended by trained health personnel in India are approximately 34 per cent²³. According to NFHS-III, 47 per cent of births were assisted by health personnel

including 35 per cent by a doctor and 10 per cent by an ANM, nurse, midwife or LHV. More than one-third of births (37%) were assisted by a trained birth attendant (TBA) and 16 per cent were assisted by friends, relatives or other persons²⁴. A significantly more proportion of educated females were found to have got their deliveries done by health personnel which is also found in NFHS-III for Punjab (the delivery by a health personnel was observed in 48.8% of illiterate women and 89.4% in the high school and above educated women)¹¹. According to a study by Khan et al in Aligarh district of Uttar Pradesh, 96.5 per cent of the deliveries at home were assisted by a local dai or relative and none of the mothers knew whether the dai who conducted their delivery was trained or untrained²⁵.

In 2005, out of the total of 484 PHCs in Punjab, only 198 (41%) were functioning with a labour room and 168 (35%) had 24 hours delivery facilities²⁶. This indicates the lack of adequate infrastructure for institutional deliveries. The NSS 52nd round of 1995-1996 showed that government-appointed doctors attended only 6 per cent of births, government appointed nurses or midwives attended 9.5 per cent of all childbirths, and 'other doctors', who we can assume as private doctors, attended 15.6 per cent of the deliveries in Punjab. The remaining 62.9 per cent of childbirths were attended by 'other nurse/midwife'. This figure is very high for Punjab as compared to the national average of 18.9 per cent of childbirths attended by such midwives or nurses. This high percentage of midwife-attended childbirths is a characteristic of Punjab and no other state has such a high dependence¹⁴.

Among those who had home delivery (625), the foremost reason of preferring home delivery was traditional attitude 539 (86.2%). For the villagers, deliveries are routine affairs and don't require much medical attention. Similar results were also seen in a study by Khan and Prasad in Bihar, Gujarat and Kerala²⁷. According to Nanda, almost 60 to 70 per cent of the people who seek health care in villages use the services of a 'rural private practitioner' (RPP). This fact has been established by the Social Rural Research Institute in its research in 330 villages of Uttar Pradesh. Dais or female midwives along with RPPs form a separate group and are very distinct categories of health care providers in rural India²⁸. The Reproductive and Child Health Programme recommends that women who do not deliver in institutions should receive three post-partum visits during which they are to be provided with advice on family planning²⁹. Data from NFHS-III show that not only these post-partum check-ups are almost non-existent but also family planning is given the lowest priority among the various components of post-partum care. Nationally, one in five non-institutional births was followed by a post-partum check-up. In the present study, of the 954 respondents, only 69 (7.3%) were visited by health personnel after delivery and 876 (92.7%) reported that nobody from the government health services visited them after delivery. According to NFHS-III, in India, mothers who received post-natal care from a doctor/nurse/LHV/ANM/other health personnel within two days of delivery for their last birth was 36.4 per cent for the whole country and 28.1 per cent for rural areas while the corresponding figures for Punjab were 55.3 per cent and 51.6 per cent respectively^{11,17}.

According to NFHS-III, in India, only 20 per cent of births outside a medical facility were followed by a post-partum check-up within two months of delivery²⁴. On the other hand, the Mitadin programme in Chhattisgarh showed a high utility of Mitadins (local village level health worker) in improving child health where 70 per cent of the newborns were visited by Mitadins on the first day or in the first week³⁰.

CONCLUSION

In spite of the fact that Punjab is one of the most prosperous and educated states in India, home deliveries and unsafe deliveries are still widely prevalent in rural Punjab and are significantly more among elder and less educated females. This could be attributed to the prevalent psycho-social and cultural beliefs of the villagers. For most of them, pregnancies are routine affairs and don't require much medical attention. The most common reason for not availing skilled care for delivery is the traditional attitude of getting the delivery done by a trained/untrained dai in the village. Health education aspect on the promotion of safe and institutional deliveries is often neglected by the health care delivery system. The introduction of Janani Suraksha Yojana (JSY) under the National Rural Health Mission (NRHM) was launched for increasing institutional deliveries by provision of cash assistance to mothers and Accredited Social Health Activists (ASHAs). So, further large-scale multi-centric studies in more interior areas of Punjab and elsewhere are recommended to know the current trends in delivery practices among women in rural India. The incentives to Panchayati Raj Institutions (PRIs) must be linked to the indicators of Family Planning and Maternal and Child Health (MCH) services to ensure real 'community participation'. The women self-help groups would be instrumental in changing the mindset of people. The elderly women of the village who takes care of her daughters-in-law for obtaining all the MCH services like ANC, immunization, institutional delivery, post-natal care (PNC), etc. could be felicitated by the Panchayati Raj Institutions (PRIs) to encourage other women in the village for getting recognition too. The future health behaviour and practice of young boys and girls would depend on the education and information we are providing them now. Hence, the higher secondary school syllabus should include reproductive life cycle curriculum with proper consideration of local sensitivity and cultural practices. The role of celebrities; particularly women from various walks of life such as sports, movies, corporate, politics, art, science, etc. could be explored for spreading the message of safe and institutional deliveries through print and electronic media as in the case of Polio Eradication Programme and other national health programmes. Short stories in the form of comics would be a better instrument to spread the knowledge among youths. Unless institutional delivery by skilled providers is made available for the majority of the pregnant women, it will not be possible to achieve the set national targets and the Millennium Development Goals³¹. Various steps like health education, female literacy and women empowerment, etc. could possibly offer a solution towards the problem; otherwise it will take a long time to achieve universalization of safe deliveries in India.

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MAINSTREAMING GENDER PERSPECTIVE IN THE NATIONAL HEALTH PROGRAMMES: THE CHALLENGES AHEAD

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ABSTRACT

Poverty and ill health affect both men and women. However, the problems get compounded for women for many reasons like lack of resources, decision-making, etc. While men have higher rates of disease morbidity for major diseases such as tuberculosis, malaria and others; a large proportion of women die due to the fact that they are brought for diagnosis and treatment at severe or last stages. The differences between female and male prevalence and incidence rates are difficult to measure since cases in women are more likely to be undetected especially for diseases like leprosy. Social insurance schemes usually implicitly exclude many women who work at home or in the informal sector. Despite expression of concern by policy makers/gender specialists, the situation of women is not accurately reflected in routinely collected health statistics. A major thrust of many national and international goals is now on achieving equity in terms of health goals for both the sexes while simultaneously decreasing the gender disparities between indicators like health, education, etc. Any project intervention can both reinforce the existing gender roles, stereotypes and thus, not affect the developmental goals or promote gender equity into positive developmental outcomes. This paper examines some of the National Health Programmes and the gender component associated with these programmes. It also suggests some approaches for analysis of gender aspects into the activities and interventions for any programme/project.

Key Words: Gender, National health programmes, Morbidity and mortality, Professionals, Equity, Community.

