

STUDIES ON ADOLESCENT GIRLS

An Analytical Review



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Foreword

Adolescents in India, account for one-fifth of the total population and are a significant human resource that needs to be given ample opportunity for holistic development towards achieving their full potential. Not only are needs of the adolescents related to their physical development, but also to their emotional and psycho-social development. Past research experience has shown that conducive environment facilitates holistic development of adolescents into mature and productive human resource and several negative influences, affecting the socio-cultural growth of adolescents, are preventable. Adolescent girls have their own developmental needs, which are peculiar to them and need to be addressed separately.

The Institute has compiled and reviewed the research on various aspects of adolescents' growth and development undertaken in the last five years to analyse the trends in development of adolescent girls in the country, their needs related to basic health and nutrition, psychological development, prevention of substance abuse and trafficking. gender differentials in development, problems related to adolescent pregnancy and poor reproductive health, as well as issues related to life skills education. The compilation has been divided in to nine sections, namely – Adolescent macronutrition: micronutrient malnutrition: adolescent health and morbidity: adolescent pregnancy and population control; mental health; menstrual practices; substance abuse, child labour and trafficking; sex education, life skill education and nutrition and health education. Studies in each section are preceded by an analysis of the trends revealed by research in last five years, the research gaps, policy and intervention related indications for holistic development of adolescent girls and the future research agenda. I hope this document will be useful for all stake holders in development and empowerment of adolescent girls within the government and the voluntary sector, besides academicians and developmental professionals.

I place on record my appreciation of the efforts put in by Dr. Tejinder Kaur in compiling and analysing the research studies, with assistance of Ms. Indarilin Dhkar and Ms. Geeta Kohli and also Mrs. Sangeeta Bhatia for processing the manuscript. Contribution of Dr. Dinesh Paul, Additional Director and Dr. Sulochana Vasudevan for guiding the project team is also acknowledged.



(A.K Gopal)

Director

I
Macronutrition and Growth

Macronutrition and Growth

Availability of food for all the population has generally been a matter of serious concern in our country. Not only the food production and distribution mechanisms are under stress, but also the intra-family food distribution is influenced by gender bias in the face of limited food availability at home. The food security in rural and urban households manifests in human growth and development as reduced parameters of height and weight, besides lower body mass.

Recent studies have been taken up to evolve growth standards for the Indian adolescents, including adolescent girls. Research during past five years has shown that adolescent girls have better nutritional status, in terms of "weight-for-age" and body mass index (BMI) than adolescent boys, but there was a slow growth after 13-14 years age, leading to lowering of parameters below the Indian Council of Medical Research (ICMR) standard, which should be a cause of concern for the programme implementers and planners.

A statistically significant increase in height (from 2.5 to 3.5 cm) and weight (1 to 1.5 kg) indicates some improvement in overall growth and development of adolescent girls over the past two decades. Socio-economic and demographic factors still have an impact on adolescent growth and nutrition, as stunting decreased with increase in per capita income and land holding. Adolescent girls were thinner than adolescent boys. More than one-third of the girls were chronically energy-deficient and underweight.

Research has shown that the calorie and protein intake of adolescent girls was below the recommended level and the economic vulnerability of the family increased the extent of nutritional deficit of these macronutrients.

The life style and eating patterns of adolescents assume significance while studying their macronutrition. Eating patterns of urban affluent adolescents reveal higher portions of food being consumed away from home. Data during past five years has revealed that multiple factors, including their attitude, subjective norms, perceived behavioural control and their beliefs influence healthful dietary behaviour of adolescents and these have to be kept in mind while planning nutrition education programme and communication interventions for culturally diverse population groups.

Life style has greatly contributed to obesity among adolescent girls over the last five years and obese children have been reported to be physically less active, more home-bound, spending more time on internet, playing video games and watching TV, as well as having easy access to fast foods in urban settings.

The indicators of growth and development may be reviewed for community health and nutrition related programmes to minimise confusion arising out of the usage of the terms 'thinness', 'chronic energy deficiency' and 'wasting', as well as employing these terms to determine the extent of macronutrient malnutrition.

The commitment to promote food security within the community and at the household level through appropriate strategies for the rural and urban settings would go a long way in ensuring better growth and development of adolescents. Gender differentials at the household level in intra-family food distribution need to be removed through gender sensitisation and improving availability of food within the family.

Future research in the following areas would help in better understanding and assessment of the dynamics of energy balance and growth patterns in a rapidly changing society and transitory effects of globalisation of our economy on adolescent growth and macronutrition:

- Studies on intake and energy expenditure in cases of chronic energy deficiency and obesity among adolescent girls.
- Longitudinal studies in life style leading to adolescent obesity.
- Rapid appraisal study on intra-family food distribution.

Physical Growth Standards for Urban Adolescents (10-15 years) from South Gujarat

Thakor Hitendra G, Kumar Pradeep, Desai Vikas K, Srivastava Ratan K. Indian Journal of Community Medicine, April-June 2000; XXV (2): 86-92.

INTRODUCTION

Achievement of optimum growth during adolescence is of utmost importance in maintaining good health thereafter. Growth monitoring by anthropometric measurement during this period, is not only an important health indicator but also a predictor of various morbidities in the community. Most of the attempts of generating anthropometric profile have so far focussed on pre-school children and a very few have dealt with adolescent age groups. Non-availability of an anthropometric profile for adolescents of South Gujarat, especially for lower middle and lower social class prompted to design this study.

OBJECTIVES

The major objectives of the study were to record anthropometric data and calculate BMI of adolescents and to compare these values with Indian Council of Medical Research (ICMR) and NCHS standards; and to study the correlates of weight with age, height and BMI and outdoor playing activities (hours spent per day).

METHODS

The study was carried out in 12 schools (upto the seventh standard), selected by stratified random sampling technique, from a total of 204 such schools run by Surat Municipal Corporation (SMC), catering to the children of lower social class. Selected schools were covered entirely and all the 2,250 children (1,092 boys and 1,158 girls) above 10 years of age were included in the study. Statistical tests such as z-test and unpaired t-test were used, besides simple and multiple regression equations for weight and height being constructed. Apart from calculating correlation coefficients (r) for weight with age, height, body mass index (BMI) and playing outdoors, coefficient of determination (r^2) were also calculated to measure the extent or strength of the association that exists between the two variables.

RESULTS

- ❑ Out of 2,250 children, most belonged to 11 and 12 years of age (30.8% each), followed by 13 (15.8%), 10 (10.1%), 14 (8.9%) and 15 (3.5%) years of age.
- ❑ The height correlated positively with the age. In boys, mean height from its minimum (133.7 ± 6.3 cm) in 10 years age rose to the maximum (153 ± 11.1 cm) at 15 years age. Similarly, in girls, mean height increased from 132.8 ± 10.9 cm in 10 years to 150 ± 20.6 cm in 15 years age.
- ❑ Median (50th percentile) values largely coincided with the mean values in various age groups and both the sexes. Mean height was slightly more in girls than boys at various ages except at the extremes (10 to 15 years).

- ❑ Body weight also increased in boys, as well as girls with the increase in age. In boys mean weight increased from 25.0 ± 4.3 kg (10 years) to 36.2 ± 7.4 kg (15 years). Weight gain was more in later age groups. In girls also, similar trend was seen, where by the weight increased from 26.1 ± 4.8 kg at 10 years to 38.0 ± 7.1 at 15 years. Mean, as well as median weights were higher for girls (than boys) at all ages and the differences were statistically significant at different ages except 10 to 15 years.
- ❑ Weight correlated positively and significantly with age, height and BMI in total population, as well as in various sub-groups. However, the time spent per day on outdoor games exhibited a weak and negative correlation, which was also statistically significant in total population, girls and various age groups (except 10-15 years).
- ❑ Height and BMI showed maximum influence on weight and could explain 48.4 to 10.8 per cent and 69.5 to 21.7 per cent of weight variation. However the variation in weight explained by it was minimal (0.1-5.4%).
- ❑ Height and weight, both are more age-dependent in boys than girls, as the r^2 were more (0.23 and 0.27) in boys, than in girls (0.19 and 0.20). Multiple regression equations to calculate weight for a given age, height and sex were more precise as the r^2 values were 0.61 and 0.56 for boys and girls, respectively.

CONCLUSION

Present study provided the growth standards for the school-based population (10-15 years age) of Surat City. Appraisal of nutritional status adjudged by the weight, height and BMI revealed that the median parameters of the population were comparable to the ICMR standards but were for below the 50th percentiles of NCHS standards. Girls exhibited better nutritional status in terms of “weight for age” and the BMI, than boys. In other words, the variation in age and height in the present study could explain 61 and 56 per cent variation in body weight in boys and girls, respectively. Further, a little slowing down of growth was observed in the present study in both sexes (in terms of weight and height) after 13 or 14 years of age. While upto the age of 12 or 13 years, parameters were little higher than those of ICMR, thereafter, the ICMR standards were higher than the parameters of the present study.

Lifestyle Associated Risk Factors in Adolescents

Singh A K, Maheshwari A, Sharma N, Anand K. Indian Journal of Pediatrics. October 2006; 73(10) : 901-906.

INTRODUCTION

Increasing trends of non-communicable diseases is a worldwide phenomenon. Until now risk factors like high blood pressure, obesity, smoking, alcohol consumption, low physical activity, etc., contributing to the development of non-communicable diseases were more prevalent in the developed countries. Non-communicable diseases like obesity, diabetes mellitus, hypertension, coronary artery disease, stroke in adults have been related to the prevalence of risk factors in childhood. Hence, there is a definite need to monitor the prevalence of these risk factors in this age group and plan intervention measures for the same.

OBJECTIVE

The present study was conducted to evaluate the prevalence of lifestyle-associated risk factors for non-communicable diseases in apparently healthy school children in an urban school of Delhi using standard criteria.

METHODOLOGY

The survey was carried out among 510 students [279 boys and 231 girls] aged 12 to 18 years from classes 9th-12th of a school in New Delhi, through an age appropriate modified GSHS (Global School-Based Student Health Survey) on risk factors of non-communicable diseases. Dietary habits, physical activity and the time spending pattern was studied. Any smoking or alcohol consumption experience, any kind of stress and family history of hypertension and obesity in parents or grandparents was asked. Anthropometric measurements and blood pressure were taken. Statistical analysis was done using Epiinfo version 3.3 and SPSS version 11.5.

RESULTS

- ❑ About one-third of the adolescents (34.4% boys and 29.4% girls) ate fast food more than three times a week. In addition, 31.5% boys and 16.5% girls committed having added extra salt to their food/salads. An extremely low consumption of fruits and vegetables across all groups. Only 39.4% adolescents had fruits daily. It did not seem to contribute in any way as a risk factor.
- ❑ About two-fifths (18.3% boys and 22.2% girls) responded as not being physically active for 60 minutes per day, atleast three days in a week.
- ❑ 30.1 per cent boys and 26.8 per cent girls admitted to having tried alcohol atleast once and the proportion of children having consumed alcohol in the past 6 months. Further, 3.6 per cent boys and 1.3 per cent girls smoked more than once in a month.
- ❑ Family history of hypertension was reported among 50.5 per cent boys and 48.5 per cent girls, while 22.9 per cent boys and 29.9 per cent girls stated that they had a family history of obesity. Overweight or obesity was found among 18.6 per cent boys and 16.5 per cent girls. Systolic hypertension (BP> 140) was found

in 11.82 per cent boys and 3.03 per cent girls, while diastolic hypertension ($BP > 90$) was present in 3.58 per cent boys and 0.4 per cent girls.

- ❑ The risk factors associated with systolic blood pressure included sex, body mass index (BMI), adding extra table salt, being obese and smoking. The other risk factors that were found to be non-contributory, were fruit intake, being non-vegetarian, consuming fast food, physical inactivity, sporting activities, alcohol intake, family history of hypertension and stress.
- ❑ A positive correlation was found with increase in diastolic blood pressure and family history of obesity. Family history of hypertension had a positive correlation with diastolic blood pressure ($p=0.046$). Stress did not appear to be contributory to the risk factors.
- ❑ Increase in BMI contributed to increase in systolic blood pressure ($p=0.001$) and diastolic blood pressure ($p=0.003$). Children with higher BMI were actually consuming lesser fast food ($p=0.001$), which can best be explained on the basis of dietary modification instituted at home, considering their being overweight.

CONCLUSION

The increase in childhood obesity over the past several decades, together with the associated health problems and costs, is a cause of grave concern among health care professionals and parents. An epidemic-like increase in the proportion of obesity would be largely attributed to the transformation in the lifestyles of young children from being physically active and consuming more of home cooked food to being more and more home bound, spending time on the internet, video games and TV, as well as the easy accessibility of fast food with growing prosperity. Similar kind of a change in lifestyle is also taking place quite steadily in children of developing countries, especially in urban areas and more so in the affluent class.

Intervention is, therefore, a necessary step at school level itself for the prevention of non-communicable diseases. Among all settings, school is a priority setting to target adolescents because it offers substantial opportunities for prevention.

Calorie and Protein Intake and its Determinants among Adolescent School Girls in Delhi

Sharma A K, Shukla D, Kannan A T. Indian Journal of Community Medicine, Jan- March 2005; 30(1) : 8-10.

INTRODUCTION

Adolescence is a crucial period in a woman's life. Health and nutritional status during this phase is critical for the physical maturity, which in turn influences the health of the offspring. It is seen that the rate of low birth weight, prematurity and neonatal and infant mortality is high among children born to malnourished adolescent girls. Adolescents constitute 21.2 per cent of the total population of India, where malnutrition is an important public health problem among children and adolescents. Adequacy of dietary intake in terms of calorie and protein are important in order to improve the chances of child survival and safe motherhood.

OBJECTIVES

This study was conducted to examine the calorie and protein intake and its determinants among adolescent school girls in Delhi.

METHODOLOGY

A cross-sectional study design was selected. In order to determine the factors influencing calorie and protein intake, adolescent girls from a government sponsored school belonging to lower socio-economic strata and students from a privately owned school belonging to higher socio-economic strata were recruited for the study. The estimated sample size was 168 in each group, in the age range of 13 to 17 years.

A pilot survey was carried out among adolescents using a food frequency questionnaire to identify the food items commonly eaten by them. A univariate analysis was performed using unpaired t-test and ANOVA multivariate analysis was undertaken using linear regression.

RESULTS

- ❑ The mean protein and calorie intake among girls from private school were 1.91 and 1.80 times higher than that among the government school girls, respectively.
- ❑ An inverse linear association was observed between monthly income of the family, family size and number of total siblings with respect to protein and calories intake.
- ❑ The mean protein intake of 298 students was 44.09 ± 20.9 gm. The protein intake on an average was 30% less than that recommended by Indian Council of Medical Research (ICMR). The deficit was more pronounced in case of government schools students (50%) than the private school students (5%). This could be attributed to poor economic status of the children studying in government schools.
- ❑ Regarding calorie intake, it was observed that the overall calorie intake was quite poor, as compared to the recommended values. The mean calorie intake for 301 adolescent girls was 1155.9 ± 522.7 Kcal. which

is only 56 per cent of recommended daily calorie intake. For the government and private schools, the values were 827.4 ± 191.2 Kcal. and 1491.3 ± 541.0 Kcal, respectively.

- ❑ In each weight and age category, the calorie intake was less, as compared to the recommendations of ICMR.
- ❑ The deficit in calorie intake in this study was found to be 20-35 per cent in various age groups of adolescent girls from private schools and 55-64 per cent in case of girls from government schools.

CONCLUSION

The calorie and protein intake of the adolescent girls is much lower among adolescent girls from the lower socio-economic group. Even in the comparatively better economic status girls, the intake fell short of requirement, which could be attributed to the concern for maintaining a slim look. In this study, income and number of siblings emerged as predictor variables.

Report on Diet and Nutritional Status of Adolescents

NNMB. NNMB Technical Report No.20, NIN ICMR Hyderabad 2000; 20: 1-25.

INTRODUCTION

In view of very little information available about dietary and nutritional status of adolescents in India, an assessment of the current diet and nutritional status had been made utilising the data collected by NNMB 1996-97. The time trends in the same were determined by using data that was collected by NNMB in 1975-79 from the same villages.

METHODOLOGY

For both the surveys a similar sampling procedure was adopted, covering 120 villages in each state. Of these, 12,090 (75%) villages were those covered earlier while the remaining 25 per cent (30 villages) were a new set of villages. From each of the selected villages, 20 households (HHs) were selected adopting 'cluster sampling method' with 5 clusters of 4HHs each. Thus, total coverage per state was 2,400 HHs with data obtained on 12,124 adolescents for anthropometrics, and 2,579 for 24 hour recall of dietary information. Information on demographic and socio-economic particulars, nutritional assessment in all the 20 selected HHs. Dietary survey in every alternate HH (10 HHs). One-day weighment diet survey was conducted in 5HHs and 24-hour recall was conducted in rest of the 5 HHs. Mean heights and weights were calculated according to age and sex, which were compared with NCHS standards. Assessment of undernutrition and extent of stunting were calculated using reference of NCHS values for 'weight for age' and 'height for age'

RESULTS

- ❑ Most of the adolescents belonged to families involved in agriculture with per capita income (PCI) of about Rs.250/- per month and were residing in their own houses (97.9%).
- ❑ 23 per cent adolescent girls got married before the age of 18 years. Among married adolescent girls, 24.1 per cent were 'at risk' due to short stature (< 145 cms) and 18.6 per cent were underweight (< 38 kg).
- ❑ Overall prevalence of stunting (< median height-25 D) was similar in both the sexes (boys: 39.5% and girls: 39.1%).
- ❑ The percentage of stunting increased as age advanced in boys (34.7% at 10 years to 59.7% at 17 years). While the same increased with increasing age (32.5% to 46.7%) upto 13 years, after which it decreased to 37.2 per cent at the age of 17 years.
- ❑ Undernutrition (< median-2SD of NCHS weight for age) in males was more (53.1%) as compared to females (39.5%) in case of body weight. In case of height, the proportion of boys with undernutrition increased from 41.6 per cent at 10 years to 68.6 per cent at 17 years, while in girls, the extent of undernutrition increased (37.8% to 45.3%) till the age of 12 years and plateaued at 39.0 per cent in the later age groups. Thus, the percentage of undernutrition was higher in boys than in girls.

- ❑ Median body mass index (BMI) values for age and sex were calculated and compared with NHANES survey in USA to assess the difference between the ages. It was found that the extent of undernutrition was considerably less among girls than their male counterparts in each of the age groups.
- ❑ The mean daily intakes of different foods according to sex were almost similar in both the sexes. Intake of all foods, except cereals & millets and roots & tubers was below the recommended daily allowance (RDA) in all ages. More so, consumption of protective foods such as green leafy vegetables (GLVs), fruits and milk were grossly inadequate.
- ❑ In general, in both the sexes, the proportion of adolescents consuming inadequate amounts were higher in case of macronutrients than that of protein, energy and total fat. More than 2/3rd of adolescents were consuming <70 per cent of RDA for vitamin A and riboflavin. Extent of deficiency with respect to iron was higher in boys than in girls.
- ❑ A secular trend in growth was observed. The adolescents measured during 1996-97 were significantly taller and heavier than those measured in 1975-79. An increase of 2.5 to 3.5 cm and 1 to 1.5 kg was observed which was statistically significant ($p < 0.05$).
- ❑ In case of most of the nutrients there was reduction in the proportion of adolescents having deficient dietary intakes over the past two decades. The extent of decline in case of iron and vitamin A was less as compared to other nutrients. Intakes of income elastic foods such as fish, fruits, milk, fats and oils and sugar increased in all ages.
- ❑ The extent of stunting was significantly higher in those living in kutcha houses (40.5%), and those belonging to labourers' families (40.3%).
- ❑ The extent of stunting decreased with increasing size of land holdings and the prevalence of stunting decreased with increasing per capita income.
- ❑ The percentage of undernutrition was higher among Hindus (46.2%) and those from ST community.
- ❑ The percentage of undernutrition was less in adolescents belonging to extended families (40.7%) as compared to joint families (48.6%).

CONCLUSION

Data on rural adolescents shows that most girls are still married during adolescence. One fourth to one fifth among the married adolescent girls are at risk during pregnancy on account of weight and height-related parameters. Undernutrition in girls increases upto the age of 12 years and as adolescence progresses without improvement in their food intake, it stagnates and results in 40 per cent adolescent girls being stunted, indicating that the proportion of stunting increased with age. The consumption of foods other than cereals and starchy foods was higher than other type of foods, indicating dietary imbalance attributable to several factors.

Even though time trends indicate better food intake by adolescent girls today, yet it is grossly unsatisfactory as 70 per cent still consume food below RDAs. Additionally, socio-economic factors like larger landholdings and better-constructed houses are indicators of better macronutrition in adolescent girls. Family structure was observed to have an effect on nutritional status of adolescent girls, as girls from extended families were observed to be better nourished than those from joint families.

A Study of Growth Parameters and Prevalence of Overweight and Obesity in School Children from Delhi

Marwaha R K, Tandon N, Singh Y, Aggrawal R, Grewal K, Mani K. Indian Paediatrics, November 2006; 43(11): 943-952.

INTRODUCTION

There has been an increase in the percentage of overweight and obese children in affluent urban families of India in the past decade. Evaluation of obesity in children is important as it provides an opportunity to identify the problem and prevent disease progression into adulthood. Childhood obesity is associated with several risk factors for later heart disease and other chronic diseases including dyslipidemia, hyperinsulinemia and hypertension. Body mass index (BMI) in childhood changes substantially with age. Hence, cut off points related to age would better define child obesity. There has been a trend towards increasing prevalence of overweight and obesity among developing countries. The data on prevalence of childhood obesity from India, which is also undergoing an epidemiological transition, is scant. Hence, the study was planned.

OBJECTIVES

The major objectives of the study were to assess the height, weight and of school children from Delhi and generate percentile charts as appropriate for age, gender and socio-economic status and to determine the prevalence of overweight and obesity in school children from low and upper socio-economic status (LSES and USES, respectively).

METHODOLOGY

School children from both sexes in the age group of 5-18 years, belonging to one Government (LSES group) and one private school (USES group), from each of the four different geographical zones in Delhi were studied. Of the 21,485 subjects, 8,840 (3566 boys and 5274 girls) belonged to LSES group and 12,645 (6197 boys, 6448 girls) made up the USES group. The subjects underwent assessment of height, weight and calculation of BMI. Children were classified as normal, overweight and obese as per IOTF guidelines. The statistics for anthropometric variables were computed by mean and standard deviation. To see the significant difference between two groups of continuous variables, student t-test (unpaired) was applied.

RESULTS

- ❑ A total of 21,485 children in the age group 5 to 18 years were evaluated for height, weight and BMI. These included 12,645 children (6197 boys, 6448 girls) from the USES and 8,840 (3566 boys, 5274 girls) from the LSES.
- ❑ Percentile charts for height, weight and BMI were constructed separately for USES and LSES children, depicting the 3rd, 25th, 50th, 75th and 97th percentile for height and weight. These charts clearly showed a secular trend when compared with ICMR charts and Agarwal charts at each age group and for various percentiles.

- ❑ On comparing the ICMR charts (all India data) with the LSES group, it was found that children today are taller and heavier as compared to their counterparts 50 years ago. Similarly, comparison of the data, with respect to the height and weight percentiles of Delhi children reported in Aggarwal study, revealed that USES children today are already taller and heavier than their counterparts 15 years ago.
- ❑ Percentiles for weight of boys and girls in both socio-economic groups revealed that children from LSES weighed significantly less as compared to those from USES. This difference was seen in both sexes, in all age groups and across all percentile values. The BMI percentiles for children from LSES were significantly lower than those from USES, across all age groups and for both sexes.
- ❑ The overall prevalence of overweight and obesity among the LSES boys was 2.66 per cent and 0.42 per cent, respectively, while that among boys from USES was significantly higher at 16.75 per cent and 5.59 per cent, respectively ($p < 0.05$).
- ❑ However, the prevalence of overweight and obesity among the LSES school girls was 2.14 per cent and 0.28 per cent, as compared to 19.01 per cent and 5.73 per cent, respectively among girls from USES ($p < 0.05$).
- ❑ Among the different age groups, 11-13 year old USES boys (19.5% overweight) and 9-11 year old USES girls (20-23%) showed higher prevalence of overweight compared to other age groups.
- ❑ Thus, children from USES were significantly taller and heavier and consequently, had a significantly higher BMI as compared to their age matched counterparts from LSES. A higher prevalence of overweight and obesity were seen in USES, starting as early as 5 years of age. At the time of entry in school at 5 years, about 9 per cent of boys and girls were overweight and about 5 per cent were obese.

CONCLUSION

There is a significant disparity in anthropometric parameters of children belonging to the upper and lower socio-economic strata, with USES children being significantly taller and heavier. This precludes any attempt to create one set of national norms. There was a high prevalence of overweight and obesity in children from as early as 5 years of age. This indicated an urgent need to tackle the burgeoning prevalence of childhood obesity with a concerted national effort. This suggested that any intervention planned to combat the menace of obesity in childhood should begin very early in life.

Prevalence of Obesity amongst Affluent School Children in Delhi

Kapil U, Singh P, Pathak P, Dwivedi S N, Bhasin S. Indian Pediatrics, May 2002; 39 (5): 449-452.

INTRODUCTION

Adolescence is a period of transition between childhood and adulthood. It occupies a crucial position in the life of human beings, characterized by an exceptionally rapid rate of growth. Obesity in childhood is associated with an increased incidence of hypertension, diabetes, coronary artery disease, osteoarthritis and overall increase in morbidity and mortality during adult life. Children and adolescents of affluent families are presently overweight than in the past, possibly because of decreased physical activity, sedentary lifestyle, altered eating patterns and increased fat content of the diet.

OBJECTIVE

The study was conducted to find out the prevalence of obesity amongst affluent adolescent children in Delhi.

METHODOLOGY

The study was a cross-sectional study conducted in one public school of Delhi catering to the affluent segment of population, which was selected by using purposive sampling procedure with criteria of school tuition fees of more than Rs. 2000/- per month. The sample size of 870 students was calculated keeping in view an expected prevalence of obesity as 6 per cent in well-to-do adolescent children.

The data was collected using semi-structured questionnaire, anthropometric measurements of weight, standing height, mid-upper arm circumference (MUAC) and triceps skin fold thickness (TSFT) and nutrient intake was assessed in 25 per cent of the study subjects, through the 24-hour dietary recall methodology.

RESULTS

- ❑ The overall prevalence of obesity in affluent adolescent school children in Delhi according to international cut-off points was found to be 7.4 per cent. A total of 6.5 per cent of the study sample comprised of boys.
- ❑ The overall prevalence of obesity was higher in male (8.3%) than in female (5.5%) children as body mass index (BMI) of 30 kg/m² was seen at 98.4 centile for males and 98.0 centiles for females. Similarly, it was found that BMI of 25 kg/m² for males and females subjects was at 86.7 and 86.9 centile, respectively.
- ❑ The maximum prevalence of obesity was found during the pubertal period, between 10-12 years. This might be associated with the increase in adipose tissue and overall weight gain during the pubertal growth spurt.
- ❑ It was found that 17.0 per cent of all adolescent boys and girls had their energy intake 100% or more, as compared to their recommended daily recommended daily allowance (RDA).
- ❑ Both obese boys and girls had higher anthropometric measurements as compared to non-obese boys and girls, and this difference was statistically significant.

- The weight of obese boys was 72.1 ± 13.32 kg, while for obese girls it was 66.3 ± 11.6 kg. In case of non-obese boys it was 23.6 ± 5.22 kg, and non-obese girls weighed 25.6 ± 3.95 kg.

CONCLUSION

The study highlighted that obesity is an emerging health problem in adolescent children belonging to affluent families in cities like Delhi. The problem is associated with life-style if in-door activities and intake being excessive to the output of energy by adolescent boys and girls. There is a need to change the adolescent food consumption pattern, both in terms of quantity and quality, as also to enhance the out-door activity level. Since maximum cases of affluent adolescents turning obese are reported to be in the age group of 10-12 years, it is desirable to focus attention on early adolescence.

A Study of the Nutritional Status of the Social Welfare Hostels in Tirupati, Andhra Pradesh

K Srinivasan, Prabhu G R. The Indian Journal of Nutrition and Dietetics, May 2004; 41 (5): 210-214.

INTRODUCTION

Provision of hostels for the children hailing from oppressed sections of the community like Scheduled Castes, Scheduled Tribes and other Backward Classes is an important social welfare measure. The role of these hostels in their educational advancement is considerable. Health care of the children in these hostels is of utmost importance because the children in the school age (5-15 years) are in a period of growth and development, when optimum nutritional and health care is essential. As these children have come out of their school environment and are living in groups, they face some special risks and need special care for the maintenance and improvement of their health and nutrition. Good health and nutrition are necessary for proper learning at school. In this context, the present study was taken up among children residing in social welfare hostels for Scheduled Caste in the Tirupati town of Andhra Pradesh.

OBJECTIVES

The objectives of the study were to study nutritional status among children by sex; to find prevalence of anaemia and helminthic infestation by sex in a sub-sample of children; and to study helminthiases by nutritional status.

METHODOLOGY

The study was conducted among children residing in five social welfare hostels for Scheduled Castes, three for boys and two for girls in Tirupati. A total of 598 children formed the subjects of the study of whom 341 were males and 257 were females. The age of the subjects ranged from 6 years to 17 years.

Nutritional status of children was assessed by anthropometrics measurements, namely height and weight. This was assessed using IAP classification based on weight for age. In a sub-sample of children (comprising 20% of total) drawn by systematic random sampling design, and hemoglobin estimation and stool examination was carried out. The results were analysed using proportions and chi-square test for association.

RESULTS

- ❑ As many as 78.4 per cent children were found to be malnourished. Malnutrition was higher in boys (82%) as compared to girls (74.5%), which was also statistically significant. Grade-II malnutrition had higher prevalence among both the sexes.
- ❑ Out of 107 (20% sub-sample) children, 86 children (80.4%) were found to be anaemic. Among the boys, the prevalence of anaemia was found to be significantly higher (87.7%) as compared to that among girls (72%).

- ❑ In all, 42 children (39.3%) were positive for intestinal infestations. Among boys, the prevalence of infestation was found to be higher (52.6%) as compared to girls (24%) and the difference was also found to be statistically significant.
- ❑ Among the boys, the prevalent infestations were of hookworm (19), entamoeba histolytica (5), roundworm (3) and pinworms (3). Among the girls infestations, the included hookworm (8), tapeworm (3) and entamoeba histolytica (1). The high prevalence could be due to inadequate sanitary facilities and poor personal hygiene.
- ❑ The prevalence of malnutrition was found to be higher (71.4%) among those children who were positive for helminthiases, as compared to those without helminthiases (58.5%).
- ❑ The mean heights and weights of both boys and girls were uniformly lower than the NCHS standard for the corresponding age.

CONCLUSION

Improvement in diet, as well as treatment and prevention of infections alongwith iron and folic acid supplementation will definitely improve the nutritional status of the children and adolescents from under-privileged sections of the society, being brought up in hostels. The periodic medical examination and facilities for their on the spot treatment, at school health clinic and referral services needs to be organised and monitored systematically. Special attention may be paid to treatment and prevention of certain diseases like skin diseases, parasitosis, anaemia and injuries, etc. Last but not the least, health education programmes have to be carried out both, at schools and hostels in consultation with health authorities, especially in relation to nutrition, personal and environment hygiene.

Nutritional Status of Adolescents in Rural Wardha

Deshmukh P R, Gupta S S, Bharambe M S, Dongre A R, Maliye C, Kaur S, Garg B S. Indian Journal of Pediatrics, February 2006; 73(2): 139-141.

INTRODUCTION

Poor nutritional status during adolescence is an important determinant of health outcomes. Short stature in adolescents resulting from chronic under nutrition is associated with reduced lean body mass and deficiencies in muscular strength and working capacity. In adolescent girls, short stature that persists into adulthood is associated with increased risk of adverse reproductive outcomes. As health systems have accepted life-cycle approach, the health issues of adolescents, like sexually transmitted diseases and reproductive health have been given due importance, but not on their nutritional status.

OBJECTIVE

The objective of the study was to study the nutritional status of adolescents in rural area of Wardha (Maharashtra).

METHODOLOGY

The cross-sectional study was carried out in two PHC areas of Wardha district with two stage sampling method. In the first stage, cluster sampling method was used to identify 30-clusters in each Rural Health Training Centre (RHTC) area separately. In the second stage, systematic random sampling method was used to identify 10 households per cluster. All adolescents in the household thus selected were included in the study. The mean body mass index (BMI) for age was used for classifying the nutritional status with CDC 2000 reference. Data thus generated was entered and analysed using epi-info 2000.

RESULTS

- ❑ Out of 764 adolescents, 420 (54.9%) were boys and 344 (45.1%) were girls.
- ❑ Majority (53.8%) of the adolescents were thin, only 2.2 per cent were overweight. The mean BMI was significantly higher among boys (16.38 ± 3.09) as compared to girls (15.54 ± 3.25).
- ❑ The prevalence of thinness was significantly higher in early adolescence (57.0%) than in late adolescence (48.5%). Moreover, the prevalence of thinness was significantly more (169.7%) in girls than boys (40.7%).
- ❑ The significantly higher prevalence of thinness was observed among adolescents from lower (63.2%) than the higher (38.1%) family income group.
- ❑ The prevalence of thinness was significantly ($p < 0.05$) higher (60.3%) in those having education less than 8th standard than those educated atleast upto the 8th standard (49.6%).
- ❑ The anthropometric assessment at the community level is to provide an estimate of prevalence and severity of malnutrition. The prevalence of thinness (<5th percentile of BMI for age) was observed to be 53.8 per

cent, chronic energy deficiency (BMI<18.5) 75.3 per cent and wasting (< - 2 Z-value of weight for height) was observed to be only 20.8 per cent.

CONCLUSION

The three different terminologies (thinness, chronic energy deficiency and wasting) and definitions/classifications used for assessing undernutrition provided three different proportions in the same population. This may at times be a bit confusing to health managers and planners, who are not always the subject matter specialists. Otherwise also, it is always better to follow one single criteria of assessment for comparison of priority areas in developmental planning and intervention. Hence, it is recommended that WHO criteria and terminology should be used to assess the nutritional status of adolescents to avoid the unnecessary confusion.

Nutritional Status of Adolescent Girls in Rural Area of Varanasi

Choudhary S, Mishra C P, Shukla K P. Indian Journal of Preventive and Social Medicine, 2003; 34(1): 54-61.

INTRODUCTION

Pubertal spurt leads to greater nutritional requirements among adolescent girls, but psychosocial and emotional problems too, may exert significant influence on their nutritional status. Unfortunately assessment of nutritional status of adolescent girls has been the least explored area of research, particularly in rural India. The findings of studies on school children/girls cannot be extrapolated to rural adolescent girls, as their school enrollment, as well as the sustenance levels are less than their urban counterparts. Girls not attending schools belonged to disadvantaged section of the society and contributed significantly to domestic and economic activities, which at times jeopardise their health.

OBJECTIVE

This community-based study was undertaken to assess the nutritional status of adolescent rural girls of Varanasi.

METHODOLOGY

The across sectional community-based study covering 270 adolescent girls were enrolled for the study in Chiraigaon block selected by simple random sampling. Data was collected through interviews and examination schedules, anthropometric measurements of weight, height and mid arm circumference (MAC) recording, besides hemoglobin estimation. Data were analysed with the help of the SPSS package. Nutritional status of study subjects was assessed by using various parameters viz., weight for age, height for age, weight for height, MAC for age and body mass index (BMI) at different age points were compared with the corresponding reference value.

RESULTS

- ❑ Clinical examination indicated 53.33 per cent adolescent girls to be of a normal build. Vitamin A, B, C, and D deficiencies were present in 13.70, 4.07, 15.92 and 0.0 per cent study subjects, respectively.
- ❑ Bitot spots were seen in 3.33 per cent subjects and 25.90 per cent 13.33 per cent and 4.44 per cent girls had anaemia, dental caries and iodine deficiency disorders (IDDs), respectively.
- ❑ In 55.56 per cent subjects, BMI for age was < 90 per cent of BMI values at different age points. BMI for age of 17.41 per cent adolescent girls was > 100 per cent of their reference values. As per proposed Asian and Previous WHO criteria, 68.52 per cent adolescent girls were underweight (BMI < 18.5). While according to proposed Asian Criteria subjects with normal nutritional status were 28.52 per cent; corresponding value for the same by Previous WHO criteria was 30.74 per cent.
- ❑ As many as 19.63 per cent adolescent girls suffered from chronic energy deficiency (CED) grade-I; corresponding value for grade-II and grade-III was 17.78 and 31.11 per cent, respectively. Adolescent girls with weight for age \leq 80% of the reference value were 71.45 per cent; corresponding value for subjects with weight for age \leq 60% was 12.56 per cent.

- ❑ As many as 32.59 per cent of study subjects were stunted (height for age \leq 90% of the 50th Centile NCHS value). However, wasting (weight for height \leq 90% of reference) was present in 54.44 per cent adolescent girls; 3.70 per cent were severely wasted. In 80.37 per cent subjects MAC was \leq 80% of the reference.
- ❑ Average weight, height and MAC of study subjects have been examined against reference value at different age points. The average weight (37.31 ± 8.05 kg), height (146.25 ± 8.75 cm) and MAC (20.58 ± 2.58 cm) of study subjects were 73.63, 91.98 and 82.81 per cent, of their estimated references, respectively.
- ❑ In comparison to reference values, weight and MAC of adolescent girls were minimum, i.e., 64.20 per cent and 77.93 per cent, respectively at 12 years, while corresponding value for height (87.56%) was between 15 to 17 years of age.
- ❑ Average haemoglobin of adolescent girls was 12.44 ± 1.29 g/dl. As many as 30.74% study subjects were anaemic (Hb $<$ 12 gm%). It was found that average haemoglobin of menstruating girls (12.65 ± 1.3 g/dl) was significantly ($p < 0.001$) more than that of non-menstruating girls (12.10 ± 1.21 g/dl). Mean haemoglobin of adolescent girls using footwear, during defecation (12.6 ± 1.2 g %) was significantly ($p < 0.001$) higher than of subjects without footwears (12.2 ± 1.4 g %). Extent of anaemia (Hb $<$ 12 gdl) in this group (20.00 %) was significantly less ($p < 0.001$) than in subjects not using footwear (42.30%).

CONCLUSION

A considerable proportion of adolescent girls had clinical nutritional deficiency diseases. Two-third of study subjects were undernourished (BMI $<$ 18.5 kg/m²), nearly one-third experiencing CED grade-III (BMI $<$ 16 kg/m²). However, with varying parameters, the extent of undernutrition in adolescent girls also varied. Nearly one-third girls were anaemic (Hb $<$ 12 g/dl); anaemia was significantly more in non-menstruating girls and subjects not using footwear during defecation. Thus, there is a need to promote sound eating and personal hygiene-related habits in rural adolescent girls, besides improving intra-family food distribution and economic empowerment of rural households.

II

Micronutrient Malnutrition

Micronutrient Malnutrition

The growth spurt during early adolescence mounts pressure on the overall nutritional requirements of adolescent girls and micronutrients too are, therefore, required in higher proportion. The increase in height and the related skeletal growth and increase in blood volume and menarche raise the requirements for dietary calcium and iron among adolescent girls. The major micronutrients of concern in adolescent growth and development are iron, calcium and iodine.

Thus, the consumption of foods rich in calcium and iron in larger quantities becomes essential for normal growth and development of adolescent girls. Thus, study of consumption of micronutrients in daily diet and nutritional status with respect to micronutrients becomes an important area of concern. Iodine deficiency disorders not only affect the adolescent girls themselves, but also affect the quality of human resource generated by iodine-deficient mothers.

Research during the last five years has shown vegetables and fruits to be important sources of micronutrients and both, parent modeling and parent support have been found to be statistically significant predictors of fruit and vegetable consumption by adolescents. Perceived parent support had a positive effect on fruit and vegetable consumption in middle school students but was moderated by lower availability of fruits and vegetables. The consumption of fruits and vegetables by adolescents was positively co-related to the educational level of the parents. These findings can be employed for improving micronutrition among adolescents through strategies involving parents and by promoting education.