Gender Mainstreaming in Health

Men and women are biologically different because of differences that exist in their reproductive system, and this aspect, hence, forms the basis of differentiation of their health needs. Gender-specific intervention is essential to address the issues of health which focus on biological differentiation as well as socially constructed norms and beliefs. Besides, there are many other issues like access to health services, cost of recovery, distance to health facility, etc. have differential connotations and implications on the health of men and women. It is essential for all health personnel especially the policy planners and those associated with implementation, to have knowledge and awareness of the ways in which gender issues affect the health differentially for men and women in any society. The process of creating this knowledge and awareness 'of' and responsibility 'for' gender among professionals enabling them to address gender issues in appropriate and most effective ways is called 'gender mainstreaming'. It is not simply an 'add in' of a gender component in any policy, programme, reform or activity or viewed as a measure to act as 'watch dogs' in the domain of differentiation

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or inequalities emerging as a result of biological differences. Mainstreaming gender perspective in the health sector has to go beyond the feminist view, often construed with patriarchy to include aspects such as socially constructed discrimination, cultural construction of roles and status on the basis of sex, etc.

Why Gender Perspective in National Health Programmes is Necessary?

Patterns of health and illness in women and men show marked differences. It is natural that existing health problems are rather sex-specific though many are common to both the sexes. For example, the health problems related to cancer like cervical and breast cancers are more specific to women, whereas prostate or testicular and penile cancers are more specific to men. In spite of the fact that there are various women-specific health problems, it is reported that women, as a group, tend to have longer life expectancy than men in the same socio-economic circumstances. Yet despite their greater longevity, women in most communities report more illness and distress than men.

It may be argued that childbearing is a natural process. However, certain phenomena like the social circumstances, environment, gender discrimination in nutrition, health care, social support, etc. are manifested in the form of biological disorders during pregnancy and later on in the life cycle of girls and women. Taking into account the social reality in India, it is not only women who need to be educated regarding the reproductive issues, it is equally important to educate and campaign among their men counterparts. Gender mainstreaming, as a policy matter, would thus, ensure that besides planning for health resources and facilities for the reproductive needs of women; the programme component includes components like IEC regarding nutrition, age for childbearing, contraceptive measures for male counterparts too. It also implies that girls and women would begin to have equal role in the decision-making in related issues of age of marriage, use of contraception for spacing, prevention of HIV/AIDS, sex of the unborn child, etc. For such issues to be reflected as a policy matter, the programme activities and interventions need to identify and address the explicit as well as hidden processes in a family, society/community.

Gender and Indian Scenario

The National Health Policy (2002) pointed out “social, cultural and economic factors continue to inhibit women from gaining adequate access even to the existing public health facilities¹. Though it did not explicitly mention the term gender, it sees women through the gender prism and with an aim to increase the access of women to basic health care facilities. It highlighted women along with other under-privileged groups, as one who are significantly handicapped due to a disproportionately low access to health care. Given below is an analysis of some of the national health programmes launched by the Government of India from the perspective of mainstreaming gender into the programme component.

The Revised National Tuberculosis Control Programme (RNTCP) adopted Directly Observed Treatment (DOTS) to diagnose, cure and reverse the epidemic². The National Health Profile 2007 provides the data related to tuberculosis, which is restricted to numerical figures such as the number of cases, deaths, prevalence rates for both the sexes, and case fatality rates. The data reveal that the tuberculosis incidence

rates are higher for males at all ages except in childhood when they are higher in females³. Studies have reported that sex differentials in prevalence rates begin to appear between 10 and 16 years of age, and remain higher for males than females thereafter. Though the reasons for the higher male prevalence and incidence are poorly understood, the differences in tuberculosis notification rates between men and women may reflect biological differences (i.e. sex difference) in the epidemiology of tuberculosis, differences in the societal roles of men and women (gender differences) that influence the risk of exposure and/or gender difference in access to care⁴. The National Health Profile 2007 shows that men are more exposed to the risk of pulmonary tuberculosis in comparison to women. Some studies report an increased delay for males in the time lapse between the onset of symptoms and the patient's first contact with a health care provider. A study in India found that males were less likely to be notified than females which suggests that the under notification of male TB cases could be because of employed men find it difficult to take leave from work to attend health centers that are open only during the day³. Further, the genital TB, which is often difficult to diagnose in both men and women, is relatively rare in men. These findings have important implications for the programme planners.

Mainstreaming gender in the Revised National Tuberculosis Control Programme should address issues such as difference in risk of exposure to infection, in health seeking behaviour and health systems response, economic consequences, and stigma associated with being known as a tuberculosis patient between males and females. Similarly, keeping the programme objectives in focus, undertaking research to find the impact of gender on factors like smoking initiation, types of tobacco used, depth and frequency of inhalation, differential response to diagnosis and health-seeking behaviour as manifested in men and women would be critical sources to identify the treatment strategy including counselling for various groups accordingly.

There is also a need for regular data collection on tobacco use disaggregated by sex and age which will clearly allow identification of trends and health effects on males and females of all the ages. This coverage could also include co-morbidities such as depression, drug addiction, and added risk of HIV/AIDS, etc. Applying a gender perspective to each component could enhance the implementation further but this will require sound multi-disciplinary research to produce appropriate recommendations for the most effective directions⁴⁻⁷. The programme must take into account the interventions which may be initiated in the community, school-based discussion of the health impacts, gender expectations for both males and females to foster greater self-awareness and, thus, resistance to gender-based advertising and harmful social norms against TB. It implies weaving financial components required to address these issues and evaluation as to whether this fund has been utilized as per the planned intervention in the national programme.

According to the National Health Profile 2008, the estimated prevalence of blindness in India in 2004 is 10.2 per 1000 in males and 12.2 per 1000 in females, whereas the estimated incidences of blindness in India in 2004 are 1002063 per year among males and 1129985 among females⁸. Females are more vulnerable when it comes to prevalence as well as estimated incidence rates of blindness, with a possibility that some women may be left unnoticed. One of the possible reasons could be found in the barriers to use eye care services which vary considerably for women and men⁹. Some of the barriers that prevent women and men from receiving surgery are cost of surgery,

inability to travel to a surgical facility, difference in the perceived value of surgery, lack of access to information and resources, fear of poor outcome, etc.

It is important to address the sex differentials and gender inequities while planning for the programme activities in the use of eye care services such as:

- i. At the local level, it is important to identify the barriers that prevent women from receiving eye care services and to design gender-sensitive programmes to reduce these.
- ii. Counselling services especially for women should be organized, focusing on the benefits and removing the fears.
- iii. Peer motivators (women to women) are likely to be more effective than health workers in promoting the use of eye care services including surgery.
- iv. Blindness programmes should monitor cataract surgical coverage rates by sex as well as monitor the outcome of surgery by sex.
- v. Special incentives may be charted out for women for example, concession in rates of surgery.

Further, an analysis of the important differences between women and men in the underlying mechanisms of HIV/AIDS infection reveals that the social and economic consequences of HIV/AIDS stem from factors related to physiology, sexual behaviour and socially constructed 'gender-related expectations,' etc. There are factors associated with roles and responsibilities, access to resources and decision-making power related to sexual patterns in any society. A number of studies have examined the role of gender inequalities on women's risk and vulnerability to HIV/AIDS. As per the WHO Fact Sheet⁵, women are more susceptible than men to get infection of HIV in any given heterosexual encounter, due to the greater area of mucous membrane exposed during sex in women than in men. Gender norms influence women's vulnerability to HIV. Violence (physical, sexual and emotional) which many women experience at some point in their lives, increases their HIV/AIDS vulnerability. Women assume the major share of care taking in the family including for those living with and affected by HIV. Much of the care taking is unremunerated and is based on the assumption that this is a role that women 'naturally' have to undertake adds to their burden. The entire project staff should be given awareness as to how women are more vulnerable to HIV and the ways and means of addressing these issues within the socio-cultural norms of any community. Gender should constitute one of the key reference points during appraisal, monitoring and evaluation of individual sexual health projects.

As far as HIV/AIDS is concerned, it is important to discuss the Sexually Transmitted Infections (STIs) as many of these can be treated. NACO has been making special efforts to promote early diagnosis and treatment of STIs as part of its family health awareness campaign. NFHS-III studied the prevalence rate of STIs, by adding variables like abnormal genital or bad smelling discharges and genital sores or ulcers in 12 months prior to the survey. It found that 11 per cent of the women and 5 per cent of the men who ever had sex, had an STI or STI symptom. Women are more susceptible and prone to these due to their physiology. Therefore, public awareness and education about these infections and methods of preventing them to women is important.

The National Cancer Control Programme (NCCP)¹⁰ is another important programme and the National Health Profile 2008⁸ reveals that 37.4 per cent of the cancer incidences

are in cervix (19.1%) and breast (17.3%) which are women-specific. Cancer at the oral cavity site is 10.9 per cent among males and 0.50 per cent among females. The first goal of the National Cancer Control Programme is primary prevention of cancer^{10,11}. Health education offers the greatest public health potential and the most cost-effective long-term method of cancer control. The cancer incidence may be brought down if due emphasis is given on 'early detection' of cancer in women. There is a need for initiating interventions for the programme to be gender-sensitive as well as site-specific. For example, the national programme needs to build in specific health education and counseling strategies for both men and women keeping the higher prevalence rates for different types of cancers. K.A. Dinshaw et al pointed out that periodic examination by pap smear and mammography is the accepted standard for early detection of cervix and breast cancers. In an Indian scenario, the health workers may be trained to tackle early detection as a routine public health, and women should be advised to undergo this as a routine investigation at least once a year^{12,13}.

The evaluation of implementation status of the National Iodine Deficiency Disorders Control Programme in India (2006) does not contain any disaggregated data regarding the number of men and women surveyed¹⁴. This type of information is an important component not only from the point of view of cooking as the responsibility of women but also from the point of view of maintaining the nutritional status of children and the family. Hence, the programme components need to build and reflect how 'gender' could be used to curb the disease through health education, communication and information strategies.

Analysing the life-cycle of women, one observes that the older women are more vulnerable to manage and get treatment as they age. To effectively reach older people, interventions have to take into account the above mentioned gender realities. The restrictions on women's power and autonomy detailed above also imply that the older women do have difficulty than older men in accessing public services such as healthcare. For certain conditions such as mental health problems, the gender norms may make it more difficult for women than men to come forward. The ways in which gender affects the ageing people, their capacities and health seeking behaviour needs to be examined and addressed if interventions are to be truly effective.

Data in the 'National Health Profile' on mental health is not disaggregated on the basis of gender but on the basis of major and minor mental disorders. In the case of mental disorders, the role of family is irreplaceable by any other agency or institution. It is imperative to campaign for constant support of the family as women may be dependent upon the family for all purposes. Another area of omission as a concern of the health sector is the absence of Gender Based Violence. Gender Based Violence (GBV) is a pervasive public health and human rights problem. GBV can take the form of physical, sexual, economic, and psychological/emotional violence within the family; child sexual abuse; dowry-related violence; rape and sexual abuse; marital rape; sexual harassment in workplaces and educational institutions; forced prostitution; trafficking of girls and women; child marriage—an issue related to health as much as human rights¹⁵. Around the world, at least one woman in every three has been beaten, coerced into sex, or otherwise abused. Physical and sexual violence causes women and men to a lesser degree to suffer substantial morbidity and mortality, a major cause of disability, death and having dire consequences on health and well-being of women. It becomes necessary to address GBV in the health sector policies and programmes.

Mainstreaming Gender in Health: The Way Forward

Differences between female and male prevalence and incidence rates are difficult to measure since cases in women are more likely to be undetected. It is essential that the situation of women be more accurately reflected in routinely collected health statistics. It has been a frequent complaint of policy-makers that most statistics are not disaggregated by sex. In the male dominated society, though women are the active players in the reproduction activities; they have no voice in the decision-making in relation to their own childbearing. The above analysis reveals that major National Health Programmes in India do not really reflect the initiative of mainstreaming gender perspective. To reflect gender sensitiveness in the health programmes, each programme has to critically view the needs of the specific gender group: women and men, and address the health issues specifically according to the needs of the specific gender. Gender sensitivity does not mean that the programmes have to give special schemes for women, rather it is to identify which gender group is more vulnerable than the other in relation to the disease dealt by the programme. This would require an analysis not only of the epidemiological factors of the disease, but also of the differential impact of morbidity and mortality on more vulnerable group, identification of social factors that would enhance the identification of cases, like leprosy, HIV/AIDS, how to ensure sustainable treatment strategy for such identified women, etc.

It is often surprisingly difficult to find out if a given health problem has different incidence, prevalence or mortality among men as compared to women, since health data are not always collected and analysed disaggregated by sex. Even if they are, gender analysis, that is analysis of the different implications and context of a given disease for men as compared to women; is often left out of research studies. Both these situations need to be rectified if our understanding of the intersections of gender, health, and health seeking behaviour is to grow.

To achieve 'health for all' as well as promote gender equity in the health services delivery, it is necessary for the policy-makers, programme planners, the government and public health workers to sensitize with aspects of gender in the public health system and how it works in the social system. While formulating the programmes/policies and interventions, the planners should reflect as to how the project activities and interventions are going to affect the outcomes with special reference to gender equations in the society, power/autonomy of any sector in the community, and also the family norms, beliefs, etc. These are of utmost importance as health, use of contraception, ante-natal check-ups and institutional deliveries, etc. are linked to one's health seeking behaviour, his/her place in the family, society/community, socio-economic status, etc.

A number of initiatives are being undertaken under the National Rural Health Mission (NRHM) especially to reduce IMR, MMR, increase institutional deliveries, etc. One of the initiatives is Janani Suraksha Yojana (JSY). It is a safe motherhood intervention being implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women. It is a modified scheme of the existing National Maternal Benefit Scheme. The main aim is to reduce Maternal Mortality Ratio (MMR) as well as the Infant Mortality Rate (IMR) and also to increase the institutional deliveries. The Mission has the provision for the appointment of ASHA to be a link health worker between the health care facilities and the clients. It

also encourages the state to evolve innovative practices in dealing the health problems in their states. However, the need to address for male involvement in the reproductive and child health is lacking in the schemes of ASHA and JSY.

The above analysis shows that any new programme/project initiative effects the gender norms, roles and/or power equations in the family and community. The interventions can both reinforce the existing gender roles, stereotypes and thus, may not improve the developmental goals or promote gender equity into positive developmental outcomes as envisaged through the scheme. Hence, the programme/policy/project planners should critically evaluate the degree of integration of gender with regard to the impact of interventions from following points of view:

- Do the interventions/programmes reinforce the existing gender norms, roles and stereotypes? If yes, what norms are good and which needs attention for a change?
- Have the appropriate interventions been developed and introduced to achieve project goals?
- Have the interventions been designed to address the existing gender norms? How will they affect the health outcome and promote participation of men and women?
- Have the indicators/data chosen in the reflected programme available for both sexes? If no, is it possible to disaggregate these?