Anaemia has been reported to be a major micronutrient deficiency among adolescent girls across the country through several studies. The prevalence of anaemia was reported to be above 80 per cent in various states of India. Weekly supplementation of iron was found to be as efficacious as daily supplement of iron. Non-anaemic girls had higher scores in cognitive skills tests than the anaemic girls.

Data has shown an inverse relationship between anaemia and the socio-economic status of the family. Anaemia among adolescent girls was found to have an association with the literacy status of the mother, occupation of the father and structure of the family (joint or nuclear) and these factors need to be confirmed through multi-factorial studies in different parts of the country, in order to develop appropriate intervention strategies. One such intervention through school system for rural adolescent girls was successful in generating awareness about symptoms, prevention and control of anaemia. Studies have shown a positive impact of iron supplement, leaf concentrate administration and cooking in cast iron utensils on the iron status of adolescent girls.

Consumption of non-iodised salt resulted with 75 per cent of the adolescents suffering from iodine deficiency disorders. More research is required on the effect of iodine deficiency disorders on adolescent girls during different developmental phases during adolescence and during adolescent motherhood.

Data suggests that calcium supplementation of post menarcheal girls with low calcium intakes for one year may improve peak bone mass, but a larger study is required to confirm such results.

The research agenda for near future may include:

- Impact of IFA supplementation under KSY on iron micronutrition among adolescents.
- Calcium supplementation and attainment of growth potential among adolescent girls.
- Influence of iodine status on milestones of adolescence in girls and outcome of motherhood among adolescent girls.
- Longitudinal studies with large sample size in different parts of the country to assess the magnitude of anaemia, vitamin A deficiency and iodine deficiency disorders.

Anaemia Prophylaxis in Adolescent School Girls by Weekly or Daily Iron Folate Supplementation

Agarwal K N, Gomber S, Bisht H, Som M. Indian Pediatrics, April 2003; 40 (4): 296-301.

INTRODUCTION

Anaemia is the late manifestation of deficiency of nutrient(s) needed for haemoglobin synthesis and such deficient states are associated with health consequences. There is a general agreement that many adolescent girls in India need iron supplementation, which in turn will improve pre-pregnancy haemoglobin status and iron stores. Possibly, it may be easier to build their iron and folate reserves by supplementation / dietary diversification and education through schools. The question remains whether weekly supplementation will meet the need for growth, menstruation and future reproductive process demand or will they need regular daily supplementation.

OBJECTIVE

The study was planned to examine the benefits of anaemia prophylaxis in adolescent school girls by weekly or daily iron folate supplementation.

METHODOLOGY

The study was carried out in four Government Senior Secondary Schools of North-East Delhi which cater to the middle socio-economic group. The total number of girls in the age group 10-17 years was 2,210 of which 2,088 subjects (with haemoglobin $>7.9\text{g/dl}$) were taken. The study groups were control (Group-I), daily administered (Group- II) and weekly administered (Group-III) groups. The haemoglobin was estimated, initially, at 115 days and at 230 ± 5 days in all the three study groups. Plasma ferritin and C-reactive proteins (CRP) were estimated in every tenth girl of the study groups. Sexual maturity rating was done using Tanner's criteria and the time of menarche and regularity of menstrual periods was noted. Statistical analysis was done using ANOVA, MANOVA (Multi Analysis of Variance), z-test and chi-square test.

RESULTS

- ❑ Initially 0.3, 0.6 and 0.5 per cent girls had haemoglobin level of 7-8g/dl in-groups I, II, III, respectively. After 115 days of intervention, the corresponding values were 0.9, 0 and 0.3 per cent.
- ❑ When no supplementation was given (control group), the prevalence of anaemia increased by 3.2 per cent at 115 days, whereas in groups II and III, it declined significantly by 12.5 per cent and 7.7 per cent, respectively. The difference between groups II and III was significant ($p < 0.001$).
- ❑ Control group showed insignificant decline in the average haemoglobin level at 115 days but mean haemoglobin at 230 days was significantly higher than the value at 115 days ($p < 0.05$). Group-II showed the maximum rise (0.5g / dl) at 115 days ($p < 0.01$). While weekly administered (Group III) did not show a significant rise ($p > 0.05$) at 115 days, but showed significant change, similar to the daily group at 230 days ($p < 0.05$).

- ❑ Girls with haemoglobin ≥ 12 g/dl were also benefited by daily supplementation as 35 per cent of them showed rise in haemoglobin, compared to 26.1 per cent in the weekly supplemented group at 115 days ($Z = 2.62$; $p < 0.05$).
- ❑ MANOVA showed a significant increase in haemoglobin level at 115 days by 0.9 and 0.4 g/dL in daily and weekly intervention groups, respectively. However, the controls showed fall in haemoglobin by 0.1 g/dl. At 230 days, the weekly group showed haemoglobin increase by 0.9 g/dl ($p < 0.05$).
- ❑ Plasma ferritin levels significantly increased in girls from all groups at 230 days, as compared to their initial values. The rise in haemoglobin was not related to ferritin levels.
- ❑ Of the 1,187 girls who had attained menarche, 48.4 per cent had baseline haemoglobin < 12.0 g/dl. In 850 pre-menarcheal girls, the prevalence was 46.6 per cent. Further, the prevalence of anaemia was 47.8 per cent, 46.8 per cent, 45.3 per cent, 52.2 per cent and 42.8 per cent in breast development stages 1 to 5, respectively.
- ❑ Pre-menarcheal girls had higher mean levels of haemoglobin on iron-folate therapy, as compared to girls with regular menstrual periods. The haemoglobin rise in daily-administered group was significantly ($p < 0.01$) higher in menstruating and pre-menarcheal girls at 115 days, as compared to the weekly intervention group.

CONCLUSION

The study conducted in adolescent girls enrolled in school, with instructions to take iron-folate tablets was successful. The daily intake for 100 days raised haemoglobin level, which was maintained until four months after withdrawal of intervention. Regular weekly administration was effective and seems suitable for populations with mild to moderate anaemia. This can also be extended to non-school goers through panchayats / mandals and possibly in the Integrated Child Development Services.

Furthermore, anaemia prevalence was similar in adolescent girls with different stages of sexual maturity. The pre-menarcheal girls maintained better haemoglobin on iron-folate supplementation as compared to the menstruating group, thus suggesting a higher need for haematinics in menstruating girls.

Diet and Nutritional Status of Tribal Population: Report on First Repeat Survey (National Nutrition Monitoring Bureau), 2000

National Institute of Nutrition (Indian Council of Medical Research), Hyderabad. [Source : Micronutrient Profile of Indian Population, 2004]

INTRODUCTION

National Nutrition Monitoring Bureau (NNMB) has been carrying out annual diet and nutrition surveys regularly for the past 28 years in the states of Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Orissa, West Bengal and Uttar Pradesh since 1972.

OBJECTIVE

The first repeat survey in Integrated Tribal Development Project (ITDP) areas was carried out during 1998-99 in the same villages, which were surveyed during 1985-87 to assess the current diet and nutritional status and changes, if any, in the nutritional status and food consumption pattern of tribal population.

METHODOLOGY

It is a community-based survey carried out on rural males and females, up to 22 years of age from eight states. The sample areas selected using a multistage stratified successive sampling covering 5,683 and 9,854 population for dietary intake during 1985-87 and 1998-99, respectively. For assessment of nutritional deficiency 20,186 and 32,869 population was covered during 1985-97 and 1998-99, respectively. Clinical examination of Vitamin A and iodine deficiency was done to find out the prevalence of their deficiency. A 24-hour recall method for dietary intake was done to collect data regarding intakes of iron, Vitamin A, Vitamin C and folic acid.

RESULTS

- ❑ The prevalence of Bitot's spot in females (12-21 years) also declined from 1.8 to 1.3 per cent, except Tamil Nadu where a considerable increase was observed (from 0.6 % in 1985-87 to 7.2% in 1998-99).
- ❑ There was considerable decrease in the prevalence of Bitot's spots in Maharashtra over the two years of the survey. The prevalence was 8.3 per cent in 1985-97, which reduced to 0.8 per cent in 1998-99.
- ❑ The prevalence of goitre reduced from 5.8 per cent to 3.0 per cent during 1998-99 and 1985-87 surveys in respect of all states, as revealed by the pooled data. The prevalence of goitre, increased in Tamil Nadu from 2.2 per cent (1985-89) to 20.1 per cent (1998-99).
- ❑ Overall dietary intake of iron had declined in all age groups (1-3, 4-6, 7-9, 10-12 and 13-15 years) as per 1998-99 surveys when compared with 1985-87 surveys.
- ❑ The intake of iron had increased in 13-15 years girls of Maharashtra and 13-15 years boys and girls of Kerala.

- ❑ The overall intake of vitamin A, based on pooled data of eight states indicated increase in dietary intake of Vitamin A in all age groups in 1998-99 survey, as compared to 1985-87 survey. However, the intake was much less than their respective recommended daily allowance (RDA)s in all age groups, except 13-15 years girls in Andhra Pradesh and Maharashtra in repeat survey, 1998-99.
- ❑ The intake was less than RDA for Vitamin C in all age groups, except in 13-15 years of children. However, a significant increase was observed in Orissa and West Bengal for girls aged 13-15 years.

CONCLUSION

The intervention under the Integrated Tribal Development Project (ITDP) has led to a general reduction in the prevalence of micronutrient deficiencies during a period of 15 years in most of the states, except Tamil Nadu. Intake of iron, vitamins A and C has increased in most surveyed states among the tribal adolescent girls. Though there has been a significant increase in the Vitamin C intake among tribal adolescent girls aged 13-15 years in West Bengal and Orissa, yet more efforts are required to enhance its intake, so as to enable it to get closer to the RDA.

Adolescent Girls Anaemia Reduction Programme-Impact Evaluation (mid-term) of Vadodara District

Kotecha P V, Patel R Z, Karkar P D, Nirupam S. Department of Preventive and Social Medicine, Medical College, Vadodara, 2002. (Source: Micronutrient Profile of Indian Population, ICMR, New Delhi, 2004)

INTRODUCTION

The study was taken up as an impact evaluation survey of 'Adolescent Girls Anaemia Reduction Programme' in all the secondary and higher secondary sections of 30 schools in Vadodara district with technical and financial support from UNICEF and the Department of Preventive and Social Medicine, Medical College, Vadodara.

OBJECTIVES

The objectives of the survey were to measure the anaemia prevalence and haemoglobin level of the school girls and measure the change due to intervention; to study the utilization of IEC material and dietary; to study the consumption of iron rich and Vitamin C-rich foods; and to evaluate the supplementation compliance of the school girls and out-of-school girls using existing school-based records and self-reporting by the girls.

METHODOLOGY

A stratified random sample (baseline survey) of 2,860 adolescent girls aged 12-19 years from schools and Vadodara district were selected. The sample consisted of rural, urban and tribal girls. Intervention trial was adopted as the same population was studied during the mid-term of anaemia reduction programme. Both, biochemical and verbal enquiry were employed to collect the data. Haemoglobin estimation was done by ABACUS cell counter and serum ferritin was assessed using immulite. Mean, median and percentages were calculated.

RESULTS

- ❑ Anaemia prevalence (Hb < 120gm/l) was recorded as 53.2 per cent, as compared to baseline anaemia prevalence of 74.7 per cent. There was a reduction of 20.5 per cent in anaemia prevalence after the initiation of the programme.
- ❑ The reduction achieved was maximum in rural areas followed by urban areas, with both showing a net reduction of over 23 per cent, while the tribal areas showed a reduction of anaemia by about 16 per cent.
- ❑ Mean rise of haemoglobin was seen to the extent of 6.4 gm/l, with regional differences and maximum rise was seen in rural areas followed by urban areas and relatively, the least rise was seen in tribal area.
- ❑ Severe anaemia prevalence was reduced from 1.6 per cent at baseline to 0.5 per cent suggesting a reduction of 68 per cent in severe anaemia from the base line value. Similar reduction valued for moderate and mild anaemia were 51 per cent and 22 per cent, respectively.

- ❑ A total of 804 samples were studied for serum ferritin and a proportion of girls having serum ferritin less than 12 ng/ml, indicative of poor iron storage, declined from 49.7 to 39.7 per cent and was consistent in all the areas.
- ❑ The mean value of ferritin increased by 5ng/ml across all areas. Overall, the proportion of girls below 12 ng/ml serum ferritin level decreased, alongwith an improvement in the medians after intervention.
- ❑ The frequency of consumption of iron rich food was not very high except jaggery, which was consumed daily by one fourth of the girls as compared to other iron-rich foods.
- ❑ Frequency of consumption of Vitamin C-rich foods was better than that of iron rich foods. Overall, 32.7 per cent of the girls consumed vitamin C-rich fruits alongwith snacks or food.
- ❑ The evaluation revealed that the coverage of school girls to the extent of 90 per cent has already been achieved under the programme.

CONCLUSION

The intervention was more successful among adolescent girls in rural areas than in tribal areas, though even in the tribal areas the reduction in prevalence of anaemia was substantial. Thus, there is a need for modification of intervention strategy and methodology for tribal areas, as per the local socio-cultural context. Even though consumption of vitamin C-rich foods improved among adolescent girls, yet greater effort would be required to promote consumption of iron rich foods for long-term gains in iron status of the girls.

Influence of Family's Vegetable Cultivation on Prevalence of Anaemia among Adolescent Girls

Kumar A R, Yadav N, Gupta A K, Parvin K, Tripathi U, Verma V. Indian Journal of Nutrition and Dietetics, January 2006; 43 (1): 32-38.

INTRODUCTION

Adolescence is one of the nutritional stress period of life. With profound growth of adolescence come increased demands for energy, protein, minerals and vitamins. Low haemoglobin level which is known as anaemia, continues to be a major public health problem, particularly among females of reproductive age in developing countries. A great proportion of Indian population belongs to farm families. The variation in crop cultivation is thought to affect food consumption and thus, the nutritional status. Green leafy vegetables, in general, are rich sources of iron, β -carotene, ascorbic acid, calcium, riboflavin and folic acid and also provide some protein.

OBJECTIVES

The objectives of the study were to assess whether the cultivation of vegetables in families benefits the adolescents in terms of vegetable consumption and maintaining normal haemoglobin levels; and whether the prevalence of anaemia varies in vegetable grower and non-grower families.

METHODOLOGY

The study was conducted in rural areas of the trans-Ganga region in Allahabad, Uttar Pradesh, India. A total of 80 adolescent girls - 40 from vegetable grower (VG) and 40 from non-grower (NVG) families were purposively selected. A combination of general and dietary survey, anthropometric measurements, clinical assessment and laboratory test was used to obtain the required information. Data for two groups of subjects, VG and NVG were compared and statistically tested for any significant difference.

RESULTS

- ❑ The research revealed that the vegetable growers commonly cultivated leafy vegetables like soya, spinach, amaranths and onion stalks. About 15 per cent of the families produced vegetables for their own consumption. The remaining had surplus quantities, which were either sold or fed to the animals. Preservation was not at all practiced for any leafy vegetable.
- ❑ In VG group 62.5 per cent girls consumed green leafy vegetables daily and the remaining consumed 4-6 times per week. The average quantity consumed was higher in the VG groups than in their NVG counterparts.
- ❑ Intake of all the nutrients in both the groups, i.e., VG and NVG was comparatively less than the recommended dietary allowance (RDA), except for fat which exceeded the RDA by about 2 grams in the group which did not grow vegetables.

- ❑ The height ranged between 123 and 162 cm, having a mean of 146.19 cm. While comparing with NCHS standards it was found that both the groups, VG and NVG could not attain satisfactory values, and those not growing vegetables showed more pronounced difference.
- ❑ A comparison between the two groups showed that the mean height of adolescent girls from VG families was better than the NVG ones. However, the t-test did not reveal any significant difference between the two categories ($p > 0.05$).
- ❑ Weight difference of the adolescent girls was somewhat similar to difference in height, which fell below the NCHS standard value. The reference value for well-to-do Indian adolescent girls' weight which was 40.87 Kg, was not satisfactory. The values ranged from 22.5 to 50 Kg. Among the adolescent girls studied.
- ❑ Various signs and symptoms of anaemia were present among subjects belonging to both the groups. Breathlessness and tiredness were experienced by about one-fourth of the subjects in both the groups. Pale nails were observed in 6 of VG and 10 of NVG group, whereas in the latter group, pale conjunctiva was noticed in a small proportion (5%).
- ❑ The mean Hb level (10.23g/dl) in the VG groups was greater than that of NVG groups (9.74 g/dl) and varying degrees of anaemia were present in higher proportion of the NVG than the VG. t-test revealed that the prevalence of anaemia did not differ between the two groups. Only 8 NVG group members as compared to 19 of VG subjects had haemoglobin levels within the normal range.

CONCLUSION

The findings showed that food and nutrient consumption, anthropometric status (height and weight) and haemoglobin status of adolescent girls did not differ significantly in the categories of families whether they cultivated or did not cultivate leafy vegetables. Dehydration and other methods of preservation could be taught to utilise the surplus vegetables, even when not in season to enhance the dietary iron content. Since VG group showed better iron status of the adolescent girls than the NVG, promotion of kitchen gardens in the household, community and the schools with cultivation of green leafy vegetables can go a long way in tackling iron deficiency anaemia.

A Comparative Study of Impact of Leaf Concentrate and Iron and Folic Acid Supplementation on Blood Profile of Anaemic Adolescent Girls

Mathur B, Ramani S V, Bertin E. Department of Home Science, University of Rajasthan Jaipur, Rajasthan (India), December 2004-2005: 1-7.

INTRODUCTION

Despite impressive gains in the field of health and nutrition, significant proportion of young people in developing countries suffer from nutritional anaemia. The effect of earlier nutritional insult is visible in the adolescent age, particularly in girls. Adolescence is a time of major physical, cognitive and psychological growth and development. Due to various reasons like irregular supply chain, poor compliance, the National Anaemia Prophylaxis Programme has not made an appreciable dent in prevention of anaemia. Hence, it prompts us to look at other alternatives. Use of leaf concentrate (LC), which is a good source of micronutrients, is one such alternative.

OBJECTIVE

The overall objective of the present study was to compare the effect of leaf concentrate and iron and folic acid (IFA) tablet supplementation on blood profile of adolescent girls.

METHODOLOGY

The present study was conducted on adolescent girls aged 14 to 18 years residing in Shastri Nagar Kacchi Basti, an urban slum area in Jaipur city. A total of 120 unmarried anaemic girls willing for the intervention trial were divided into two experimental groups I (IFA supplementation) and II (LC supplementation). One IFA tablet (60 mg iron and 500 mg folic acid) was given to group I every day and 10 gm of leaf concentrate powder (8 mg iron and 0.03 mg folic acid) was used as herbal medicine for the second experimental group for 135 days. After excluding dropouts, the results of 90 subjects (40 subjects in IFA group and 50 subjects in LC group) were tabulated and compared.

RESULTS

- ❑ A statistically significant improvement had taken place in haemoglobin levels, as well as other blood parameters (i.e. TRBC, PCV, MCV, MCH, MCHC, serum iron, serum ferritin) of the subjects in both the groups.
- ❑ There was about 15 per cent increase in haemoglobin level of subjects in both the groups. This data was even tested for larger sample size and it indicated that if LC was used as a supplement for larger population size then the result will prove to be more promising as compared to IFA.
- ❑ The iron content of an IFA tablet is 60 mg, although 10 gm of LC powder supplied only 8 mg of elemental iron which is not at all comparable. In spite of this fact, the results of both the groups were comparable, with no statistically significant difference between the two groups. This can be attributed to perhaps better absorption of LC.

- Microscopic examination of the slides at initial, as well as final stage was also studied. Initially, the slides showed anisocytosis, poikilocytosis, severe hypochromic microcytic, ovalocyte and macrocyte cells. These showed a shift towards normocytic, normochromic and few microcytic and mild hypochromic cells in both the groups after supplementation.

CONCLUSION

The results of the study are promising for LC, which gave similar and comparable results on the iron status of the subjects. Both the supplements showed similar improvements. In spite of the small dose of LC given to the subjects, the other factors like presence of other micronutrients, e.g. copper and zinc must have helped in bringing significant change in haemoglobin levels, as well as other blood parameters of the subjects.

The LC powder has grassy flavour and subjects initially have problems in consuming 10 gm of powder at a time. Due to close monitoring and rapport with the subjects, during the present trial, they were advised to consume this 10 gm LC by taking a spoonful 2-3 times in a day. It is not that 10 gm dose of LC is very problematic to consume; it can be taken orally with glass of water/ lemon juice/ buttermilk or mixed with chapatti dough or yoghurt or lentils. Perhaps a lower dose of 5 gm LC powder can be introduced on long-term basis into the existing supplementary feeding programmes and Mid Day Meal (MDM) programmes so that the vulnerable groups of people can get some additional amounts of micronutrient in their diets besides their usual intakes. The Government of Rajasthan is looking out for a micronutrient supplement to be used in its ICDS supplementary feeding programme and thus, leaf concentrate can be used for this purpose.

A Cross Sectional Study on Iodine Deficiency Disorder among School Children in West Bengal

Haldar A, Munsu Kumar A, Chatterjee T, Saha Kumar A, Basu SS. The Indian Journal of Nutrition and Dietetics, April 2004; 41(4): 160-164.

INTRODUCTION

Iodine deficiency disorders (IDD) constitute a public health problem affecting all vulnerable groups. No state in India is free from iodine deficiency. With every passing hour, 10 children are born, who will not attain their optimum physical and mental potential due to neonatal hypothyroidism caused by iodine deficiency. Endemic goitre is an important public health problem and 5d more of girls aged 12 to 14 years show Grade I enlargement of thyroid gland. The prevalence rate of goitre in West Bengal is nearly about 21.3d.

OBJECTIVES

The present study was carried out with the objectives of determining the prevalence of goitre among school children of vulnerable age groups in West Bengal and for identifying high-risk areas in the state for Information Education and Communication (IEC) activities.

METHODOLOGY

A cross-sectional study was carried out for 6 months among 10-14 years of both boys and girls from co-educational schools in 6 blocks and 4 municipality areas of North 24 Parganas District in West Bengal, selected randomly by multi-stage sampling procedure. Information was collected through interviews, clinical examination, and testing of salt at household level. Finally data for all parameters were analysed.

RESULTS

- ❑ It was found that overall prevalence of goitre was 6.73d among 1,590 adolescents, with average prevalence rate of 6.75d among them.
- ❑ Result reveals the prevalence of goitre among male and female adolescents to be 8.14 and 5.12 per cent, respectively. The occurrence of percentage of goitre showed significant difference between male and female adolescent children ($\chi^2 = 8.35$, $p < 0.01$).
- ❑ There was a significant difference among the goitre cases and goitre free cases in relation to iodised and non-iodised salt users. The difference was found to be statistically significant ($\chi^2 = 471.39$, $p < 0.001$).
- ❑ Prevalence of goitre in 10 different areas was found to be highest (49.62%) in Bermajur village school children of Sandeshkhale Block, followed respectively, by Panihati Municipality school children (29.76%) and Habra (3.16%), Haroa (1.11%) and Bagda (0.93%), whereas prevalence was nil among the school children of other five areas.

- Findings in the study also pointed out towards the type of salt consumed by children suffering from goitre (107). Out of 69 (64.49%) non-iodised salt consumers, 38 (35.52%) and 31 (28.97%) developed grade I and II goitre, respectively. Among the students who were consuming iodised salt, 28 (35.3%) developed grade I goitre.

CONCLUSION

Information, Education and Communication programme on IDD should be organised throughout the district of North 24 Parganas in West Bengal, with special emphasis on high-risk areas, with active involvement of school teachers and panchayat functionaries. Special effort should be made towards promotion of consumption of iodised salt in order to reduce IDD's arising out of dietary iodine deficiency among adolescent girls, who are instrumental in reducing neonatal level IDD's through adequate iodine supplementation.

Health Status of School Children in Ludhiana City

Panda P, Benjamin A I, Singh S, Zachariah P. Indian Journal of Community Medicine, October-December 2000, XXV (4): 150-155.

INTRODUCTION

Whereas there are concerted efforts to provide care to the under-six-year-old children through various national maternal and child health programmes (e.g., ICDS, RCH programmes), the 5-16 years age group remains a neglected lot. Various types of government sponsored school health programmes have been launched from time to time, but progress and achievements are very slow and incomplete and very often limited to the urban and few favoured schools. School health services are irregular and intermittent, without follow-up or accountability. The 5-16 years old children are on the threshold of adulthood. If they are to reach adulthood in a healthy state, then it is necessary to provide targeted and concerted services to improve their health status.

OBJECTIVES

To assess the health and nutritional status of adolescent school children in the age group of 5-16 years and to find out their morbidity pattern.

METHODOLOGY

A total of 776 students of both sexes (462 boys and 314 girls), in the age group 5-16 years, from a secondary school in Ludhiana were examined by a health team consisting of medical students (final years), interns and faculty of the Department of SPM, Christian Medical College, Ludhiana. Physical examination of all children was carried out, and their height and weight were recorded. Anaemia was diagnosed from clinical signs such as pallor of the conjunctiva /tongue. The mean weight and height of the children, according to age and sex, were compared with ICMR standards. Nutritional status of the adolescents was assessed through weight for age (wasting) and height for age (stunting) according to Waterlow classification.

RESULTS

- ❑ On an average, the boys were found to be significantly taller than the girls at ages 5, 15 and 16 years (ANOVA $p < 0.05$). At 4, 6, 7, 9, 11, 12 and 13 years, the girls were taller than the boys, but these differences were statistically not significant (ANOVA $p > 0.05$).
- ❑ On an average, the girls weighed significantly more than the boys at ages 6, 13 and 14 years (ANOVA $p < 0.05$). At ages 7, 9, 11 and 12 years also, the girls weighed more than the boys, but these differences were statistically not significant (ANOVA $p > 0.05$). The boys were significantly heavier than the girls at ages 5, 15 and 16 years (ANOVA $p < 0.05$). At ages 4, 8 and 10 years also, the boys weighted more than the girls, but the differences were statistically not significant (ANOVA $p > 0.05$).

- ❑ The standards of growth of female children was observed to be at par with NCHS standards, except at the time of growth spurt (ages 9, 10 and 11 years). It was also noted that the present standards were better than Kerala school girls except in the ages of 5 and 15 years.
- ❑ Comparison of mean heights and weights of the children with the median height for age and weight for age as per ICMR standards indicated that in all the age and sex groups it was less except for weight in 14 years old girls, and for height in boys and girls at ages 15 and 16 years.
- ❑ 47.8 per cent of children were normal as per their weight for age, 52.2 per cent were malnourished and 6.8 per cent were in severe degree of wasting. The 11-15 years old children, i.e., the age group in which the growth spurt takes place, were observed to be at highest risk of wasting. Both boys and girls suffered almost equally ($p=0.968$).
- ❑ Nutritional status of children (stunting) indicated that 20.7 per cent children were in mild degree of stunting and 5.5 per cent were in moderate/ severe degrees of stunting. The 11-15 years old children were the most affected. Both boys and girls were suffering almost equally from stunting ($p=0.29$).
- ❑ 562 (72.4%) children were suffering from one or more illnesses like anaemia (26%), dental caries (23.1%), tonsillitis (14.4%) and refractive errors (5.6%).
- ❑ The prevalence of anaemia was significantly higher in girls (30.5%) than in boys (22.9%). Nearly one percent (1.1%) of the children were found to be suffering from skin diseases.

CONCLUSION

The health and nutritional standards of the school children under study are found to be low, more so in girls than in boys. The extent of malnutrition in this group is high, with the children in nearly all ages, both boys and girls, being deficient in both weight and height as compared to the ICMR standards. The prevalence of wasting and stunting in these children is high (52.2% wasted and 26.3% stunted) with boys and girls suffering almost equally. The prevalence of anaemia is high in both sexes of adolescents, though significantly more so in girls (30.5%) than in boys (22.9%). Malnutrition and anaemia make the adolescents more susceptible to infection.

Prevalence of Iron, Vitamin A and Iodine Deficiencies amongst Adolescent Pregnant Mothers

Pathak P, Singh P, Kapil Umesh, Raghwanishi R S. Indian Journal of Pediatrics, April 2003; 70 (4): 299-301.

INTRODUCTION

Micronutrient deficiencies play an important role in the outcome of pregnancy. The micronutrient status of adolescent pregnant mothers (APMs) is of great importance for their health as it influences pregnancy and foetal outcome. Poor nutritional status coupled with the onset of pregnancy imposes an additional burden on the nutritional status of the pregnant adolescent girl, as well as the growing foetus. Pregnancy during adolescence deprives the girl of achieving their full growth, according to her genetic potential.

OBJECTIVES

The study was undertaken to assess the prevalence of anaemia, Vitamin A and iodine deficiencies amongst APM belonging to rural communities.

METHODOLOGY

The study was conducted on all APMs residing in a rural block in Udham Singh Nagar district, Uttaranchal. One of the blocks with an ongoing ICDS project was randomly selected, out of which five villages were also randomly selected. The data on demographic, anthropometric and obstetric parameters was collected, besides a 24-hour dietary recall. Anaemia, Vitamin-A deficiency (VAD), Urinary Iodine Excretion (UIE) levels were assessed. The data analysis was conducted by utilising the standard statistical test and procedures.

RESULTS

- ❑ In all 151 APMs belonging to low-income group communities residing in the block, the mean age of the APM was 17.8 ± 1.5 years and almost 89 per cent of the APMs were in the age group of 16-19 years.
- ❑ Around 60 per cent of the APM were in the gestational age of 24 weeks or more and 23 per cent had parity of 2 or more. As many as 24 per cent of the APMs had inter-pregnancy interval less than 24 months.
- ❑ It was observed that anaemia was prevalent amongst 45.7 per cent of the subjects, with 20-26 per cent of APM having mild to moderate anaemia, respectively. This high prevalence of anaemia could be due to low intake of dietary iron, as 80 per cent of the APM were consuming iron less than 50 per cent of iron of their recommended daily allowance (RDA).
- ❑ Vitamin A deficiency was prevalent amongst 15.9 per cent of the subjects possibly due to low dietary intake of Vitamin A.
- ❑ Goitre was found in 14.6 per cent of the subjects. No APM had Grade II goitre. The iodine deficiency, as evident from UIE levels being less than 100 mg/l, was found to be prevalent in 57.4 per cent of the subjects.

- ❑ In all, 2.0 per cent of the APM had concomitant prevalence of all three-micronutrient deficiencies. Similarly, 5.9 per cent of the pregnant mothers were suffering from IDD and anaemia and 2.6 per cent had IDD and VAD. Eight percent of the APMs were found to be suffering from VAD and anaemia.
- ❑ The dietary intake of the APMs was found to be deficient in all the nutrients, i.e., energy, protein, iron and retinal. Around 35.1, 55.6, 82.8 and 94.7 per cent of the adolescent pregnant mothers were consuming less than 50 per cent of RDA for calories, protein, iron and retinol, respectively.
- ❑ The mean weight of the APMs was 46.7 ± 7.8 kg and the mean height was 149.7 ± 5.9 cm. About 20.3 per cent APM were “at risk” due to weight < 40 kg. Similarly, 21.2 per cent of the APM were “at risk” due to height < 145 cm. The anthropometric measurement indicated poor nutritional status of the APM.

CONCLUSION

The present study revealed a high prevalence of the three-micronutrient deficiencies. Anaemia, VAD and Goitre was prevalent amongst 40 per cent, 15.9 per cent and 14.6 per cent of the study population, respectively. There was a deficient dietary intake of all the nutrients. Increased number of child births with reduced inter-pregnancy intervals coupled with low dietary intake of all nutrients may possibly lead to poor nutritional status of the adolescent pregnant mothers. Other possible factors associated with the problem may be the low literacy level, poor nutritional status of the adolescent mother and closely-spaced pregnancies. The results indicated a need for longitudinal studies with larger sample size to be undertaken in different parts of the country to assess the magnitude of micronutrient deficiencies amongst adolescent pregnant mothers.

Prevention and Control of Anaemia in Rural Adolescent Girls through School System, Andhra Pradesh

Indian Institute of Health and Family Welfare, Annual Report, 2001-2002.

INTRODUCTION

Iron deficiency anaemia is a very common nutritional problem among majority of adolescent girls. Surveys have revealed very high rates of prevalence of iron deficiency anaemia ranging from 70-88 per cent among adolescent girls in rural areas and urban slums. Adolescent girls were not covered under National Nutritional Anaemia Control Programme (NNACP) or any other programme. Interventions for anaemic adolescent girls should raise their iron stores and sustain their haemoglobin at normal levels. This will not only improve their physical and mental capacity, but also subsequently help in reducing the incidence of low birth weight of infants and maternal mortality rates. Recognising the enormous potential of the school system, a project was initiated with support from UNICEF to prevent and control anaemia in adolescent girls, utilising the school system in rural areas of Andhra Pradesh.

OBJECTIVES

The study was undertaken with the objectives of assessing the feasibility and acceptability of supervised weekly supplementation of iron and folic to school going adolescent girls (10-15 years) to prevent and control anaemia; improving the knowledge, attitude and understanding of adolescent girls regarding ill effects of anaemia and usefulness of weekly IFA supplement through appropriate IEC interventions; assessing the impact of the programme in reducing the prevalence of anaemia using haemoglobin as an indicator.

METHODOLOGY

All (n=1,811) adolescent girls between 10 and 15 years of age, studying in 6th to 10th standards in 16 high schools located in two randomly selected mandals, viz., Hathunura and Kondapur of Medak district were enlisted. A combination of anthropometry, biochemical assessment and interviews were used for assessing the nutritional anaemia status and awareness about anaemia among subjects. Data pertaining to knowledge, attitude and practices (KAP), nutritional status (height and weight) and blood samples for estimation of blood haemoglobin levels were collected.

RESULTS

- ❑ The mean age of subjects was 12.4 ± 1.44 years.
- ❑ Signs and symptoms of anaemia like pallor (eyes, tongue nails), fatigue, breathlessness, poor appetite and lack of concentration in studies were reported by 12.5 per cent, 14.1 per cent, 9.2 per cent, 26.5 per cent and 86 per cent of girls, respectively.
- ❑ A meagre percentage of respondents were aware of anaemia (7.4%) and the national programme to control it (4.6%).

- ❑ Consumption of iron rich foods like ragi, greens, meat and Vitamin C rich foods like sprouted grams on the previous day was reported by 36.3 per cent, 20.1 per cent and 7.3 per cent of subjects, respectively.
- ❑ Iron deficiency anaemia was found in 81 per cent of respondents. Mild, moderate and severe grades of anaemia were observed in 63.2 per cent, 12.5 per cent and 5.3 of respondents, respectively.
- ❑ Though the pattern of growth of the girls was similar to that of NCHS standards, the heights and weights of study subjects at any given point of age were far below the NCHS standards and the deficit increased with age.
- ❑ Side effects like abdominal pain, nausea, vomiting, diarrhoea were reported in 5.15 per cent of girls at the beginning of project and remained 3 per cent at mid-term survey evaluation. In majority of cases, such effects were reported when supplementation was taken on empty stomach or during mild sickness without sufficient intake of water, etc.
- ❑ About 62 per cent of subjects did not skip even a single IFA tablet, indicating good compliance. Mean blood haemoglobin level at the baseline survey was 10.6 ± 1.1 g/dl, which increased to 11.6 ± 1.0 g/dl during mid term survey.
- ❑ Haemoglobin level improved in 45.6 per cent while it remained static in 49.4 per cent and declined in only 5 per cent of subjects.

CONCLUSION

It was evident from the results of midterm survey that IFA supplementation to school going girls, under teacher's supervision, for preceding six months together with IEC intervention resulted in a significant increase in haemoglobin levels, indicating the feasibility of this approach. The terminal evaluation of the project would accordingly, focus on dietary practices of adolescent girls in terms of increase in the intake of iron rich foods, as well as foods which promote the absorption of dietary iron, using food frequency list. Attempts could be made to evaluate the compliance of IFA supplementation based on information provided in the compliance cards coupled with self-reporting by girls. This experience would also help in scaling up of this approach to eliminate anaemia among adolescent girls.

Prevention and Control of Anaemia among Rural Adolescent Girls through School System in Andhra Pradesh

Indian Institute of Health and Family Welfare, Annual Report, 2002-2003.

INTRODUCTION

Iron deficiency anaemia is an ubiquitous nutritional problem encountered by 70 - 90 per cent of adolescent girls in rural areas and urban slums. A study was initiated earlier (2001-2002) with UNICEF support in two randomly chosen mandals of Medak district, Andhra Pradesh, to examine the feasibility and acceptability of weekly IFA supplementation to adolescent girls, using school system as a vehicle for anaemia reduction. The project was evaluated at mid-term and at the endline.

OBJECTIVES

The purpose of the study was to scale up this approach in the remaining mandals of the district in a phased manner. Therefore, besides continuing weekly IFA supplementation in Hathnura and Kondapur mandals, two more new mandals, namely, Jinnaram and Pulkal were also included under the project during the year 2002-2003.

METHODOLOGY

A combination of anthropometry, biochemical assessment and interviews were used for assessing the nutritional anaemia status and awareness about anaemia among subjects of the new mandals. All the 14 high schools located in two newly added mandals were covered under the project. There were 1,881 girls enrolled in the 6-10 classes. About 1,555 subjects, accounting for 82.7 per cent of total universe, were covered under the study in baseline survey. Also, data pertaining to knowledge, attitude and practices (KAP), nutritional status (height and weight) and blood samples for estimation of blood haemoglobin levels were collected. In case of the earlier mandals baseline and midline data was referred to. Intervention focused on improvement of dietary practices and self reports on compliance of IFA tablet intake.

RESULTS

The results of endline evaluation after 52 weeks of IFA supplementation and the baseline anaemia status of the adolescent girls from the new mandals were as follows:

- The mean haemoglobin level of paired sample at the baseline was 11.1 ± 1.1 g/dl, which increased to 12.1 ± 1.0 g/dl after 52 weeks of IFA supplementation. Percentage of subjects with normal haemoglobin values increased from 17.1 (baseline) to 59.8 (endline) and concomitant decrease could be noticed in percentage of subjects with mild and moderate degrees of anaemia indicating the efficacy of weekly IFA supplementation. Haemoglobin levels improved in 50.1 per cent adolescent girls, while they were static in 42.9 per cent and declined in 7.0 per cent of subjects.

- ❑ Nearly 53 per cent of subjects had consumed all the tablets and 37 per cent of them consumed 90 per cent of the tablets, indicating a high compliance for IFA tablets, and the successful implementation of the programme by teachers.
- ❑ During endline survey, 78.1 per cent of the subjects could list all the signs and symptoms of anaemia and 89.6 per cent could also recall the normal haemoglobin level to be maintained.
- ❑ Consumption of iron-rich food articles like finger miller (ragi), greens, meat and Vitamin C rich foods like sprouted grams and citrus fruits rose to 56.5, 29.9, 18.0 and 5.5 per cent, respectively during endline survey.
- ❑ The mean age of subjects was 12.6 ± 1.3 years in the new mandals.
- ❑ Iron deficiency anaemia was detected in 85.6 per cent respondents. The mean haemoglobin level of subjects with mild, moderate and severe grades of anaemia were 10.8 ± 0.6 , 9.1 ± 0.4 and 6.7 ± 1.1 g/dl, respectively.

CONCLUSION

The study has clearly shown that IFA supplementation for 52 weeks to the school going girls under the teacher's supervision, together with IEC intervention has resulted in a significant increase in haemoglobin levels, confirming the feasibility and efficacy of this approach. Therefore, continued efforts are necessary by both Education and Health Departments for a commitment to fulfill the conditions for achieving a reduction in anaemia. The crucial component for sustainability of the project is the nutrition counselling of adolescent girls that must take place continuously, preferably by the health staff.

All the current IEC activities should focus on dietary practices of adolescent girls in terms of increasing the intake of iron rich foods, as well as foods which promote the absorption of dietary iron. The experience gained through this intervention study would be utilised in scaling up of this approach to the entire district.

Socio Demographic Correlates of Anaemia among Adolescent Girls in Rural Areas of District Meerut (UP)

Rawat C M S, Garg S K, Singh J V, Bhatnagar M. Indian Journal of Community Medicine, October-December 2001; XXVI (4): 173-175.

INTRODUCTION

Among adolescents, girls constitute a more vulnerable group, particularly in developing countries, where they are traditionally married at an early age and exposed to greater risk of reproductive morbidity and mortality. Developmentally it is a crucial period, particularly with reference to reproductive health. The young women who are at the brink of womanhood constitute the most crucial segment of our population from the point of view of the quality of our future generation. It is a period of peak growth for boys and girls. Food and nutrient needs are proportionately higher during this period of growth spurt. In adolescent girls on marginal diet, iron deficiency may consequently affect growth and skeletal development. Further, low iron stores throughout childhood may contribute to a delayed age of menarche and anaemia in adolescents may also impair immune response.

OBJECTIVES

The present study was undertaken to find out prevalence of anaemia among adolescent girls in rural Meerut and to study their socio-demographic characteristics in relation to anaemia.

METHODOLOGY

The study was carried out in Daurala block. The sample consisted of randomly selected 504 adolescent girls (10-18 years), covering 21 girls from each of the 24 subcentre villages under Daurala PHC. Detailed information was collected about socio-demographic characteristics for anaemia by oral questionnaire method, supplemented by physical examination and haemoglobin estimation.

RESULTS

- ❑ 174 (34.5%) of the 504 adolescent girls were anaemic. The prevalence of mild, moderate and severe anaemia among adolescent girls was 19 per cent, 14.1 per cent and 1.4 per cent, respectively. The proportion of mild, moderate and severe anaemia was 55.2 per cent, 40.8 per cent and 4.0 per cent, respectively.
- ❑ The prevalence of anaemia was significantly higher (45.2%) among adolescent girls from joint families as compared to those from nuclear families (28.3%) ($p < 0.001$), which may be related to household food security.
- ❑ Anaemia was higher in socio-economic class V (50%) and it significantly reduced with rise in socio-economic status, being minimum (27.3%) in class I ($p < 0.001$). This may be because of better availability of high quality food with rise in socio-economic status (SES). An inverse association between SES and anaemia was observed.

- ❑ The prevalence of anaemia in relation to father's occupation was found to be significant ($p < 0.001$) which may be because of availability of better quality foods to the girls of agricultural families. Adolescent girls, whose fathers were labourers (44%) were more anaemic than those whose fathers working in agriculture (27.1%).
- ❑ A significantly higher ($p < 0.01$) prevalence of anaemia was seen in adolescent girls having illiterate (42.2%) and just literate mothers (51.9%).
- ❑ A significantly high ($p < 0.02$) level of anaemia was observed in adolescent girls belonging to families having family size > 3 (38%) than those from families of size ≤ 3 (27.2%), which may be due to availability of adequate diet to all the family members in small families.

CONCLUSION

The prevalence of anaemia among adolescent girls was found to be 34.5 per cent. The significant association of anaemia with socio-economic status, type family, father's occupation, mothers education and family size stressed the need to develop strategies for intensive adult education, nutrition education and dietary supplementation, including anaemia prophylaxis. The household food security also had an influence on the iron status of the adolescent girl. The campaigns for small family and literacy need to be intensified for better adolescent health and nutrition, with special reference to micronutrient status of the girls.

Reducing Iron-Deficiency Anaemia and Changing Dietary Behaviours among Adolescent Girls in Maharashtra, India

Pande Rohini, Kuz Kathleen, Wodia Sunayana, Mac Quarrie Kerry, Jain Saranga. Improving the Reproductive Health of Married and Unmarried Youth in India. Evidence of Effectiveness and Costs from Community-based Interventions, Institute of Health Management, Pachod (IHMP), Pune. Final Report of the Adolescent Reproductive Health Program in India, International Centre for Research on Women (ICRW, 200:14-15).

INTRODUCTION

As many as 60-70 per cent of adolescent girls are anaemic, and at risk of adverse pregnancy outcomes, including maternal deaths, reduced work productivity and impaired physical capabilities. Adolescence, as a period of growth and development, is considered the best time to intervene, to assist in physical and mental development, and to prevent maternal anaemia. The Institute of Health Management- Pachod (IHMP), in collaboration with ICRW, had conducted an intervention study in Maharashtra to improve dietary behaviour and reduce iron-deficiency anaemia among unmarried adolescent girls.

OBJECTIVES

The specific objectives of the study were to increase number of daily meals from 2 to 3 or 4 in the case of adolescent girls; to encourage girls to consume iron-rich foods on a daily basis; to encourage girls to consume vitamin C-rich foods in combination with iron-rich foods daily; and to reduce the prevalence of anaemia, especially in the severe and moderate categories.

METHODOLOGY

The unmarried adolescent girls aged 10-19 years were selected from 10 intervention slums (1000) and 6 control slums (752) for the baseline and endline with two cross-sectional samples. Ultimately, out of 1,142 girls, 811 were surveyed for information on dietary and morbidity history, anthropometric parameters, menstrual history and workload within and outside the house. Blood samples from 803 girls were taken to assess haemoglobin status. Logistic regression was used to determine the predictors of anemia, with haemoglobin status as the dependent variable. Independent variables included economic status, consumption of iron-rich foods, meals eaten in a day, use of lemon with meals, morbidity in the past year, hours worked in a day and whether menses had started.

RESULTS

- ❑ The average age of the study population was 14 years and 76 per cent of them were currently in school and 50 per cent had achieved menarche.
- ❑ Around 58 per cent of the sample was anaemic (Hb<12 g/dl), 1.3 per cent severely anaemic (Hb<7gm/dl) and 40 per cent of them were eating two or fewer meals daily.

- ❑ Logistic regression of baseline data showed that anaemia was significantly more likely among girls who ate two or fewer meals in a day, had been sick in the past year and consumed few iron-rich foods. Thus, the intervention focused on changing dietary behaviour.
- ❑ Endline comparisons showed that the intervention has influenced dietary behaviour, with a significant increase in percent of girls who ate more than 3 meals a day and consumed lemon with their meals, as well as in the frequency of eating fruits in the intervention group.
- ❑ Between baseline and endline, blood testing showed that mean Haemoglobin levels increased from 5.8 to 9.5 g /dl for severely anemic girls, and from 8.9 to 11.2 g/dl for moderately anemic girls.

CONCLUSION

Participatory nutrition education can influence adolescent girls' anaemia and dietary behaviour. Key dietary behaviour messages for girls include: eating more than 3 meals a day, eating with family so as to eat enough, eating green vegetables daily and eating lemon or amla with meals. Iron supplementation programmes need to include nutrition education programmes to be effective. More effective methods need to be devised for community-based haemoglobin testing. The government's anaemia prevention and control programme should focus on adolescents.

Deleterious Functional Impact of Anaemia on Young Adolescent School Girls

Sen A, Kanani S J, *Indian Pediatrics*, March 2006; 43 (3): 219-226.

INTRODUCTION

In the period of later school age and early adolescence, nutrient requirements are high and reserves are being laid for the subsequent rapid growth and development. Iron deficiency in this age group has been primarily studied for its detrimental effect on hematinic status. However, anaemia may compromise pubertal growth spurt. It may also reduce physical work capacity and cognitive function. Anaemia produces scholastic under-achievement and behavioural disturbances in school-going adolescents.

OBJECTIVES

The study was planned with the objective of assessing the physical work capacity and cognition of underprivileged anaemic schoolgirls in early adolescence as compared to their non-anaemic counterparts.

METHODOLOGY

The study was conducted in 4 Vadodara Municipal primary schools wherein 350 girls from low-income families studying in standards V and VI were selected. Data on haemoglobin (n = 322), height and weight (n = 350) were collected. A random sub-sample of 60 per cent of the total students was taken for physical work capacity (PWC) and cognitive tests (n = 230). The cognitive functions of the girls were assessed using modified selected tests from the Gujarati version of Wechsler Intelligence Scale for Children (WISC). Mean and standard deviation were calculated for PWC and cognition scores. Percentage of anaemic girls was calculated using WHO cut off of haemoglobin < 12g/dl. On a smaller subset of data, anaemic and non-anaemic girls were compared within well-nourished and undernourished groups. Undernutrition was defined as body mass index (BMI) < 5th percentile of Must, et. al. standards.

RESULTS

- ❑ The mean haemoglobin level of total sample of girls (n = 322) was 11.32 g/dl; 10.67 g/dl for anaemic (n = 217) and 12.68 g/dl for non-anaemic (n = 105) girls.
- ❑ The prevalence of anaemia was very high (67%), with 32.6 per cent girls being mildly anemic (Hb = 11.0-11.9 g/dl) and 34.7 per cent girls moderately anaemic (Hb = 7.1-10.9 g/dl).
- ❑ Though the mean number of steps climbed by the 59 non-anaemic girls (175) in 3 minutes was not significantly higher than 171 anaemic girls (172) but the time taken to recover to the basal pulse rate was significantly higher (p<0.001) for anaemic girls. Even mildly anaemic girls took longer to recover to their basal pulse rate compared to non-anemic girls. The moderately anemic girls similarly showed a longer recovery time than those mildly anaemic.

- ❑ The non-anaemic girls scored higher than their anaemic counterparts in cognitive tests, the difference being significant in digit span and visual memory tests. Both, mildly anaemic and moderately anaemic girls fared significantly poorer as regards recovery time ($p < 0.05$) and digit span scores ($p < 0.01$). Even the mildly anaemic girls tended to have lower scores than non-anaemics, and the moderately anaemics further had lower scores than those mildly anaemic.
- ❑ In the undernourished groups non-anaemic girls (174 steps) performed significantly better than their counterparts (143 steps). This indicated that the adverse effects of anaemia are compounded due to overall undernutrition and that being well-nourished was as important as being non-anaemic for normal PWC.

CONCLUSION

The findings of the study indicated that anaemia is likely to compromise physical work capacity and cognitive functions of girls in the pubertal phase of development. Further, even mild anaemic can have a deleterious effect on these functions. The adverse impact gets especially aggravated, if both undernutrition and anaemia are present. Cognition in particular, appears to be adversely affected by anaemia in both, well-nourished and undernourished subjects.

Thus, not just pre-schoolers, but even older school children and those entering adolescence are vulnerable to the adverse functional consequences of iron deficiency anaemia that is, poor growth and physical work capacity and compromised cognitive abilities. Thus, the future reproductive health of the girls may also be jeopardised as these girls continue to be anaemic and may enter pregnancy with little iron store, poor height and weight due to chronic malnutrition. It is hence, time to focus on this neglected group of early adolescence for anaemia control interventions.

Iron Status of Adolescents Girls and Its Effect on Physical Fitness

Shekhar A. The Indian Journal of Nutrition and Dietetics, October 2005; 42 (10): 451-456.

INTRODUCTION

It is becoming increasingly evident that control of anaemia in pregnant women may be more easily achieved if satisfactory iron status of the adolescent females can be ensured prior to marriage. The causes of anaemia are multifactorial. Nutritional requirement for iron in relation to the body size is higher during adolescence, because this is a period of rapid growth and development. During adolescence, iron deficiency not only reduces work productivity but also leads to iron deficiency during pregnancy. Therefore, targeting adolescent girls would not only have an immediate curative effect but may also have long term preventive effect on iron deficiency during pregnancy. In view of the implications of iron deficiency on development, growth, health and work output of an individual and thereby, nutritional productivity, urgent steps are needed to control it.

OBJECTIVES

This study was undertaken with the objectives of carrying out a situational analysis of the current status of nutritional anaemia in adolescent girls; and assessing the impact of haemoglobin levels on physical fitness.

METHODOLOGY

150 college-going adolescents aged 17-19 years were enrolled for the study. Background information, anthropometric measurements, dietary intake and menstrual history were recorded, besides assessing the haemoglobin level. The physical fitness assessment of anaemic and non-anaemic adolescent girls carried out on a sub-sample of 50 girls. A regression equation for the prediction physical work capacity of adolescents of 11 to 16 years was derived. One mile running test on a treadmill was administered to measure physical fitness of adolescent girls.

RESULTS

- ❑ The mean age of girls was 18.5 years, with 95.2 per cent being of 17-18 years of age.
- ❑ The mean height was found to be 156.6 cm. and mean weight was 51.5 kg. The mean BMI of the subjects ranged from 16.8 to 20.8.
- ❑ Out of 150 subjects, 68 students were found to be normal, although none were observed to be severely anaemic (Hb < 7g/dl); 12.6 per cent and 46 per cent subjects were moderately and mildly anaemic, respectively.
- ❑ Approximately 74 per cent girls with moderate anaemia and approximately 28 per cent girls with mild anaemia were correctly identified when pallor of conjunctiva, eyes and tongue was used to examine and assess anaemia.

- ❑ The sensitivity of identifying girls with symptoms like weakness, tiredness, irritability and breathlessness for moderate and severe anaemia was 61 per cent and 20 per cent, respectively. About 98 per cent girls were correctly identified as non-anaemic. The mean age of menarch was 13 years and the menstrual cycle was regular among 75 per cent of adolescents.
- ❑ Mean daily iron intake was observed to be less than 50 per cent of the RDA, whereas the ascorbic acid intake was adequate, leading to many adolescent girls having normal haemoglobin levels inspite of iron consumption being less than RDA.
- ❑ There was significant difference in the mean running time of normal and moderately anaemic adolescent girls ($p < 0.001$). The response to running in terms of heart rate does not seem to be much different between the groups.
- ❑ When the work performance of the adolescent girls was analyzed, girls with a better haemoglobin status (< 12 g/dl) could run a mean distance of 216 metres per minute, a difference of 23 metres in comparison to moderate anaemic groups, who achieved 193 metres per minute.

CONCLUSION

Clinical signs and symptoms are adequate indicators for detection of mild and moderate levels of anaemia. The consumption of ascorbic acid in diet alongwith iron leads to better absorption and utilization of iron, as reflected in better haemoglobin level among adolescent girls. Despite of the fact that both groups were working at the same level of physiological response of the body in terms of the heart rate, better performance was seen in the adolescent groups having normal haemoglobin levels. Inadequacy of haemoglobin status related response in anaemic adolescents might be predicted conveniently with symptoms of tiredness, irritability and breathlessness.

Efficacy of Twice Weekly Iron Supplementation in Anaemic Adolescent Girls

Shobha S and Sharda D. Indian Pediatrics, December 2003; 40 (12): 1186-1190.

INTRODUCTION

Iron deficiency anaemia is the most prevalent micronutrient deficiency among humans all over the world. Adolescent girls are a particularly vulnerable group as their requirements of iron, as well as its losses from the body are high. Anaemia during adolescence limits growth and delays the onset of menarche, which in turn may lead to cephalo-pelvic disproportion. Very often, in India, girls get married and pregnant even before the growth period is over, making anaemia doubly risky. Since the anaemic status of the adolescent girls is bound to affect their offspring, care during this period is likely to pay rich dividends.

An intermittent supplementation of iron, that is, weekly once or twice could be effective, costs less, has fewer side-effects and would be of particular use in a public health programme, if proved to be effective.

OBJECTIVES

The study examined the comparative effectiveness of a twice a week supplementation programme to a daily supplementation programme in enhancing the haemoglobin levels of adolescent girls with different grades of anaemia and in reducing side effects.

METHODOLOGY

A sample of 244 girls aged 13-15 years from Andhra Pradesh Social Welfare Residential School for girls in Ranga Reddy District was studied. The haemoglobin was estimated to classify Girls as normal, mildly, moderately, or severely anaemic, as per the WHO standards and were further randomly divided into two subgroups to follow a daily or a twice weekly supplementation regimen for the period of 84 days. The subjects were dewormed with a single dose of 400 mg albendazole and haemoglobin was estimated at the beginning, and at the end of the 3rd, 6th, 9th and 12th weeks. Group means and standard deviations were calculated and students' 't' test and paired 't' test were carried out to test the significance of difference between different groups, as well as within the groups at different periods of supplementation.

RESULTS

- 83 per cent adolescent girls were anaemic.
- The haemoglobin level increased steadily in all supplemented subjects as the period of supplementation increased. By the end of 21 days of supplementation, all categories of both groups showed significant improvement in the baseline haemoglobin level.
- In the mildly anemic girls, the daily groups had significantly higher haemoglobin level than the weekly group. The same trend was observed by the 41st day of supplementation. By the 63rd day the subjects

reached normal levels of haemoglobin, while weekly supplemented adolescent girls had near normal haemoglobin levels.

- ❑ At the end of the study period (84 days), all mildly and moderately anaemic subjects given either daily or weekly twice iron supplementation became normal (12 g/dl). Moreover, majority of the severely anaemic subjects also reached near normal levels.
- ❑ Severely anaemic subjects showed maximum overall increment (58.78% in daily and 52.64% in weekly groups), followed by moderately (33.44% in daily and 29.69% in weekly groups) and mildly anemic subjects (23.22% in daily and 18.95% in weekly groups). Thus, it was observed that lower the initial haemoglobin level, the greater the increase on supplementation.
- ❑ While 57.84 per cent of the daily supplemented subjects suffered unpleasant side effects, only 5.94 per cent of the weekly twice-supplemented subjects had adverse side effects. This could probably be due to the avoidance of iron-overload in the stomach of the subjects due to intermittent supplementation.

CONCLUSION

Supervised administration of weekly twice supplementation of iron to anaemic subjects was found to be as advantageous as daily supplementation, as far as raising the haemoglobin levels were concerned. Even the severely anaemic adolescent girls had near normal haemoglobin status after the 84 day supplementation programme. It has an edge over the traditional supplementation method with regards to occurrence of unpleasant side effects like nausea and epi-gastric pain, which could perhaps lead to better compliance among subjects to iron supplementation.

Impact of Iron, Vitamin A and Vitamin C Supplementation on Anaemic Adolescent Girls

Swarnalatha A, Yegammai C. The Indian Journal of Nutrition and Dietetics, June 2006; 43(6):229-237.

INTRODUCTION

Adolescence is a period characterised by rapid increase in height and weight, besides hormonal changes resulting in sexual maturation and causing wide swings of emotion. During the period of puberty, the body has increased need for all nutrients and particularly iron and calcium. Increased physical activity, combined with poor eating habits and onset of menstruation contribute to accentuating the potential risk for adolescent's poor nutrition.

OBJECTIVE

The objective of the study was recognising the importance of absorption enhancers namely vitamins A and C and the sustainability of food-based strategies.

METHODOLOGY

A hundred school-going girls in the age group of 13-15 years from Coimbatore, who attained menarche before six months of the study, having regular menstrual period and haemoglobin below 12 g/dl were selected for the study. Details on family background, food habits, menstrual problems, hygienic habits and nutritional knowledge of the selected girls were collected. They were divided into 4 groups (A, B, C and D) for supplementation- an iron tablet daily; an iron tablet daily + raw guava + raw carrot; an iron tablet daily + *sirukeerai poriyal*; and no supplement. The supplementation was planned in a way so as to provide similar iron level in all the experimental groups and the period of supplementation was 120 days. The anthropometric measurements, clinical signs and symptoms alongwith blood parameters, were studied before and after the supplementation. Parameters that indicated the severity of anaemia were studied in a sub-sample of 6 adolescent girls each, from the four groups before and after supplementation.

RESULTS

- ❑ The mean age at menarche was 13 years and among them 75 per cent had one or more menstrual problems.
- ❑ The overall consumption of iron rich foods was found to be poor among the adolescent girls due to poverty and poor nutritional knowledge.
- ❑ Before supplementation, diet of girls was nutritionally deficient. However, after supplementation, iron intake of the experimental groups was surplus by 46-54 per cent; Vitamin C in groups B and C was noticed to be surplus by 110 per cent and 228 per cent, respectively. The folic acid intake was surplus in group B (1%) and group C (11%), whereas deficit was noticed group A (10%) and group D (4%).
- ❑ The anthropometric measurements of all the groups before and after supplementation were lower than the reference value given by ICMR (1998).

- ❑ Prevalence of pale conjunctiva was greater as compared to other symptoms in both the experimental and control groups. The maximum prevalence (60%) was noted in the control group A (48%) and group B (40%). After supplementation remarkable reduction was seen in all the experimental groups, whereas in the control group (Group D) prevalence of symptoms like pale conjunctiva, white patches in the skin and loss of appetite were visible to a greater extent.
- ❑ The haemoglobin of the anaemic adolescent girls before and after supplementation had brought maximum (1.54 ± 0.52 g/dl) increment in group B who were fed with iron tablet, guava and carrot, followed by group C (1.10 ± 0.45 g/dl) who received *sirukeerai poriyal* and group A (0.73 ± 0.46 g/dl) who were supplemented with iron tablet alone.
- ❑ Serum iron was lower than the reference value both, in the experimental and control group before the supplementation, but after supplementation, there was a significant increase in all the experimental groups, with maximum in group B which received iron tablet, guava and carrot.
- ❑ The experimental groups recorded significant increase in PCV, with group B showing maximum (5.47 ± 0.77), followed by group C ($4.91 \pm 1.03\%$) and group A ($5.05 \pm 1.08\%$). Group B supplemented with iron tablet, guava and carrot and group C who received *sirukeerai poriyal* showed similar increase in MCV (15.23 ± 0.90 fl) and (15.20 ± 2.97 fl), which was greater than group A (14.81 ± 4.63 fl) who received iron alone.

CONCLUSION

It is concluded that the supplementation of iron with absorption enhancers, namely vitamins A and C in the case of adolescent girls resulted in better iron absorption, when compared to the girls who were supplemented with iron alone. The positive impact of vitamin A and C supplementation alongwith iron is a successful approach for combating iron-deficiency anaemia.

Effect of Deworming on Response of Iron-Folic Acid Supplementation among Adolescent School Girls of Lucknow

Tripti S, Idris Z M, Massod J. Indian Journal of Community Medicine, October-December 2004; xxix (4): 197.

INTRODUCTION

Adolescence, the second decade of life (10-19 years) is a period of transition from childhood to adulthood. Nutritional anaemia, particularly iron deficiency anaemia (IDA) is clinically the most widespread nutritional deficiency disorder and the risk of deficiency increases during the adolescent growth spurt. Various studies have shown that the prevalence of anaemia was double in girls who had history of passing worms (53.6%) as compared to those not infected.

OBJECTIVES

The present study was conducted to know whether de-worming together with iron-folic acid supplementation is more effective in improving haemoglobin status than iron-folic acid supplementation alone.

METHODOLOGY

The study was carried out on 100 adolescent school girls (10-19 years.) who had attained their menarche selected through stratified random sampling. Fifty students from each school were voluntary selected which were further divided into 2 groups of 25 students each. Group 1 was given iron folic acid (100 mg of iron + 500 µgm of folic acid) for three months + single course of de-worming agent (400 mg Albendazole) in the second month and next 25 students were given iron folic acid tablets for three months and single dose of placebo tablets in place of de-worming agent. Sahli's method for haemoglobin estimation was used both before intervention and within one week of completion of three months' intervention.

RESULTS

- ❑ More than one-third (39%) girls had history of passing worms and no statistically significant relation of anaemia in girls passing worms was found in relation to those who were not passing worms ($p=0.8$), though a very weak association ($RR=1.04$) was found.
- ❑ A mean change in haemoglobin with and without deworming was 1.74 gm% and 1.62 gm%, respectively ($p=0.06$) among the two groups and the difference in mean increase in haemoglobin level after iron folic acid supplementation with and without deworming was statistically not significant.

CONCLUSION

Though worm infestation is a contributor to anaemic situation, yet it cannot be ascribed as a major cause of anaemia. Deworming, in any case would always help in improving the anaemic condition. IFA supplementation remains the main strategy for combating anaemia and improving haemoglobin status of adolescent girls and deworming is a complementary strategy to improve it.

Micronutrient Deficiency Disorders in 16 Districts of India – Part 1 Report of an ICMR Task Force Study

Tuteja G S, Singh P, Dhillon B S, Saxena B N, District Nutrition Project, 2001 (Source: Micronutrient Profile of Indian Population)

INTRODUCTION

Indian Council of Medical Research (ICMR) had undertaken a multicentre study “District Nutrition Project” in 18 districts from 13 states of the country. The objectives were to assess the magnitude of micronutrient (iron, iodine and vitamin A) deficiency disorders, as well as protein energy malnutrition and to develop a need-based service delivery intervention model through the existing district health system. The districts were mainly covered from northern, eastern and north-eastern states of the country.

METHODOLOGY

It is a community-based survey, including rural and urban children (< 12 years); adolescent girls (11-18 years) and pregnant women. Around 11, 260 pregnant women and adolescent girls were covered for anaemia screening. Anaemia was determined by haemoglobin estimation using filter paper method (cyan-methaemoglobin method).

RESULTS

- ❑ The overall prevalence of anaemia among 4,332 non-pregnant adolescent girls from 16 districts was 90.1 per cent. The range was 58.2 per cent (Dehradun) to 100 per cent (Badaun).
- ❑ The average prevalence of anaemia in the eight districts of northern India was 89.4 per cent and in the six districts of eastern (including north-east) India, it was 91.7 per cent.
- ❑ The overall prevalence of severe anaemia was 7.1 per cent; the highest (24.3%) in Bikaner and the lowest (nil) in both Bishnupur and Kohima districts.
- ❑ The overall prevalence of moderate (7-10 g%) and mild (>10-11.9 g%) anaemia among adolescent girls was 50.9 per cent and 32.1 per cent, respectively.

CONCLUSION

Anaemia is prevalent nation-wide among adolescent girls and pregnant women, and the extent varies from region to region, with pockets of severe anaemia. Mild and moderate anaemia is more prevalent than severe anaemia, which can be tackled through the strategy of IFA supplementation.

Factors Influencing Anaemia among Girls of School Going Age (6-18 years) from the Slum of Ahmedabad City

Verma A, Rawal V S, Kedia G, Kumar D, Chauhan J. Indian Journal of Community Medicine, January - March 2004, xxix (1): 25-26.

INTRODUCTION

In India, pre-adolescent and adolescent girls, who constitute a sizable segment of its population, constitute a vulnerable group on account of practice of early marriage, with potential exposure to a greater risk of morbidity and mortality. A low marginal diet and furthermore, low iron stores throughout childhood may contribute to a delayed menarche and impaired immune response.

OBJECTIVES

The study was designed to highlight the problem of anaemia in school going, pre- adolescent and adolescent girls residing in the slums of Ahmedabad city; and to highlight the relationship between prevalence of anaemia and various socio-demographic variables.

METHODOLOGY

The study was carried out among girls (n= 1295) of school going age (6-18 years) residing in 15 randomly selected slums of the north Ahmedabad city. Information was collected regarding age, height, body weight, haemoglobin level (Sahli's method), parents' education and occupation, socio-economic status, knowledge about anaemia, status of menstruation and consumption of various diets factors. The results were analysed using multiple regression analysis. Blood samples for haemoglobin estimation were obtained from 1,153 girls (89%) for diagnosis of anaemia and its severity using WHO guidelines.

RESULTS

- ❑ Majority (81.8%) of girls were anaemic, out of which 55.2 per cent were mildly anaemic, 0.6 per cent severely anaemic and the rest were moderately anaemic.
- ❑ Anaemia was found to be significantly higher among girls with following attributes, namely:
 - Those with the habit of post meal consumption of tea/ coffee (94.4%) ($p < 0.01$),
 - Whose fathers were working as semi-skilled/skilled workers (77%) ($p < 0.02$);
 - Those having a BMI of 18.5 or lower (82.4%), as compared to those with BMI more than 18.5 (79.7%).
- ❑ The prevalence of anaemia was significantly lower in girls consuming green leafy vegetables ($p < 0.01$).

- ❑ No significant relationship of anaemia was observed with socio-economic class, knowledge about anaemia, and parent's education, status of menstruation and daily consumption of lemon/ sour fruits.

CONCLUSION

A high prevalence of anaemia among the urban girls of Ahmedabad slums was alarming, in view of the grave consequences of anaemia. The study highlighted the need to develop pragmatic intervention programmes, incorporating various strategies to improve dietary intake and bio-availability of iron; nutritional supplementation through iron and folic acid tablets and fortification of edible dietary items with iron.

III
Adolescent Health and Morbidity

Adolescent Health and Morbidity

Though some of the concerns related to adolescent girls' health and morbidity have been enlisted in the section on RCH and RTIs, yet the entire gamut of issues associated with health and morbid conditions related to adolescent girls are quite varied. Some of the micronutrient deficiencies like anaemia are rampant among adolescent girls but there are others like generalised malnutrition due to eating disorders arising out of psychological conditions. Addictions like smoking and gutka consumption in this age group are quite common, besides systemic disorders like blood pressure, conversion disorders, hepatitis and occasional vision failure. Obesity was reported to be higher in adolescent girls (5%) from higher socio-economic status than adolescent boys (2%). Studies show that more than 55 per cent adolescents were anaemic and nearly 40 per cent suffered from dental caries. Adolescence was the age when refractive errors set in, especially due to educational stress.

Research shows that more than half of the adolescents suffered from worm infestations, various nutritional deficiencies, besides addiction of gutka/tobacco leading to loss of appetite. The habit of chewing tobacco and gutka was greater in male than in female adolescents but it was proportionate to the age of the adolescent and was more common in nuclear families due to lack of adequate supervision in such families. A peculiar finding was that percentage of male adolescents having a habit of chewing tobacco was higher in cases where their fathers had such a habit and similarly, adolescent girls picked the habit of chewing gutka/tobacco from their mothers with such an addiction.

Adolescent malnutrition had a synergistic relationship with intestinal infections and was positively correlated with anaemia; the prevalence of anaemia being higher among worm-infested adolescent girls. The causative factors included poor sanitation and open defecation, as well as poor personal hygiene among adolescents and the practice of not using or sparingly using footwear.

Poor hair hygiene in case of adolescent females from lower socio-economic status led to higher prevalence of pediculosis (upto 40%) in these adolescent girls.

Both Rapid Assessment Procedures (RAP) and conventional methods were found to be consistent in the outcome to assess health and nutritional status of adolescent girls. In winters 70-75 per cent girls reported cough & cold, and fever. In summer conjunctivitis (57.5%) and diarrhoea (23.7%) was reported and rainy season saw a peak in skin infections (27.5%) among adolescent girls. More than 60 per cent also reported having suffered from malaria.

Data from studies relate several growth and nutritional deficiencies to sub-optimal environmental conditions and adolescent girls from affluent families show anthropometric parameters similar to ICMR standards, suggesting that factors like poor diet, morbidity burden, socio-economic status etc. result in poor growth of Indian girls.

The obsession of adolescent girls with their figure and the desire to have a thin frame of body pushes them into anorexia nervosa and on the other hand, the problem of bulimia originates from excessive eating during depressive mood swings and in stressful conditions. Thus, eating disorders are not too uncommon among adolescents. Negative self-cognition, coupled with occurrence of bingeing suggested a fundamentally self-limiting means of achieving temporary resolution of issues related to personal identity, self-expression and self-esteem.

The prevalence of infective skin disorders like scabies and pyoderma was most common in street children and adolescents, predominantly due to poor personal hygiene, calling for a consistent programme on personal hygiene and community awareness for adolescents to prevent infective dermatosis.

Other health problems of adolescents reported in research studies over the last five years include refractive errors of eyes, hepatitis and conversion disorders.

Further research may be directed towards:

- Rapid assessment of the extent of adolescent morbidity due to preventable causes.
- Association of refractory errors during adolescence with stress and nutritional status.
- Role of personal and environmental hygiene in reducing adolescent morbidity.

Study of Health Problems of Adolescents in Urban Field Practice Area

Kalamka H S, Department of Preventive and Social Medicine, Indira Gandhi Medical College, Nagpur. A Thesis Submitted for the Degree of Doctor of Medicine (MD) (Prevention and Social Medicine), Nagpur University, Nagpur 2001.

INTRODUCTION

Adolescence is considered as a bridging period from childhood to adulthood. Biological, cognitive, moral, as well as social development occurs during this period. It can be identified as one the vulnerable period of life when the various health problems may be seen. Substance abuse, disregard of traffic regulations are the examples of behavioural patterns that frequently endanger adolescent health. Stress leads to emotional problems in adolescents giving warning signs, suicidal behaviour and depression. Teenage pregnancy, abortion, child birth, unsafe sex and sex abuse endanger adolescent health. Therefore, a practical approach to the adolescent health problems should be developed in a country like India where general health care system has not come to a level where it can serve the needs of individual age groups separately.

OBJECTIVES

The specific objectives of the study were to study the various health problems of the adolescents and the factors influencing them.

METHODOLOGY

The community-based cross-sectional study was carried out in field practice area of UHC, Sadar Nagpur to study various health problems in adolescence and factors influencing those health problems. Out of 740 adolescents in 10 - 20 years age group, 700 adolescents were studied. After obtaining the preliminary information, every adolescent was subjected to thorough clinical examination and anthropometric measurement. Haemoglobin estimation was done by using Sahli's haemoglobinometer. Clinical examination was done according to schedule suggested by Jelliffe and findings were recorded accordingly. Anthropometric measurements (weight, height, and skin fold thickness at triceps) were taken using the following techniques. Data thus collected was analysed using Chi-square test.

RESULTS

- ❑ Out of 700 adolescents (93 males and 120 females) studied, 336 (48%) were males and 364 (52%) were females. Early adolescents (10-14 years) sample consisted of 319 (45.57%) subjects (162 males and 157 females). Middle adolescents (14-17 years) sample consisted of 168 (24%) subjects (81 males and 87 females). Late adolescents (17-20 years) were of 213 in number (30.43%).
- ❑ Age of menarche in females ranged from 10 - 17 years, with majority having attained it at the age of 13 years. Menstrual problems, including oligomenorrhoea were present in 30 per cent adolescents.

- ❑ Study shows that 439 (62.71%) adolescents were suffering from acute nasopharyngitis/ acute tonsillitis and 401 (57.28%) from anaemia. As many as 379 (54.14%) were having acne, 259 (37.0%) were having dental caries, 240 (34.28%) were having nicotine stains on teeth. Further, 184 (26.28%) adolescents were having signs of vitamin B complex deficiency, 136 (19.42%) had history of passing worms in stools, 45 (6.43%) adolescents had scabies, 52 (7.43%) pediculosis, 25 (3.57%) obesity and 2 (0.28%) were known cases of congenital heart diseases (CHD). Out of 700 adolescents, 401 (57.28%) were anaemic, with 117 (16.71%) having moderate and 284 (40.57%) having mild anaemia. Higher prevalence of anaemia was seen in 219 (60.16%) female adolescents as compared to 182 (54.16%) male adolescents.
- ❑ There was statistically significant association between age and habit of chewing tobacco and gutka in adolescents ($\chi^2 = 182.1$; $df = 2$, $p < 0.001$), implying that habit of chewing tobacco/gutka was directly proportional to age of adolescents. It was observed that percentage of adolescents having habit of chewing tobacco and gutka was higher in nuclear families (60.47% males and 53.03% females) as compared to joint families (45% males, 47.17% females).
- ❑ The percentage of morbid conditions was higher in joint families (82.42%) as compared to nuclear families (61.08%), due to overcrowding and poor sanitation.

CONCLUSION

There was statistically significant association between morbid conditions and socio-economic status. Habituation to tobacco and gutka was an important behavioural problem. Socio-economic status influences the morbidity as well as the different habits in the adolescents. Study shows a direct association between type of family of adolescents and the habit of chewing tobacco and gutka, which is often due to lack of supervision in nuclear families as compared to joint families. Presence of elders in the family definitely influences the behaviour of adolescents.

Worm infestations, repeated attacks of common cold, diarrhoeal diseases, monthly menstrual bleedings, menstrual disorders, dietary deficiency of iron and multiple micro and macro nutrient deficiencies might be responsible for increased prevalence of anaemia in adolescents covered in the present study.

Rapid Assessment Procedures for the Health and Nutritional Profile of Adolescent Girls : An Exploratory Study

Mathur P, Sharma S, Wadhwa A [Source: www.unu.edu/unupress/food/8F11730/8F173Eoi.htm].

INTRODUCTION

Use of Rapid Assessment Procedures (RAPs) is gaining ground in international health, nutrition and development planning. Planning and implementing development programmes with people's participation is considered one of the keys to sustainable development. Although RAPs are often not explicitly participatory at least, as originally conceived, the participatory approach in the present study was a vital addition to the basic method for better involvement of the target population in the research process.

OBJECTIVES

The study was designed to develop and test tools for the rapid appraisal of the health and nutrition profile of adolescent girls (11-14 years) from a peri-urban background and compare it with conventional method for health and nutrition profile.

METHODOLOGY

Twelve to 15 adolescent girls from 6 Anganwadi centres in Ladosarai, Mehrauli (totaling to 80), their mothers (n=61) or married elder sisters (n=3) were selected. The six Anganwadi workers and their helpers, alongwith 4 most frequently consulted doctors in the village were also interviewed. Focus group discussions were conducted with the girls and their mothers separately regarding their usual dietary pattern and health problems. Checklists were used to record the data.

Data collection was repeated using the conventional methodology to compare the two procedures with respect to the quality of data and the time required to collect them. An interview schedule was used to obtain information about the economic profile, morbidity profile and dietary habits of all 80 adolescent girls and 24-hour intake recall was done 40 girls selected randomly. The paired t-test was applied to see if there was any significant difference in nutrition intakes by the RAP and conventional methodologies.

RESULTS

- ❑ The classification of Kaushal and Khanna at 19x9, 1990 was used to categorise the income estimates obtained by the conventional method. The number of adolescent girls falling into each category matched well with the number obtained by the RAP exercise.
- ❑ The adolescent girls' perception of seasonal variation in peak frequency of different diseases was similar to that reported by the doctors. The winter months had the maximum frequency of fevers (75%), coughs (73.5%) and colds (72.5%); the summer months had a high frequency of conjunctivitis (57.5%) and diarrhoea (23.7%); the rainy season saw a peak in skin infections (27.5%). The girls associated each ailment with a particular season, except for diarrhoea, which almost half the girls reported as occurring frequently and not specific to any season.

- ❑ The RAP tool for the 24-hour food intake was much faster, taking an average of 4.7 minutes to complete, whereas the conventional tool took an average of 10.3 minutes. The entire RAP exercise for one Anganwadi centre took about 8 hours, against 15 hours to complete the conventional interview schedule. Thus, the RAP tool was indeed both rapid and reliable.
- ❑ Of energy, protein, calcium, iron, and vitamins A and C, only vitamin C was consumed in excess of the RDA. This was probably because of the inclusion of fresh fruits and vegetables in the daily diet, especially guava, a vitamin C-rich source, the girls purchased from vendors outside their schools.
- ❑ The calorie and protein gap was maximum in the 14-year olds (641 kcal and 24 g). This could be related to the fact that the older girls ate with their mothers after the men in the family, and probably inadequate amounts were left for them.

CONCLUSION

The results of the wealth ranking exercise were consistent with estimates of income obtained by conventional interviews. The doctors confirmed seasonal variation in frequency of diseases mapped out by the girls. The locomotor disability rates for the girls were very high in this community.

There was no significant difference between the mean nutrient intakes obtained by conventional and modified (RAP) 24-hour recall. The consumption of all nutrients except vitamin C was below the RDA. The mapping of food intake using RAP and indeed, the entire RAP exercise took much less time than conventional interviews. The greatest asset of the method was the allowance it gave for creativity and modification. It was this leverage that ultimately helped to elicit a range and quality of information and insights that were inaccessible with the more conventional methods.

Intestinal Parasitic Infections, Anaemia and Undernutrition among Tribal Adolescents of Madhya Pradesh

Rao V G, Aggrawal M C, Yadav R, Das S K, Sahare L K, Bondley M K, Minocha R K, Indian Journal of Community Medicine, January-March 2003; XXVIII (1): 26-29.