Given the challenging goals of reducing the IMR and MMR under NRHM or meeting the Millennium Development Goals, mainstreaming gender perspectives in each of the policies, programme and activities is the only alternative. Such inclusion is necessary as the health and all health seeking behaviour have deep rooted implications not only in the demographic factors but also in the socio-cultural patterns and behaviours. It is more important for girls and women as they lay the foundation of healthy children and family and of a country. Given the changing global scenario in technology, migration, demographic indicators and many others, the role of healthy girl child and women in the development of the nation cannot be overlooked.

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CORRELATES OF TOBACCO USE AMONG MALE ADOLESCENTS IN SCHOOLS OF HALDWANI, NAINITAL

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ABSTRACT

Tobacco use is a leading cause of morbidity and mortality globally. The period during high-schooling is a critical phase to adopt unhealthy lifestyle. This cross-sectional study was conducted in 4 schools from 1st July to 30th September 2009 with the objectives of estimating the prevalence of tobacco use among school-going male adolescents and to identify its correlates. Randomly selected 594 students of grades 8th, 9th and 10th participated in the study. A pre-tested, close-ended, self-administered questionnaire was used to study the socio-demographic factors and influencers of tobacco use. About 21.2 per cent of the students were found as current tobacco users. Logistic regression analysis showed that students belonging to grade ten (adjusted OR=4.3; 95% CI: 2-9) and grade nine (adjusted OR=2.2; 95% CI: 1.3-3) were more likely to use tobacco as compared to grade eight students. Students whose friends used tobacco were more likely to use than those whose friends were non-users (adjusted OR=3.4; 95% CI: 1.7 – 6.7). Students, unaware of the hazards of tobacco consumption, were more likely to use tobacco (adjusted OR = 1.7; 95% CI: 1.01-3.15). Reported factors should be considered for interventions targeting children in high schools at an early age motivating them to adopt a healthy lifestyle.

Key Words: Adolescents, Tobacco use, Influencers, School, Peers, Behaviour.

Tobacco is a risk factor for 6 of the 8 leading causes of death and is the single most preventable cause of death in the world today¹. Tobacco is a major public health problem² as it kills more than five million people a year or one person every six seconds³, and more than 80 per cent of these deaths occur in developing countries¹. Tobacco kills a third to half of all people who use it⁴, on an average 15 years prematurely^{4,6}. By 2030, unless urgent action is taken, tobacco's annual death toll will rise to more than eight million^{3,7}. According to the WHO estimates, 194 million men and 45 million women use tobacco in smoked or smokeless forms in India⁸. Indians form the second largest consumer of tobacco and consume it in forms of bidi, gutka, khaini, paan-masala, hukka, cigarettes, chillum, chutta, gul, mawa, mishri and others^{1,9}. In India, tobacco use is estimated to cause 0.8 million deaths annually¹⁰. Nearly 2200 Indians die each day of tobacco-related diseases¹. The World Health Organization predicts that tobacco deaths in India may exceed 1.5 million annually by 2020⁷. The most susceptible time for initiating tobacco use in India is adolescence and early adulthood. Approximately 55,500 adolescents start using tobacco every day in India, joining the 7.7 million young people under the age of 15 who already use tobacco on a regular basis¹¹.

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METHODOLOGY

This school-based cross-sectional study was carried out during July-September 2009. The study was designed to find out the prevalence of tobacco use and its correlates among 13 to 15 years old adolescents (corresponding to grades from 8 to 10) in Haldwani, Nainital, Uttarakhand. A stratified-random sample design was used to produce a representative sample of students. In the first stage, a list of all schools of government and non-government categories having grades from 8 to 10 was prepared with enrolment numbers for boys. The schools were grouped into rural and urban zones in Haldwani city respectively. In the second stage, one government and one non-government school were selected randomly from each zone. All students of grades 8 to 10 in the selected schools irrespective of age were eligible to participate. The sample size (640 including 10% refusals) had 80 per cent power to detect a difference of 10 per cent between categories with a 0.050 2-sided significance level. The sample size was also adequate for regression analysis. All the selected schools agreed to participate in the study (school response rate=100%). As the required sample size was 640 from 4 schools, the total number of boy students in all the schools (in standards VIII, IX and XI) was 960. Simple random sampling method was used to select 640 children out of 960 in the presence of the school authorities.

A total of 640 questionnaires were distributed to students and 614 of them were filled in and submitted to the investigator (student response rate=96%). Of them, 22 questionnaires did not have basic information thus, excluded from the study. Finally 594 questionnaires were included in the analysis, 284 from rural and 310 from urban areas. Data were collected through a pre-tested, closed-ended questionnaire. The questionnaire was self-administered with no identification (name of the student and name of school). Informed verbal consent from the school authority was obtained after explaining the purpose of the study. The questionnaires were distributed to the selected students after explaining the purpose of the study and the instructions to fill in the questionnaire. Considering the sensitivity of the issue, the school authority was requested not to be present during the filling of the questionnaire. Students were assured that the information they provided would remain confidential and thus, were encouraged to be truthful in their responses. They were informed that their participation was completely voluntary and they could quit at any time. Tobacco use was classified as ever use (the use of tobacco even once) and current use (use of tobacco at the time of the survey). The data entry and analysis were done by using SPSS V 16 software package.

FINDINGS

Table 1 shows that out of 594 subjects, 319 (53.7%) were from private and 275 (46.3%) from government schools. Most of the selected students (53.7%) were in the age group of 13-15 years followed by 40.6 per cent in the age group of 16 years and above and 5.7 per cent were less than 13 years. Of the total adolescents, 31.3 per cent, 31.5 per cent and 37.2 per cent of them were in classes eighth, ninth and tenth respectively. About 43.3 per cent of them stated that at least one of their family members was a tobacco user whereas proportion of students whose friends were tobacco consumers was 55.2 per cent. It was found that 35.7 per cent of the students had ever tried tobacco and 21.2 per cent students were current users. Peer pressure, academic pressure and unawareness about hazards of tobacco were found in 38.4 per cent,

46.8 per cent and 71.7 per cent of the students respectively. Only 19.5 per cent of the adolescents felt that tobacco use increases attraction towards girls.

In Table 2, bivariate analysis shows the Odds of consuming tobacco was 1.3 (0.8-1.9) amongst students of government schools as compared to their private school counterparts. The Odds of using tobacco were 1.9 (0.5-6.5) and 4.4 (1.3-15.0) in students of the age groups of 13-15 years and 16 and above respectively as compared to those less than 13 years of age. It was also found that the Odds of using tobacco were 2.7 (1.4-5.0) and 5.1 (2.8-9.2) in grade ninth and tenth respectively in comparison to grade eighth. Students having comparison between those with at least one of the parents and friends using tobacco and those without showed Odds of 1.7 (1.2-2.5) and 2.6 (1.7-3.9) respectively. The Odds of using tobacco amongst respondents with peer pressure, academic pressure and unaware of hazards of tobacco were 1.7 (1.1-2.6), 1.9 (1.3-2.8) and 2.2 (1.2-3.2) respectively in comparison to those without. Adolescents who said that tobacco use increases and decreases attraction towards girls were 3.5 (2.2-5.6) and 1.3 (0.7-2.3) times more likely to be tobacco users as compared to those who said that there was no difference in attraction.