INTRODUCTION

Adolescence, a period of transition between childhood and adulthood, is an important period of human growth and maturation. Being a period of growth spurt, exceptionally rapid rate of growth occurs with unique changes during this phase of life. The health of adolescents attracted global attention in the past decade. Though the issues like sexually transmitted diseases, reproductive health, etc., have been given due importance, limited work has been done on their nutritional status, including anaemia and intestinal parasitic infections.

Intestinal parasitic infections are widely prevalent in many developing countries, including India. These are particularly important during adolescence as they cause or aggravate malnutrition, including iron-deficiency anaemia. Adolescents grow rapidly and are at risk of developing anaemia, which is further aggravated by the presence and severity of intestinal parasitic infections.

OBJECTIVES

To assess worm infection and nutritional status, including anaemia among adolescents.

METHODOLOGY

This study was carried out between April, 2000 to May, 2001 in 27 villages of Kundam Blocks of Jabalpur district in Madhya Pradesh. Majority of the villages in the block are inhabited by the Gond tribal population (71.2%). Using PPS sampling technique, 818 adolescent boys and girls aged 11-19 years were covered during the study. Anthropometric measurements (weight and height) were taken using standardised techniques by trained investigators. Nutritional status was assessed adopting standard deviation (SD) classification using NCHS reference data. Haemoglobin was estimated using cyanmethaemoglobin method. Anaemia levels were assessed adopting WHO recommended classification. Morning stool samples were collected and were tested for the presence of ova and cysts of intestinal parasites within two hours using direct saline and iodine wet preparation method. Negative samples were re-examined by Mc Master technique on the same day. Worm load grading in terms of eggs per gram (epg) was done as per WHO classification. Baseline information in sanitary facilities, hygienic practices, etc. was also collected.

RESULTS

- High prevalence of undernutrition in terms of underweight, stunting and wasting was observed among adolescent boys and girls. More than half of the adolescents were found underweight (61.7%) and stunted (51.7%). Wasting was observed in 32.8 per cent adolescents. Prevalence of undernutrition was found similar in both the sexes.

- ❑ An overall prevalence rate of 59.5 per cent of intestinal parasites was observed among them, with boys having marginally higher prevalence (61.7%) as compared to girls (57.0%). The difference was statistically not significant ($Z = 1.34$; $p > 0.05$).
- ❑ Infection with *Ancylostoma SP* and *Hymenolepis nana* were commonest forms of parasitosis observed among them. Single and mixed infection was observed in 81.1 per cent and 18.2 per cent, respectively.
- ❑ Mean egg for various parasites ranged from 422.2 to 1097.8 and girls had higher hookworm load than boys.
- ❑ An overall prevalence rate of 82.3 per cent was observed among adolescent boys and girls with anaemia. Girls had significantly higher prevalence (86.5%) than boys (78.6%) ($Z = 3.00$; $p < 0.05$). Moderate and severe anaemia was observed in 59 per cent adolescents.
- ❑ The mean haemoglobin in hook worm-infected adolescents (9.19 ± 1.48) was significantly lower than that in non-infected (10.10 ± 1.75) ($Z = 6.60$; $p < 0.05$) ones.
- ❑ Prevalence of anaemia in hook worm-infected adolescents was observed to be 88.3 per cent as against 73.6 per cent in non-infected adolescents. The difference was logistically significant ($Z = 4.61$; $p < 0.05$).
- ❑ The environmental sanitation survey showed that all the villages had potable water supply in the form of bore-well fitted with hand pumps. Open-air defaecation was the rule in these villages. Majority of them either did not use footwear or used it occasionally. Most of them used either mud or plain water for washing hands after defaecation.

CONCLUSION

Both, anaemia and worm infestation play a significant role in chronic undernutrition among adolescents. This situation is further aggravated by poor hygiene and sanitation, resulting in a vicious cycle of malnutrition and adolescent morbidity due to preventable causes.

Prevalence of Refractive Errors in School Children (12-17 years) of Ahmedabad City

Sethi Sonam, Kartha G P. Indian Journal of Community Medicine, October-December 2000; XXV (4): 181-183.

INTRODUCTION

Refractive error is an optic defect, intrinsic to the eye, which prevents light from being brought to a single point focus on the retina, thus reducing normal vision. Diagnosis and treatment of refractive errors is relatively simple and is one of the easiest ways to reduce impaired vision. Yet, in India, refractive error is the second major cause for patients to consult ophthalmologists.

Refractive errors constitute a sizeable proportion of any large eye OPD in our country. Poor vision in childhood affects performance in school or at work and has a negative influence on the future life of the child. Moreover, planning of a youth's career is very much dependent on the visual acuity, especially in jobs for navy, military, railways and aviation. This warrants early detection and treatment of refractive errors to prevent permanent disability.

OBJECTIVES

The present study was carried out to assess the prevalence of refractive errors in school children (12-17 years) of Ahmedabad city by age, sex, class, type and socio-economic status.

METHODOLOGY

Students in the age group of 12-17 years studying in 7th to 12th class from the four schools of Ahmedabad; Naranpura, Ramdevnagar, Memnagar and Vastrapur were taken for the study. A total of 1,647 students (828 males and 819 females) were included in the study.

The screening was done from 6-meter distance. The student was shown the E-card four 'E's of standard size (6/9 of Snellen's chart). For each eye, the child had to indicate the direction of open end of E. By simply rotating the card, the sequence could be changed. The child either indicated the direction correctly (eye sight good) or incorrectly (eye sight not good). Children whose eyesight was not good, i.e., who had a visual acuity of less than 6/9 were sent for subjective refraction. Subjective refraction was done till best-corrected visual acuity was achieved. Cycloplegic refraction was advised for whom best corrected visual acuity could be achieved. Those having organic defects in eye, such as corneal opacity, opacity of the lens, choroids and retinal disorders were excluded.

RESULTS

- Amongst 16-47 students who were examined, 828 were males and 819 were females. The age of the students ranged from 11 to 17 years. The mean age was 13-22 years; median and mode age was 13 years.

- ❑ In the study, 417 students (25.32%) were found to have refractive errors. Of these, 196 (47%) were females and 221 (53%) were males. There was no significant difference between refractive errors amongst males and females ($\chi^2 = 1.34$, $p > 0.25$).
- ❑ Out of 417 students with refractive errors, myopia was found in 265 (63.5%), hyper metropia in 47 (11.2%) and astigmatism in 85 (20.4%) cases.
- ❑ Number of ametropic of 10th to 12th standard were significantly higher (d Value = 3.96, $p < 0.05$) than the ametropic students of 7th to 9th standard, thereby showing that ametropia is related to number of years of schooling.

CONCLUSION

The data supported the assumption that vision screening of school children in developing countries could be useful in detecting correctable causes of decreased vision, especially refractive errors and in minimising long term visual disability. The number of students with refractive errors increased as the students move to higher classes, implying thereby that a significant relationship exists between refractive error and educational level.

Adolescents aged 11-17 years during which the children are at risk of developing refractive error, because they are actively growing and subjected to the strain of near work due to demanding academic schedules. Such a population was more likely to have more number of myopics.

Health Status of Adolescent Girls in Slums of Lucknow

Singh J, Singh JV, Srivastava AK, Suryakant. Indian Journal of Community Medicine, April – June 2006, 31(2): 102-103.

INTRODUCTION

As we entered the new millennium, the concept of health for all remained distant dream especially, for adolescent girls who had always been neglected group of our society. The rapidly changing physio-psychology, monitory backwardness and burden of uncontrolled population expansion in slums make their adolescent population vulnerable to malnutrition, infections and social abuse. Health and morbidity survey of the adolescent girls will reveal their health and related conditions and will ultimately navigate health-promoting bodies to enumerate priorities and accordingly, to plan the nature and extent of health services needed for them from the limited available resources in our country.

OBJECTIVES

In this study an attempt was made to explore the health status and extent of health-related problems of adolescent girls in slums of Lucknow city.

METHODOLOGY

The study was a cross-sectional descriptive type carried on adolescent girls in 10-19 years age group, in four randomly selected slums of Lucknow, over a period of one year from September 1998 to October 1999. House-to-house survey was done and requisite 400 girls were drawn from the four randomly selected slums on the proportionate sampling basis. In all, 400 girls were interviewed using a pretested schedule and thorough anthropometric and clinical examination was carried out. Any abnormality detected was considered as defect. Height and weight of all girls were recorded and haemoglobin was estimated by Sahli's method. Detailed information on their menstrual pattern was also obtained.

RESULTS

- ❑ Out of 400 girls, 49.0 per cent were in 10-13 years, 38.0 per cent were in 14-16 years and 13.0 per cent were in 17-19 years age group. The mean age was 13.7 years. Two hundred and thirty-three (58.2%) girls had attained menarche and mean age at menarche was 13.3 years (SD=1.2). The mean duration of menstrual flow was 3.7 days (SD=1.3). The mean interval between two regular cycles was 29.3 days (SD=1.1).
- ❑ The mean height and weight of adolescent girls in all age groups was less than ICMR standards. Growth spurt was noted to occur between the age of 13-15 years, with increment of 11.1 cm in height and 8.8 kg in weight.
- ❑ The mean haemoglobin level was 10 gm per cent (SD=2.3); 56 per cent girls were anaemic of which 10.5 per cent were moderately anaemic (haemoglobin level 6.5-8 gm%), while 45.5 per cent were mildly anaemic

(haemoglobin level > 8-11 gm%) These results were comparable to WHO (1998) study in which they reported anemia in 40-60 per cent of cases.

- ❑ Deficiency signs of micronutrients were found in 28.7 per cent girls. A majority of them (22.2%) showed iron deficiency signs and 3 per cent girls had signs of vitamin A deficiency.
- ❑ Various morbid conditions were seen during the survey. Inadequate oral hygiene affected 55.4 per cent of adolescent girls. Other morbidities found were pediculosis (39.2%), cold & cough (25.8%), lymphadenopathy (22.2%), scabies (16.2%), inflamed tonsils (7.8%) and ear discharge (7%) of girls.

CONCLUSION

The deficiencies related to micronutrients like iron and vitamin A afflicted nearly one-third adolescent girls because of the fact that the girls were from slum areas where environmental conditions and health status are quite poor. Majority of girls lag far behind the standard weight and height, revealing the extent of chronic malnutrition in these girls. It is true for girls in slum areas of Lucknow that sub-optimal environmental factors are the main culprits for their poor growth. As many studies in affluent Indian children have shown comparable height and weight with reference to ICMR standards, so it can be suggested that Indians have comparable genetic potentials to grow but sub-optimal environmental factors like diet, morbidity burden, socio-economic status etc. that has resulted in poor growth of Indian girls.

IV
Reproductive Morbidity

Reproductive Morbidity

Reproductive health is an important area of concern in adolescent health and is intimately connected with the issues like RCH, population control and HIV/AIDS prevention. It is also a sensitive area due to socio-cultural taboo of discussion about sexuality and reproduction in the Indian society. In such circumstances, it is even more difficult to assess the reproductive health needs, reproductive health problems and access of adolescents to RCH services.

Assessment of unmet needs of unmarried adolescent girls during past five years revealed needs related to personal hygiene, nutrition, improving self-awareness about self care practices and health care-seeking behaviour and setting up accessible health services. Nearly half the adolescent girls were unaware of the phenomenon of menstruation prior to its onset and were therefore, scared at the time of its onset, calling for adequate prior orientation about it, including its management. Further, need to educate all adolescent girls against unprotected sex in both rural and urban areas, irrespective of their educational status, emerged as an urgent health education need.

More than half of the adolescent girls and young married women in rural areas and urban slums did not know about RTIs and nearly 95 per cent of them suffered from vaginal infections leading to watery/curdy discharge. It was observed that girls using unsafe menstrual practices were thrice at risk of contracting RTIs. Further, out-of-school girls were at around 1.6 times at greater risk of having RTIs as compared to adolescent girls attending school, thereby indicating the greater needs of out-of-school adolescent girls for education on RCH issues. Prevalence of infection was higher among illiterate adolescent girls (77%) and diminished with the improvement in literacy status.

While home delivery posed a greater risk of RTI as compared to institutional delivery, yet girls married before attaining the age of 15 years continued to be at greater risk of RTIs, as compared to those married at the age of 19 years. Better socio-economic status, as reflected by 'pacca' houses (as compared to 'kaccha' houses), was observed to be negatively associated with incidence of RTIs/STDs.

Adolescent girls lacked in awareness about various aspects of AIDS and safe blood. More than 40 per cent of these adolescents did not know the causative agent of HIV/AIDS. Both electronic and print media were the sources of information for school-going adolescent girls in most cases. Nearly half the adolescent girls felt that AIDS patients must not be managed at home and should be hospitalised and the remaining had either no idea about management of AIDS patients or had a negative approach (isolation, ostracising, shunning and even expulsion from school).

Thus, a more serious and concerted effort is required for reaching the adolescent girls with correct information about HIV/AIDS, its management and prevention. Thus, the campaigns related to HIV/AIDS should also talk about community management of HIV/ AIDS to enable adolescents to develop a positive attitude towards HIV/AIDS patients. Special sessions should be organised for screening and education regarding RTIs, which in most cases are not considered as morbid condition. There should be a slot for reproductive health education in schools. For the 'out of school adolescents' the nutrition and health education under Kishori Shakti Yojana, reproductive health should be included in the modules for both the age groups.

The research agenda during the years to come may include the following:

- Variations in the social interactions of adolescents with HIV/ AIDS cases.
- Rapid assessment of awareness among adolescents about RTIs/ STIs in urban and rural India.
- Level of communication between married adolescent girls and their spouses about unmet reproductive health needs.
- Status of empowerment of adolescent girls regarding their reproductive health needs.

Health Needs of Poor Unmarried Adolescent Girls - A Community-Based Study in Rural Tamil Nadu

Balasubramanian P. Indian Journal of Population Education, March-June, 2005 : 18-33.

INTRODUCTION

Adolescent girls constitute one-fifth of the female population in the world. Generally this group is considered healthy and thus, has not been given adequate attention in health programmes. The reason is that age-specific mortality is comparatively low in this age group as compared to others. In countries like India, adolescent girls face serious health problems due to socio-economic, environmental conditions and gender discrimination. These factors make them more vulnerable to health risks. A majority of girls in India are suffering from either general or reproductive morbidities. If not treated early, these morbidities could lead to various disabilities and consequently, affect their valuable lives. Adolescent girls are likely of mothers in the subsequent 5-10 years and these morbidities may affect the well being of future generation.

OBJECTIVES

The present study was undertaken to assess the health needs of rural poor, dalit and adolescent girls who are more vulnerable to health risks. The specific objectives were to document menstrual practices hygiene of girls who had attained puberty; to assess general and reproductive health status of adolescent girls and explore social, economic and demographic determinants of health; and to assess care seeking behaviour of adolescents for their reproductive and general illness.

METHODOLOGY

The study covered 391 unmarried adolescent girls (11-18 years) in the 13 villages of Chunamet Panchayat, Chitamur Union, Madhuranthakam block Kanchipuram district through house-to-house survey for collecting information on their general and reproductive health and associated factors, including the health care seeking behaviour.

RESULTS

- ❑ 29 per cent of girls were in the age group of 13 and 14 years; 35 per cent of the remaining were in early adolescence (11-14 years) and another 35 per cent were in late adolescence (15-18 years). Around 89 per cent girls had attended school; 68 per cent of literate girls were in school and only 8.3 girls were school dropouts. Around 79 per cent of those who were not attending school were working.
- ❑ 263 of the 391 adolescent girls (67%) had attained puberty. The mean age at menarche was 13.48 years. Majority (84%) of girls had 3-5 days of menstrual flow. About 61 per cent felt tired and 22 per cent felt nauseated during periods.
- ❑ 84 per cent ate regular food during menstruation and 16 per cent of girls avoided eating certain types of food like sweets/ jaggery, groundnut and non-vegetarian food, mainly fresh and dry fishes, on the pretext

that consuming fish could result in bad/foul odour and sweets/ groundnuts may cause excessive bleeding. All respondents used old clothes and undergarments for protection.

- ❑ About 82 per cent of girls reported having had atleast one reproductive health problem during the survey. On an average, 2.5 problems per girl were reported, including dysmenorrhoea, severe backache during menstruation, white discharge and itches and sores in the genital areas. A negative association between age at menarche and morbidity and association between the two was statistically significant. Prevalence of morbidity increased with age at menarche and it was high among illiterate than literates. Only 19 per cent had accessed treatment for illness. The care-seeking behaviour was slightly better among mature, literate and working girls. These girls provided economic support to their family and therefore, had better access to health care.
- ❑ Among those who had accessed treatment, 45 per cent had gone to government hospitals, 23 per cent were treated at private clinics and around 16 per cent received treatment from the Village Health Nurse or through self-medication. Poverty was the main reason for not seeking treatment, followed by lack of felt necessity of treatment. A statistically significant relation was observed between employment, girls from joint families, education and health care-seeking behaviour.
- ❑ 87 per cent girls who had attained puberty had any one of the morbidities at the time of survey (reproductive or general or both). Around 46 per cent suffered from reproductive morbidity and 5 per cent from general illness.

CONCLUSION

The overall findings indicate that the girls suffered the health consequences of their socio-economic status, poor personal hygiene and lack of nutrition. Improving awareness about self-care practices and care-seeking behaviour may prevent the reproductive morbidities that were the outcome of poor personal hygiene. In addition to awareness, there is an urgent need for accessible health services for adolescent girls in rural areas. An important finding has been that economic empowerment of adolescent girls enhances their awareness and need for seeking health care.

Need Assessment of Adolescents

Deb T, Mishra R. Indian Journal of Population Education, March 2005: 3-17.

INTRODUCTION

Adolescence had been defined as a stage among human beings where a lot of physiological as well as anatomical changes take place resulting in reproductive maturity in them. Rapid physical changes create a strange state of mind in the adolescents. They grow extremely sensitive. At times, they experience a sense of embarrassment because of those changes. The associated sexual changes also bring in a lot of psychological as well as emotional changes. They need proper guidance, counselling and consolation. Most of the adolescents are illiterate and live in pathetic conditions and lack knowledge in critical areas of life that is essential for leading a healthy and meaningful family life and parenthood.

OBJECTIVES

The study was undertaken with objectives of assessing the information and counselling needs of adolescents; knowing the level of awareness about the changes during adolescence, reproductive health and health education services.

METHODOLOGY

Two villages of Deosar Block from Sidhi district were selected for the study. The sample included a total of 350 households in Rajania and Chhamarachh villages. The sample included 290 male and 60 female adolescents.

RESULTS

- ❑ The sample included a total of 350 adolescents - 290 males and 60 females. The respondents were almost equally divided on their marital status, 174 being married. As many as 154 respondents participated in the literacy movement, including 52 semi-literates (28 male and 24 female adolescents) and the neo-literates included 44 male and only two female adolescents.
- ❑ The population in the countryside still seemed to believe in having more members in the family. The male and female adolescents who opined in favour of higher number of families were 194 and 27, respectively.
- ❑ As many as 206 respondents expressed inclination in support of reproducing again in want of a boy child. More than half of the female adolescents indicated such an inclination.
- ❑ As many as 202 adolescents believed that a large number of members in the family increases the prospects of earning in the family.
- ❑ 71 respondents held the couple responsible for deciding the number of children in the family with the maximum contribution coming from the respondents in their late adolescence (42 males and 12 females). As many as 49 respondents said the husband owns the responsibility.

- ❑ As many as 167 respondents said they preferred spacing of a maximum of two years in between two children.
- ❑ Condom still appears to be the most popular contraceptive measure, as over 40 per cent respondents opted it to be their most favoured option for contraception.
- ❑ Most of the respondents did not know that the sex of the embryo could be determined in advance. As many as 208 respondents ruled out the idea of aborting the girl child and 60 per cent female adolescents and around 168 male respondents opposed any of such abortion prompted by the sex. However, 126 respondents could not come up with the reply and this would be the section that needs to be taken special care of, as it can go either way.
- ❑ As many as 194 respondents had not heard about HIV/AIDS. Most of them belonged to the early adolescent age group. Over 90 per cent males and about 25 per cent females had no awareness on HIV/AIDS. Radio continues to be the leading source of information on HIV/AIDS among the sample size as every third respondent got the information from radio.
- ❑ It was striking to note that 221 of the 350 respondents supported the thought that gender discrimination should continue. One among every four female respondents was not opposed to the discrimination. Seventy-one male respondents also supported continuation of discrimination.

CONCLUSION

There is a lot of gap in the present level of knowledge of adolescents and their requisite knowledge in the areas like body growth and functions and sex-related diseases. As adolescents continue to be close to their mothers, it is essential to involve mothers in the educational process of adolescents. Hence, strategies have to be designed to educate the mothers on needs of adolescents and also to equip them with proper knowledge so that they can ably guide the adolescents in negotiating their problems. The area of RCH and adolescent development needs immediate attention and prompt steps are necessary to disseminate information among women. Reproductive health care programmes should be designed to serve the needs of women, including adolescent girls.

Knowledge, Attitude and Belief on HIV/ AIDS among the Female Senior Secondary Students in Srinagar District of Kashmir

Gaash Basir, Ahmad Muzaffar, Kasur Rehana and Bashir Shabnam. *Health and Population – Perspectives and Issues* 2003; 26 (3): 101 – 109.

INTRODUCTION

Adolescence is a period of great physical, mental and emotional turmoil, and the teenagers, in search of their identity, very often start experimenting with intravenous drugs or sex, both making them vulnerable to contracting HIV. Many of them are less likely to be aware of HIV/AIDS and the modes of its spread. Since prevention is the key to AIDS control, empowerment of youth with knowledge about high-risk behaviour and its ominous relation with HIV is the most effective tool. The study was undertaken to assess the extent of knowledge, nature of beliefs and current attitudes of adolescent students towards HIV/ AIDS.

METHODOLOGY

The study was conducted on total 2,250 girls students of class XI and XII, randomly selected from different government higher secondary schools of Srinagar district. The information was gathered through a pre-structured questionnaire.

RESULTS

- ❑ Only 24 per cent of the adolescents had never heard of HIV/AIDS. Among those who were aware, only about a half of the adolescents (48.44%) attributed the cause to a germ or a virus. A little less than half of the adolescents (43.04%) had no idea about the possible mode of transmission.
- ❑ Contaminated needles and syringes were the likely risk factors in transmission of the disease as expressed by 23 per cent of respondents, while only 7 per cent blamed it on the infected blood. Only 20.5 per cent of the adolescents blamed sexual contact as a mode of spread of the disease. A mere 3.5 per cent knew that HIV could be transmitted prenatally, i.e., from mother to the child.
- ❑ Most of the adolescents believed that HIV/AIDS could spread through handshake (82%), eating with the victim or sharing utensils (64%) or use of fumets (52%). The chief source of information about HIV/ AIDS in case of 73.34 per cent adolescents was media, both electronic (47.8%) and print (25.56%). Other sources included friends (9.11%), teachers (6%), parents (2%) and siblings (1.78%). About 26 per cent of respondents believed that HIV/ AIDS had not yet reached their state and 74 per cent expressed otherwise.
- ❑ According to adolescents, the best method of prevention was total premarital abstinence (25%), followed by sterilisation of needles before injection (21.8%). Around 26 per cent believed that pregnancy, poverty, illiteracy, adulthood or adolescence per se, make people more vulnerable to contract HIV/ AIDS. Majority of adolescents (89.56%) attributed the presence of HIV/AIDS in the state to the degradation of moral values.

- ❑ Most of the adolescents (65.13%) were unable to name any particular group to be targeted for health education on HIV/AIDS and 43.11 per cent admitted that they never pulled enough courage to discuss the topic with anyone. Slightly more than half (56.89%) of the adolescents who admitted having discussed HIV/AIDS with their friends (35.78%), sisters (10.89 %) and teachers (9.12%).
- ❑ Nearly half of the respondents (48.44%) felt that AIDS patients must not be managed at home but should be hospitalized, 28.67 per cent believed they could be treated as out- patients with extra precautions.

CONCLUSION

The study showed a dismal picture of HIV awareness among urban, educated adolescents, indirectly pointing to the likelihood of a much worse level of awareness among the rural, illiterate counterparts. The matter is serious and needs to be addressed appropriately through intensive HIV/AIDS awareness campaigns in all high and higher secondary schools of the state. The study reflected the prevalence of parochial parental attitudes and possible dangerous misguidance from the otherwise ignorant friends, given the existing misconceptions of adolescents. There was hardly any scientific knowledge in circulation among the adolescents studied. The situation is alarming, as there exists widespread ignorance among adolescents about the 'risk groups'.

Reproductive Health Problems and Help Seeking Behaviour among Adolescents in Urban, India

Joshi B N, Chauhan S L, Dande U M, Tryambake V H, Gaitwad N S, Bhadoria V. Indian. Journal of Pediatrics, June 2006; 73(6): 509-513.

INTRODUCTION

Most of the adolescent reproductive health programmes focus on the 15-19 year old age group. There is an increasing need to recognise the 10-14 year group that comprises 12 per cent of India's total population. This group is different from the older group as younger adolescents find it difficult to understand their problems, the consequences of their behaviour and effects of their actions. Very little is known about their unmet needs, making it difficult to mobilize resources and develop programme strategies for this group. Educational programme can increase awareness about reproductive health, but in the absence of appropriate health services, this awareness may not always translate into appropriate help seeking by adolescents.

OBJECTIVES

To assess their reproductive health problems and help seeking behaviour among urban school going adolescents.

METHODOLOGY

A sample of 300 urban school going adolescents between 11-14 years were chosen from a secondary school in Mumbai. Quantitative and qualitative data on the reproductive health problems and health seeking behaviour was collected using self-administered questionnaire, voluntary attendance of one year to the school-based Adolescent Friendly Centre (AFC), medical screening through health check-up camp and Focus Group Discussions (FGDs).

RESULTS

- The mean age of menarche among girls was 10.8 years.
- About 17 per cent of the enrolled adolescents came to seek information on various sexual and reproductive health issues at the AFC. A few adolescent girls and boys (0.6% and 2.6%, respectively) were referred by their teachers to the AFC for behavioural and psychological problems. Some were related to academic performance or abuse of other adolescents.
- 12 per cent boys and 3 per cent girls reported problems like depression, low self-esteem and interpersonal relationship issues with their peers and parents.
- Girls mainly reported problems related to menstruation, excessive vaginal discharge, itching of genitals and urinary complaints.

- ❑ Around 93.5 per cent of the girls were anaemic and mean haemoglobin was 9.6 gm (SD±1.7). About 14.8 per cent of girls were below 5th percentile and 4 per cent of girls were above 95th percentile for body mass index (BMI) in comparison to the WHO recommended standards and mean BMI was 19.08 (SD±4.9).
- ❑ Findings revealed that genital itching was the major reproductive health problem among boys followed by urinary complaints.
- ❑ 82.3 per cent of the boys were anaemic and their mean haemoglobin was 10.68 gm (SD±1.56). About 29.3 per cent boys were below 5th percentile and 0.6 per cent were above 95th percentile for BMI in comparison to the WHO recommended standards and mean BMI was 17.98 (SD±3.15).
- ❑ Around 43 per cent girls and 35 per cent boys reported to the clinic voluntarily in one year, to seek help at the school based AFC compared to 72 per cent girls and 56 per cent boys who reported problems during survey, indicating that many did not visit the centre voluntarily in spite of having problems. Some adolescents went to private practitioners or municipal dispensaries as they always felt better going to those places and many of them preferred home remedies. Very few of them mentioned that they were shy to approach the AFC.
- ❑ Few boys mentioned going to quacks. Most adolescent girls did not consider their problems important enough to seek care. However, few said that problems subsided on their own.
- ❑ Mothers or senior female members of the family and neighbourhood felt that menstrual problems such as pain and discomfort during menses was very common for girls and they must learn to bear the pain. Thus, the care was only sought when the pain was unbearable or during exams or when they had to miss school.
- ❑ This intervention helped to increase the client attendance in subsequent period of next one year from 43 per cent to 60 per cent among girls and from 35 per cent to 42 per cent among boys.

CONCLUSION

The study indicated that a comprehensive package of health and life skill education, medical screening with a focus on reproductive health by trained physicians, increased parental involvement, supported by AFC for counselling, referral and follow-up are essential to improve help-seeking behaviour of adolescents.

Role of Community and Sustainable Education in Strengthening Young Women's Reproductive Health in Andhra Pradesh

Joshi N, Prasad R, Ranjan R. Indian Journal of Population Education, September 2006; 38:14-27.

INTRODUCTION

Community health development approach can be useful for strengthening the reproductive health of the marginalised sections of the society. There is a greater impact of joyous and creative education on motivation for any developmental effects. The existence of social capital contributed to educational progress of lower caste children, the improvement of community health, the stopping of a number of child marriages and the promotion of gender equality. There is a need to strengthen the reproductive and child health of young women through community and sustainable education methods.

OBJECTIVES

The study was undertaken with the objectives of finding out the differentials in selected components of Young Women's Reproductive Health by Community and Sustainable Education in Andhra Pradesh; and examining the association between community and sustainable education and selected components of reproductive health in Andhra Pradesh and recommending policy measures.

METHODOLOGY

The National Family Health Survey (NFHS) (1998-99) has been utilised as the data source. NFHS village schedule: "community level IEC activities for health and family welfare during last one year categorised into: (1) Film show, (2) Exhibition, (3) Drama/song/dance performance, (4) Puppet show and (5) Group meeting (Self-Help Groups - SHG)" was taken as the study variable with selected factors of reproductive health as social, economic, demographic variables, contraception, fertility, immunisation and child care and quality of health care. Bivariate methods of analysis have been applied to understand differentials and correlation analysis to understand the association between the selected factors and study variable. Young women have been taken as women in the age group of 15-24 years as per availability of data in NFHS-2.

RESULTS

- ❑ Though the quality of family planning services was not very good in Andhra Pradesh, yet unmet need was only 7.7 as compared to 15.8 for India (NFHS-2). The socio-economic and demographic characteristics of women are influenced by community and sustainable education methods. SHG education was more effectively affecting the development in socio-economic characteristics.
- ❑ Intention to use contraceptives in the next 12 months after the birth of the last child was equally affected both by community and sustainable education, but surprisingly even sustainable methods of education are not effectively affecting the want of more children and preference for sons in Andhra Pradesh by a 10 per cent point difference.

- ❑ Antenatal and natal care was affected by community and sustainable methods of education. Entertainment education is more effective in the matter of consumption of IFA tablets and putting the child to breast within one hour of birth of the baby. Young women receiving entertainment and SHG education have been provided better care during pregnancy, though place of delivery was still home for nearly 60 per cent of women receiving entertainment education where 21.2 per cent of women have their deliveries at home.
- ❑ Less educated women had many RH problems than those who were receiving entertainment education for health and family welfare. Entertainment and SHG education methods were more popular among the illiterate women while follow-up for the current method of contraceptive use was more affected by community and sustainable education, suggesting a need to develop group-specific programme communication strategy for strengthening RH of women. Follow-up for current method of contraceptive use was also favoured by entertainment education. Sex preference and education showed a highly negative correlation.

CONCLUSION

The majority of the demographic variables such as knowledge of family planning, HIV/AIDS and ways to avoid AIDS and quality of health care are affected positively towards improving the reproductive health conditions of women by community and sustainable education. Community Education, Entertainment Education and Education for strengthening RH through SHGs has emerged as a significant factor affecting the RH of women in Andhra Pradesh. Thus, joyous and creative methods of education can help in shedding various dogmatic and harmful social practices. Education through SHG meeting significantly affected the knowledge of HIV/AIDS and was highly effective in institutionalising the delivery of children. The study leads to the conclusion that health-strengthening strategies may be combined with other developmental programmes with joyous and creative communication strategy for strengthening reproductive health of women.

Self-reported Symptoms of Reproductive Health Problems of Women in India

Kanitkar T; Radkar A. Demography India; July-December 2004; 33(2): 231-248.

INTRODUCTION

The study is based on one major aspect of reproductive health, namely the RTI. 'RTIs' include a variety of bacterial, viral and protozoal infections of the lower and upper reproductive tract of both the sexes and most of them are STDs. RTIs included three types of infections, i.e., infections which are transmitted through sexual intercourse; endogenous infections that women catch apart from sexual intercourse, by sub-standard hygiene practices; and iatrogenic infections resulting from medical procedures, i.e., infections introduced in reproductive tract by badly managed childbirth, IUD insertions or unsafe abortion. RTIs are common among adolescent girls and women, but rarely recognised by them as serious health problems, even when they admit having symptoms of these infections.

OBJECTIVES

The study assessed the prevalence of RTIs among currently married women aged 15-49 years for urban and rural India and states; correlates of the prevalence of the RTIs in urban and rural India; and factors associated with RTIs in urban and rural India.

METHODOLOGY

The study on reproductive health problems of women in urban and rural areas of India was based on the information collected from ever-married women aged 15-49 years on some common symptoms of RTIs. A total of 90,303 ever-married women in reproductive age group were interviewed under the NFHS-2, including 84,682 currently married ones. From currently married women, information was collected on two additional aspects-painful intercourse and bleeding after intercourse. Information on painful intercourse and bleeding after intercourse was collected only from currently married women, while other questions were asked to all ever-married women in the sample.

RESULTS

- ❑ 39.2 per cent currently married women reported atleast one symptom of RTI, as against 60.8 per cent who did not report any such symptom. 37 per cent currently married women in urban India and 40 per cent in rural India reported atleast one symptom of RTI during three months prior to the survey. It meant that more than one in three of the currently married women in urban India and two in five of the currently married women in rural India showed at least one symptom of RTI.
- ❑ Problems related to abnormal vaginal discharge, severe abdominal pain were most frequently mentioned (45% for urban and 49% for rural) followed by itching or irritation in vaginal area (44% for both rural and urban) and vaginal discharge having bad odour (24% for urban and 31% for rural). Pain or burning while

urinating (40%) and pain during intercourse (31%) in urban areas. Similar percentages for rural areas were 46 and 32.

- ❑ An association between age of women and RTIs was also observed. It was observed that women having no child have recorded highest prevalence rate (42% in urban and 43% in rural areas). Highest RTI prevalence rate was observed for women who were married before attaining the age of 15 years and lowest for women married at age of 19 years or above. In urban areas, the prevalence rate of RTI was very high for women who were exposed to beating (54%) than those who are not beaten (35%). Similar difference was also observed in rural areas. It is also revealed that with the increase in frequency of beating, the percentage of RTI symptoms increases in both urban and rural areas-more pronounced in urban areas.
- ❑ Relationship with the education of women and that of husband, was found to be strong, and in the expected direction, with illiterate women and wives of illiterate husbands reporting highest RTI prevalence and highest educated women and wives of highest educated husbands reported lowest RTIs in rural and urban areas.
- ❑ Those who have undergone one or more induced abortions had recorded significantly higher prevalence rate than those who had not. It was found that a sterilised woman was more likely to report higher symptoms of RTIs than women using other methods. In rural areas, no firm relationship between female sterilisation and level of RTI is observed. Home delivery was the greatest risk factor for prevalence of RTI and delivery in private institutions was the lowest.
- ❑ Those who read newspaper, watched TV and listened to radio atleast once a week were less likely to report the symptoms of RTI.
- ❑ Women living in crowded conditions were more likely to experience higher RTIs than their counterparts with better living conditions. Prevalence of RTI was unusually higher (64%) in slums of Mumbai than non-slums (40%).

CONCLUSION

As evident, strategies and programmes aiming at reducing the incidence of RTIs should focus on increasing age at consummation of marriage, promoting literacy, awareness and media consciousness of masses, promoting hygiene and sanitation, institutional deliveries and reducing domestic violence. Both men and women have to be made conscious of the need for health care to prevent and cure RTIs.

AIDS Awareness Campaigns, Sex Education Programmes and Pornography: The Shaping of Sexuality Awareness among College Students

Leena Abraham. *The Indian Journal of Social Work*, Volume 66, Issue 4, October, 2005.

INTRODUCTION

The AIDS awareness campaigns in India, which began in the 1990s, are possibly unmatched by any other public health campaigns in recent times in other countries in terms of the volume of funds, the variety of communication strategies employed, and the number of agencies involved. These campaigns focus chiefly on preventive measures using IEC strategies, with youth being targetted as a group vulnerable to the HIV infection. However, studies conducted in different parts of the country show that while some information on AIDS is widespread among the youth, adolescents and young adults, even the educated among them 'lack information' on sexuality and sexual health despite being exposed to the campaigns and such information was not being used by people in their lives.

OBJECTIVES

The study aims to explore what constitutes awareness of sexuality and sexual health among urban, unmarried, college going men and women from low-income families.

METHODOLOGY

The data is drawn from a study on youth sexuality conducted among low-income college students in the age group of 16-22 years from Mumbai, studying in higher secondary class (XI Standard) and third and final year (TY) undergraduate course. Focus group discussions (FGDs) (n=75) and interviews (n=87) were conducted, followed by a survey of 966 students (625 boys and 341 girls). Data from all these sources are used in order to understand what constitutes sexuality awareness among these youth.

RESULTS

- ❑ The knowledge of genitals or 'private parts' was limited, especially among girls, including the urban educated girls. Nothing was told to 44 per cent girls about menstruation prior to its onset. Another 30 per cent were told about restrictions in worship, domestic work, and play. All the girls were cautioned against interacting with older boys and men. Except for a few older girls, both boys and girls viewed menstruation as an event independent of conception and pregnancy. The cultural socialisation that surrounds menstruation not only withholds information from the girls, but produces two important consequences for them: girls develop a sense of shame attached to their body, and they begin to see sex as something dirty.
- ❑ For information on menstruation, girls rely on two main external sources – family (especially mothers and elder sisters), and teachers or educational programmes. Boys depend mainly on friends. There is virtually no exchange of information between boys and girls.
- ❑ Family life education' is often packaged as a part of 'life skills education'. The official sexuality education is

silent on themes of sexual pleasure or sexual exploitation, and shies away from discussing topics such as sexual intercourse.

- ❑ The reluctance to discuss sex in the school-based sex education programmes is linked to issues of morality, on the one hand, and power relations between teachers and students, on the other hand.
- ❑ Girls relied mostly on Hindi movies and married friends for information on sex. Accessing blue films and other erotic materials and in a few cases, a visit to a commercial sex worker were pedagogical strategies for boys to know about sex and share with peers, often in an exaggerated manner.
- ❑ Nearly 82 per cent of boys know what a condom is and that it could be procured from chemists or from some of the paan shops. Knowledge of condoms among younger girls is extremely low (12%) as compared to older girls (40.6%) or boys of their age group (76%). Barring some of the younger boys, others have seen condoms and are able to describe how to use them. Some of the girls know of condoms, not as male contraceptive, but only as a preventive measure against AIDS.
- ❑ Girls' information on pills is mainly from television and from a married sister, relative or friend and on the tambu from a married woman or a health worker who visited their homes.
- ❑ 81.2 per cent boys and 85.6 per cent girls do not have information about STIs. Students' awareness of AIDS may be described as rote knowledge.
- ❑ The use of condoms, however, was inconsistent even among the few who engaged in multi-partner sex, including commercial sex.

CONCLUSION

AIDS campaign has narrowly focused on diseases and suppressed the aspect of needs and desires and sex education programmes should move beyond the narrow agenda of the AIDS/sex awareness campaigns. Young people's sexuality awareness is distorted and their perceptions of 'risks' and protective measures are limited and influenced by cultural and contextual factors over which they have little control. IEC is crucial but insufficient to combat STIs, including HIV, as there are obvious shortcomings of these programmes. The sexual experiences and the associated health outcomes cannot be conceptualised without considering the diverse constructions of sexuality.

Impact of Training for Adolescent Leaders of Self-Help Groups in Combating HIV/AIDS

Majumdar B G, Acharya N. Indian Journal of Population Education, December 2006: 20-27.

INTRODUCTION

Since the majority of HIV/AIDS cases in India are due to sexual intercourse, it is essential to know the people having greater chances of getting AIDS through sex. These are the people who have multiple partners for sexual enjoyment. They do not usually take precaution at the time of sexual enjoyment, as women and girls of India are less aware of the kind of drastic effects of HIV. The chance of HIV infection into a female body from a male one is more than that of female to male. As adolescents are more vulnerable to HIV/AIDS, peer education system of generating awareness about HIV/AIDS may play a pivotal role in combating the spread of this disease.

OBJECTIVES

The main objective of the study was to generate awareness about HIV and AIDS among the adolescent leaders of SHGs with some technical know-how for precautions and counselling necessities, so that they may act as peer educators at their villages, particularly with the fellow members of the group.

METHODOLOGY

District Level Training Programme for Master Trainers on Awareness Generation in different aspects of HIV/AIDS was organised for 15 master trainers on different aspects of HIV/AIDS, followed by a block level awareness camp on the above aspects of HIV/AIDS in Kanchanpur, where 120 self-help group leaders covering the whole block participated in the training camp. On cross-checking of the scores, before and after the training programme, some statistical values of the scores were evaluated.

RESULTS

- ❑ Before sensitization, 75 per cent of the respondents replied 39.45 per cent questions regarding medium of HIV transmission, whereas after sensitization, 75 per cent respondents answered 81.82 per cent questions on the subject.
- ❑ 75 per cent respondents answered 36.65 per cent question about the syndrome of AIDS at pre-training stage, whereas 75 per cent answered 83.15 per cent questions post-training. 75 per cent respondents knew 48.57 per cent of the answers regarding causes of infection, whereas 75 per cent respondents answered 85.37 per cent questions regarding causes of HIV infection.
- ❑ 75 per cent adolescents answered 35.56 per cent questions regarding necessity of counselling, but later 75 per cent of them answered 69.66 per cent questions on necessity of counselling.
- ❑ 75 per cent of the adolescents answered 51.42 per cent of the total questions regarding necessity of blood tests, while after sensitisation, 75 per cent of the participants answered 51.42 per cent of such questions.

- 75 per cent respondents were initially aware of 30 per cent answers to questions about the identification of HIV infected persons, while post-sensitisation, 75 per cent respondents could answer 50.37 per cent of such questions.

CONCLUSION

The participants could do well after having one phase of awareness training. It was also observed that the participants had some preliminary knowledge on HIV/AIDS. This might be due to field publicity programmes through audio-video media as is being carried out across the state. Thus, counselling is a major tool for handling the HIV positive persons. Proper counselling makes people feel better and more peaceful. It helps the people to think about the best way to live. It generates hope among the people, which motivates people to fight against the problem. They become ready not only to combat HIV/AIDS but also to motivate other infected fellow beings to hope for the best.

Thus, it is possible to fight against the vicious virus of HIV, if people have positive and healthy attitude for combating the evils of HIV. It is easy to make people realise that life is still beautiful. This kind of interaction with the people, particularly adults and adolescents at grassroot level, may act as one of the best tools for generating awareness against the evils of HIV/AIDS.

Knowledge, Awareness, Belief and Practice on Sexuality and Reproductive Health of Adolescent in Slums of Ahmedabad

Patel P, Capor I, Joshi U, Barge S, Uttekar V. CHETNA and Society for Operations Research and Training, Small Research Grants Report No.10, December 2000.

INTRODUCTION

Within the typical gender-stratified social structure in India, adolescent girls are especially disadvantaged. Due to this gender discrimination, they are often afflicted with anaemia and other deficiencies that adversely affect their health and entire well being. Despite laws to the contrary early marriage continues to be the norm and once married, there is a tremendous pressure on young wives to bear a child. Early sexual activity also exposes adolescents to a greater risk of contracting STDs, including HIV/AIDS. Early marriage and pregnancy is one of the major causes of maternal mortality in India.

OBJECTIVES

The main aim of the study was to collect baseline data and assess service needs related to reproductive and sexual health for the adolescent population of slums in Shahibaug.

METHODOLOGY

All the adolescent boys and girls in the age of 12-19 years, residing in three slums in Shahibaug area of Ahmedabad were covered under the study. Qualitative (Social Mapping, Body Mapping, Focus Group Discussions and in-depth interviews) and quantitative (Household Listing and Pre-coded Questionnaire) methods of data collection were used.

RESULTS

- ❑ More than 72 per cent boys and 75 per cent girls had studied beyond middle level of education. The specific reasons for discontinuing studies of girls included household work, distance of school and an unsafe environment for girls. Girls face restrictions of not roaming around with boys and have friendships or affairs with them.
- ❑ Age of marriage for girls was strongly associated with the onset of menstruation, and mean age of marriage for girls was 13 years.
- ❑ Films were one of the common topics among peers of the same and opposite sex and family problems dominated the talk among girls. Around 95 per cent adolescents watch TV. Movies, songs, serials were popular among girls. Only 25 per cent of boys admitted that they had seen blue movies.
- ❑ There was no knowledge about the legal age of marriage among girls, although they were well informed about the small family norm. There was limited scientific knowledge about infertility. Only 27 per cent knew that both the partners could be responsible for infertility.

- ❑ There was a poor knowledge about physical changes during puberty, both among boys and girls about the process of menstruation and conception. Out of 93 adolescent girls, 48 per cent girls did not know about menstruation before they started menstruating. Out of 24 per cent who had knowledge, 13 per cent learnt from their friends and 8 per cent from their mother and sisters.
- ❑ Girls had poor knowledge about antenatal care and importance of nutrition during pregnancy. Half of the adolescents suggested a need for a nutritious diet while only 25 per cent suggested a regular visit to doctor. Adolescents were aware about tetanus toxoid injections to be given during pregnancy. However, they did not know the purpose of the injections.
- ❑ Majority did not know that in India, abortion is legal. Surprisingly, two fifths approved abortion among unmarried girls, one-half approved sex determination and one-fifth even approved abortion of female foetus. A large number (68%) of the adolescents knew about contraceptive methods for family planning and the sources of information including TV and friends.
- ❑ Of all adolescents, 62 per cent of the boys and 57 per cent of the girls had heard about HIV/ AIDS, respectively. Though they know of AIDS better than STD, yet they had many misconceptions. Major source of information on issues related to AIDS/ HIV was TV, followed by friends and posters/ pamphlets.
- ❑ Information needs of adolescents girls reflected their curiosity to about know their own body and growth, pregnancy, childcare and delivery while boys' needs were less. STD/RTI/HIV were the topics in which boys were more interested.

CONCLUSION

The study provided useful and important information on adolescent health and development to plan future educational interventions at the community level. The study indicates that overall development of girls suffers due to gender biases prevailing in the community. The boys seem to have a rigid idea of gender roles, which needs to change through a systematic intervention through gender sensitisation.

In general, adolescents are unaware about scientific information on puberty, menstruation pregnancy, STD and HIV/AIDS. Keeping in mind the need to learn about reproduction and sexual health among adolescents, CHETNA plans to organise education programmes on life skills and other useful topics, using participatory techniques.

Knowledge, Awareness, Belief and Practice on Sexuality and Reproductive Health of Adolescent in Slums of Ahmedabad

Pallavi Patel, Indu Capoor, Urmila Joshi, Sandhya Barge, Vasant Uttekar. Centre for Health Education Training and Nutrition Awareness Ahmedabad and Society for Operations Research and Training, Vadodara, 2000-2001.

INTRODUCTION

In India, according to the 1991 Census, there are approximately 183 million adolescents aged 10-19 years, constituting over 22 per cent of the country's population. Sizeable proportions of them continue to be illiterate, out-of-school, unemployed and hence neither served by educational nor school health programmes. Besides, they receive inappropriate nutrition due to various reasons. Early marriage results into early sexual activity, early motherhood and also exposes adolescents to a greater risk of contracting sexually transmitted diseases, including HIV/AIDS. This is also a leading cause of maternal mortality in India.

OBJECTIVES

The study assessed the knowledge of adolescents on reproduction, sexuality and HIV/AIDS; their information needs and sources of information; their sexual behaviour; and their morbidity patterns related to reproductive health.

METHODOLOGY

The study used a combination of qualitative and quantitative approach to elicit the required information. Interviews with 151 boys and 93 girls in three slums where CHETNA is planning to initiate health awareness programme for adolescent boys and girls provided quantitative data. Qualitative information was collected by observation of the functioning of the services provided at the clinics and informal discussion with the providers.

RESULTS

- ❑ Not a single girl mentioned reading magazines related to jokes, cricket, sex issues and general knowledge. TV was the most important source for adolescents to know about health, sex and body.
- ❑ The minimum age at marriage among boys and girls was 16 years and 13 years, respectively. Less than half of the adolescents knew of their legal age at marriage.
- ❑ Films were one of the common topics discussed among peers of the same sex and also opposite sex. Among the peers of the same sex, the boys discussed about girls but girls did not admit that they discuss about boys.
- ❑ One-fourth of the boys and no girl admitted of having seen blue films. After watching the blue films, the boys reported repeating the act in reality. The other sources of their information were advertisement of public transport facilities, dispensaries and CHETNA.

- ❑ 57 per cent adolescents in the slums felt the need for restriction on boys (57%) and girls (75%) when they are growing up. The perceived restrictions on boys were on getting into addiction and on roaming around in the night. The suggested restrictions on girls were on roaming around with boys, going out alone, spending money, or going to cinema.
- ❑ Adolescents (71%) accepted and justified wife beating if she flirted with other males.
- ❑ More boys (55%) than girls (25%) mentioned to have first child within 2 years of marriage. Similarly, 34 per cent girls mentioned 3-5 years interval between two children compared to only 15 per cent boys.
- ❑ Adolescents had poor knowledge about physiological changes during puberty among boys and girls, process of menstruation, and conception. Nearly 84 per cent boys and 41 per cent girls reported that pregnancy occurs due to sexual intercourse.
- ❑ Adolescents knew of contraceptive methods for family planning but lacked correct knowledge about its details, and about the protective measures for prevention of STD/HIV.
- ❑ Only 5 per cent girls were aware of the fertile period. Knowledge about safe sex was very negligible, particularly among adolescent girls. Similarly, knowledge about STD, its mode of transmission, curability was also very poor.
- ❑ Majority (62% boys and 75% girls) had heard of HIV/AIDS. Though adolescents knew of AIDS better than STD, they had many misconceptions. Around 42 per cent boys and 38 per cent girls had girl/boy friends and 24 per cent and 12 per cent, respectively had experienced vaginal intercourse first with a neighbour or relative of same age.

CONCLUSION

The study brings out the need to impart family life education and need to understand the meaning of education in a broader sense. It also indicates the media generally accessed by the adolescents that can be successfully exploited to transmit useful information on reproductive health and family life education. Adolescents need to be provided complete scientific information on pubertal changes, menstruation, pregnancy, contraception, safe sex, STD and HIV/AIDS. Empowerment of adolescents with information and services to reduce gender biases prevailing in the community would help them improving reproductive health.

Reproductive Tract Infection among Female Adolescents

Ram R, Bhattacharya SK, Bhattacharya K, Baur B, Sarkar T, Bhattacharya A, Gupta D. Indian Journal of Community Medicine, January-March 2006; 31(1):32-33.

INTRODUCTION

Women's reproductive health is largely influenced by the state of their health during infancy, childhood and adolescence. Compared with boys, the adolescent girls' health, nutrition, education and development are more neglected, which has adverse effect on reproductive health. Moreover, a large number of people suffer in silence due to RTIs and STDs, which are recognised to be an important health problem in India. RTIs, which are preventable and treatable, are responsible for causing serious consequences of infertility, ectopic pregnancy, wastage, low birth weight, etc. As the adolescents are important target group for prevention of RTIs, assessment of the problem among them is urgently needed.

OBJECTIVES

The study was undertaken to estimate the prevalence of RTIs among adolescent girls and determine the socio-demographic correlates of RTI.

METHODOLOGY

The study was conducted in Kolkata among the female adolescents aged 10 to 19 years who accompanied the beneficiaries for vaccination. Total 100 adolescents were selected for interviews on issues related to RTIs. The operational definition of RTI was framed, based on self-reported symptoms. Vaginitis was diagnosed in presence of visible or excessive vaginal discharge without lower abdominal pain/low backache with vaginitis and only the vaginal discharge constituted RTI.

RESULTS

- ❑ The mean age of the adolescent girls interviewed was 17.8 ± 0.82 years. The mean ages of respondents at marriage and at first pregnancy were 17.2 and 17.5 years, respectively.
- ❑ 35 per cent girls had given the history of excessive vaginal discharge without low backache/lower abdominal pain and they were supposed to be suffering from vaginitis and 29 per cent had history of lower abdominal pain/low backache with vaginal discharge. Thus, a total of 64 per cent of the girls were suffering from RTIs. Among them, 12 per cent had history of burning sensation during micturition and 50 per cent had dysmenorrhoea.
- ❑ Although 80 per cent of the subjects were married, the prevalence of RTI among the unmarried group (70%) was higher as compared to the married (60%).
- ❑ Prevalence of infection was seen to be the highest among the illiterate group of girls (77%) and it diminished with the improvement of literacy status.

- ❑ Prevalence of RTI was seen to be minimum in small-sized family (50%) and it gradually increased with the increase in the number of family members.

CONCLUSION

The study shows that both married and unmarried adolescents are susceptible to RTIs under unhygienic conditions and poor personal hygiene. Therefore, any educational or awareness programme should focus on personal and environmental hygiene. Further, literacy level of the adolescents should be improved to help them in managing their health and hygiene effectively to reduce the incidence of RTIs. Small families help in reducing RTIs through better health care access and better resources at the disposal of the family.

Community-Based Study of Self Reported Morbidity of Reproductive Tract among Women of Reproductive Age in Rural Areas of Rajasthan

Rathore Monika, Swami S S, Gupta B L, Sen. Vandana, Vyas B L, Bhargav A, Vyas Rekha. Indian Journal of Community Medicine, July - September 2003; XXVIII (3) : 117-121.

INTRODUCTION

Majority of women in India continue to suffer from reproductive tract infections resulting into pelvic inflammatory diseases, salpingitis, pelvic adhesion, infertility, cervical cancer and chronic pelvic pain. Although early detection and treatment of RTIs can prevent and minimise the severity of long term sequel, many infections go unnoticed. Utilisation of specialized services for the management of RTIs is often low, because these infections are frequently asymptomatic or produce vague, non-specific symptoms. Further, the socio-cultural norms, values and taboos also prevent the women from seeking health care for RTIs.

METHODOLOGY

A community-based cross-sectional study was conducted on 1,200 adolescents out of the eligible females in reproductive age group in rural Bikaner. A semi-structured interview schedule was used during household survey to collect general information and data on reproductive history and health. Those suffering from any of these symptoms were asked to report voluntarily, for pelvic and diagnostic examinations.

RESULTS

- ❑ Out of a total of 1,044 women interviewed, mean age of women suffering from reproductive tract infections was 33.59 years. As many as 332 females were suffering from reproductive morbidity and more than one morbidity was found per person.
- ❑ The prevalence of reproductive morbidity in the study population comprised of 22.3 per cent (233) women suffering from RTIs, 6.1 per cent (63) women having menstrual problems, 5.7 per cent (59) were sterile, 2 per cent had prolapsed uterus, 0.96 per cent had urinary tract infections and only 0.57 per cent women had uterine and ovarian growth. Pelvic inflammatory disease (15.7%) was the commonest RTI, followed by vaginitis (11.3%), whereas cervicitis and cervical erosion was reported by 4.2 per cent and only 0.2 per cent women had genital ulcers.
- ❑ There was an increasing trend of RTIs with increase in age, ranging from 1.7 per cent ($p < 0.001$) in 15 to 19 years age group, as compared to 44.7 per cent in the age group 40 to 45 years.
- ❑ Out of the total population, 48 per cent of the study population was illiterate, out of which 29.5 per cent was suffering from RTIs, while only 7.3 per cent of women with secondary and higher secondary education were suffered from RTIs ($p < 0.001$).

- ❑ Only 1 per cent of unmarried women had RTIs as against 27.9 per cent of married women ($p < 0.001$). Lowest (2.4%) prevalence of RTIs was found in nullipara and highest (44.9%) in grand multipara ($p < 0.001$).
- ❑ Around 43.5 per cent of women with history of gynaecological surgery had RTIs, while only 15.2 per cent of women who had not undergone any gynaecological surgery had RTIs ($p < 0.001$).
- ❑ Women from nuclear families had more RTIs and it was observed that 37.6 per cent of invasive contraceptive users were suffering from RTIs as against 22.1 per cent of non-invasive contraceptive users ($p < 0.001$).

CONCLUSION

The study is a pointer towards the factors associated with higher RTIs among adolescent girls and women. It is significant fact that more than one-fifth female population is afflicted by RTIs, which may at times be asymptomatic. The rise in reproductive activity results in higher prevalence of these infections. Further, as when women experience more sexual life, pregnancies, gynaecological surgeries, deliveries, invasive contraceptives, etc. with advance in age, they turn more vulnerable to RTIs. Invasive contraception too is associated with such infections. Thus, an intervention strategy designed to reduce RTIs should be based on the insight into the factors associated with RTIs.

Education : An Important Indicator for Better Prevention and Management of RTIs, STDs, HIV/AIDS among Rural Women : An Analytical Study of UP, India

Singh H. Indian Journal of Population Education, December 2005 : 27-41.

INTRODUCTION

The ICPD programme stressed the need for education and health programmes to reach the under-served groups, including girls and women, rural communities and indigenous populations. It focused on the need for reproductive health, including reproductive rights, through the life cycle approach. The idea was that it will not only make women more aware, knowledgeable and empowered on reproductive health and reproductive rights issues, but also help to prevent RTIs, STDs, HIV/AIDS and the problem of abnormal vaginal discharge that make the problem often complicated.

OBJECTIVES

The study was structured around objectives of assessing the knowledge, attitude and practice (KAP) among rural women towards prevention and management of RTIs, STDs, HIV/AIDS and abnormal vaginal discharge; and studying the role of education in improving KAP towards their prevention and management.

METHODOLOGY

Data was collected from 295 eligible women (women of reproductive age and not using or not having used any permanent contraceptive method) of 15-45 years age group belonging to eight villages from two development blocks of Lucknow district of Uttar Pradesh using multistage random sampling technique. Besides structured interview schedule, information was also collected through observations, informal talks, relevant literature and other secondary sources for drawing inferences.

RESULTS

- ❑ 30.2 per cent respondents were married at or above the legal age of marriage, i.e., 18 years. The mean age of marriage of all women interviewed was as low as 15.99 years.
- ❑ Poor socio-economic status and meager hold on economic resources with increased work pressure due to nuclear families further affects their decision making and ultimately service-seeking and reproductive health care behaviour.
- ❑ 98.58 per cent of the illiterate respondents had negligible knowledge about RCH. Around 48.9 per cent literate women with education upto or above school level had no knowledge of ways to avoid AIDS.
- ❑ Despite a good number of respondents with satisfactory knowledge levels and high percentage of respondents with positive attitude, service-seeking behaviour was found to be extremely poor, as only 13.22 per cent respondents were seeking RCH services.

- ❑ Low or no awareness about the place from where services can be obtained was observed. Qualitative information showed that even if doctors were available, they were male doctors, which further discourages women to visit them for the treatment of even abnormal vaginal discharge, ultimately making them more vulnerable to contract RTIs and STDs.
- ❑ Respondents were suspicious about the response of the doctors, especially on such sensitive issues. Behaviour of the Government doctors was also reported to be dissatisfactory by the respondents who approached PHCs and CHCs for counselling and treatment. This refrained the women or even their counterparts suffering from the problems to go to the doctor. Rather, often they relied on private practitioners who included quacks and persons having knowledge of tribal /herbal medicines.
- ❑ Social stigmas or taboos attached to it prevented them to seek services. Women fear husband's rejection and therefore, bear the pain till it becomes evident. Males, on the other hand, feel shy to go to the doctor, especially at the PHCs or CHCs, as they feel that every body will come to know about the disease.

CONCLUSION

These observations reflect that not enough has been done to either educate or to motivate the larger population, especially secluded, invisible and powerless adolescent girls and women about providing information and services on RTIs and HIV/AIDS and even prevention and management of abnormal vaginal discharge - a common problem among rural Indian adolescents and women. Thus, though the respondents have knowledge and positive attitude but practice remains a far cherished dream to be accomplished. Education certainly remained a key-contributing factor for better reproductive health care and favourable services seeking behaviour. The study shows that there is a need to post more female doctors in PHCs and CHCs to boost the confidence of adolescent girls and women to enable them to seek health care for their reproductive health problems.

Coverage of RCH (Reproductive and Child Health) Components through Inter-Personal Communication as IEC (Information, Education, Communication) Tools: Finding Possibilities for Better Outreach of the RCH Programme to Rural Women

Singh H. Indian Journal of Population Education, December 2006; 3-11.

INTRODUCTION

People, especially women folk belonging to rural areas, who have barely any exposure to the outside environment, are hesitant to share their views and feelings with any outsider or unknown person, be it a woman only, which is very natural. In such circumstances, inter-personal communication (IPC), that too communication with spouse, family members, relatives and member of villages community, especially residing in their close vicinity becomes very important tool on such sensitive and personal issues. Thus, it is necessary to see the coverage of RCH components through these powerful IPC tools and inputs so that the result obtained can not only be utilised for heightening the importance inter-personal communication tools but also for planning more effective and practical IEC strategy for RCH programme.

OBJECTIVES

The study was focused on the objectives of studying the level of coverage of RCH components and suggesting optimum utilisation of IPC tools and inputs as a powerful IEC media for better outreach of RCH services.

METHODOLOGY

Data on RCH was collected by interviewing 295 eligible women (both clients and potential clients) of 15-45 years of age group selected from eight villages of Lucknow using multistage random sampling technique. Secondary data obtained from the Department of Health and Family Welfare, Uttar Pradesh.

RESULTS

- ❑ Spouses were found to be resorting to both male and female sterilisation alongwith natural care (including post-natal check ups) with considerably high percentage, i.e., 56.9, 45.8 and 43.4, respectively.
- ❑ One major positive change observed was that now communication between husband and wife and even with others atleast has been initiated and discussions were also taking place on such sensitive issues like, male sterilisation.
- ❑ It was observed that female respondents were more comfortable in discussing RCH issues, especially issues related to contraception and contraceptive methods, and male sterilisation in particular, with their mothers.
- ❑ Respondents were found to be less hesitant in sharing their views and obtaining information with their sisters, sisters-in-law and their female relatives while taking on contraception and contraceptive methods. Again, the coverage was restricted to female sterilisation only.

- ❑ A sharp rise in percentages was observed in case of coverage from closest neighbours and influential women of the cluster that was even more prominent in case of friends. Here, it was observed in case of closest neighbours that the coverage was almost same with minor difference in maternal care and contraceptive methods. However, in case of influential women of the cluster, focus was on maternal care.
- ❑ Friends emerged as most important IPC agent next to spouse. Here, the discussion remained centred around various types of contraceptive methods as they might find them closer in terms of sharing and mindset.
- ❑ Opinion leaders too, were observed to be covering few of the very sensitive and personal issues related to contraceptive methods-withdrawal and periodic abstinence.
- ❑ Another important aspect covered by opinion leaders and which was not covered by another IPC tool had been the complications during delivery. This revealed the importance of opinion leaders on very important, untouched and sensitive issue and on the other hand showed negligence towards such an important sub-component causing high maternal mortality rates in UP.
- ❑ It was shocking to observe that the various village level functionaries under new Panchayati Raj System and allied areas such as Z.S.S. (Zilla Saksharta Samiti) were found to be completely inactive.
- ❑ The problem of abnormal discharge was also covered which is very common among rural women and agony of side-effects and social stigma related to it are borne silently by most of the women due to fear of rejection from the husband.

CONCLUSION

A lot needs to be done for male counselling as they have complete hold on economic, other family-related issues including RCH-related decisions in rural India. The study revealed negligence of Panchayati Raj bodies on RCH issues, which were empowered to cater to the needs of rural poor through information and faster outreach of services. At the same time, data also revealed that the Department of Family Welfare has completely neglected IPC, a very important powerful IEC tool. All these tools that could have been the pivotal motivating agents in such closely knitted rural society in a country like India, where decision taken by one person of the village or cluster affects the decisions of individuals and whole of the village at large.

An Awareness Study about AIDS and Safe Blood among Higher Secondary Girl Students

Singh R, Garg K S, Singh V J, Bhatnagar M, Chopra H. Indian Journal of Community Medicine, July – September 2004; xix (3): 114.

INTRODUCTION

According to WHO, 250 million new cases of STD occur worldwide each year with a high rate in 16-19 years age group. Young people are at risk of HIV/AIDS because they are in the transition phase of their life. Hence, they have the right to understand the changes they are going through and to develop skill of forming healthy and responsible relationships.

OBJECTIVES

The objective of the study was to assess the level of awareness regarding AIDS and safe blood among higher secondary girl students of Meerut city.

METHODOLOGY

The study was carried out among 400 randomly selected higher secondary girl students of Meerut city by multistage sampling method. Information was collected through a questionnaire, consisting of 24 knowledge-based questions pertaining to AIDS and blood safety.

RESULTS

- ❑ All the four groups of girl students were lacking in awareness about various aspects of AIDS and safe blood.
- ❑ Overall awareness level was around 60.6 per cent.
- ❑ A statistically significant difference in awareness was observed between Hindi and English medium schools and between Science and Arts group ($p < 0.001$). The range of score was higher (10-21) among Science students of English medium school as compared to (5-19) among Hindi medium Science group girl students.
- ❑ The Arts group of English medium schools had a range of score of 9-21, which is some what similar to that of 6-22 Hindi medium schools.
- ❑ Awareness about known modes of HIV/AIDS transmission was 78.3 per cent; 62.8 per cent knew about frequency of blood donation; and 41.3 per cent were aware about other diseases transmitted by blood.

CONCLUSION

Mass education about AIDS and safe blood is the need of the hour not only among students but also among other vulnerable sections of the society because our larger aim is prevention of AIDS and safe blood awareness in the society as a whole, so that each individual can enjoy life to the hilt without falling prey to these new age diseases. This will help us in our greater endeavour of nation building and maximum utilisation of our meagre resources.

A Comparative Study of Perception about Reproductive Tract Infections among Married Women in Rural, Urban and Urban Slum Areas

Srivastava A, Nandan D, Mehrotra KA, Maheshwari BB, Mishra SK. Indian Journal of Community Medicine, April-June 2004; xix (2): 67-68.

INTRODUCTION

There are different types of reproductive tract infections: sexually transmitted diseases, which includes infections such as candidiasis and bacterial vaginosis and those associated with unhygienic delivery and other unsanitary practices. These can cause pelvic inflammatory diseases, problems during pregnancy and childbirth, infertility, abdominal pain and even, cervical cancer.

OBJECTIVES

The study was undertaken with an aim of finding out perception about RTIs among women from rural, urban and urban slum areas.

METHODOLOGY

The study was conducted on randomly selected 345 married women in reproductive age group of 15 to 45 years, 115 women each from rural area, urban area and urban slum of Agra. An interview schedule was administered to gather the information.

RESULTS

- ❑ 74.78 per cent urban, 28.69 per cent rural and 45.22 per cent urban slum girls and women responded to questions about perception regarding RTI correctly and difference was found to be significant ($P < 0.05$) in all three areas.
- ❑ The difference was significant in all three areas regarding perception about side effects of vaginal discharge in terms of all correct responses in rural and urban areas (100%), while 97.39% women in urban slums answered correctly.
- ❑ The occurrence of vaginal discharge was found 54.78 per cent in rural and 43.48 per cent in both urban area and urban slums.
- ❑ The data on type of vaginal discharge revealed that out of 163 women, 106 (64.08%) had watery discharge, 36 (29.13%) had curdy discharge, while only 4.85 per cent and 1.94 per cent reported mixed discharge and offensive discharge, respectively.

CONCLUSION

Even though the adolescent girls and women from rural and urban areas of Agra are aware about RTIs, yet they

do not seek treatment and majority continues to be afflicted by these infections. This is apparently due to lack of awareness of long-term consequences of RTIs. It is, therefore essential that the involvement of health workers in family planning programmes should be intensified upto the village level and similarly, the cooperation and involvement of NGOs should also be sought. Women and adolescent girls should be imparted education on reproductive health and encouraged to avail health and family welfare services at the State health facilities.

Child and Adolescent Sexual Abuse in Health Facilities

Surinder Jaswal, The Indian Journal of Social Work, Volume 66, Issue 4, October, 2005.

INTRODUCTION

Some Indian studies on a small sample of girls between the age groups of 15-22 years report that 83 per cent respondents have experienced physical eve-teasing, 13 per cent of them when they were less than 10 years old; 47 per cent respondents were molested or had experienced sexual overtures. Fifteen per cent of the respondents had experienced serious forms of sexual abuse, including rape, and 31 per cent of them were less than 10 years old. However, no attempt has been made to study vulnerable populations such as urban communities, especially in the context of health.

OBJECTIVES

The objectives of the current study were to study the prevalent patterns of cases of child sexual abuse (CSA) reporting to different health facilities; to understand the health-seeking behaviour of CSA victims; and study the handling and management of such cases by health care providers at various health facilities.

METHODOLOGY

The research used a combination of qualitative methods to collect data from health facilities of one municipal corporation. Checklists were distributed in the concerned OPDs at the health facilities for strategic screening of cases. A total of four male children and adolescents in the age group 6-16 years and 16 female children and adolescents in the age group of 13 months to 15 years were identified as having been sexually abused/reporting with SA during the period of the study.

RESULTS

- ❑ A total of 17 female children and adolescents reported symptoms of SA compared to only six males during the period of the study in the health facilities. Maximum cases were in the adolescent age group of 13-16 years where an almost equal number of 5 male and 7 female adolescents reported SA symptoms.
- ❑ An almost equal number of male (3) and female (4) street children reported symptoms of SA. Most of these children had left their home or were forced by various circumstances like death of parents, alcoholic father or physical abuse by parents to leave their homes. Life on the streets and lack of economic, social and information support increases this group's vulnerability to abuse on the streets.
- ❑ It was observed that the symptoms of SA found in children and adolescents reporting to Casualty and OPD varied from mild redness, soreness (erythema) of the vaginal or anal area or penis to severe maggot infection of the genitals. The severity of the symptoms is also presented to highlight and assess the stage at which symptoms were reported at the health facility, as well as the treatment and prognosis of the reported symptoms.

- ❑ Strong indicators of sexual activity included hymenal disruption, presenting as scars, tears or abrasions; injuries of the posterior forchette in girls; significant anal relaxation or the presence of large anal scars; presence of STDs and genital warts; chronic irritation about the genitals; pregnancy; presence of semen in the vagina, rectum, or mouth or on other parts of the body.
- ❑ Some respondents reported with bruises, lacerations of the labia majora, labia minora and hymen. Some children in the pre-pubescent age reported of missing or damaged hymen.
- ❑ Four pregnant teenage respondents reported that they were lured into or forced into sexual activity by a person known to them, usually husband (child marriage), boyfriend, or stranger in case of street adolescents.
- ❑ Sexually transmitted infections (STIs) were reported by a majority of the street children and adolescents and were not reported by children and adolescents staying with their parents.
- ❑ Parents of sexually abused children and adolescents reported that the respondents exhibited behavioural problems like withdrawal, isolation from other family members and difficulty in concentrating at school.
- ❑ Lack of information about the consequences of SA prevents the street children and adolescents from seeking medical help. They try delaying going to the doctor till the situation gets aggravated. Not only did the street children report late to a health facility, but the health providers were also found to be unapproachable and rude to the street children. Children have considerable anxiety about the response of adults towards their abused status.

CONCLUSION

The study indicates the need for educating children of all ages as well as both male and female children. Parents and guardians too need to be informed about both the symptoms of 'likely' SA as well as its risks to children of all ages and sexes. Besides inclusion of CSA in formal education curriculum of schools, there is also an urgent need to address the beliefs and perceptions of guardians and parents about CSA to provide a safer environment for children and adolescents. The attitude of health providers added to the discomfort and feelings of shame and guilt felt by the child and his/her family.

Utilisation of Services by Adolescent Mothers in Selected States in India

Swain P. Indian Journal of Population Education, March, 2006; 3-13.

INTRODUCTION

In India, early marriages and frequent pregnancies at early age without making much use of maternal health facilities make the situation worse, i.e., increase the risk for both mother and child. Motherhood at a very young age entails a risk of maternal mortality that far exceeds the normal levels and the children of young mothers tend to have higher levels of morbidity and mortality. Majority of deaths of mothers in the adolescent age group and children born to them would have been averted if they marry in late teens or if the beginning of their childbearing would have been postponed by using the contraceptives. Early childbearing continues to be an impediment to improvements in the educational, economic and social status of young women.

OBJECTIVES

The prime objective of this study was to examine the effects of education, work status, age at first birth, decision-making and standard of living on maternal health care utilisation behaviour of adolescent mothers.

METHODOLOGY

The data for this study was drawn from the NFHS (1998-99) in India. The sample used in this article comprised 1,427 adolescent females in the current age group of 15-19 years, in 4 states of Bihar, Madhya Pradesh, Uttar Pradesh and Rajasthan, who had atleast one birth within three years prior to the survey. Hence, only service utilisation behaviour associated with the most recent pregnancy was considered.

RESULTS

- ❑ Age of marriage was lower among rural female adolescents. More than 50 per cent adolescent mothers in urban areas and 73 per cent in rural areas were illiterate. Mean age of respondents' first delivery was 16.1 years in rural areas.
- ❑ Of those women in the age group 15-19 years who had given birth within three years prior to survey, 46 per cent received prenatal care from a modern source. Urban women were more likely to have received prenatal care from a modern source than rural women (74% and 42%, respectively).
- ❑ Adolescents with primary education were significantly more likely to use prenatal care from a modern source as compared to illiterate ones.
- ❑ Women with little or moderate decision making power, were 51 per cent less likely as compared to women with strong decision making power to use prenatal care. Exposure to mass media increased the use of prenatal care by 57 per cent. Working adolescents were likely to use prenatal care 45 per cent higher than their non-working counterpart. There was a 129 per cent increase for using prenatal care among women of high standard of living.

- ❑ Women living in urban areas got the advantages of utilising prenatal care services than their rural counterparts. Urban females were 2.1 times more likely to utilise the prenatal care services from modern facilities. Regarding ethnic groups, a scheduled tribe would be 33 per cent less likely to utilise the prenatal care services.
- ❑ For a woman with upto primary level education and a woman having education more than primary level (middle and above) the odds of using natal care was 2.5 times as compared with woman with illiterate status.
- ❑ Giving 1st birth after the age of 18 years by a woman increased utilisation of natal care by 80 per cent.
- ❑ Urban females were 2.2 times more likely to utilise the natal care services from modern facilities.

CONCLUSION

The study demonstrated that there was no change of teenage pregnancy during two NFHS surveys, which was detrimental to national effort to make a further decline to the overall fertility rate in order to achieve replacement level of fertility to the country and to the selected states within the short period of time by 2010. In view of high incidence of adolescent pregnancy, appropriate policy and measures are to be undertaken immediately to reduce the incidence, which could have negative health, social and economic consequence, including curtailment of education and job prospect.

Analysis of the utilisation of two types of maternal health services, such as prenatal care and professional assistance at delivery revealed that the adolescents in our country underutilise the services. Educational awareness level was also low. Adolescents with primary education were two times more likely to utilise modern health facilities. Mass media also played an important role of increased utilisation of prenatal care. In order to encourage making use of maternal health services, the age at marriage for girls must be enhanced. The educational status of these adolescent mothers was very low and even up to primary level education could significantly increase the chance of using maternal health services from a modern health facility.

V

*Adolescent Pregnancy and
Population Control*

Adolescent /Teenage Pregnancy and Population Control

In a country like India, adolescent pregnancies are not too uncommon. Most girls are married early in life and child marriages are prevalent in rural areas, leading to early child bearing in the absence of adequate and effective information and education on planning and spacing children. In this section studies on population control and adolescent pregnancies have been compiled to give an insight into the trends in adolescent pregnancies reported over the past five years.

Research has revealed that the school-going adolescents had an idea of the negative impact and consequences of uncontrolled growth of population but had a very limited knowledge about advantages of contraceptives. They were aware that contraceptives helped in population control but mostly failed to recount advantages like prevention of unwanted pregnancies and improving maternal and child health. Thus, such gaps in adolescents' knowledge require to be filled up through appropriate educational inputs through use of mass media, interaction on the subject by parents and school curriculum imparting information on reproductive health and sex education.

Further, data indicates that schooling of children in early adolescence had a consistent positive effect on contraception and its negative effects on desire for more children but not on son preference in states like Andhra Pradesh and Madhya Pradesh. Such data should be confirmed through larger studies covering all states of the country.

The research data reflects that married adolescent girls/women face problems not only due to low literacy dependency and low socio-economic status, but also due to lack of control over their reproductive intentions and ignorance regarding ways and means to fulfill their reproductive health needs. It is disturbing to note that less than half the adolescents and young adults go for treatment of STIs. Television, newspapers and radio were the most commonly quoted sources of information on HIV/AIDS but these media need to be used more effectively.

The proportion of short, underweight and anaemic mothers was significantly higher in case of adolescent mothers than adult mothers. As per the research during the last five years, adolescent mothers constituted a high percentage of women experiencing premature labour and delivering intrauterine growth-retarded babies. While maternal age, weight and haemoglobin concentration had a significant effect on neonatal maturity, antenatal check-ups, height and literacy did not affect it.

Research data shows pregnancy wastage was about six times greater in case of adolescent pregnancies, in comparison to adult pregnancies. It is a pointer towards a need to discourage adolescent pregnancy and consequently reduce wastage of deliveries, low birth weight babies through an intensive campaign to delay marriage of girls and defer initiation of family in cases of adolescent marriages, promote institutional deliveries, early registration for antenatal care.

Even though most adolescent studies relate to married adolescents, yet data is also available about changing trends of adolescent pregnancy due to premarital unprotected sex, in both rural and urban areas. There exists an emerging need for pre-marital counselling and family life education for both, 'in-school' and 'out-of-school' adolescents. The idea of installing vending machines for condoms and easier access to contraceptives and education regarding their proper usage has to be explored. The adolescents will have to be made aware of the

fact that the emergency pill available at the chemist shops is not the solution to routine/ frequent unprotected sex and its misuse for such purposes can be injurious and fatal. The marketing of the emergency contraceptive pill has to be backed by sound and effective educational campaign on the mass media.

The gaps in knowledge of adolescents need to be addressed by developing and following suitable educational content. The education and motivation of adolescents will go a long way in influencing their reproductive attitudes and behaviour, which in turn is likely to have an impact on overall reproductive health, demographic and social outcomes.

While planning intervention strategies, literacy, low socio-economic status and dependent status of females are important underlying factors to be considered. However, care has also to be taken of the situation of married adolescents giving rise to the lack of control over their reproductive intentions and ignorance about ways and means of fulfilling their reproductive health needs.

As adolescent mothers have poor access to early prenatal care due to gender inequality in health care and the intra-household power balance, care providers in the public health system and the policy makers are required to consider not only the resources of the health care system, but also the knowledge and attitudes of adolescent mothers-to-be, their families and the community at large. Emphasis has to be laid on delaying marriage to enable the adolescent girl to mature for safe motherhood and be economically empowered.

The focus of future strategies should also be towards effective implementation of the recent legislation on prevention of child marriage, early registration of pregnancy for antenatal care and maximising institutional deliveries with the help ASHA under the 'Janani' scheme.

The research agenda to reduce adolescent pregnancies may be furthered through the following:

- Impact of 'Janani' scheme on reducing adolescent pregnancies.
- Study on best practices to reduce adolescent maternal mortality.
- Action research to assess the views and concepts of married adolescent girls on critical issues of designing a family (gap between marriage and first pregnancy, spacing the children and determining the family size) and designing intervention to improve their knowledge and practices related to these issues.
- Rapid appraisal of the extent of premarital unprotected sex in rural and urban areas of the country to modify the policies and programmes being designed and implemented for adolescents.

Knowledge and Attitude of Senior Secondary School Students of Ludhiana Regarding Population Control and Contraception

Benjamin A I, Panda P, Singh S, Bhatia A S. Indian Journal Community Medicine, October-December 2001; XXVI (4): 201-207.