Logistic regression analysis showed that students belonging to government (adjusted OR=1.2; 95% C.I: 0.7-2.0) were more likely to use tobacco as compared to students in private schools (Table 3). Students in tenth class (adjusted OR=4.3; 95% CI: 2.0-9.0) and ninth class (adjusted OR=2.2; 95% CI: 1.3-3) were more likely to use tobacco as compared to students of class eighth. Adolescents who had at least one parent using tobacco were more likely to be tobacco users as compared to those whose parents were non-tobacco users (adjusted OR=1.7; 95% CI: 0.8-3.6). Students whose friends used tobacco were more likely to use it as compared to those whose friends were non-users (adjusted OR=3.4; 95% CI: 1.7 – 6.7). Peer pressure (adjusted OR = 4.8; 95% CI: 1.9-12.0) and unawareness about hazards of tobacco use were (adjusted OR=1.7; 95% CI: 1.1-3.10) significantly while academic pressure was insignificantly (adjusted OR=1.3; 95% CI: 0.5-3.2) associated with tobacco consumption.

TABLE 1
SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Characteristics	Frequency	(%)
Type of school		
Government	275	46.3
Private	319	53.7
Residential area of respondents		
Rural	284	47.8
Urban	310	52.2
Age of the respondents		
Less than 13	34	5.7
13-15	319	53.7
16 or above	241	40.6
Grade of the respondents		
Eight	186	31.3

Nine	187	31.5
Ten	221	37.2
Family history of tobacco use		
At least one member smokes	257	43.3
No member smokes	337	56.7
Friends using tobacco		
Yes	266	55.2
No	328	44.8
Current users		
No	452	76.1
Yes	126	21.2
Ever used		
No	382	64.3
Yes	212	35.7
Peer pressure		
No	366	61.6
Yes	228	38.4
Academic pressure		
No	316	53.2
Yes	278	46.8
Aware of hazards		
No	426	71.7
Yes	168	28.3
Attraction towards female		
Increase	116	19.5
Decrease	109	18.4
No change	369	62.1

TABLE 2
UNIVARIATE ANALYSIS OF FACTORS ASSOCIATED WITH CURRENTLY
TOBACCO USING MALE ADOLESCENTS

Characteristics	Current tobacco status		Crude	OR	95% C.I
	Non-user (n=468)	users (n=126)			
Type of school					
Private	258(55.1)	61(48.4)	1		
Government	210(44.9)	65(51.6)	1.3		(0.8-1.9)
Residential area of respondent					
Urban	250(80.6)	60(19.4)	1		
Rural	218(76.8)	66(23.2)	1.2		(0.8-1.8)
Age of the respondent					
Less than 13	31(6.6)	3(2.4)	1		

13-15	269(57.5)	50(39.7)	1.9	(0.5-6.5)
16 or above	168(35.9)	73(57.9)	4.4	(1.3-15.0)
Grade of the respondent				
Eight	170(36.3)	16(12.7)	1	
Nine	149(31.8)	38(30.2)	2.7	(1.4-5.0)
Ten	149(31.8)	72(57.1)	5.1	(2.8-9.2)
Family history of tobacco use				
No member smokes	279(59.6)	58(46)	1	
At least one member smokes	189(40.4)	68(54)	1.7	(1.2-2.5)
Friends using tobacco				
No	282(60.3)	46(36.5)	1	
Yes	186(39.7)	80(63.5)	2.6	(1.7-3.9)
Peer pressure				
No	309(66)	57(45.2)	1	
Yes	159(34)	69(54.8)	1.7	(1.1-2.6)
Academic pressure				
No	265(56.6)	51(40.5)	1	
Yes	203(43.4)	75(54.5)	1.9	(1.3-2.8)
Aware about hazards				
Yes	145(31)	23(18.3)	1	
No	323(69)	103(81.7)	2.2	(1.2-3.2)
Attraction towards female				
No change	311(66.5)	58(46)	1	
Decrease	87(18.6)	22(17.5)	1.3	(0.7-2.3)
Increase	70(15)	46(36.5)	3.5	(2.2-5.6)

DISCUSSION

With the increasing use of tobacco among adolescents, it has become important to find out the prevalence of tobacco and its correlates. This study demonstrates that the prevalence of ever tobacco users was 35.7 per cent and current tobacco users was about 21.2 per cent among school going adolescents of grades 8 to 10 in Haldwani city. High prevalence of tobacco users was also found in studies conducted in Uttar Pradesh², Chennai¹² and other North-Eastern states of India¹³. In National Family Health Survey (NFHS-III), it was found that the 28.6 per cent of the adolescents aged 15-19 years was using any kind of tobacco¹⁴. Global Youth Tobacco Survey (GYTS) has been conducted in different states of India during the period 2000-2004 in which 25.1 per cent of the students aged 13-15 years reported that they had ever used tobacco in some form whereas current use was reported by 17.5 per cent of the students (range: 2.7%–63%)¹⁵. It was found that several factors were associated with tobacco use among school adolescents. In this study, a strong association was seen between tobacco use by the adolescents and tobacco users in the family and peers which is also similar to the findings of another study¹³. These associations have been observed worldwide¹⁶. Other studies conducted among school students of grades from

9 to 11 in Delhi and among youths aged 15-21 years in Scotland found that friends had a stronger influence on tobacco consumption by adolescents than their family members^{17,18}. The overwhelming effect of peer pressure on the initiation of tobacco use among adolescents is a matter of serious concern because it is very difficult to prevent the effect of this factor in an age group which likes the company of their friends. Friend's tobacco consumption was found to be a significant link between peer pressure and tobacco use¹⁹. It is adolescent behaviour to report his friends about tobacco use which, in turn, tends to influence other friends to consume tobacco.

TABLE 3
MULTIVARIATE ANALYSIS OF FACTORS ASSOCIATED WITH TOBACCO USING
MALE ADOLESCENTS

Characteristics	Adjusted odds ratio	95% C.I
Type of school		
Private	1	
Government	1.25	(0.7-2.0)
Age of the respondent		
Less than 13	1	
13-15	1.9	(0.4-8.0)
16 or above	2.5	(1.5-4.3)
Grade of the respondent		
Eight	1	
Nine	2.2	(1.3-3.0)
Ten	4.3	(2.0-9.0)
Family history of smoking		
No member smokes	1	
At least one member smokes	1.7	(0.8-3.6)
Friends smoking		
No	1	
Yes	3.4	(1.7-6.7)
Peer pressure		
No	1	
Yes	4.8	(1.9-12.0)
Academic pressure		
No	1	
Yes	1.3	(0.5-3.2)
Aware about hazards		
Yes	1	
No	1.7	(1.1- 3.15)
Attraction towards females		
No change	1	
Decrease	1.6	(0.9-3.3)

Increase	5	(3.3-10.0)
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Students in government schools were more likely to consume tobacco as compared to private schools which is similar to the findings of many other studies conducted among school-going adolescents. However, the difference was not statistically significant. These findings indicate an association between low socio-economic status and tobacco use. The statistically significant association was found in the current study regarding tobacco use in any form and lack of knowledge on hazards of tobacco use is similar to the findings in some other studies^{13,20}.

CONCLUSION

This study reports that initiation of tobacco use among students is significantly associated with their peers. Therefore, efforts should be made to involve students in healthy recreational activities. As this study focuses on school students, the findings would be especially helpful to initiate effective tobacco control programmes in schools. Extracurricular activities such as celebration of 'World No-Tobacco Day', tobacco control photo exhibitions, essay writing competition, etc. should become an essential component of school activity to discourage students from tobacco use and creating awareness in the adolescent minds. Teachers should also be given training on formal tobacco-control education, and should have easy access to tobacco control materials.

Cessation help should be made available up to the school level for better outreach.

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STUDY ON IMMUNIZATION COVERAGE IN URBAN SLUMS OF AHMEDABAD CITY

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ABSTRACT

Immunization plays an important role in reducing child mortality and morbidity. Children of the urban poor suffer accentuated vulnerability to illnesses, as outbreaks of vaccine preventable diseases are more common in urban slums. To assess the immunization coverage among children aged 12-23 months in the urban slums of Ahmedabad, a cluster survey based on probability proportion to size advocated under multi-indicator cluster survey by World Health Organization was used. With regard to vaccinations; it was found that coverage was the highest for BCG, DPT-1 and OPV-1 (83.3%) and the lowest for measles vaccine (71.7%). Only 66 (47.8%) children had received Vitamin A at the time of measles vaccination. The coverage rate for all the vaccines was slightly higher among males as compared to females. 70.3 per cent of the children were fully immunized and immunization coverage was found to be more among the males as compared to females though the difference was found to be statistically insignificant. The study reflects low immunization coverage and non-utilization of measles vaccination and Vitamin A supplementation.

Key Words: Multi-indicator cluster survey, Immunization, Vaccination, Children, Prevention, Morbidity and mortality.

Immunization forms the major focus of child survival programmes throughout the world. Roughly three million children die each year of vaccine-preventable diseases with a disproportionate number of these children residing in developing countries¹. A recent estimate suggests that approximately 34 million children are not completely immunized with almost 98 per cent of them residing in developing countries². In May 1974, the World Health Organization (WHO) officially launched a global programme known as Expanded Programme of Immunization (EPI) to protect all the children of the world against six vaccine-preventable diseases (VPDs) by the year 2000. EPI, launched in India in January 1978 was re-designated as Universal Immunization Programme (UIP) in 1985. The main aim of UIP is to avert morbidity and mortality due to the six childhood diseases.

The current scenario depicts that immunization coverage has been steadily increasing but the average level remains far less than the desired. Still only 44 per cent of the infants in India are fully immunized (NFHS-III) which is much less than the desired goal of achieving 85 per cent coverage³. Though there is increased accessibility of health care services in both urban and rural areas, still the utilization of health care services is low by the different segments of the society⁴. 27.8 per cent of the Indian urban poor live in slums and they are at the highest risk of disease transmission (Census 2001).

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Maternal and child health indicators among slum-dwellers show that their health is 2-3 times worse than people living in better urban areas⁶. Children of the urban poor suffer accentuated vulnerability to illnesses as outbreaks of vaccine-preventable diseases are more common in urban slums owing to high population density and continuous influx of new pool of infective agents with immigrating population⁷. This study was formulated with the objective of assessing the immunization coverage in the slums of Ahmedabad city in Gujarat. The multi-indicator cluster survey technique proposed by the World Health Organization was utilized for the assessment of health services coverage and their impact evaluation in the urban slums of Ahmedabad. Assessment of immunization coverage was done for six vaccine-preventable diseases amongst children aged 12-23 months.

METHODOLOGY

Multi-indicator cluster survey proposed by the World Health Organization with 30 clusters was undertaken in the slums of Ahmedabad. A cross-sectional study was conducted during the month of July–August 2006 that included 138 children aged 12-23 months from 1800 households. Trained doctors collected information regarding immunization coverage using a structured questionnaire. Data were entered in Epi-info and the findings are given in percentage. Children who received 1 dose of BCG, 3 doses of DPT and OPV each and one dose of measles were considered to have received full immunisation. Children who missed any one or more of above doses were considered as partially-immunised and children who did not receive even a single dose of vaccine were categorised in no-immunisation.

FINDINGS

A total of 1800 families with 9234 subjects were studied in 30 clusters. The population consisted of 52.8 per cent males and 47.2 per cent females in the selected clusters. There were 732 children under-five years of age. Average family size was 5.13 and sex ratio was 892 females per 1000 males. A total of 138 children aged 12-23 months were studied (Table 1).

TABLE 1
GENERAL INFORMATION OF THE HOUSEHOLDS STUDIED

Household Information	No.
Total number of the households studied	1800
Total number of persons in the household	9234
Total number of clusters studied	30
Total number of males in the families	4880
Total number of females in the families	4354
Total number of children under 5 years of age	732
Total number of children 12-23 months of age	138
Total number of women delivered in last year	120
Average family size	5.13
Sex Ratio = No of females/1000 male	892

TABLE 2
VACCINATION STATUS OF CHILDREN AGED 12-23 MONTHS (N=138)

	Male		Female		Total		Z value	P
	Yes		Yes					
Total children	75	54.35	63	45.65	138			
Vaccination card availability					122	88.4		
Fully immunized	57	76.0	40	63.5	97	70.3	1.3	>0.05
Partially immunized	18	24.0	23	36.5	41	29.7	0.9	>0.05
Non-immunized	0	0	0	0	0	0.0	0.0	>0.05
BCG	63	84.0	52	82.5	115	83.3	0.21	>0.05
DPT-1	64	85.3	51	81.0	115	83.3	0.61	>0.05
DPT-2	63	84.0	49	77.8	112	81.2	0.82	>0.05
DPT-3	63	84.0	47	74.6	110	79.7	1.21	>0.05
OPV-1	64	85.3	51	81.0	115	83.3	0.61	>0.05
OPV-2	64	85.3	50	79.4	114	82.6	0.82	>0.05
OPV-3	64	85.3	48	76.2	112	81.2	1.20	>0.05
Measles	59	78.7	40	63.5	99	71.7	1.64	>0.05
Vitamin A	39	59.0	27	41.0	66	47.8	1.39	>0.05
Dropout rates%								
DPT(I-III)		1.6		7.8		4.3		
OPV(I-III)		0		5.9		2.6		
BCG to measles		6.3		23.1		13.9		
DPT-I to measles		7.8		21.6		13.9		

Out of the total vaccinated children; findings in Table 2 show that 54.35 per cent were males and 45.65 per cent were females. Vaccination card was available for 122 (88.4%) of the children and for the remaining children, it was relied upon the parents' recall memory. With regard to type of vaccinations, coverage was the highest for BCG, DPT-1 and OPV-1 (83.3%) and the lowest for measles vaccine (71.7%). Only 66 (47.8%) children had received Vitamin A supplement at the time of measles vaccination. The coverage rate for all the vaccines was slightly higher among males as compared to females though it was found to be statistically insignificant ($Z=0.21$, $p>0.05$ for BCG, $Z=0.61$, $p>0.05$ for DPT-1 $Z=0.82$, $p>0.05$ for DPT-2, $Z=0.120$, $p>0.05$ for DPT-3 $Z=0.61$, $p>0.05$ for OPV-1 $Z=0.82$, $p>0.05$ for OPV-2 $Z=1.20$, $p>0.05$ for OPV-3, $Z=1.64$, $p>0.05$ for measles). The decline (dropout rate) from first dose to third dose was found to be minimal for DPT and OPV (2-4%). However, there was consistent decline in the coverage rate from BCG to measles (13.9%) and DPT-1 to measles

(13.9%). The dropout rate was found more among females as compared to males for all the vaccines. 70.3 per cent of the children were fully immunized and immunization coverage was found to be more among the males as compared to females though the difference was found to be statistically insignificant ($Z=1.3$, $p>0.05$). The rest of the children were partially immunized (29.7%). However, partially immunized female children were more as compared to the male children though the difference was not significant. ($Z=0.9$, $p>0.05$).