INTRODUCTION

The United Nation Population Fund (UNFPA) notes that future population trends will hinge on the fertility decision of today's men and women aged 15-24 years and on their ability and freedom to act on those decisions. Concern about adolescent fertility arises from its health implications-both for the mother and the child, its demographic and social implications in societies with rapid population growth. In India also, there is evidence from studies among senior secondary school students that adolescents are increasingly becoming sexually active. This warrants an investigation into the knowledge and attitude of this age group regarding fertility control and contraception.

OBJECTIVES

The study was planned to assess the knowledge and attitude of senior secondary school children regarding population control and contraception.

MATERIAL AND METHODS

The study was carried out in two co-education senior secondary schools of Ludhiana. The respondents were the students (both boys and girls) of classes 11 and 12. Data was obtained through a questionnaire. A total of 527 students, 377 boys (71.5%) and 150 girls (28.5%) were studied.

RESULTS AND DISCUSSION

- ❑ Majority of the subjects, 310 (82.2%) boys and 132 (88%) girls stated that uncontrolled population growth had adverse effects. The most commonly mentioned consequence by both, boys (78.7%) and girls (79.5%) was lack of jobs or employment facilities, followed by inflation (75.8% boys and 70.5% girls) and food storage (41% boys and 40.1% girls), etc. Knowledge on other aspects like lack of clean / potable water, increase in crime rate, shortage of electricity, poor sanitation and spread of infections diseases was poor.
- ❑ Only 54.4 per cent boys and 70 per cent girls know the correct legal age of the marriage for boys ($p = 0.004$), 61.8 per cent boys and 81.3 per cent girls knew the correct legal age of marriage for girls ($p = 0.0001$). Around 80.1 per cent boys expressed 18-21 years as the desirable age of marriage for girls, 12.2 per cent favoured age group 22-25 years. In comparison, 72.7 per cent girls favoured the age of 18-21 years and 19.3 per cent indicated 22-25 years as the desirable age of marriage for girls. These gender differences in responses were statistically significant.
- ❑ Amongst the boys, 91.5 per cent preferred two children, 5.6 per cent preferred one and 2.9 per cent preferred three, as being the ideal number of children a couple should have. Around 88 per cent girls

preferred two and 12 per cent preferred one child. Hence, a significantly higher proportion of girls preferred one child ($p = 0.005$), though the preference in both sexes was still overwhelming for two children.

- ❑ Around 96.8 per cent boys and 96.7 per cent girls preferred a gap between marriage and the first child. It was observed that 26 per cent boys and 18.6 per cent girls preferred this gap to be 1 year and more than half of the students (52.3% boys and 55.2% girls) wanted this gap to be 2 years; it is encouraging to note that more than one-fifth of the boys (21.6%) and more than a quarter of the girls (26.2%) preferred this gap to be more than 2 years. All the respondents were unanimous in their desire for a gap between the first and the second child, but girls significantly more (62%) than boys (49.3%), preferred a gap of more than 2 years between the children ($p = 0.02$).
- ❑ A significantly higher proportion of boys (85.1%) than girls (47.3%) knew about condoms ($p = 0.0001$), but more girls (87.3%) than boys (78.5%) knew about oral contraceptive pill ($p = 0.0001$).
- ❑ More girls (80.7%) than boys (60.5%) indicated the hospital as a source ($p = 0.005$), more boys (64.7%) than girls (59.3%) mentioned the chemists shop ($p = 0.0001$), more girls (56.0%) than boys (30.8%) mentioned the health centre ($p = 0.0001$) for procurement of contraceptives. Similarly, more girls (44.7%) than boys (17.5%) knew of the doctors as a source of contraceptives ($p = 0.0001$).

CONCLUSION

The study showed that a large majority of the senior secondary school students surveyed had a realisation of the negative impact of uncontrolled population growth on the development of the country and had the knowledge of its adverse socio-economic consequences, though in terms of the wider implications of uncontrolled population, like poor sanitation, lack of potable water, spread of infectious diseases and increases in crime rate their knowledge was low. The knowledge of the advantages of contraceptives appeared to be restricted to population control, with very few citing prevention of unwanted pregnancies and improvement of maternal and child health as the advantages. These gaps in knowledge need to be addressed by including population and sex education in the school curriculum. Education and motivation of the adolescents will go a long way in influencing their reproductive attitudes and behaviour, which in turn is likely to have an important impact on overall reproductive health, demographic and social outcomes.

A Study of Never Users of Contraception from an Urban Slum of Delhi

Khokhar A, Gulati N. Indian Journal of Community Medicine, January-March 2000; XXV(1):26-30.

INTRODUCTION

Since the launch of the nationwide family planning programme in 1951, attempts have been made from time to time to encourage the women to accept and adopt contraception. In spite of efforts of the programme planners and implementers there are women who have never used a method of family planning throughout their reproductive life and there are many who are likely to follow their footsteps. Reports from other parts of the world, i.e., Guatemala, Mali, Senegal, Nigeria and Pakistan have shown that more than 80 per cent of the women with unmet needs have never used contraception. The situation in India is yet to be analysed.

OBJECTIVES

To study sought to analyse the reasons for never use of contraception by ever married women in the age group of 15-49 years.

MATERIAL AND METHODS

The present study was conducted in an urban slum located at Deen Dayal Upadhyay Marg, Delhi. All the 440 ever-married women in the reproductive age group of 15-49 years were included. It was a community-based cross-sectional study conducted during 1996-97. A pre-tested pre-structured proforma was used to collect the information from the target population.

RESULTS

- ❑ Out of a total 440 ever-married women, 170 (38.64%) were ever users of contraceptives and 270 (61.36%) were never users. A total of 204 (75.55%) women mentioned the main reason for never use of contraception to be fear of side effects.
- ❑ Literacy status of the study subjects and that of their spouses showed an association with the contraceptive use and the difference was statistically significant ($p < 0.001$).
- ❑ Religion and work status of the study subjects also showed an association with the contraceptive use, which was statistically significant ($p < 0.001$).
- ❑ As many as 62 (22.9%) women felt opposition from their husband or other family members.
- ❑ Out of the 204 women who had cited fear of side effects to be the reason for never use of contraception, as many as 144 (70.58%) of them cited it as a reason for non-adoption of sterilisation. As many as 112 (54.9%) revealed that increased bleeding associated with Copper-T insertion were an important factors for not using any contraceptive.

- ❑ With condom use, fear of pregnancy was cited as the main reason, while for oral contraceptives, menstrual disturbance was mentioned by 15.69 per cent of the subjects to be deterrent.
- ❑ 70 (15.9%) of the study subjects had not heard of any method of contraception. All the ever users had heard about at least two methods and 163 (95.89%) of them had heard about three or more methods, whereas only 82 (30.37%) out of never users had heard about three or more methods.

Profile of Induced Abortion in Women from an Urban Slum of Delhi

Khokhar A, Gulati N, Journal of Community Medicine October- December, 2000; XXV (4): 177 – 180.

INTRODUCTION

Induced abortion is the most controversial area of family planning, yet it is often the most important method of fertility regulation by a community in the struggle to control family size. In reality, contraception and induced abortions are complementary methods of fertility regulation. Although abortion has been greatly liberalized, the annual number of legal abortions are 0.5 million, which contribute hardly 10 per cent to the total number of the abortions done in the country. Illegal abortions are still rife, although it is now more than 20 years since MTP Act has been promulgated. Urban slums, by virtue of their socio-economically disadvantaged population are in the greatest need of safe abortion services.

OBJECTIVES

The main objectives of the study were to study socio-demographic profile of an urban slum and the reasons for procuring an abortion and choice of health care provider.

METHODOLOGY

The present study was conducted in an urban slum, consisting of four clusters located at Deen Dayal Upadhyaya Marg, Delhi during the period 1996-1997. The slum has a total population of approximately 3,500, a large proportion being migrants from other states, namely, UP and Bihar. All the 440 ever-married women in the age group of 15-49 years were included in the study. Out of this, there were 70 women with history of induced abortions and all of them were administered the pre-structured and pre-tested proforma pertaining to abortion details. It was a community-based cross-sectional study. The data was analysed and the test of significance for difference between two proportions (chi/square) was applied.

RESULTS

- ❑ In the present study, out of 440 eligible women, 70 (15.90%) had undergone an induced abortion at one time or the other, giving a rate induced abortion in the study area as 20/1000 population or 159/1000 married women in the reproductive age group.
- ❑ 25.71 per cent (18/70) of the women with induced abortion were literate, as against 16.75 per cent (62/370) of women without an induced abortion and the difference was not statistically significant ($p > 0.05$).
- ❑ Husbands of 42.85 per cent (30/70) of the study subjects who had undergone an induced abortion were literate, as compared to 25.94 per cent (96/370) of those without an induced abortion and the difference was statistically significant ($p < 0.01$).
- ❑ Higher proportion of married adolescent girls and women who were gainfully employed (28.94%) had undergone an induced abortion compared to those not employed (13.18%). This difference was statistically significant ($p < 0.001$).

- ❑ There was no statistically significant ($p > 0.05$) difference between the abortion status of Hindus (16.87%) and Muslims (14.7%).
- ❑ Around 13.86 per cent of married adolescent girls and women from upper-lower and 17.64 per cent of women from lower income groups had undergone induced abortion and the difference was not statistically significant ($p > 0.05$).
- ❑ 15.49 percent of married adolescent girls and women from nuclear families and 16.66 per cent from joint families had undergone an induced abortion ($p > 0.05$)
- ❑ 39.58 per cent induced abortions were performed in government hospitals, whereas, 18.75 per cent (18) of the total abortions were induced by women themselves. As many as 28 women tried the hormonal pills (OCS, progesterone) from the chemist before going to any of the mentioned abortion providers.
- ❑ Use of contraception had increased after induced abortions. Before the first induced abortion only 20.83 per cent of married adolescent girls and women had used a contraceptive and after the induced abortion this increased to 58 per cent.

CONCLUSION

Looking at the results obtained from this study, it can be concluded that married adolescent girls and women of an urban slum of Delhi, in the reproductive age group face a set of problems not only because of low literacy, low socio-economic status and dependent status but also because of lack of control over their reproductive intentions and ignorance as to how to fulfill their reproductive health needs. There is a need to enhance awareness in urban slums about reproductive contraceptive options and safe abortion, besides providing follow-up and support for contraceptive use/side-effects and safe abortion services.

Knowledge, Attitudes and Practices of Young Adults (15-24 years) - Disaggregated Data from the National Behavioural Surveillance Survey (2001)

National AIDS Control Organisation, Supported by Ministry of Health and Family Welfare and United Nations Children's Fund.

INTRODUCTION

The epidemic of HIV-infected individuals, which was earlier confined to high-risk groups, has now spread to bridge populations and the general population. India is now implementing the second phase of National AIDS Control Programme (NACP). For effective implementation of the programme and to assess the impact of the strategies being implemented, the NACP has given adequate attention to monitoring and evaluation (M&E) efforts. The M & E system has been geared to provide continuous information on crucial areas of the NACP so that remedial action can be instituted in time. The M & E framework feeds policy makers and programme managers on how well the programme is being implemented and the extent of achievement against the stated objectives of the NACP. Thus, to effectively monitor the trends in cognitive information on HIV/AIDS and to assess changes in sexual behaviour and risk practices, the NACP has commissioned a Behavioural Surveillance Survey.

METHODOLOGY

The study summarises disaggregated findings on awareness, attitudes and sexual practices of 26,716 young people (15-24 years), selected through multi-stage sampling procedure were surveyed during the Behavioural Surveillance Survey, conducted during 2001-2002. Only general population was considered for the present analysis as the focus was on adolescent girls. Thus, respondents aged 15-24 years in the general population were included in the current analysis.

RESULTS

- ❑ The proportion of respondents aged ≤ 24 years ranged from 26.4 to 41.2 per cent in the different states. A significant proportion of respondents have heard of HIV/AIDS (84.9%). However, urban males had highest levels of awareness (91.8%).
- ❑ Most respondents knew atleast two common modes of transmission of HIV (83.4%). As far as awareness among rural females was considered it was found to be low in Jharkhand, Gujarat, Chattisgarh, Uttar Pradesh and West Bengal.
- ❑ Most respondents had misconceptions on certain incorrect modes of transmission. Only 27.1 per cent were aware that a mosquito bite or sharing a meal with an infected person could not transmit HIV and that a healthy looking person could transmit infection. In many states, rural females aged 15-19 years had marginally better awareness on these aspects compared to rural males in the same age group.

- ❑ More than half the respondents (54.8%) were aware that consistent condom use and having sexual relationships only with uninfected faithful partners protects against HIV transmission. Rural females in Assam, Bihar, Jharkhand, Gujarat, Nagaland, Orissa and UP had lower levels of awareness regarding this.
- ❑ More than half the respondents (57.9%) were aware that there is no cure for HIV/AIDS and this knowledge was equivocal across different population segments.
- ❑ Overall, only one in five respondents (19.6%) were aware that STI patients had a higher risk of HIV infection. All sub-populations of respondents from Andhra Pradesh had better levels of awareness as compared to respondents from other states.
- ❑ Cumulating responses across the states, 1.8-3.6 per cent of males and 3.1-5.9 per cent of females reported one or more symptoms of STI in a year's recall period. More than 10 per cent female respondents in Delhi, Haryana, Jammu and Kashmir, Madhya Pradesh, Chandigarh and Uttaranchal reported symptoms of STIs in a year's recall. Between one-third to half the respondents stated that they consulted a medical practitioner during their last episode of STI and nearly one-third reported that they did not seek any medical attention.
- ❑ Awareness of condoms was high (82.7%) among males and females. However, males had better awareness compared to females, both in the urban and the rural areas.
- ❑ One in six respondents stated that they had been exposed to inter-personal communication on HIV/AIDS/STIs.
- ❑ Television appeared to be the most common source for information among the mass media, on HIV/AIDS/STIs with 48-94 per cent respondents in different states mentioning this channel. Radio was the next commonest source for adolescents in many states.
- ❑ In states like Kerala and Mizoram with high levels of literacy, print media was also commonly reported, with more than 80 per cent respondents stating that this media provided them information on HIV/AIDS/STIs.
- ❑ Television, radio and newspapers were quoted as the most common source of information on HIV/AIDS both by respondents aged ≤ 19 years.
- ❑ Overall 7 per cent reported sex with casual partners in a year's recall. Rural females (2%) reported the lowest prevalence of casual sex. Around 52 per cent respondents reported using condom in the last casual sex while 34 per cent reported using a condom.
- ❑ Only 40.7 per cent of the respondents had a positive attitude towards HIV-infected individuals and were willing to share food with infected persons.
- ❑ Also, it was observed that respondents who had a positive attitude towards HIV- infected individuals had significantly better awareness of most HIV/AIDS/STI-related parameters compared to respondents who did not share a similar positive attitude.

- ❑ Respondents educated to beyond class VIII had highest levels of awareness and these differences were also observed to be statistically significant, except in relation to the awareness regarding lack of cure for HIV/AIDS.

CONCLUSION

The data from national survey brings out the level of knowledge, attitudes and practices of adolescents in various states and union territories on reproductive health, with special reference to HIV/AIDS. The media and literacy level of adolescents play a significant role in raising their level of awareness in the area of reproductive health. Message of safe sex has reached many adolescents but more inputs would be required for universalising the information among rural and urban adolescents. The survey hints at the need for RTI/STI clinics and organisation of more awareness generation camps for adolescent girls and young women in rural areas.

Anthropometric Profile and Perinatal Outcome of Babies Born to Young Women (< 18 years)

Malviya M K, Bhardwaj V K, Chansoria M, Khare S. Indian Pediatrics, October 2003; 40 (10): 971-976.

INTRODUCTION

Menarche signifies the attainment of reproductive potential on the part of a girl. Average age of menarche in India is 12.6 years. A post-menarcheal girl is biologically capable of bearing children. However, skeletal growth continues until 16-18 years of age and pelvic growth is completed at 18 years of age. Sexual activity on the part of adolescents leads to unintended conceptions and there is larger problem of legitimate adolescent pregnancies. A higher frequency of adverse obstetric and perinatal events are observed among adolescents than adult women. This study had been designed keeping in mind the above situation.

OBJECTIVES

The study was conducted to ascertain the socio-demographic profile, maternal characteristics, neonatal anthropometry and perinatal outcome in adolescent pregnancy.

METHODOLOGY

The hospital-based observational study covered all consecutive primiparous women below 18 years of age and consecutive primiparous women above 18 years of age, about twice the number of study group, served as the control group. General information was obtained by interview of the women/attendants. Details of antenatal visits, antenatal investigations and complications and intra-natal complications, if any, were obtained from hospital records. Gestational age and anthropometric parameters were assessed as soon after delivery as possible, preferably within 24 hours of birth. Head circumference was recorded after 48 hours of birth. Mother's weight and height were recorded after delivery. Neonate was clinically examined daily till 7th postnatal day or discharge to look for any complications. Comparison of maternal nutritional parameters and 'gestational maturity and birth weight-based categorisation of neonates of the two groups was done by Z-test.

RESULTS

- ❑ There were 4,556 deliveries during the study period, 57 (1.25%) cases comprised the study group and 128 were enrolled as the control group. Mean age of study cases was 17.2 (\pm 0.8) years and that of control cases was 23.1 (\pm 0.9) years.
- ❑ Proportion of short (height < 145 cm), underweight (weight < 45 kg) and anaemic (Hb < 9 g/dl) women was significantly higher in the study group.
- ❑ Incidence of isolated hypertension detected during pregnancy was 9.33 per cent in the control group as against nil in the young mothers group.

- ❑ Significantly higher percentage of women in the study group had premature labour, while significantly higher proportion of women in the control group carried their pregnancy to term. Young mothers of the study group when delivered to the term, they delivered small for date, i.e., intrauterine growth retarded (IUGR) babies significantly more often than older women.
- ❑ Number of still birth in study group (n = 2) was comparable to the control group (n = 3). Birth asphyxia occurred in 1 and 2 cases in study and control groups, respectively. Maternal age, weight and hemoglobin concentration were found to have significant effect on neonatal maturity, while ante-natal check-ups, height and literacy did not have significant influence on the maturity.
- ❑ Higher proportion of girls in the study with < 45 kg weight and had haemoglobin concentration of < 9 g/dl, which probably contributed to higher frequency of premature labour and lower birth weight of babies in this group.
- ❑ Only maternal weight and hemoglobin concentration had significant influence, while maternal age, antenatal checkups, height and literacy lacked significant effect on birth weight.
- ❑ Neonatal hyperbilirubinemia occurred significantly more often in the babies of study group (38.2% vs. 18.4%, $p < 0.0025$). However, the incidence of early onset sepsis and respiratory distress was not significantly different in the two groups and no early neonatal deaths were reported in either group.

CONCLUSION

Adolescent girls entering motherhood are more at risk with respect to safe motherhood and child survival and development parameters. They are usually anaemic and tend to deliver 'small for date' babies or premature babies with a low birth weight. The neonates born to adolescent mothers show symptoms of jaundice more often and more pronounced. Thus, it would not be desirable to have adolescent girls being initiated into marriage and child bearing and more concerted effort needs to be made to promote marriage of girls after 18 years of age.

Study of Unmet Need for Family Planning among Married Women of Reproductive Age Attending Immunisation Clinic in a Medical College of Calcutta

Ram R, Ghosh MN, Bhattacharya S, Haldar A, Chatterjee C, Naskar N. Indian Journal of Community Medicine, January-March 2000; XXV(1):22-25.

INTRODUCTION

Millions of women who are sexually active would prefer to avoid becoming pregnant either in a proper manner or otherwise, but they are not using any methods of contraception. These women are considered to have an "unmet need" for family planning. The concept of unmet needs points towards the gap between some reproductive intentions of women and their contraceptive behaviour. Among the common reasons for unmet need are inconvenient or unsatisfactory services, lack of information, fears about contraceptive side effects and opposition from husband, relatives or others.

OBJECTIVES

The present study was carried out to find out the extent of unmet needs among females of reproductive age and reason for the gap, besides identifying the demographic and social factors influencing unmet needs.

METHODOLOGY

The study was taken up in Calcutta, with 1728 mothers of reproductive age (15-40 years) who were attending the clinic with their children for vaccination. They were interviewed to screen out the unmet needs group using the standard formulation. The criteria was to include all women who were married and presumed to be sexually active, who were not using any method of contraception and who either did not want to have any more children or wanted to postpone their next birth for at least two more years. The unmet needs group also included all those pregnant and lactating mothers whose current or previous pregnancies were unintended or mis-timed.

RESULTS

- ❑ The number of mothers who fulfilled the criteria of standard formulation was 400, which revealed that about 23.1 per cent of married women of reproductive age had unmet contraceptive needs.
- ❑ More than 50 per cent of the mothers belonged to the age group 21-30 years, which is the most active period and most important for child bearing.
- ❑ The overall unmet needs were low at the beginning of reproductive age, but it increased and reached a peak in late twenties and then declined.
- ❑ Around 92 per cent of the mothers had 2 or more children. This shows that women become more interested in controlling fertility after the birth of the first child and this increased with each additional child.

- ❑ About 50 per cent of the women were illiterate and only 1.5 per cent had higher education which shows that majority of the educated women were already using contraception.
- ❑ Around 12.25 per cent of the mothers found the methods available to be inconvenient and 15.25 per cent complained of poor quality of service and unmet needs were also high among illiterate and little educated mothers. In case of 26 per cent of the mothers, the reason of unmet needs was lack of information.
- ❑ Women who are not aware of contraceptive methods or do not know from where these can be obtained, who neither understand their side effects nor know how to use them are more likely to have unmet needs.
- ❑ In case of 25.25 per cent of mothers, concerns about health and contraceptive side effects were responsible for the unmet need. It was also the major reason even in educated mothers. In 12 per cent of mothers, the reason for unmet need was opposition from husband, families and communities.
- ❑ About 9.25 per cent of the mothers thought that they were uncertain about child bearing and so were unlikely to be interested in contraception.

CONCLUSION

In view of the above findings, improving the quality of services and access to convenient methods, improving communication and focussing on both, men and women will reduce unmet need. The requirement for early awareness generation regarding need for and purpose of contraception has been indicated by this study. Women have to be made better decision makers in designing the size of the family and deciding the time of advent of a baby in the circumstances they find themselves. The follow-up services to provide medical aid in cases of complications and side-effects of contraception need to be strengthened.

Integrating Adolescent Livelihood Activities within a Reproductive Health Programme for Urban Slum Dwellers in India

Sebastian M P, Grant M, Mench B. Population Council, CARE, CORT 2004; 1-36.

INTRODUCTION

While adolescents in India are facing a rapidly changing economic environment, the life choices of adolescent girls are different from those of adolescent boys. Most adolescent girls have little say in the timing of their marriage or the choice of spouse, and after marriage most have limited power within their marital household, coupled with restricted physical mobility within the community and limited decision-making power within the household. Thus, programmes are needed that increase the ability of unmarried girls to have a say in their own lives and enhance the skills that expand life choices. By building social network and developing critical financial and income generating capacities through *livelihood programmes* that have the potential to enhance the decision-making power of adolescent girls, as also to deliver technical and life skills and to transform the ways in which girls view themselves and the ways in which they are perceived by the community.

OBJECTIVES

This study examines whether the intervention of livelihood (human, financial, natural, physical and social) programmes increased knowledge of reproductive health; increased physical mobility and contact with individuals outside the family, as well as awareness of safe places for girls to congregate; increased self-esteem and social skills; altered work aspirations and encouraged more progressive gender role norms; reduced time spent on domestic tasks and increased time spent on income generating tasks.

METHODOLOGY

A pilot project for adolescent girls aged 14-19 years, in the urban slums of Allahabad, Uttar Pradesh in 2001 and livelihood activities for adolescent girls were integrated into CARE-India's existing reproductive health programme for slum-dwellers. Two comparable wards were selected as the experimental site (5 slums) and the control site (9 slums). Although adolescent girls in both the experimental and control areas received reproductive health education from peer educators, only participants in the experimental area were provided with counselling on livelihood, training in a range of 19 vocational skills, assistance with savings formation, and supportive follow-up counselling and assistance. Around 1,017 girls were taken for quantitative analysis as they were covered in both survey rounds. In all, 825 participants completed at least one vocational course, and almost 80 per cent completed two or more courses. Baseline and endline surveys measured the impact of the project.

RESULTS

- ❑ Over 75 per cent of the adolescents reported that they live with both, their mother and father. Approximately 15 per cent live only with their mothers, nearly 5 per cent live with their father only, and less than 4 per cent live with neither parent.

- ❑ While almost 80 per cent of adolescent boys and girls reside in households with access to piped water and nearly three-quarters live in households with a cement roof, less than half reside in households that have a flush toilet. Only 38 per cent of adolescents live in households that have a separate room for cooking.
- ❑ Around 92 per cent of adolescent boys have attended school as compared to 84 per cent of girls.
- ❑ Relatively few 14-19 year olds have ever-worked for pay. The proportion of boys who reported that they have ever-worked for pay was five times greater than the proportion of girls. Girls reported spending almost four times as many hours as boys on chores. Although adolescent boys are more likely to participate in paid labour, they also have more time available for leisure activities.
- ❑ Approximately half of the girls indicated that they had not travelled outside Allahabad during the past six months, compared to only about one-quarter of boys. While 93 per cent adolescent boys were able to visit a relative on their own, only 22 per cent girls were able to do so.
- ❑ Girls were much more likely to report that they needed to seek permission to make visits outside of their homes than boys, and both boys and girls reported that there are no places in the community where unmarried girls can safely congregate for any purpose.
- ❑ Despite the fact that girls were much less likely to work for pay, they were more inclined to save; 54 per cent girls and 26 per cent boys reported having saved some money, and only 7 per cent girls and 28 per cent boys among them had a savings account.
- ❑ Adolescent boys had a mean score of 1.2 on the self-esteem index, as compared to a mean value of 10.5 of girls. On the social skills index, boys had a mean value of 11.0, as compared to a mean value of 10.6 for girls. Although these differences appear to be relatively small, they are highly significant (self-esteem $p = 0.001$, social skills $p = 0.001$).
- ❑ Adolescent boys had a mean score of 12 on the index of gender role attitudes, where as girls had a mean score of 13 (t-test showed significant results, $p = 0.001$), indicating that adolescent girls had a slightly more progressive outlook than the boys.
- ❑ Only 6 per cent boys and 2 per cent girls knew about the fertile period of a women's reproductive cycle.
- ❑ About one-third (32%) of girls knew about condoms as compared with 82 per cent boys.
- ❑ Participation had a strong influence on the social skills of adolescent girls while social skills of intervention participants increased (10.5 at the baseline verses 12.0 at the endline out of a maximum of 20); there was virtually no change in the social skills of girls living in the control area (11.0 at the baseline version 11.1 at the endline). This relationship was strongly supported by the regression results, showing that the change experienced by project participants was significantly greater than that of adolescent girls in the control area.
- ❑ Eighty-three percent of intervention participants reported knowledge of a safe space at the endline, compared to less than one-third of control respondents. Intervention participants showed a significant increase in reproductive health knowledge relative to control respondents.

- ❑ Finally, more than 80 per cent of the participants in the experimental area continued to use their vocational skills after the programme ended, and more than half were able to open savings accounts in their name at the local post office. However, only 10 per cent managed to earn any income from their newly acquired skills.

CONCLUSIONS

The baseline survey clearly indicated the appropriateness of an intervention that addresses the capabilities and opportunities available to adolescent girls. A livelihood programme for adolescent girls was not only acceptable to parents in this very traditional slum community but also feasible to implement. While a short-term intervention cannot alter the structure of opportunities available to adolescent girls, it can raise awareness, social skills, knowledge of safe spaces and group identification. However, in order to reduce deeply entrenched gender disparities that exist and also to enhance girls' ability to have a greater voice influencing their lives, it would be desirable if future programmes had considerably more contact hours than the current intervention. Moreover, increased efforts are required to develop group cohesion, as well as improve the communication, negotiation and decision-making skills of adolescent girls.

Pregnancy in Adolescents: A Community Based Study

Sharma A K, Chhabra P, Gupta P, Aggarwal Q P, Lyngdoh T. Indian Journal of Preventive and Social Medicine, Jan-June 2003; 34 (1&2): 24:33.

INTRODUCTION

Married adolescent girls are exposed to risk of pregnancy early in life. It is reported by several researchers that pregnancy among adolescents is associated with maternal complications, pre-mature birth, low birth weight, prenatal mortality and increased infant mortality. It has been observed in developing countries, that teenagers were at increased risk of maternal anaemia, pre-term birth and cesarean delivery. Thus, pregnancy among adolescents is associated with high maternal morbidity and mortality. As a majority of the studies are hospital-based, where high-risk cases are more likely to be delivered, only the community-based studies can assess the risk in adolescent pregnancy. Therefore, this study has been done with the objective of assessing the maternal risks and fetal outcome of pregnancy in adolescents in a community set-up of Delhi.

METHODOLOGY

It was a prospective cohort study. Each pregnant woman was visited once a month to record pregnancy-related events till 8 months of pregnancy and weekly visits were carried out in the ninth month. Attempt was made to visit each puerperal woman within 48 hours of delivery. Information regarding events and complications of pregnancy, delivery and outcome of pregnancy were recorded using a structured semi-open ended questionnaire. Anthropometric measurements, clinical examination and appropriate lab investigations were carried out.

The present study was a secondary analysis of data from the cohort study using a nested case-control study design. All pregnant women below the age of 20 years were considered as cases. Majority of them were primigravida. However, pregnancy-related events and outcome of pregnancy was compared among primigravida adolescents and adult women in order to eliminate bias, if any, on account of gravidity. The original cohort consisted of 843 pregnant women. It included 74 adolescents (10 to 19 years) and 156 primigravida adult women. Of these, only 64 (86%) adolescents were primigravida.

RESULTS

- ❑ The average age of adolescents and adult primigravida at the time of conception was 18.46 (± 0.56) and 21.69 (± 1.96) years, respectively ($p < 0.01$). The age at menarche was similar in both groups. Median age at marriage of the adolescent girls was 2 years less than that of the adult primigravida. Illiteracy was more common among the adolescents as compared to the adult primigravida.
- ❑ Only 45 per cent adolescents and 42 per cent adult pregnant women were registered. Registration in the first trimester was done by one fifth of the adolescents as compared to a quarter of adults.
- ❑ Oedema was reported atleast once during pregnancy by 25 per cent and 16 per cent of adolescent and adult respondents, respectively. Immunization with optimum number of tetanus toxoid dosages was comparable in the two groups of women. There was only one case of pregnancy-induced hypertension

(PIH) among adult primigravida and none among adolescents, and no cases of ante-partum haemorrhage and eclampsia, in either group. Mean haemoglobin levels were comparable in the two groups of pregnant women.

- ❑ Three percent adolescent and 8 per cent adult pregnancies ended pre-term. Presentation other than vertex was reported in case of 5 per cent and 2.5 per cent of adolescent and adult pregnancies, respectively. Only one-third of adolescents had institutional delivery whereas more than half of adults opted for institutional delivery (odds ratio 2.10; 95% CI: 1.11-3.99, $p < 0.01$).
- ❑ Untrained dai or family members conducted the deliveries in case of 35 per cent adolescent and 55 per cent adult pregnancies. Delivery related complications were reported by 11 per cent adolescents compared to only 5.8 per cent adults. Pregnancy wastage was about six times more common in adolescent pregnancies (Odds Ratio 6.46; 95% CI: 2.14-20.03, $p < 0.000$). Low birth weight was more prevalent in the babies born to adolescent women (57.1%) compared to the adult women (40.0%).

CONCLUSION

It may be concluded that oedema, abnormal presentation, home delivery and complications of delivery were more common among adolescents. Pregnancy wastage was significantly high among adolescent primigravida. In all other aspects, not much difference was observed between the two groups. It may be attributed to their being from the same socio-economic and cultural background. Outcome of pregnancy in terms of pregnancy wastage and delivery of low birth weight babies is significantly high among adolescents, thereby necessitating the need for increasing the age at marriage and conception. Therefore, delaying marriage and delaying pregnancy in adolescents will definitely help in improving their educational status and thereby improve scope for their empowerment. It will reduce the pregnancy and child bearing-related complications and thus, contribute to reduction of maternal and infant morbidity and mortality. Early registration and institutional deliveries are to be promoted for better child survival and development. Emphasis should also be laid on early registration of pregnancy, regular check ups and institutional delivery, in order to reduce the risks to the mother and the child. In order to reduce the risk of antenatal complications and minimise poor outcome of pregnancy, an intensive campaign for increasing the age at marriage and thus, of for delaying conception is to be carried out.

Factors Associated with Teenage Pregnancy

Thekkekkara T, Veenu J. Indian Journal of Community Medicine, April - June, 2006-31 (2): 83-85.

INTRODUCTION

In India, 10.3 per cent of the female population belongs to the age group of 15-19 years and 22.1 per cent of Karnataka's population comprises of adolescents. Incidence of teenage pregnancy in the country varies from 3.2 to 18.6 per cent. In 1997, the age-specific fertility rate was found to be 0.061 live births per 1000 rural women aged between 15-19 years. Thus, it would be essential to study the factors associated with adolescent pregnancy, as adolescent pregnancy is very common in the country and rural Karnataka as well.

OBJECTIVES

This study analyses factors associated with teenage pregnancy, including age, parity distribution, educational qualifications, marital status and health seeking behaviour.

METHODOLOGY

This retrospective study was conducted in a maternity hospital in Solur, Bangalore. All the women who delivered from February, 2003 to April, 2003 were included in the study with the exception of those who were referred to tertiary care centres (medical and /or obstetric complications, HIV or HBsAg positive). Data from these 221 patients was obtained after personal interviews and review of medical records. After calculating their present age, the patients were subsequently divided into teenagers and non-teenagers (i.e., those above 19 years). The data was then tabulated in excel spreadsheet and analysed using Epi 6 programme.

RESULTS

- ❑ Out of the 221 pregnant women included in the present study, 52 per cent (115) were teenagers. Among the teenage women, 76 per cent belonged to the age group 18-19 years with 3.5 per cent of them being 15 years or below. The youngest mother was 14 years old. Around 3 per cent the teenage primigravidae were unmarried, while the rest of the population was married.
- ❑ The mean age at marriage among teenagers was 16.5 years (SD=1.5), whereas among non-teenagers it was 18.6 years (SD=2.4). The mean age at first pregnancy among teenagers was 18.1 years (SD=1.2), while among non-teenagers it was 20.5 years (SD=2.7). The mean interval between marriage and first pregnancy was 1.1 years (SD=0.6) among teenagers and among non-teenagers it was 2.0 years (SD=2.7). The youngest age at marriage was 12 years in the present study.
- ❑ Around 14.9 per cent of the study population was married by the age of 15 years and 24.4 per cent were pregnant by the age of 17 years.
- ❑ While 15.4 per cent of the total study population had never been to school and 38.5 per cent had completed their studies up to tenth standard. About 13.2 per cent of the teenage primigravidae had no formal education and 56 per cent had studied up to high school. However, among the teenage multigravidae, the majority

had studied only up to upper primary. On the contrary, among the non-teenagers, 21.7 per cent had gone for further studies after completing their tenth standard. Higher the educational status, older was their age at marriage, as well as their age at first pregnancy ($p=0.018$).

CONCLUSION

In the present study, the mean age at marriage among teenagers was found to be 16.5 years with a mean interval of 1.1 years for the first pregnancy. Three percent of the teenagers were unmarried in the present study. Higher the educational qualification of the women, higher was their age of marriage and first pregnancy. Thus, emphasising on education of girls would be a successful strategy for delaying marriage of girls and consequently preventing adolescent pregnancy.

VI
Mental Health and Behaviour

Mental Health and Behaviour

Psychiatric morbidities afflicting mental health and modifying adolescent behaviour are a significant area of study, as mental health influences the balanced development of the personality and emotional side of the adolescent. Several manifestations of abnormal mental health and behaviour are a consequence of poor knowledge of body parts, poor self-image or inadequate or incorrect knowledge about sex related issues.

Not many studies have been undertaken to assess the prevalence of adolescent psychiatric morbidities. However, the few studies conducted during last five years have estimated that prevalence of psychiatric disorders among children and adolescents as being more than 10 per cent and adolescents were found to be in the high-risk zone, needing psychiatric help. Research has shown that the eldest born child was the most commonly affected. More than half the adolescent girls with psychiatric disorders had more than one problem syndromes. Studies have established that nearly 30 per cent of adolescents show diagnostic symptom of anxiety ranging from generalised anxiety to social anxiety as the boys and girls move from early to middle and later adolescence. Suicide and self-harm ideation and practice is not unknown among adolescent population groups, as evident from recent research initiatives.

Research data has shown that higher level of cortisol among adolescent girls is associated with greater general and social anxiety among them, as compared to boys. Greater cortisol levels across time among certain adolescent girls tended to have higher general and social anxiety among them, which across time implied higher chances of anxiety symptoms in future. Thus, the gender difference between adolescent boys and girls in the cortisol-emotion relationships may give ones for differences in rates of psychopathology among adolescent boys and girls.

The background of the family, its income, employment status of the mother, chronic illness among family members and type of school were the factors related to psychiatric morbidity among the school-going adolescent girls. Social stress was observed to be common among most adolescent girls.

Parental encouragement lowered academic anxiety in both boys and girls. However, academic anxiety in adolescent girls receiving coaching with low parental encouragement was higher than that in girls with high parental encouragement. Similarly, academic anxiety was higher among adolescent girls receiving low parental encouragement than those receiving high parental encouragement even in-group of self-studying adolescents. The mindset of the parents is an important determinant of their professional prospects. In case of adolescent girls, ability to think diversely help them to overcome cognitive rigidity unlike boys and they are also more creative in cognitive thinking processes than boys. A poor body image was associated with depression. Adolescent girls were more conscious about their body weight and appearance than their male counterparts.

The above trends give an insight into the behavioural patterns, mental predisposition and capabilities of adolescent girls, which can be referred to for planning intervention policies and programmes for them with fine-tuning of regional and cultural attributes and value systems. The schemes and programmes for adolescent girls should help them to lower the social and body image related stress. The educational system is required to be modified to reduce academic performance stress. Good parenting with a positive mind-set needs to be promoted to encourage adolescents to achieve their full potential and relieve academic performance stress. Counselling

services for 'in school' and 'out of school' adolescents need to be set up at the school and community level, respectively, throughout the country.

The research agenda in the area of mental health would include the following:

- To have a better idea of prevalence of morbid conditions among adolescent girls, it is imperative to conduct epidemiological longitudinal studies, starting from early childhood, through adolescence for development of an appropriate preventive, promotive and curative programme in the community.
- An extensive study to assess suicide behaviours among adolescents and empowering adolescents to refrain from the options of self-harm.
- There is dearth of Indian studies on aggression among adolescent girls and the mechanism of diffusing stress in a closed social network, with limited interactions and mobility.

A Study of Life Stress and Coping Styles among Adolescents Girls

Dubat K, Punia S, Goyal R. Journal of Social Science, 2007; 14 (2): 191-194.

INTRODUCTION

Stress is the outcome of environmental factors like economic or technological uncertainty, mainly due to overpopulation, leading to competition. In this process, one feels psychologically disturbed, emotionally drained, physically sapped out and may sweat heavily without being subjected to any physical exertion. The consequences of these causes can show its direct or indirect impact in the form of symptoms like headache, high blood pressure, heart diseases, etc. Organisational factors like overburden of work, hazardous working conditions, role conflict, role ambiguity, etc., are also source of stress, the consequences of which may give rise to psychological symptoms like sleep disturbances, depression, etc.

OBJECTIVES

The present study was planned to study the levels of adolescent stress and coping strategies adopted to deal with the same.

METHODOLOGY

The study was conducted in two cities of Hyderabad and Hisar. Two schools (one CBSE and one State Board Education) were selected at random, each from Hyderabad and Hisar. In all 80 students of 12th standard, 20 each from both the affiliated schools of the 2 selected cities were taken at random in the process of investigation, a life stress scale, general role stress scale and coping questionnaire were used. The responses were quantified giving appropriate weightage. Frequency and percentage were used for data analysis.