DISCUSSION

Immunization against common childhood diseases has been an integral component of mother and child health services in India since the adoption of the primary health care approach in 1978. The UIP was introduced by the Government of India in 1985-'86 to cover at least 85 per cent of the infants against the six vaccine-preventable diseases by 1990³. It was hoped that by the turn of 20th century, the coverage of children for vaccination against the 6 VPDs would reach 100 per cent. In the present study, the vaccination coverage among children aged 12-23 months reflects that 70.3 per cent of the children are fully immunized which is less than the desired goal of achieving 85 per cent coverage⁴. Similar level of coverage was documented in other studies by Khokhar et al and Kar et al in urban slums of Delhi^{8,9}. Singh et al have reported the complete coverage for India to be lower at 63.3 per cent¹⁰. National Family Health Survey-III reports that only 54.7 per cent of the urban children are fully vaccinated⁴. According to recent studies on routine immunization coverage, there has been a considerable decline in the coverage in some major states¹¹⁻¹⁴.

According to National Family Health Survey-III conducted during 2005-'06; in Gujarat, 89.6 per cent of the children received BCG, 71.7 per cent received three doses of Polio vaccine, 67 per cent received three doses of DPT vaccine and 73.6 per cent of the children received measles vaccine. In the present study, vaccination coverage for all the vaccines was almost at par the NFHS-III data. In the current study, it has been seen that coverage of measles was the lowest as observed by others also^{9,10}. The low coverage of measles vaccine as compared to other vaccines reflects that special campaigns for measles vaccine need to be organized. All the children who receive measles vaccination should also receive Vitamin A. There was no gender discrimination in the immunization coverage of the children. There was gradual increase in the dropouts from BCG to measles vaccination and DPT to measles vaccination (13.9%). The main reason for dropout or non-immunization of the children may be ignorance and illiteracy among parents which can be improved through effective communication efforts and other awareness campaigns. All the children should be provided with vaccination cards. State routine immunization monitoring system is a step towards prevention of VPDs which needs to be done at regular intervals.

CONCLUSION

The results in the present study prove that even after fifteen years of implementation of the UIP, routine immunization has not reached all. Full immunisation coverage of children was primarily low due to not immunised with measles vaccination. It is suggested that some form of health care packages under the Maternal and Child Health (MCH) programme; such as iron, folic acid or Vitamin A supplementation, or the provision of iodized salt can be given to attract parents especially to sustain contact

for the time between DPT-3 and measles vaccinations. This is required to hold the parents' attention during non-immunization periods which can also contribute towards health status of the mothers and children¹⁵. Steps for improvement should focus on bottlenecks by reducing the dropout rate from BCG to measles and DPT-1 to measles. State routine immunization monitoring system needs to be geared up for effective 100 per cent immunization coverage.

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KNOWLEDGE AND AWARENESS OF NURSING STUDENTS ABOUT HIV/AIDS

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ABSTRACT

The study was conducted during the period from 1997 to 2000 among 95 nursing students in the nursing school attached to the Himalayan Institute of Medical Sciences, Dehradun, Uttarakhand to find out their knowledge and awareness regarding HIV/AIDS. Only 76 per cent of them had heard of HIV/AIDS and for 83 per cent of the participants, the source of information was television (TV). 98.94 per cent of the students knew that HIV can be transmitted through blood transfusion while 97.89 per cent of them knew that it could transmit through unsterilized needles and syringes. Common misconceptions among the respondents about HIV/AIDS were HIV transmission through hugging, sharing toilet seats, towels, utensils, shaking hands and even mosquito-bites. Out of the total of 95 nursing students who perceived that by changing behaviour one could avoid getting AIDS; 60 per cent of them considered it important to be faithful to one's life partner. 70 per cent of them knew that blood transfusion related infection can be reduced by receiving screened blood. More than 60 per cent of the students opined that TV is the best mode to impart awareness to the community followed by posters (90%), radio (78%), etc.

Key Words: Knowledge, Awareness, Nursing Students, HIV/AIDS, Transmission.

Every HIV positive patient is a potential candidate for disease transmission to the attending health care workers. So, the risk of accidental transmission of HIV in such cases, depend on their safe practices including universal precautions which in turn, depends on their awareness and knowledge regarding the epidemiology of the disease. The accidental transmission of HIV infection to health care workers during occupational exposure, are the real threats today¹. Many such cases have been documented by NACO and various other researchers.

Amongst the health care professionals, nurses and nursing students are an important component of the health care delivery system. Since they are the one who are responsible for the constant care of in-patients and thus, they come in close contact with blood and other body fluids of patients. Due to frequent and prolonged contact, they are being identified as a potential risk group for the HIV/AIDS spread. To reduce the transmission, adequate knowledge about the disease and practice of safety measures are of great importance. Generating awareness regarding HIV/AIDS in this group is crucial for AIDS management and the prevention of HIV spread.

To update health care workers' (HCW) knowledge about HIV/AIDS, various trainings

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are being conducted by the government institutions as well as non-governmental organizations worldwide. Data regarding the baseline knowledge of HIV/AIDS amongst HCWs and impact of these training programmes are required to modify the contents of the programme further. Keeping these two objectives in view, a cross-sectional study was carried out to assess the awareness of nursing students about HIV/AIDS and to identify the areas of confusion that might serve as an important aspect of educational intervention.

METHODOLOGY

A cross-sectional study was conducted amongst the first, second and third year nursing students of the nursing school attached to Himalayan Institute of Medical Sciences, Dehradun, Uttarakhand. Out of the total of 100 students, 95 nursing students whose questionnaires were completely filled, were included in the study while five proformas were not included being incomplete. The purpose of the study was explained to all the participants. Information was collected on a pre-designed, pre-tested and self-administered questionnaire. They were informed that the whole exercise was confidential, anonymous, voluntary and purely for academic purpose. Questionnaires were distributed to all the students simultaneously during their regular morning classes. For the students who were on leave or off duty on the day of survey, the questionnaires were circulated on subsequent days. Data collected were entered in Microsoft Excel programme and analyzed using the SPSS software.

FINDINGS

There were 100 students attending the nursing course conducted at the institution. Out of 100 students, 95 students' responses were taken into consideration for study. The mean age of the students was 18.94 years. All the students had completed 12th standard.

Knowledge about HIV/AIDS

It was found that all the respondents had heard of HIV/AIDS. 39 per cent of them informed that they knew about HIV/AIDS for the last five years. For 83 per cent of the students, the main source of information regarding HIV/AIDS was television (TV) followed by newspaper/magazine (31%), radio (28.5%) and peers (26%).

Of the 95 students, 94 (98.94%) knew that HIV can be transmitted through blood transfusion, 97.89 per cent knew that it could be also transmitted through unsterilized needles and syringes. Sexual route is the most important route of infection was known to 95.79 per cent of the students. Transmission from mother to child is also possible was known to 74 per cent of the students. The common misconceptions about HIV/AIDS among them were that HIV transmission can also occur through hugging, sharing of toilet seats, towels, utensils, shaking hands and mosquito-bites (Table 1). Findings given in Table 2 reveal that among the various types of sexual intercourse that can transmit HIV infection, 83.16 per cent thought that vaginal intercourse was the commonest mode. Anal intercourse can lead to increased risk of transmission of disease was not known to 87.37 per cent of the participants (Table 2). Of the 95 students, 72 (76%) knew that safe sex means having sex using condom and they were also of the opinion that this is the best method to prevent HIV/AIDS. 60 per cent of the respondents agreed that maintaining faithfulness to spouse could also protect

individuals against HIV/AIDS. 87 per cent of them knew that sharing of needles and syringes is the commonest mode of infection amongst injectable drug users. 41 per cent of the nursing students were aware that visiting commercial sex workers or using intra-venous (IV) drug could lead to many sexually transmitted diseases. 50 per cent of the respondents knew that there are chances of contacting hepatitis and HIV from such persons using IV drugs.

Knowledge about Methods of HIV /AIDS Prevention

Results given in Table 3 show that 70 per cent of the students knew that blood transfusion related infection can be reduced by receiving screened blood while only 10 per cent had viewed that blood should not be received from any paid or professional blood donor. Out of the total of 95 students, 48.42 per cent were of the attitude that they would receive blood if it has been screened for hepatitis only. More than 15 per cent of them were ready to receive blood/blood products available from anywhere in case of emergency and even from paid/professional donors.

TABLE 1
KNOWLEDGE REGARDING TRANSMISSION OF HIV/AIDS INFECTION
(Multiple Answers)

Sl. No.	Route	Respondents (n=95)	
		No.	%age
1.	Blood Transfusion	94	98.94
2.	Unsterilized Needles/Syringes	93	97.89
3.	Sexually	91	95.79
4.	Mother to child (Transplacental)	71	74.74
5.	Hugging	06	6.31
6.	Sharing of Glasses	02	2.10
7.	Towels	02	2.10
8.	Toilet Seats	02	2.10
9.	Urine	02	2.10
10.	Hair Cutting	01	1.05
11.	Mosquito Bites	01	1.05

TABLE 2
AWARENESS REGARDING MODES OF TRANSMISSION OF HIV/AIDS BY
SEXUAL ROUTES
(Multiple Answers)

Sl. No.	Modes	Respondents (n=95)	
		No.	%age
1.	Vaginal intercourse	79	83.16
2.	Anal intercourse	12	12.63
3.	Don't know	04	4.21
4.	None	06	6.31

TABLE 3
OPINION REGARDING SAFETY OF BLOOD TRANSFUSION PRACTICES
(Multiple Answers)

Sl. No.	Blood Transfusion Practice	Respondents (n=95)					
		Safe		Not Safe		Don't Know	
		No.	%	No.	%	No.	%
1.	Donate blood at well reputed blood banks	75	78.95	15	15.79	05	5.26
2.	Receive blood which is screened for Hepatitis	46	48.42	46	48.42	03	3.16
3.	Receive blood from paid/ professional blood donors	10	10.53	84	88.42	01	1.05
4.	Receive any blood product anywhere	05	5.26	86	90.53	04	4.20
5.	Receive blood screened for HIV, HBV & HCV	66	69.47	27	28.42	02	2.10
6.	Receive any available blood during emergency	05	5.26	87	91.58	03	3.16

When asked whether they will like to join a campaign against HIV/AIDS, 94 per cent of them reported that they would love to do so. To impart HIV/AIDS awareness to the community, more than 60 per cent of the participants expressed that TV, posters, radio, dramas, group discussion, etc. are the various modes which can be adopted but most of them considered television as the best mode to disseminate information about HIV/AIDS and spreading awareness among the public (Table 4).

TABLE 4
OPINION REGARDING MODE OF SPREADING EFFECTIVE AND CORRECT AWARENESS ABOUT HIV/AIDS
(Multiple Answers)

Sl. No.	Modes	Respondents (n=95)	
		No.	%age
1.	T.V.	88	92.63
2.	Posters	85	89.49
3.	Radio	74	77.89
4.	Nukkar Dramas	70	73.68
5.	Group Discussion	56	58.95
6.	Special Lectures	52	54.74
7.	Video	44	46.31
8.	Cartoons/Comics	41	43.16
9.	Essay	30	31.58
10.	Debates	27	28.42
11.	Biraha	25	26.31

DISCUSSION

HIV infection is not only a significant health problem but also one of the most important social issues of the twenty-first century². While the basic information about the disease like causative agent, modes of transmission, etc. were known to most of the participants, deficiencies in their knowledge and awareness in many critical areas of the disease were noticed. These deficiencies in knowledge influence their behaviour thus, exposing them to the risk of transmission. As it can be seen from the present study that misconceptions regarding transmission of the disease are high which can further lead to discrimination in patient care or apprehensions and stress amongst the health care providers while dealing with such patients. An awareness study on HIV/AIDS on nursing students of Delhi³ also revealed a high level of popular misconceptions. Similar misconceptions have also been reported among medical school faculty and students⁴. Students' awareness and opinion about HIV/AIDS in the current study was fairly good which is similar to study findings by Dutta et al in Kolkata⁵ and Kumar et al in Delhi among the nursing staff⁶.

Students' attitude with regard to receiving blood looks to be quite a casual one. Fifteen per cent of them were ready to receive unscreened blood in case of emergency. They were ready to accept blood donated by professional blood donors and not very particular about screening of blood for HIV and hepatitis B. This finding is similar to the findings of another study conducted among staff nurses of Banaras Hindu University⁷. Perhaps they were not aware of the fact that the probability of contracting the disease through blood or blood product is more than 90 per cent. They require proper knowledge in this regard as they are cornerstones of our health delivery system.

In the present study, television appears to be the main source of information on HIV/AIDS. This suggests that this mass media tool has reached to most of the population and may be utilized properly to create awareness. It is very encouraging to see that 94 per cent of the students are eager to participate in campaigns against HIV/AIDS which indicates that they are ready to equip themselves with the correct knowledge regarding the disease. This also reflects that they are motivated to practice universal precautions to protect themselves as well as their patients from the dreadful disease. Steirborg⁸ found positive correlation between knowledge and attitudes. He also observed that nursing students having HIV/AIDS care experience had significantly more positive attitude than those without such experiences. However, it is difficult to comment upon Indian nursing students because of their inadequate exposure as the number of full-blown AIDS cases requiring hospitalization is still very low in the country⁹. Yet, to prepare them to face the challenges in future, their training should include not only the role they are required to play but also there should be continuous training programmes to sustain the effect so that it could enable them to address fear, discomfort and anxieties about HIV/AIDS.

CONCLUSION

Based on review of the reported literatures from our country on this topic till now and the outcomes of the present study, it is clear that our efforts in the last two decades in spreading the knowledge about the disease have met with some limited success. The fact that increasing number of cases of HIV/AIDS are being reported from various parts of the world coupled with increased incidences and prevalence of the disease

in the bridge population, it is imperative for the health care policy makers to review and reorient the ongoing training programmes¹⁰. While on one hand, serious deficit in knowledge in specific areas need to be addressed, tremendous effort has to be put in to devise strategies to convert the theoretical knowledge into 'safe practices'.

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