RESULTS

- ❑ The results indicated that 47.50 per cent and 72.50 per cent adolescent girls from Hisar and Hyderabad, respectively, were in the moderate category of family stress. Financial stress was reported by 50 per cent and 60 per cent of Hyderabad and Hisar adolescents, respectively. Majority of the adolescent girls of both Hyderabad and Hisar cities (85 per cent and 90 per cent, respectively) had moderate level of social stress. Educational stress was also encountered by majority of the adolescents from both the cities. Stress due to ego threat was reported by 42.50 per cent adolescents from Hyderabad and 60 percent from Hisar.
- ❑ Bereavement, i.e., departure of somebody due to death, was reported to be the cause of stress by 50 per cent adolescents from Hyderabad and 40 per cent from Hisar. Separation leads to moderate level of stress in almost equal percentage (70% and 72.50% in Hyderabad and Hisar, respectively) of adolescents in both.
- ❑ Moderate and high stress due to personal set back, was reported by 30 per cent and 40 per cent adolescents, from Hyderabad and 65 per cent and 30 per cent adolescents from Hisar, respectively.

- ❑ Only in case family stress Hyderabad adolescents had high stress level in comparison to Hisar adolescents. But overall stress was high in Hisar adolescents. The associated reason for higher level of stress in the students of Hisar city may be the cultural differences and educational status of their parents.
- ❑ Majority of the adolescents in either setting (82.50% of Hyderabad and 70% of Hisar) could moderately cope by using confrontive method, followed by 10 per cent of Hyderabad and 17.50 per cent of Hisar who could use the coping strategy to a lower level. Distancing coping technique was adopted by most of the adolescents, i.e., 65 per cent in Hyderabad and 67.50 per cent of Hisar, to a moderate level. The method of self-controlling was very common as equal percentage (77.50%) of adolescents from both, Hisar and Hyderabad, used this method to a moderate level.
- ❑ Seeking social support to deal with stress was used to a moderate level by equal percentage of adolescents, i.e., 70 per cent, both from Hyderabad and Hisar city. Majority of the adolescents (72.50% of Hyderabad and 80% of Hisar) coped with stress by accepting the responsibility to a moderate level. Escape avoidance was adopted as a technique to a moderate level by more than half of the adolescents, (67.50% from Hyderabad and 87.50% adolescents from Hisar).
- ❑ Painful problem solving technique was used by 87.50 percent of Hyderabad and 80 per cent of Hisar adolescents to a moderate level and positive reappraisal coping strategy was adopted by 85 per cent of Hyderabad and 70 per cent of Hisar to a moderate level against 20 per cent from Hisar who used this method to a higher level.

CONCLUSION

When coping strategies were analysed for the total sample it was found that majority of the adolescents had moderate or low level of coping in confrontive coping, distancing, escape avoidance, painful problem solving and positive appraisal. The percentage of Hyderabad adolescents in comparisons to the Hisar adolescents was slightly higher in using these techniques. Adolescent girls from Hyderabad used different coping methods to a higher level as compared to Hisar adolescents and these methods were confrontive, distancing, seeking social support, painful problem solving and positive reappraisal, while Hisar adolescents used escape avoidance and accepting responsibility as a coping strategy to a higher level.

Adolescents from Hyderabad frequently used positive methods of coping than Hisar students. Reasons attributed for their differences were that the adolescents from Hyderabad city were more independent in their decisions due to the cultural differences and educational status of the parents.

Impact of Parental Motivation for Academic Achievement on Time Use Pattern of Rural Adolescents

Kaur P, Jaswal I | S. Indian Journal of Population Education December 2005; 19-26.

INTRODUCTION

It is generally assumed that one of the major resources available to students for improving their academic achievement is time. Many of the verbal interactions of the parents with their children appear to be related to show parental concern about how children spend their time. Parents intuitively believe that achievement can be increased by time spent on intellectually stimulating activities. If sports, social life, dates and television are occupying more time than studies, then parents often try to re-allocate their child's time by giving greater emphasis to academics.

OBJECTIVES

The study was planned to understand the impact of parental motivation for academic achievement on children's time use pattern and their academic achievement.

METHODOLOGY

The study was conducted in two villages of Ludhiana district of Punjab, namely Lalton Kalan and Badowal, randomly selected from the list of villages. The sample consisted of 600 rural school going adolescents studying in 7th to 12th class. Sample was evenly distributed by class and sex, with 100 adolescents in each class having 50 boys and 50 girls.

A questionnaire was used to study the time use pattern of rural adolescents. Parental motivation for academic achievement was measured by an interview schedule, which included the items regarding type of home environment, motivation given to the children and type of academic goals set for children by their parents. The motivational responses were rated as high, average or low. Data were analysed by applying appropriate statistical methods such as frequency percentages and coefficient of correlation.

RESULTS AND DISCUSSION

- ❑ Half of the parents (50%) of the rural adolescents fell in the category of average motivation level followed by high motivation level (30.83%). In the low motivation category majority of the parents (55.65%) were illiterate and only very few (7.82%) were matric. None of them were graduate or above.
- ❑ While in the case of average motivation, majority of the parents (56.3%) were matric and in high motivation level, majority of the parents (86.48%) had obtained education upto matric level and rest (13.51%) were graduate and above.
- ❑ The findings indicated that all (100%) of the parents in the low motivation category wanted to educate their child till matric level. In the average motivation level category, majority of parents (64%) responded that

they wanted to provide education to their child till graduation level. On the other hand, in the high motivation level category, 85.94 per cent parents wanted their child to have education till postgraduate level and 14.05 per cent wanted their children to be graduates.

- ❑ Surprisingly, 'no-occupation' choice was opted only in the case of girls. There was not a single male in this category. Out of the sample of 300 girls, 152 (50.66%) of the parents still wanted their girls to be housewives and did not want them to join any occupation.
- ❑ In the average motivation level category, majority of the parents (45%) opted agriculture as an occupation for their child. In the high motivation level category, majority of the parents opted service as an occupation for their child, followed by agriculture (15.13%) and self-employment (7.56%).
- ❑ A statistically significant positive relationship was found between time spent on personal care and maintenance homework and leisure reading. Thus, higher the level of motivation for academic achievement more was the time spent on aforesaid activities.
- ❑ Although a negative relationship existed between time spent on television and household chores with parental level of motivation for academic achievement, it was found to be significant ($p < 0.05$). The results depicted that higher the motivation level, lesser was the time spent on television viewing and household chores. However, no relationship with parental motivation level and time spent on religious activities, exercise, tuition, playing and sleeping was found.

CONCLUSION

Thus, the higher educated parents had higher level of motivation and had higher goals regarding the education and occupation of their children. The parents' level of motivation for academic achievement had significant positive relationship with time spent by adolescents on homework, leisure reading, personal care and maintenance and had significant negative relationship with time spent on household chores and television viewing. Thus, education of a generation of parents helps in shaping the educational pursuits and career graph of the adolescents. However, in the case of adolescent girls, the mindset of parents becomes an important determinant of their professional prospects.

Body Image and Depression among Adolescents

Kaur R, Singh A K, Javed A. *Journal of Personality and Clinical Studies*, March 2003; 19(1) : 51-56.

INTRODUCTION

Attractive people are perceived to be happier, more successful, popular, more sensitive, kind, interesting, strong, poised, modest, sociable and outgoing than less attractive people. In addition, physical attractiveness has consistently been reported as the most important factor in a person's desirability as a dating partner. This has led to women becoming increasingly preoccupied with maintaining a thin body type in recent years.

In addition, to a possible link between self-perceived attractiveness and depression, physical appearance, as perceived by others may contribute to depression. Based on evidence that unattractive person received less social reinforcement than attractive person, it might be predicted that less attractive persons could be more susceptible to depression.

OBJECTIVES

To test the hypothesis that the poor body image would be strongly correlated (positively) with depression in case of female adolescents than male adolescents.

METHODOLOGY

The sample of the study consisted of 300 adolescents (150 males, 150 females) studying in IX, X, XI and XII grades of different schools/colleges of Chandigarh. The subjects were unmarried, unemployed, belonging to urban area and were primarily from middle class.

To study the depressive tendencies, Beck Depression Inventory (1978) for body image of adolescents, and Multi-dimensional Body Self-Relation Questionnaire (MBSRQ) by Cash (1991) were used. Under MBSRQ thirteen variable were studied, including Appearance Evaluation (AE), Appearance Orientation (AO), Fitness Evaluation (FE), Fitness Orientation (FO), Health Evaluation (HE), Health Orientation (HO), Illness Orientation (IO), Body Area Satisfaction (BAS), Subjective Weight (SW), Fat Anxiety (FA), Weight Consciousness /Vigilance (WC/WV), Current and Restraint Dieting (CRD) and Eating Restraint (ER).

The tests were administered in two sessions following uniform sequence. In the first session Beck Depression Inventory was administered and in the second session MBSRQ was completed.

RESULTS

- ❑ Males and females differed significantly on measures of depression derived from Beck Depression Inventory, with males scoring higher than females (mean 16.76 vs. 12.45, t -value = 4.02, $p < 0.01$).
- ❑ Male and female adolescents differed significantly on four indices of body image, that is, appearance orientation, more alert to personal symptom of physical illness (illness orientation), more concerned with fat anxiety, as well as changes in weight.

- ❑ Males and females did not differ significantly on four indices of body image referring to fitness evaluation (feeling of being physically fit), fitness orientation (investment in being physically fit), health evaluation (feeling of physical health) and health orientation (health consciousness). Thus, males and females do not differ as far as physical fitness or health consciousness was concerned. Gender differences were observed in only those dimensions of body image, which were concerned with one's appearance, that is, females being more conscious about their appearance than males.
- ❑ The Pearson's product moment correlations among 13 different indices of body image were positive, the correlations were ranging from 0.01 to 0.55 for males and from 0.01 to 0.45 for females.
- ❑ The correlational analysis showed that two features concerning the relationship between depression and body image are important. First, all significant correlations (50% for both males and females) have emerged to be negative, indicating that the poor body image was associated with depression. Second, the pattern of correlations was more or less similar for males and females so far as the measure of depression was concerned. The significant negative correlations between depression and some indices of body image expressed more depressive tendencies.

CONCLUSION

'Our bodies ourselves' is a poignant theme during adolescence. The dramatic bodily changes during puberty set in motion comprises of an important stage in self-development and integration of sexual maturity into the totality of self-experience. The changing body provides powerful stimulus to self and others. Many new perceptions, new thoughts and new feelings about the body have to be confronted, mastered and integrated with the unfolding sense of self during adolescence.

The study partially confirmed that females are more conscious than males so far as weight consciousness and appearance were concerned. Most of the correlates of body image were found to be negatively correlated with depression. Thus, results of the study would have practical implications in terms of providing insight to formulate certain intervention programmes for promoting right value system among adolescents.

Academic Anxiety among Adolescents: Role of Coaching and Parental Encouragement

Madhu Jain, Jaishree Jain, University of Rajasthan, Jaipur. National Academy of Psychology, India Vol. 52, No. 2, 146-148; 2007.

INTRODUCTION

In the era of extreme competitiveness, academic anxiety has become a significant stressor for the Indian adolescents. Due to high parental expectation, societal demands, anxiety of social disapproval, peer approval, uncertainty in the job market and ever rising level of aspirations, this group is becoming highly vulnerable. For the parents too it is a period of severe anxiety. The parents suffer admission mania as their children struggle to cope with the great demand supply hiatus in prestigious professional institutions.

Expectations of the parents and society as whole has developed a competitive feeling among adolescents to excel in their coaching institutions so as to attain the goal of becoming a doctor or an engineer. Pressures on these coaching institutions are enormous and therefore, they have devised ways to screen the entrants. This psychological pressure adds to their already accentuated anxiety and tension, thus shooting up their anxiety level.

OBJECTIVES

The objective of the study was to assess the effect of coaching and parental pressure on the academic anxiety in adolescent boys and girls.

METHODOLOGY

A large sample of 400 (200 coaching attending and 200 self studying) adolescents from the age range of 16-18 years from Kota city in Rajasthan participated in this study. There were equal number of boys and girls in both the subgroups. Self studying adolescents were those who were not attending coaching and were preparing entrance examinations at home. This sample was selected from various co-educational private CBSC Board English Medium schools of Kota city. All of them were appearing for the first time in competitive exams. The degree of encouragement which a child receives was assessed with the help of a verbal scale developed by Sharma (1988). A scale developed by Lal, Mishra, and Pandey (1985) was used to assess academic anxiety.

RESULTS

- ❑ The adolescents with high perceived parental encouragement reported low level of anxiety ($M=7.86$) than those with low perceived parental encouragement ($M=10.50$), $F(1,392) = 17.82$, $p<0.01$. A significant interaction of type of study x gender, $F(1,392) = 7.88$, $p<0.01$ showed that the coaching attending boys had high level of academic anxiety ($M=9.90$) than self studying boys ($M=8.18$).

- ❑ Contrary to it, coaching attending girls had low academic anxiety ($M=8.47$) than self-studying girls ($M=10.32$). Finally, a 3-way interaction was significant, $F(1,392)=3.83$, $p<0.05$. Coaching attending boys with high parental encouragement had low anxiety ($M=8.36$) than coaching attending boys with low parental encouragement ($M=11.20$). However, coaching attending girls with high parental encouragement had obtained low academic anxiety ($M=7.22$) than coaching attending girls with low parental encouragement ($M=9.72$).
- ❑ Furthermore, self studying boys with high parental encouragement showed low level of academic anxiety ($M=6.43$) than self studying boys with low parental encouragement ($M=9.78$). Similarly self-studying girls with high parental encouragement had obtained low scores on academic anxiety ($M=9.72$) than self-studying girls with low parental encouragement ($M=11.28$).

CONCLUSION

The coaching attending boys experienced high level of academic anxiety than self-studying boys. Contrary to it, coaching attending girls tend to have less anxiety than self-studying girls. Similarly, coaching attending boys exhibit more academic anxiety than the coaching attending girls and self studying boys show less anxiety than self studying girls. It is high time that both the school and parents take realistic view of their wards' capabilities and set reasonable standards for their achievements. The parents, in particular, and schools, in general need to encourage adolescents to freely express themselves, impose lesser restrictions on them and appreciate their achievements.

A Clinico-Social Study of Psychiatric Morbidity in 12 to 18 Years School Going Girls in Urban Delhi

Mishra A, Sharma A K. Indian Journal of Community Medicine April-June 2001; XXVI (2): 71-75.

INTRODUCTION

During adolescent years, children need special care as they undergo a complex process of emotional, physical and social changes. At times, failure to adjust with these changes leads to mental health problems. Both girls and boys are susceptible and suffer from these problems. However, in case of adolescent girls, the problem gets compounded due to societal factors. Unfortunately, these needs of adolescent girls have not been addressed by the health system. Adolescents are the future citizens of a country and it is imperative to systematically address their needs. Adolescent girls are also the future mothers and it becomes critically important to plan for the well being of the girl child during her adolescent years.

OBJECTIVES

The specific objectives of the research were to study the prevalence of psychiatric morbidity in school girls aged 12 to 18 years, to identify its pattern and to find out the socio-cultural factors associated with it.

METHODOLOGY

The study was conducted on 1,097 school girls aged 12 to 18 years from classes VIII to XII from three different types of schools in New Delhi (including one government, one government aided and one private selected randomly) through stratified cluster sampling. Two sections of each class were selected randomly, covering atleast 70 students of each class in a school and covering 210 students in a class of all three schools.

Two types of questionnaires were used in the study. To identify psychiatric morbidity, Youth Self-Report, 1989 (T M Achenbach) was used. To find out the association of socio-cultural factors, viz., type of school, family, self-perception of the girls of her looks, worry about weight, perceptions of father's love, quality of relationship between parents, etc. with psychiatric morbidity, a self-designed questionnaire was used to collect the data and chi-square test was applied. Further, multivariate analysis was used on the factors, which were found to be significant by univariate analysis, i.e., chi-square test.

RESULTS

- ❑ The study revealed that 151 girls (13.76%) had psychiatric morbidity.
- ❑ Morbidity was 9.86 per cent in 12-13 years girls, it rose steeply to 18.89 per cent in the 14-15 years girls, 17.24 per cent in 16-17 years and further to 23.96 per cent among girls of 17-18 years.
- ❑ With the help of YSR, maximum numbers of syndromes identified related to internalising (189). This group had three problem syndromes namely, anxious/depressed syndrome (10.3%) somatic syndrome (4.38%) and withdrawn syndrome (2.55%). As many as 113 (10.30%) girls had anxiety and/or depression and this was the most common problem.

- ❑ Externalising problems were found in 52 girls and most of these (48 girls, 9.4%) had aggressive behaviour syndrome. Around 10.6 per cent girls fell in neither internalising nor externalising syndromes groups. In this group, social problems were maximum (55 girls, 5%), followed by attention problems in 45 (4.1%) girls, while 6 (0.5%) girls had thought-related problems.
- ❑ Majority (57.6%) of girls had more than one (2.29 syndromes/girl) problem syndrome. The girls with an unsatisfactory relationship with father had significantly higher morbidity (O.R. 3.09, C.I. 1.73-5.53). Perception of girls of mothers' love for her, featured next (O.R. 2.99, C.I. 1.96-4.55). Other important factors in decreasing strength of association were; the girls' perception of her appearance, relationship with mother and the girl being physically fit.
- ❑ Variables, significantly associated with psychiatric morbidity by univariate analysis only were: Student's perception of being overweight ($p < 0.0001$), girl's worry about weight ($p < 0.001$), girl's dissatisfaction with academic performance ($p < 0.0001$), parents dissatisfaction with girl's academic performance ($p < 0.001$), inadequate father's love ($p < 0.001$), poor quality of relationship between parents ($p < 0.001$), presence of addictions in father ($p < 0.001$), chronic illness in self ($p < 0.05$) and frequent worries associated with studies ($p < 0.05$).
- ❑ Factors not found to be related with psychiatric morbidity were: type of school, type of family, monthly family income, mother's employment status and presence of chronic illness among the family members.

CONCLUSION

On the basis of this study, it is evident that psychiatric morbidity is a serious health concern in Indian school going adolescent girls. The primary factors associated with psychiatric morbidity have been identified as those linked to girl's relationship with parents and her perception of self in terms of appearance. These indicated that an intervention strategy aimed at the girls and their parents is required. There is need to understand their problems and provide appropriate counselling. For a society in transition like ours, the rising trend of psychiatric morbidity in adolescent girls, who are the future mothers, is alarming. Therefore, immediate and positive measures need to be taken at the appropriate levels.

Vocational Interest of High and Low Creative Adolescents

Nandwana S, Asawa N. Journal of Social Science, 2007; 14 (2): 185-190.

INTRODUCTION

Creativity is important because it enhances the quality of solutions to life's problem. Creative thinking results in original solutions to problems that continually arise in the personal and vocational spheres. Creative talent refers to a clear and distinct domain-specific creative ability. Talent is manifested in both children and adults, in socially valuable novel products in scientific, artistic, social, leadership, ventures, business or any other human endeavour.

OBJECTIVES

The present study is an exploratory attempt to assess the vocational interest of high and low creative adolescents.

METHODOLOGY

The sample for the present study constituted school going adolescent boys and girls of 14-18 years belonging to middle class families. In the initial stage, preliminary survey was conducted in various selected institutions of Udaipur city. Subsequently, the Baquer Mehdi Verbal Creativity test (1985) pertaining to three traits, i.e., fluency, flexibility and originality was administered to 716 adolescents (423 boys and 293 girls).

A total of 120 boys, i.e., 60 high scorers and 60 low scorers in creativity and similarly, 120 girls with same criteria were selected to administer the Comprehensive Interest Schedule by Sanjay Vohra (1992) to find out the vocational interest of adolescents. It measured interests in eight areas and each six of these occupations were divided into two sub-fields. The association of relationship between creativity and vocational interest of boys and girls were measured by means of correlation coefficient.

RESULTS

- ❑ Majority, i.e., 53.33 per cent of highly creative boys showed high interest in medical occupational fields, including chemist, surgeon, physician, radiologist, etc. with greater inclination towards intellectual interest and better judgment abilities. They showed high general mental capacity in problem raising and solution offering situation.
- ❑ Computational and performing arts were fields where more of high creative boys showed low interest, i.e., 36 per cent and 41 per cent, respectively.
- ❑ Around 28 per cent of the low creative boys showed high interest in the administrative occupational field, followed by medical field where 26 per cent showed high interest. Among low creative boys also, clerical field was the least preferred (10%).
- ❑ Around 36.0 per cent girls showed high interest in creative occupational field, which included occupations like costume designer, graphic designer, beautician, etc. and tend to have good insight and are intellectually adaptable.

- ❑ Around 53 per cent of the highly creative girls showed high interest in the administrative field, including occupations like IAS, Magistrate, Probationary officer, etc. and tend to be active, participative and competitive. They were self-assured about themselves and were expressive.
- ❑ 20 per cent of the low creative girls showed high interest in the administrative, performing and educational field. Among low creative girls also, clerical field was the least preferred (11%) occupational area.
- ❑ Highly creative boys and girls had more focused interests than their lower creativity counterparts. This might be attributed to the fact that creativity has been labeled as Divergent Thinking by Guilford, which included traits like fluency, flexibility and originality, and the fact that highly creative individuals having fluency of expressions are able to express their interest areas in a more focussed way.
- ❑ There was a significant relationship between creativity and vocational interest of adolescents among highly creative boys and girls. Creativity that helps them to achieve success in areas that are of their interests and are favourably viewed by the people who are significant to them would be a source of self-reliance and satisfaction to them.

CONCLUSION

It is very essential to conserve and utilise the manpower in a country like India-which is at the developing stage where economic, social, educational and occupational set-up is changing very fast, vocational availability is limited but at the same time huge human resources with varied ability, aptitude and interest are available in abundance. There is lack of proper guidance in every educational field. The larger percentage of failures in different jobs and dropouts amount to an immeasurable waste of money and energy. The life of misfits in a vocation is tragic, resulting in heavy loss to individual and to the society. Hence, to overcome this problem it is essential to give due weightage to adolescents' interest factor. Vocational interest of adolescents should be deeply understood in order to minimise maladjustments in their vocational sphere because life satisfaction and happiness to a large extent depend upon work satisfaction, which is the outcome of interest which one takes in one's vocation in addition to his/her creativity. Therefore, supporting young in achieving their full potential means improving prospects for young is important for the well being of the society and the country.

Assessments of Psychosocial Morbidities among Adolescents Going to Schools of South-West Delhi

Paul D, Priscilla S, Siwach S, Gopalakrishanan S, Pant S, Gupta T. NIPCCD. A Report, 2006.

INTRODUCTION

In India adolescents (defined as children in age range 10-19 years) as a group comprise one-fifth of total population, but none of the health policies or programmes are specifically targeted at this group. The study was carried to assess the magnitude of psychosocial morbidities among school going adolescents and also to identify clientele for the Adolescents Guidance Services Centre established by the Institute.

OBJECTIVES

The major objectives of the research study were to identify the needs and problems of schools going adolescents; identify the correlates affecting the adolescent mental health; identify the adolescents with problem behavior; and develop a networking system between school and the Institute so as to provide care to adolescents with problems.

METHODOLOGY

The data was collected from schools of South-West Delhi. The sample selection was through purposive sampling, which included one public school and three government schools. In all 1,302 adolescents studying in VIII- XII classes in the age group 12-19 years were selected randomly for the study. The tools used for the study included, Youth Self Report (YSR) developed by T. M. Achebach (1991) and Sources of Daily Stress.

RESULTS

- ❑ The adolescents were grouped into early adolescence (12-15 years) and late adolescence (16-19 years), including both adolescent boys (39.48%) and girls (60.52%). Majority (79.50%) of adolescents belonged to the family where mothers were housewives. Almost an equal percentage 41.78 per cent, as compared to 41.32 per cent, had either 1-2 siblings or 3-4 siblings, respectively.
- ❑ About 33.03 per cent adolescents have not changed school even once followed by 37.01 per cent adolescents who had changed school atleast once. Majority (50.38%) of adolescents had secured only between 30-40 per cent marks in the last examination.
- ❑ Health check-ups were carried out for 712 students, including 512 girls and 200 boys. The finding revealed that 69 per cent of adolescents were undernourished (i.e., low weight for age) and 89 per cent of adolescents were wasted (i.e., low weight according to their height). The finding revealed that 76 per cent and 90 per cent of girls were undernourished and wasted, respectively which might be due to gender discrimination and low socio- economic status. Out of total 712 students, majority (77%) of adolescent girls were anaemic.

- ❑ Majority (63.4%) of both, adolescent boys and girls have eye problems such as eye pain, water from eyes, headache due to poor sight, etc. Myopia was found to be the major eye problem among them. Some of the other health-related problems were dental caries (22.6%), ear discharge (5.33%) and also high blood pressure (6.32%).
- ❑ Majority (93.08%) of adolescents were in low risk zone as regards to withdrawn behaviour. The somatic complaints like feeling dizzy, tired, aches, headaches, nausea, eye, skin and stomach problems, vomiting, etc. were also considered. It was noted that out of the total sample, about 12.34 per cent fall in the borderline and 6.75 per cent were in the high risk. Among the schools, the private school showed the least percentage for prevalence of high-risk somatic complaints.
- ❑ The percentage of adolescents in low risk, borderline and high risk category in terms of anxiety and depression were 80.26 per cent, 12.75 per cent and 6.99 per cent, respectively. The private schools ranked second among the four schools with prevalence of low-risk adolescents.
- ❑ The information related to social problems like not getting along with peers, acting too young for his/her age, too dependent adults, not liked by peers, poor coordination or clumsy, preference to be with younger people, etc. revealed that majority (65.59%) were at a low risk or one can say, did not have social problems. The similar trend was observed in private school.
- ❑ The findings of the study relating to thought problems in adolescents, like not being able to get mind off certain thoughts, hearing things that nobody else seems to hear, storing up things not needed, etc. revealed that about 10.60 per cent were borderline cases and 3.53 per cent were in the high-risk zone, needing help from a psychiatrist.
- ❑ The majority (89.48%) of the adolescents were in the low-risk zone as far as attention problems like excessive day dreaming, being impulsive, feeling nervous, poor coordination, etc. were considered.
- ❑ The study had questions to screen delinquent behaviour among adolescents such as lying and cheating, being with older children, setting fire, swearing, missing schools, etc. The findings revealed that majority (89.25%) were grouped under low-risk. However, there were 8.22 per cent borderline cases, pointing towards need for psycho-social interventions, and most of these were from Government schools.
- ❑ Aggressive behaviour which focussed on issues such as arguing, bragging, being mean, feeling jealous of others, screaming, threatening people, mood swings, etc. was also studied. The results revealed that majority (91.70%) were in the low-risk zone and the prevalence of aggression among adolescents was more in private schools (11.22%), as compared to the government schools.
- ❑ Other problem behaviour syndrome revealed that out of 57.14 per cent cases with other problems 34.4 per cent had social problems, 14.13 per cent had thought problems and around 8.6 per cent had attention problems.
- ❑ Out of the total sample of 1,302, about 630 adolescents were identified as having psycho-social morbidity, including 208 borderline cases and 422 high-risk cases.

- ❑ Distribution of morbid adolescents by various problem behaviour revealed that social problems (34.41%) seemed to be the leading cause of morbid condition, followed by anxiety/depression (19.74%), somatic complaints (19.12%), thought problems (14.13%), delinquent behaviour (10.75%), attention behaviour (10.52%), aggressive behaviour (8.29%) and withdrawn behaviour (6.91%) among the adolescents.
- ❑ Major cause of stress among the adolescents was doing home work/ assignment (52.84%), followed by too many things to do (51.08%). On the whole, around 43 per cent adolescents were too concerned about physical appearance/weight, while parental nagging and scolding by parents and teachers (30.95%) did not seem to induce much stress in adolescents of the sample. The percentage for all causes of stress on the whole was higher for private school adolescents. The problem behaviour increased with age of adolescent till 16 years and majority of those with problem behaviour were in class VIII and IX. A negative correlation was seen between sex and problem behaviour among adolescents but results were found to be significant under chi- square ($p < 0.5$). Adolescents identified with problem behaviour had below average performance in academics.

CONCLUSION

Problem behaviour is prevalent in both, the government and private schools. The intervention strategy can be worked out as group-based input or as individual counselling sessions, based on the need assessment. Both, the principal and parents of the adolescent have to be taken into confidence. As many adolescent boys and girls constitute border-line cases of psychosomatic illnesses, sound parenting and sensitivity among teachers may be essential to prevent the degeneration of the situation into serious psychological problems.

Suicide Behaviours in Adolescents

Sidhartha T, Jena S. Indian Journal of Pediatrics, September 2006; 79 (9): 783-788.

INTRODUCTION

Suicidal behaviours represent a spectrum, ranging from suicide ideation, to suicidal plan, to suicide attempt, to completed suicide. Non-fatal suicide behaviours (NFSB) include all these behaviours except the completed suicide. Attempted suicide, as conceptualised currently, is a potentially self-injurious action with a non-fatal outcome for which there is evidence, either explicit or implicit, that the individual intended to kill himself or herself. The most frequently endorsed motives for self-harm, reported by attempters were to die, to escape and to obtain relief. Across different cultures, the prevalence of NFSB has been found to be alarmingly high among adolescents. The estimation of prevalence of NFSB among adolescents in India has not been reported so far.

OBJECTIVES

The study has been conducted on adolescents in Delhi to find prevalence of NFSB and other related behaviours to identify risk factors for NFSB.

METHODOLOGY

Data has been collected from 1,205 adolescents in the age group of 12 to 19 years from two schools in Central Delhi through semi-structured questionnaire on demographic variables and behaviour; Adjustment Inventory for School Students (AISS) by Sinha et.al. to measure emotional, social and educational adjustment; Beck Depression Inventory (BDI) for self-assessment of depression. Those having a lifetime history of suicidal ideation (n=261) with or without history of suicide attempts (n=97) were grouped together to form the NFSB group. NFSB was taken as the dependent variable and all other variables were taken as independent variables. Chi-square values, 2-sided significance and Odds Ratios (OR) were calculated to estimate the differences in the two groups for each of the variables. The variables for which a significant difference was found between the two groups were entered into a Logistic Regression Analysis model for assessment of the association of these variables with NFSB after adjusting for other variables found significant on univariate analysis.

RESULTS

- ❑ The mean age of the sample was 14.73 (SD 1.44) years. Younger adolescents (12-14 years) were 545 (45.2%), while older adolescents (15-18 years) were 660 (54.8%). Males formed approximately 60 per cent of the sample. Majority (68.2%) of the students were living in smaller (5 member or less) size families.
- ❑ 78.6 per cent of fathers and 66.1 per cent mothers were educated up to graduation or above. Regardless of high level of literacy, 75 per cent of mothers were housewives. Approximately 5 per cent of the adolescents reported that their parents were separated or divorced while 4.1 per cent of them reported that either or both of their parents were not alive. Only 2 per cent of the students reported that they were not living with their parents.

- ❑ The lifetime prevalence of suicidal ideation was higher in females as compared to males (25.4% vs. 19.1%) and lifetime prevalence of suicide attempt was also higher in females as compared to males (11% vs. 6.1%), Deliberate self-harm (DSH) was equally prevalent in both sexes.
- ❑ Lifetime prevalence of suicidal ideation was higher (24.2% vs. 17.8%) among the older adolescents, as also the lifetime prevalence of suicide attempt (8.6% vs. 7.3%). Lifetime prevalence of DSH was higher in the younger age group (19.1% vs. 17.1%).
- ❑ Of the 97 per cent respondents who reported having attempted a suicide, 25.8 per cent of them had done so by consuming poisons and 26.8 per cent by taking an overdose of medicines. Nearly 17.5 per cent said that they had attempted suicide by cutting themselves, 7.2 per cent and 2.1 per cent had attempted suicide by hanging and jumping from a height, respectively. Whereas 50.6 per cent had attempted suicide after thinking about the act for a long time, 42.3 per cent did so without giving it much thought. Approximately 20.6 per cent of the suicide attempters reported that they were intoxicated at the time of the suicide attempt.
- ❑ A substantial number (75.3%) of the attempters did not seek medical care after the attempt. As many as 33 per cent of the suicide attempters reported that they had done something to prevent rescue by others.
- ❑ Physical abuse by parents and feeling neglected by parents was found to be the significant risk factors for NFSB. The older age group (15-18 years), female sex and Hindu religion were also found to be risk factors for NFSB. More so, history of running away from the school and history of suicide by a friend was found to be important risk factors.
- ❑ Death wish and DSH was found to be significant risk factors for suicidal ideation and suicide attempt.

CONCLUSION

There is high prevalence of suicidal ideation, suicide attempt, death wish and deliberate self-harm among adolescent population in two schools in Delhi. Hindu religion, female sex, older adolescent, physical abuse by parents, feeling neglected by parents, history of running away from school, history of suicide by a friend, death wish and deliberate self-harm were found to be significant risk factors for NFSB. This research study indicates that a larger research study is required to study the suicide behaviours in adolescent population of the country to improve the mental health of the adolescents.

Mental Health Status of Runway Adolescents

Khurana S, Sharma N, Jena S, Saha R, Ingle G K. Indian Journal of Pediatrics May 2004; 71(5): 405-409.

INTRODUCTION

A wide range of problems such as: physical, nutritional, substance abuse, mental health, sex-related medical concern and the ones associated with victimisation and abuse are faced by runaway adolescents. Given the difficulties of life on the street, it is likely that relatively more homeless youth suffer mental health problem and psychiatric illnesses. The more common mental health problems in homeless adolescents are hopelessness, depression and self-destructive behaviour, including suicide. Assessment of hopelessness is important as negative expectations towards the future, often associated with depression in adults, are unlikely to be evident in children. Thus, it is essential to study the mental health status of the runaway children, a group which is generally ignored. Their mental health must be addressed and cared for to prevent emergence of mentally unhealthy youth who pose risk to themselves and the society.

OBJECTIVES

The study was conducted:

- To assess the psychological problems amongst the runaway adolescent boys.
- To determine possible risk factors.

METHODS

The study was cross-sectional in design, conducted at a Child Observation Home (COH) for boys in Delhi. All runaway adolescent boys (n = 150) aged 10 to 16 years of age were included in the study. A comprehensive schedule consisting of five parts was used to assess various mental health problems including the following:

- Identification details – age, address, family composition, etc.
- Hopelessness scale for children (H.S.C.) by Kazdin.
- Beck Depression Inventory.
- Psychological survey questionnaire to elicit the possible causes responsible for making of runaway children like peer relationship, school performance, parental love and care and suicidal behaviours
- Rutter –B2 scale was used for assessment of behaviour of children.

RESULTS AND DISCUSSION

- Nearly half of the runaway children were from Bihar and Uttar Pradesh, 18.7 per cent were from Delhi and rest were from other states of the country.

- ❑ Around 15.3 per cent had single parent families and 6.66 per cent were from families with step-parent.
- ❑ Physical abuse was reported by 38 per cent children and sexual abuse by 14.6 per cent. Relatives, friends and unknown people on streets had reportedly physically abused 5.3 per cent of the children. While 42.9 per cent of sexually abused children reported abuse by unknown people and 28.5 per cent suffered sexual abuse by the family members and similar number by their relatives.
- ❑ A wide range of substance abuse was reported by 55.3 per cent of the children out of which 49.6 per cent of children gave history of tobacco intake. Glue sniffing was reported by 26.6 per cent of cases and 0.67 per cent reported ganja (Marianna) intake.
- ❑ High levels of hopelessness were seen in 20.7 per cent subjects. Out of these, 12.9 per cent gave history of suicidal thoughts, 12.9 per cent reported planning suicide at any point of time and 3.2 per cent gave history of attempting suicide. Although suicidal attempt was rare in children, early assessment of hopeless in children may help to predict later suicidal behaviours.
- ❑ Depression was seen in 8 per cent of children out of these depressed children 25 per cent gave history of suicidal thoughts, 16.6 per cent planned for suicide and 8.3 per cent gave history of having attempted suicide.
- ❑ Suicidal behaviours (either thought, plan or attempt) were present in 8 per cent of the children. Around 6.6 per cent of the subjects reported having suicidal thought at any point of time in their life and 4.7 per cent of the children gave history of ever planning for suicide. 2 per cent and 3.3 per cent of the children confirmed that they had attempted suicide at any point of time in life and of suicidal thoughts as well as planned for suicide respectively.
- ❑ Around 69 per cent of the children scored above the recommended cut-off score of 9 or above Rutter-B2 Scale. 81 per cent of children had out social behaviour, 7.8 per cent were neurotic and 10.5 per cent remained undifferentiated. It was clearly evident that the behavioural problems in the runaway or homeless children were significantly higher as compared to the housed school going children.
- ❑ Amongst the children belonging to single parent family and step parent family, behavioural problems were present in 63.3 per cent and 60 per cent respectively. In case of children having both parents alive, behavioural problems were observed in 71 per cent while in 72.7 per cent children living with families constituting grandparents or relatives and behavioural problems.
- ❑ Around 40 per cent of children belonging to families with step parent and 36.4 per cent of children belonging to single parent family reported abuse. On the other hand 41.1 per cent of the children belonging to families with both parents alive, and 9.09 per cent of families having a grandparent gave history of abuse.
- ❑ Out of those who gave positive history of abuse, behavioural problems were reported in 70.2 per cent. In the non-abused, 68.8 per cent had behavioural problems.

- ❑ Of those children who gave positive history of abuse, 22.8 per cent had hopelessness as compared to 19.4 per cent of the non-abused group.
- ❑ Of those children who gave positive history of abuse, 8.8 per cent had depression as compared to 7.5 per cent in the non-abused children.
- ❑ Suicidal behaviours were reported in 14.03 per cent in the non-abused group as compared to 7.01 per cent in the abused group, though difference was not statically significant ($p>0.05$).

CONCLUSION

The high rates of homeless children with mental health problems indicate that in adverse situations, it is the most vulnerable who suffer the most. Physical and sexual abuse by parents or guardians was found to be very high in the present study and is a cause for concern as it has also been reported to be the cause of running away and thus needs to be addressed. Improved community mental health services may prevent some from becoming homeless. The high report of mental health problems in these children therefore indicate the need for broadly based psychosocial intervention in dealing with these problems and improving the accessibility and availability of community mental health services for the homeless children. The high prevalence of substance abuse also demands intensive, active treatment programmes along with long-term support and rehabilitation programmes which may help to revert to stable and healthy living conditions.

Clinical Characteristics and Outcome of Children and Adolescents with Conversions Disorder

Malhi P, Singhi P. Indian Pediatrics August 2002; 39 (8): 747-752.

INTRODUCTION

Conversion disorder is a loss or alteration in sensory or voluntary motor function that cannot be fully explained by known pathophysiological mechanisms. The presenting symptoms resemble a neurological dysfunction, including paralysis, tremors, gait disturbance and pseudo-seizures which may cause more distress among parents and clinicians than to the patient himself, also referred to as *La belle* indifference.

The diagnosis of conversion disorder in children is at times difficult, as well as risky. A major pitfall is the high incidence of organic disorders that are subsequently diagnosed which in retrospect can explain the initial symptoms that normally resemble an uncommon neurological disease. Given the nature of the disorder, it is reasonable to assume that the disorder would be common in pediatric settings.

OBJECTIVES

The aim of this study was to describe the clinical characteristics and outcome in children with conversion disorder.

METHODS

All children with a clinical diagnosis of conversion disorder referred to the Psychology Services of the hospital during a one-year period were studied. A detailed clinical examination, including neurological evaluation, was undertaken, in addition to appropriate investigations to rule out any underlying organic etiology. A detailed psychosocial evaluation of the children and adolescents was done. Sixteen children meeting the diagnosis of conversion disorder as per the DSM (IV) criteria were given treatment and were managed to help resumption of normal activities with family support. Parents were given appropriate counselling and cases were followed up for a period of 3 to 6 months after the initial diagnosis was made.

RESULTS

- ❑ The mean age at presentation was 11 years with a range of 8.2 to 14.6 years. None of them were below 8 years. The female: male ratio was 1:1.6.
- ❑ Most children were from urban areas (62.5%) and were living in nuclear families. Children were mostly from large low middle class families (mean S.E. index of 3.4) having on an average 2.25 siblings (range of 1 to 5).
- ❑ Pseudo-seizures were the most common presenting symptom present in 10 of the 16 children and adolescents. These children also complained of other somatic symptoms including headache, weakness, giddiness, and abdominal pain. Other conversion symptoms included fainting spells (4 children), weakness

of legs accompanied by bizarre gait characterised by non-rhythmic gait with instability, not conforming to any neurological abnormal pattern (1 child) and aphasia (1 child).

- ❑ Thirteen families reported significant and multiple psychosocial stresses with most common were school difficulties, pressure from parents to excel academically and family related stress. Other problems like marital discord, tension at home (4); physical abuse of mother and child (2), alcohol abuse by father (1); sibling rivalry, lack of affection and attention at home (2); recent financial stress due to loss of job, legal battles (3) were also reported.
- ❑ Four children had their symptoms for more than 3 months but less than 6 months, 6 children for more than a year and 4 for less than three months. Those who had the symptoms for more than a year had been seen by several physicians and undergone multiple clinical investigations like EEG, CT scans, X-rays and blood tests.
- ❑ Majority of the patients recovered within one to three months of the initiation of therapy, with 25 per cent (4) children recovered within 6 weeks of the initiating of treatment. Symptoms resolution further helped the families to accept the validity of diagnosis.
- ❑ All children who showed improvement resumed normal activities, were attending school regularly and had shown no recurrence of conversion disorder and there was no single instance of symptom substitution during the entire period of follow up (3 to 6 months).

CONCLUSION

The study highlighted the importance of a team approach between the paediatricians and psychologists in the diagnosis and successful management of children with conversion disorder. Collaborative management not only reduces the risk of missing an organic aetiology by wrongly labelling child's illness as functional but at the same time involvement of mental health workers at the earlier stages of diagnosis helps in avoiding unnecessary medical tests. Longer follow-up would make it evident whether the gains from therapy is sustainable. A striking feature of the study was the rapidity with which the symptoms resolved once the diagnosis was made.

VII
Menstrual Practices

Menstrual Practices

Menarche is a significant milestone in the transitory developmental journey of an adolescent. A normal menstrual cycle is an important determinant of reproductive development during adolescence. An adolescent girl should be made aware of the phenomenon of menstruation at least a little ahead of its occurrence, so as to enable her to accept it as a normal developmental process and manage it appropriately. Poor personal hygiene and defective menstrual management practices give rise to repeated reproductive tract infections (RTIs), which are otherwise preventable. A chronic state of RTIs can lead to infertility and greater susceptibility to HIV/ AIDS infection.

Research during last five years indicates that a vast information gap exists among rural as well as urban adolescent girls regarding prior awareness and facts about menstruation and its management. Several taboos and restrictions in the area of nutrition, health, social interactions and mobility are imposed on adolescent girls. Poverty and limited means of survival disable adolescent girls from having access to commercially manufactured sanitary pads. Perhaps, teaching adolescent girls from low socio-economic strata of the society, the skill of making sanitary pads at home for self consumption is the most viable solution for proper management and hygiene during menstruation.

Data shows 'out of school' adolescents to be 1.6 at a higher risk of contracting RTIs. Most adolescent girls were dependant on their mothers, other family members and peers for information regarding menstruation and its management, who themselves were poorly informed. Even educated adolescents were hesitant to discuss these issues with their parents due to prevailing socialisation pattern.

The solution to above reported situation lies in including information on menstruation and its proper management, as well as menstrual hygiene in the curricula at the school level. For 'out of school' adolescents, health and nutrition camps and RCH camps can be utilised for imparting relevant information. Parents of adolescents have also to be educated to educate adolescents and guide and help them in proper menstrual management.

Research for the future may cover the following:

- Assessment of the preparedness of the mothers/ community to guide and educate adolescent girls regarding sound menstrual practices.
- Best practices in training projects on adolescent reproductive health to promote effective menstrual practices and management.
- Effectiveness of peers in educating 'out of school' adolescents in the area of menstrual management and reproductive health.

Knowledge and Practices of Adolescent Girls regarding Reproductive Health with Special Emphasis on Hygiene during Menstruation

Paul Dr. Dinesh, Gopalakrishnan Shanta. National Institute of Public Cooperation and Child Development, 2006.

INTRODUCTION

The relationship between the physical, social and psychological changes that adolescents experience and their vulnerability of health problems has remained largely unrecognised and unexplored and they still remain ill-served as far as their reproductive health needs are concerned. One of the culturally supported beliefs that an adolescent girl internalises, during menstruation is that of her body being 'unclean'. This makes adolescent girls less confident and less comfortable about their bodies and they are therefore less likely to look after themselves. In view of the existing socio-cultural milieu, the lack of sanitation and water facilities in most households and schools, the ever increasing number of adolescent girls dropping out school at puberty, and the growing concern about the reproductive health of girls/women in the present time, it is all the more pertinent to address the issue of how adolescent girls maintain hygiene during menstruation and the various consequences that so greatly affect their life style.

OBJECTIVES

The main objectives of the study were to assess the knowledge, practices of adolescents regarding reproductive health with special emphasis on hygiene during menstruation; to study the source of information and health seeking behaviour of adolescents with particular reference to problems related to menstrual health; and to suggest locally available materials for hygienic management of menstruation.

METHODOLOGY

The study was conducted in one district each of Assam, Delhi, Karnataka, Madhya Pradesh and Uttar Pradesh. In all, 500 adolescent girls and their mothers alongwith 93 women opinion leaders were covered under the study conducted in 50 villages of 10 blocks from the five selected districts. In addition to this, 150 women ICDS and health functionaries, including CPDOs (6), Supervisors (26), Anganwadi Workers (52), Medical Officers (8), Lady Health Visitors (14) and Auxiliary Nurse Midwives (40), were interviewed. Data was collected from adolescent girls who had attained menarche, to ascertain hygienic practices adopted by them during menstruation and other relevant issues.

RESULTS

- More than half (60%) of the adolescent girls were in the age group of 15-17 years, followed by girls aged 10-14 years (32%) and 18-19 years (8%).
- About 70.6 per cent adolescent girls were not aware about the menstruation till its onset. Mother was the main source of information about menstruation for 37.6 per cent adolescent girls. The other main source

of information has been siblings (32.8%) and friends (27.6%). Majority of mothers of adolescent girls (70.4%) had perceived menstruation to be dirty and polluting and the same perception was also evident among adolescent girls as well.

- ❑ Restriction of movements within the household had come down from 90.8 per cent in yesteryear mothers to 68 per cent in today's adolescent girls.
- ❑ Majority of adolescent girls (84%) and mother of adolescent girls (92.9%) were using cloth during menstruation. Out of which, 57.6 percent adolescent girls and 74.1 per cent mothers of adolescent girls were reusing the cloth after washing it. Though the washing of the cloth is being done at a clean place by majority of the respondents; but only 61.6 per cent adolescent girls and 45.6 per cent mother of adolescent girls were carrying out drying it under the sun.
- ❑ Roughly, only one-third mothers had prepared their daughters for menarche and menstruation. They had discussed about menstrual cycle, dysmenorrhoea, menstrual hygiene, vaginal discharge, etc.
- ❑ Only one-third adolescent girls know RTIs/STIs is curable. Using condom could prevent RTIs/STIs was known to only one-fourth of adolescent girls. The knowledge signs and symptoms of RTIs/STIs among the adolescent girls, mothers of adolescent girls and women opinion leaders was incomplete and low, but 85 per cent of adolescent girls, 69.6 per cent of mothers of adolescent girls and 83.8 per cent of women opinion leaders reported that they had heard of HIV/AIDS.
- ❑ In all 37.8 per cent adolescent girls, 43.4 per cent mothers and 52.6 per cent of women opinion leaders had vaginal discharge accompanied with itching. Dysmenorrhoea was common amongst adolescent girls. Majority approached mother, sister, sister-in-law or AWW for help in case of dysmenorrhoea /vaginal discharge.

CONCLUSIONS

Information about menarche and reproductive health should be built into the school curriculum for children of VI standard onwards, covering the subjects in a hierarchical manner, keeping in mind the age of the student, providing opportunities for participatory learning. The curriculum should be suitably modified for "out-of-school" adolescents through non-formal education. Reproductive health issues be built into the nutrition and health education (NHED) component of both the ICDS and RCH programme for reaching out to the mothers/caregivers in the community. Adolescent girls getting training under the KSY scheme field units of FNB could function as social animators.

Reproductive Health Awareness among College-Going Girls

K Jyothi Kamalam, B Rajalakshmi. The Indian Journal of Social Work volume 66, Issue 4, October, 2005.

INTRODUCTION

Lack of education on sexual and reproductive health is responsible for a number of problems affecting young people due to ignorance of basic human physiology and anatomy. This is despite their strong desire to participate in activities geared towards their own reproductive health and social development needs. Moreover, many traditional practices and myths surround normal physiological processes such as menarche, and when young people are not given scientific explanations of such phenomena, they are left puzzled and are unable to differentiate between myth and reality. This has resulted in anxiety and psychological trauma in adults, who as teenagers had held firmly to certain beliefs about sexuality. Due to the aforesaid reasons, it is felt that for creating a generation with proper knowledge for good health, it is necessary to find out the reproductive health awareness of young people, especially women who are on the verge of marriage.

OBJECTIVES

The objective of this study was to assess the knowledge and attitudes regarding various aspects of reproductive health among college-going girls in Thiruvananthapuram, including menstruation and related problems; pregnancy and childbirth; attitude towards marriage and children; fertility control; and STDs.

METHODOLOGY

The study uses data from 300 girls on their awareness and attitude regarding various aspects of reproductive health who were randomly selected from post graduate (178) and professional (122) courses in colleges. Again, from each college selected, 50 students were selected at random from each course of study, and altogether 300 students were interviewed using a structured questionnaire during February-March 2000.

RESULTS

- ❑ Around one-third girls had no knowledge of menstruation, while more or less a similar proportion (32%) had high or moderate knowledge. Students of post- graduate courses had better knowledge as compared to students studying in professional courses. One-fourth of the girls did not get any information at all regarding menstruation.
- ❑ Among those who had some knowledge, the majority got it either from the media or their mothers.
- ❑ A majority of them started menstruating between 10-12 years and 13-15 years but were unaware of the normal duration of bleeding during menstruation. For majority of the students, the duration was for 3-5 days.
- ❑ More than 90 per cent of the students did not use any type of pills for postponement of their periods. Most users were postgraduate students who never consulted the doctor. They were not aware that they should seek medical advice before using such pills.

- ❑ Most of the students suffered from various discomforts (stomach ache, vomiting, headache, back pain and depression) during menstruation but did not use medicines to avoid/overcome the discomforts.
- ❑ 92 out of 100 professional students had no idea about problems due to irregular periods. More than half of these professionals were not aware of the reasons for the occurrence of irregular periods.
- ❑ More postgraduates readily accepted the two-child family norm as compared to the professional students. Also, majority of the students (irrespective of the course of study) said that they would change their desired family size to that of their husbands.
- ❑ Majority of the students, professionals as well as postgraduates, had little knowledge about the precautions to be taken for a safe delivery and safe motherhood and the problems faced by a pregnant woman, types of termination of a pregnancy causes of abortion or stillbirths and after-effects of caesarian section. The knowledge about normal birth weight, importance and types of immunisation for children and breastfeeding.
- ❑ A considerable majority of the students (>80%) are aware of AIDS and 70 per cent are aware of STDs. Majority of them are not aware of the preventive measures to be taken against contracting these diseases.

CONCLUSION

The overall findings of the study reveal that the students undergoing postgraduate and professional courses are generally lacking awareness regarding the various aspects of reproductive health. The main reason for the lack of their awareness may be the fact that in the curricula, none of the aspects of reproductive health has been included. Knowledge about all the aspects of reproductive health should be imparted through the curricula.

Menstrual Practices and Reproductive Problems: A Study of Adolescent Girls in Rajasthan

Khanna A, Goyal S R, Bhawsar R. Journal of Health Management 2005; 7 (1): 91-107.

INTRODUCTION

Around 40-45 per cent of adolescent girls report menstrual problems, mainly due to psychosocial stress and emotional changes. As the physiological process of menstruation is still regarded as an unclean state, such perceptions segregate girls from the activities of normal life. Several traditional beliefs, misconceptions and practices are linked with the issue of menstruation, which make girls vulnerable to reproductive problems. A large proportion of adolescent girls suffer from various gynaecological problems, particularly menstrual irregularities such as hypermenorrhoea, hypomenorrhoea, menorrhagia and dysmenorrhoea. RTIs among adolescents are associated with infertility, reproductive tract infections, pelvic tenderness and genital prolapses. Health behaviours and practices vary from culture to culture, and ignorance of culturally divergent beliefs and practices may lead to failure in health care delivery, thereby complicating various reproductive health problems.

OBJECTIVES

The study was undertaken to study issues related to menstrual practices, especially in the context of their socio-economic environment; and to examine the association of menstrual practices with reproductive morbidity.

METHODOLOGY

The data was drawn from a situational analysis study carried out to assess the sexual and reproductive health needs of adolescent boys and girls in Ajmer, based on both qualitative and quantitative data collected through survey, focus group discussion (FGDs) and key informant interviews. The sample comprised of 730 adolescent girls, with equal representation of urban-rural and school going and out-of-school girls from 8 rural and urban localities each, through the systematic random sampling.

RESULTS

- ❑ The girls were in the age group of 13-19 years, with a mean age of 15.8 years. Almost 84 per cent of the girls were never married.
- ❑ Out of 730 girls, 84 per cent had attained menarche by the time of survey. The proportion of girls attaining menarche was higher in urban areas (92%) than rural (77%). The mean age of menarche was found to be 13.2 years, the mean age being slightly lower for the girls belonging to urban areas as compared to rural ones.
- ❑ Nearly 92 per cent girls in urban areas and 97 per cent in rural areas were not aware of the natural phenomenon of menstruation among women. Most girls got first information about menstruation from their mothers, in urban (66.8%) and rural areas (55.1%).

- ❑ Nearly 70 per cent girls believed that menstruation is not a natural process and 80 per cent girls believed that one should not attend religious rituals during menstruation and >25 per cent believed that one should not cook during menstruation. In rural areas, during menstruation, they were instructed not to pass through crossroads to avoid being caught by evil spirits and becoming mad. The girls reported that such beliefs and practices make their situation more miserable and embarrassing, as all family members, including males, come to know about it.
- ❑ Three-fourths of the girls use old cloth during periods and one-fifth (19.5%) reported using readymade sanitary pads. The practice of using cloth during menstruation was higher among rural (89.0%) and out-of-school adolescent girls (88.1%) and a large proportion of the girls re-used the old cloth during subsequent periods. The usual practice is to wash the cloth with soap after use and keep it at some secret place till the next menstrual period, generally at most unhygienic places.
- ❑ Nearly 70 per cent girls reported problems during menstruation, like abdominal pain (>80%) and irregular periods (53%). The proportion of girls reporting irregular periods was higher in rural (44.6%) than urban (17.0%) areas, whereas abdominal pain is reported more in urban (50.5%) than rural girls (29.8%).
- ❑ The major reported symptoms of RTIs/STIs among girls were white discharge and pain in the lower abdomen (41% each). White discharge was more common in urban (60.6%) and out-of-school (42.1%) girls as compared to the rural (21.8%) and school going girls (39.1%).

CONCLUSION

School going girls are 2.4 times more likely to adopt safe practices during menstruation as compared to out-of-school girls. Girls using unsafe practices during menstruation had thrice the risk of getting RTIs as compared to those having safe practices. Menstrual practices, schooling, exposure to media and occupation of father were the major predictors of prevalence of RTIs among adolescents. Out-of-school girls were at around 1.6 times at a higher risk of having RTIs as compared to those attending schools. Therefore, while planning strategies for reducing RTIs and promoting menstrual hygiene among adolescent girls, due attention be paid to the above factors affecting their reproductive health.

Sexual and Reproductive Health Status of Adolescents and Young Married Girls

Sandhya Rani PM. The Indian Journal of Social Work, Volume 66, Issue 4, October, 2005.

INTRODUCTION

Early marriage and childbearing, which are rooted in tradition, deny adolescent girls a healthy and positive transition to adulthood. Their vulnerability, ignorance related to sexuality and reproductive health, inadequate knowledge on contraception, and their inability or unwillingness to use family planning and health services lead adolescents and young girls to early pregnancies. Sex education programmes can increase awareness about reproductive health, but in the absence of appropriate health services, this awareness does not always translate into safe and responsible sexual behaviour. However, a comparative study of adolescents and youth are very much needed to understand the variations in the extent of influence of various factors, which, in turn, influences their sexual and reproductive health status.

OBJECTIVES

The study examines some of the factors related to sexual and reproductive health and its effects on adolescents and young married girls, on the basis of a comparative study of adolescents and young married girls in Mumbai.

METHOD

Two hundred married adolescent and young girls from urban slums of Mumbai, of which 170 were aged 18-20 years and the remaining 30 were between 15-17 years were interviewed and anthropometric measurements recorded. A few case studies of the respondents were also attempted to capture issues related to their sexual and reproductive health in an in-depth manner. Age of the educated girls was verified from certificates or qualifications. In the case of illiterates and dropouts, information was obtained from the respondent's family.

RESULTS

- ❑ 53.3 per cent adolescents and 40.6 per cent young married girls were educated upto middle school and around 13.5 per cent adolescents who were educated beyond middle school were married.
- ❑ The mean age at menarche was 13.1 years. Dysmenorrhoea or menstrual disorders were prevalent among them, besides abdominal pain (30%), cramps of legs with abdominal pain (20%)
- ❑ Deliveries at home (42.9%) and private hospital (42.8%) were predominant among adolescent mothers, whereas in case of young married women a high proportion (57.5%) of the government hospital deliveries, followed by the home deliveries (24.1%) were reported.
- ❑ 36.7 per cent adolescents and 40 per cent young were in the range of 145-149 cm. Nearly 43 per cent adolescents had body weight in the range of 40-44 kg, whereas similar proportion of young married girls had body weight of 45 kg and above. The mean body weight of the adolescents was lower (42.1 kg) than

that of the young married girls (44.6 kg). The relationship between body weight and the number of living children is observed to be positively related among both the categories of respondents.

CONCLUSION

Education, the important social development indicator, should be considered on a priority basis among the population, especially that of adolescents. Higher educational status of girls will lead to a better health status, and also help them to take proper decisions in their marital life. With the study showing low levels of prenatal, natal, and antenatal care services in the community, steps should be taken to improve current institutional health care services and women's access to these services. As majority of the deliveries took place at home with the help of family members or untrained midwives, there is a need to impart health education among them so as to make them understand the importance of utilisation of a health centre or involvement of health care personnel for safe deliveries.

Awareness among girls on issues related to sexual and reproductive health, through population education/sex education programmes, need to be created and for this, emphasis may be given on various mass media/ information, education and communication programmes. As sexual health is closely interlinked with reproductive health, all policy initiatives approaching either one of them need to take note of the other and efforts are needed to integrate these programmes for their effective promotion.

Reproductive Health Constraints of Adolescent School Girls

Reddy PJ, Usha Rani D, Reddy GB, Reddy KK. The Indian Journal of Social Work, Volume 66, Issue 4, October, 2005.

INTRODUCTION

In traditional countries like India, the attainment of menarche has a lot of cultural significance as it marks the transition from girlhood to womanhood and the event is celebrated with the girl as the central figure. Adolescent girls are exposed to several problems associated with menarche, which could have a negative impact on the education and activities of the adolescent girls. Physical discomfort and other related problems during menstruation might have an adverse effect on their performance in academic and other activities of life. However, so far, whatever little research has been done in this field is mostly on age at menarche, but not on the problems and their impact on the education and work of adolescent girls. Hence, the present research has focused on the problems associated with menarche.

OBJECTIVES

The study attempted to find out about awareness and perception about menarche; source of information about menarche; and menstrual problems of the adolescents and its effect on school attendance and education of the adolescent girls.

METHODOLOGY

A total of 274 girls from 6 schools of Tirupati, studying in 8th, 9th and 10th standards, representing children from lower, middle and upper economic strata were covered in the study through interview. Height and weight of the student was also recorded in the questionnaire.

RESULTS

- ❑ 84.7 per cent adolescent girls had attained menarche. The mean age at menarche was 13 years for the 232 adolescent menstrual girls. The onset of the menarche is early in girls of early adolescent age of 12-13 years. Only 13.8 per cent of the girls had prior knowledge of menses and of the 24.5 per cent of the menarcheal girls knowledge about the process of menstruation.
- ❑ Mother was the first source of information about menses for majority (61.2%) of the adolescent girls, followed by peers (14.7%) of the adolescents.
- ❑ 79.8 per cent of the menarcheal girls stated being frightened on the occasion of first menstruation. At the onset of menarche 75.4 per cent girls confided first in the mother.
- ❑ 86.2 per cent girls reported problems having been experienced before menstruation. Calf muscle pain both, before (29%) and during (25.6%) menstruation. Nearly 57 per cent adolescent girls reported bad odour from menstrual blood, followed by profuse discharge of menstrual blood (30.6%) and lower abdominal pain (27.5%).

- ❑ 32 per cent adolescents reported bathing once and 66.4 per cent twice a day during menstruation. Lukewarm water was used for bath by 83.2 per cent girls, whereas cold water was used by 16 per cent girls. When the menstrual flow was at its peak, only half of the girls were changing pads twice a day, one-fourth thrice a day and one-tenth four times a day. Majority (69%) of the girls were using homemade pads (not washed properly or were kept unwashed till evening as the girls were in a hurry to reach their schools) and sanitary napkins were used by only 15 per cent.
- ❑ Water supply in most toilets was erratic. Under these circumstances, 80 per cent girls reported that they were not changing the pads during school hours even if they wanted to, particularly during the days of high menstrual flow. Majority (73.7%) of the adolescent girls reported that they were not in favour of attending the school during menstruation, especially when menstrual flow was heavy.
- ❑ Tuitions are having an adverse effect on their reproductive health as is evident from the psychological problems such as irritability, anger, headache, fear and depression as reported by the adolescent girls prior to and during menstruation.

CONCLUSION

Lack of prior knowledge about menstruation is due to the taboos attached to reproductive health. For awareness and knowledge about menstruation, most of the adolescent girls were dependent upon their mothers, other family members and peers who themselves were poorly informed. They had no other way of getting scientific information. The fact that even educated adolescent girls were not discussing these problems with their parents for reproductive health problems, reflects the poor communication between them.

Such psychological stress and strain have adverse effects on their studies as well as on their reproductive and general health. Greater adjustability is needed on the part of family members, particularly mother and siblings, in order to protect them from such psychological states such as depression, irritability, anger, and so on, at the time of menses.

Perceptions and Practices Regarding Menstruation: A Comparative Study in Urban and Rural Adolescent Girls

Deo DS, Ghattargi, C.H. Indian Journal of Community Medicine. January- March 2005, Vol. 30, No. 1: 33-34.

INTRODUCTION

Adolescence in girls is a turbulent period, which includes stressful events like menarche, considered as a landmark of female puberty. One might expect young girls to react positively to their menarche; however, negative responses such as shame, fear, anxiety and depression are more common. The manner, in which a girl learns about menstruation and its associated changes, may have an impact on her response to the event of menarche. In India even mere mention of the topic has been a taboo in the past and even to this date the cultural and social influences appear to be a hurdle for advancement of the knowledge of the subject. The social practices about menstruation make a girl child feel subnormal and may hamper her development. Menarche may remain a traumatic event for her unless she is prepared for it.

OBJECTIVES

The present study was undertaken to learn about the source of information regarding menstruation; reaction to first and subsequent menstruation; taboos and restrictions as a result of menstruation; and hygiene practiced during menstruation.

METHODOLOGY

The present study was undertaken in adolescent schoolgirls aged 10-19 years in urban and rural areas of Ambajogi. Only the 94 girls from urban school and 74 from rural school who had attained menarche were included in the present study. Information regarding perceptions and practices about menstruation was collected through a questionnaire and compared among urban and rural girls.

RESULTS

- ❑ The age of menstruating girls ranged from 12-17 years with maximum number of girls between 13-15 years of age.
- ❑ It was found that 40 (42.5%) urban and 41 (55.4%) rural girls were aware about menstruation prior to attainment of menarche. In urban girls, mother was the main source of information about menstruation (27.5%), while it was the teacher in rural areas (27.01%). Other sources of information were friends, relatives and books.
- ❑ The reaction to first menstruation were scare, indifference, discomfort, disgust and guilt. The unawareness of girls about menstruation might be the cause for nearly 44.8 per cent girls to become scared at the onset of menarche. Discomfort and guilt were significantly more in urban, than the rural girls.

- ❑ Majority of girls were indifferent to subsequent menses. The indifference to subsequent menses was significantly more in rural girls, than in urban girls, probably due to lack of source of information or shyness in rural girls. Urban girls had either positive (accepted) or negative (disgusted, scared, etc.) reaction to subsequent menses.
- ❑ The contrary to expectation, the number of girls not practicing taboos was significantly more among rural girls (21.6%) as compared to urban girls (4.3%).
- ❑ Restrictions of physical activity were more in rural girls. It could simply be due to the fact that they undergo more compulsory physical activity than their urban counterparts, like fetching water, walking long distances in absence of transport, working in the fields, etc.
- ❑ Majority of urban, as well as rural girls preferred cloth pieces to the sanitary pads to deal with the menstrual flow.

CONCLUSION

There is vast information gap among both, rural and urban adolescents in the matter of being aware of and prepared for menstruation and its management. Prevalence of taboos and restrictions on adolescent girls during menstruation calls for education of mothers and other elder women in their families. Separate awareness generating strategies would be required for rural and urban adolescent girls and their mothers to help development of a healthy scientific attitude towards this developmental phenomenon and its management in life.

Pragmatic Approach for Sustainable Adolescent Health and Development

Mehra Dr. Sunil, Negi Ravinder Singh, Saeed Iram. Mamta Health Institute for Mother and Child, supported by The John D and Catherine T. Mac Arthur Foundation Chicago, USA; A Review, January 2002.

INTRODUCTION

This study presents a review of the project 'Capacity Building of NGOs for Achieving Optimum level of Adolescents Health and Development undertaken in two north Indian states namely, Uttar Pradesh and Rajasthan. The gaps that existed and areas that needed strengthening were identified and specific strategies used by the partner NGOs in their respective project areas were also looked into. It is hoped that this exercise will help to streamline the overall implementation strategies keeping in mind the regional specificities and this in turn helps delineate future direction to address adolescents' issues effectively.

OBJECTIVES

The broad objective of review was to revisit the programme intervention strategies. It also aimed to record changes in perceptions, knowledge level, attitudes and behaviours of the key stakeholders on AHD issues.

METHODOLOGY

A cluster of villages with a population of about 30,000 each was covered in Varanasi, Jaipur and Jodhpur, besides both urban slums and rural areas of Ghaziabad. Review was conducted with adolescent boys and girls; community members; Service Providers; policy makers; and Project personnel of partner NGOs through discussions, Participatory Rural Appraisal (PRA) and interviews to gather information systematically.

RESULTS

- ❑ A change in overall perception regarding physical and psychosexual growth of adolescents among adolescents, community members and service providers across the projects areas was observed.
- ❑ Though girls were shy, they showed interest in all discussions and most stated increase in height and weight and onset of menarche as common features of this phase. It was noticed in all the project areas that school-going/literate girls were more articulate about discussing bodily changes than illiterate girls.
- ❑ Most of the girls used plain cloth because they could not afford sanitary napkin. Though, girls said that they maintained hygiene during menstruation, but the large number of leucorrhoea cases reported in rural Ghaziabad, contradicted this claim.
- ❑ Practices such as not bathing, not entering to kitchen, eating selected food, was no longer being observed among most families, particularly among educated ones. The attention of parents towards adolescent girls did not necessarily translate into providing good health and education to girls, though generally parents were found to be responsive in accepting adolescent's needs.

- ❑ There was a realisation among parents that adolescent boys and girls required an adequate and nutritious diet for their physical growth and development.
- ❑ Most of the adolescent boys and girls felt that education levels and media were a major contributing factor to personality development.
- ❑ Post-project, a slow change in the trend was noticed that if a girl wanted to pursue higher education and in case family could afford it, parents did consider this before taking decision to marry her.
- ❑ Most of the boys and girls knew about the various contraceptive methods, though girls were not comfortable discussing it as they were not supposed to be aware of it before marriage. Educated boys and girls were aware about HIV/AIDS but knowledge about RTIs/STDs was poor among most adolescent groups. Most of the adolescent girls having knowledge of RTIs/STDs were reluctant to talk about it.

CONCLUSION

This project is a pilot effort to set trend for addressing AHD issues. There are indications of change in the perceptions of community members, parents and service providers towards AHD issues. It has been observed that there was realisation of the need to give correct information to adolescents about their physical and psychosocial changes, reproductive and sexual health. However, certain myths and misconceptions associated with the pubertal growth, STDs/HIV/AIDS infections, sex and sexuality are still prevailing among the parents, school teachers and health service providers and also among adolescents.

VIII

*Substance Abuse, Trafficking and Child
Labour during Adolescence*

Substance Abuse, Trafficking and Child Labour during Adolescence

Substance abuse is quite common among adolescents in both rural and urban set-ups. It varies from drug abuse to alcoholism and nicotine addiction. There are various reasons for substance abuse that make adolescence an extremely vulnerable period. Research has indicated that as many as 80 per cent the rural and urban adolescent drug abusers reported their families to be less harmonious.

Several reasons identified for substance abuse during last five years included stress of studies/everyday life, peer pressure, to catch-up some sleep and to overcome boredom. Seventy per cent adolescents attributed initiation into drug abuse to peer pressure. Further, substance abuse among adolescents increases the risk for the onset of depression and vice versa. There exists co-morbidity between bulimic pathology and substance abuse, as both share common risk factors. Also, the co-morbidity between bulimic pathology and depression in adolescent girls emerges due to each of these enhancing the risk for onset of the other disorder.

In case of adolescents who underwent body modifications including piercing (beyond one pair of bilateral earlobe piercing in girls), tattoos, branding, etc., one-third of them screened positive for problem substance use.

The body image and eating disturbances have emerged as potent predictors of smoking onset, suggesting that smoking prevention programmes for adolescent girls might be enriched by focussing on reducing body dissatisfaction and eating pathology and demolishing the notion that cigarette smoking leads to weight loss.

The trends of tobacco consumption in India show that chewing is more common than smoking and older adolescents, including girls are more addicted to chewing tobacco than the younger ones, and more significantly in the lower socio-economic strata of the society. A disturbing finding has been the strong association between exposure to 'Gutka' advertisement and its consumption by adolescent boys and girls.

Alcohol consumption is a social problem, rooted in adolescence. Among adolescents, in case of frequent drinking adolescent boys and girls, the academic achievement decreases and emotional distress rises.

Trafficking of adolescent girls is a serious problem across the globe and India too, is adversely affected by organised trafficking of women and girls. The research during the last five years confirms the earlier findings of acquaintances, relations and family members being involved in trafficking and various means like, sexual abuse, assault, blackmail, illegal detention, torture and starvation are used to force adolescent girls and young women into prostitution.

Another social problem affecting the holistic development of adolescent boys and girls is of child labour. Data suggests that adolescent girls were exploited to a greater extent as child labour than adolescent boys. Nearly half of the adolescent girls who were involved in domestic work were subjected to mental torture and nearly 20 per cent face sexual harassment.

A concerted effort will have to be made towards community de-addiction programmes for adolescent girls. All myths associated with the practices of drinking and smoking have to be exploded. A statutory ban on smoking and 'Gutka' consumption has to be effected to save the adolescents from early ill-informed addiction. Similarly,

the advertisement industry and films should be made to discharge their social responsibility by avoiding glamourising substance abuse.

The research agenda during the coming years may include the following:

- An interesting area of research thrown-up by a research study is of causal dynamics underlying the association between employment and substance abuse and explore its linkage with mental health problems in such adolescents.
- Body modification was associated with self-reported problem alcohol and other drug use among adolescents, prompting the need for research to determine the clinical and socio-cultural significance of body modifications and its relationship to substance use among the adolescents.
- Rapid appraisal of the substance abuse status of adolescent girls in rural and urban areas.

Processes of Child Trafficking in West Bengal: A Qualitative Study

Tanusree Deb Sibnath, Srivastava Neerajakshi, Chatterjee Pooja Chabraborty, *Social Change* June 2005; 35(2):112-123.

INTRODUCTION

Trafficking is an abuse of human rights. It not only abuses the human rights of the victim, but also is a direct affront to mankind. People who are ensnared and entrapped are often kept in conditions of slavery. As a contemporary form of slavery, this is a clear violation of international rights that are accepted worldwide.

OBJECTIVES

The broad objective of the study was to understand how adolescent girls/girl children and young women are trafficked in West Bengal. It was intended to obtain a detailed insight into the various stages that trafficked victims go through, till they reach a red-light area and eventually, a rehabilitation centre. Another objective of the exploratory study was to gather information about the procurers and pimps, the strategies they adopt in trafficking, and the journey of the trafficked victims from their usual life to the world of the unknown. The study was purely a qualitative one that endeavoured to understand the process of trafficking of females in West Bengal.

METHODOLOGY

The target for the study were 35 trafficked girls aged 4-18 years who were inmates of Sanlaap, a rehabilitation home for trafficked children in Narendrapur, West Bengal, receiving education and vocational training. Data was collected through in-depth interviews and the case study method. Detailed case studies were also developed on all the trafficked inmates.

RESULTS

- ❑ The study revealed that known persons play a major role in trafficking. There are indications that parents themselves initiate their young ones into prostitution or sell them to pimps. Mothers tend to send their sons to schools, but induct their daughters into the profession as early as possible. Though the subjects themselves were pushed into this profession, they do not mind dragging their children into it as well.
- ❑ The treatment received by victims from procurers/pimps during the process of trafficking shows a diverse picture. Of the 35 adolescent girls/girl children, six reported being forcibly detained by the procurers when they refused to obey orders, 20 were sexually abused and 5 were assaulted physically and tortured. None was starved. Two adolescent girls were subjected to blackmailing, 15 received good food and friendly behaviour and 5 said medical help was given when required.

CONCLUSION

Trafficking of women and children, illegal immigrants, drugs and weapons is a multi-million-dollar industry, directly and indirectly employing many people in India. The most 'at risk' groups are children from poor and ill-

educated families, and in the 5-18 years age group. Programmes and services to help victims are required, but these must be developed in conjunction with local NGOs and by enlisting government and community support.

The rural setting is the origin of child trafficking activities. It is, therefore, essential that awareness programmes should be organised in all blocks and district headquarters. A network should be developed among key community leaders like local teachers, doctors and police personnel for prevention of trafficking and for maintaining vigilance.

Rehabilitation measures for trafficked victims must include emergency medical attention, food and safe shelters, vocational training, mental health services, like counselling and legal support. Definite attempts must be made to reunite the affected children with their family members. NGOs can organise programmes in villages to remove perceptions of stigma among family members and encourage them to accept their girl children and adolescent girls back.

Child Abuse and Neglect in a Metropolitan City : A Qualitative Study of Migrant Child Labour in South Kolkata

Deb Sibnath. Social Change, September 2005; 35(3): 56-67.

INTRODUCTION

In the metropolitan cities of developing countries, there is a good market for disadvantaged children to work as maid-servants and casual workers in tea stalls, shops, hotels, markets and garages. In urban areas, girl children from lower socio-economic families find it easier to get jobs as maid-servants on a lower wage. Driven by utter poverty, these children mostly come from rural areas and from neighboring states like Orissa, Bihar and North-Eastern States. Work for such children begins early in the morning and continues till after their employers retire for the night and are mostly treated as bonded labourers, often abused and maltreated.

OBJECTIVES

The main aim of the study was to understand the nature and types of abuse and neglect among migrant child labour.

METHODOLOGY

The sample comprised of 120 children (75 boys and 45 girls) aged between 10 to 16 years, coming from neighbouring states and rural areas and working as maid-servants in shops, tea stalls and garages. Qualitative data collection techniques like informal interviews, observation (of employer's behaviour and workload) and case studies (30 adolescents) were adopted.

RESULTS

- ❑ About half of the children (46.7%) belonged to the 12-14 years age group, 30.8% to the 15-18 years of age group and 22.5 per cent were below 12 years of age. Majority of them were illiterate (45.8%).
- ❑ A majority of the adolescents were involved in domestic work (53.3%), while 25 per cent, 11.7 per cent and 10 per cent of them were in tea stalls, grocery shops and garages, respectively. Out of 45 girls, 40 (88.9%) were engaged in domestic work.
- ❑ More than half of them had been working for more than three years (53.3%) and 58.3 per cent were paid Rs 201-400 per month.
- ❑ About one-third of the working children came from rural Bengal while almost equal proportion hailed from both Bihar and the North- eastern States. Majority came from nuclear and large family and had three or more siblings.
- ❑ As for the parent's education, about one of every three fathers and three out of every five mothers were illiterate. Thus, a high correlation between child labour including adolescents and parental illiteracy was observed. The monthly income of 70 per cent families was up to Rs 2,000/- per month.

- ❑ A large number of working children were tortured mentally (37.3% boys and 51.1% girls) and physically (32.5%) because of minor mistakes or to maximise output. Sexual harassment was not infrequent as about 10.8 per cent had gone through it and was more prevalent among girls (17.8%) as compared to boys (6.7%). Most of them did not disclose the form of abuse out of sheer embarrassment.
- ❑ Out of a total of 120 children covered in the study, 38.3 per cent said they had fallen sick in the last few months. Of them, only 19.6 per cent received proper medication while 42.3 per cent were given medicines without consulting the doctor. Fortunately, 13 per cent were allowed to take rest.
- ❑ About 35 per cent employers displayed a broad outlook by allowing the working children and adolescents to study at home when work pressure was less, especially in the case of domestic servants. About one-fifth (23.3%) got no cooperation in this regard while 42.5 per cent children were themselves, not interested in studying.
- ❑ As far as meals were considered, about 42 per cent of the working children and adolescents said they got inadequate food while 23.3 per cent said they were given inadequate food. The remaining 24.2 per cent were sometimes fed adequately.

CONCLUSION

Child abuse, including abuse of adolescents, in different forms is a frequent occurrence in our highly class-conscious society and people across all sections of society are less concerned about its after-effect on the working children who include adolescents. As per the employers, who employ children and adolescents, mental pressure and physical punishment are the best options to extract maximum work out of them, which can even prove fatal. Although there is some legislation, in reality it takes a long time to clear the cases because of so many unavoidable reasons. Prompt action against harassment of child labour will definitely bring some change in the outlook and attitude of employers. NGOs must play an active role in securing justice for children and adolescents employed as child labour. Also, it is a time to create adequate social awareness for an attitudinal change, so that they deal with working children sympathetically and also help them merge into the mainstream society.

Tobacco Use among Adolescents in India: Results from National Family Health Survey-2, 1998-99

Mini G K, Moli G.K. India Journal of Population Education, September 2006: 59-64.

INTRODUCTION

Tobacco use is one of the major public health problems and is well recognised as the most important preventable cause of death. Worldwide about 4.9 million people die annually from tobacco-related cause, and it is predicted that by 2030, it will be around 10 million. Globally, current cigarette smoking ranges from 39.6 per cent to less than 1 per cent among youth (Global Youth Tobacco Survey, 2003). Most of the earlier studies in India reported high prevalence of tobacco use among men than women (WHO, 1997).

OBJECTIVES

The main objective of the study was to provide a national picture of the socio-economic and demographic correlates of tobacco use, both in terms of smoking and chewing among adolescents in India.

METHODOLOGY

The study uses data from the National cross-sectional survey, National Family Health Survey (NFHS-2), conducted in 1998-99. The present study covered a sample of 1,02,938 adolescents (15-24 years of age) in India. Univariate analysis was applied on data collected through questionnaires to understand the prevalence of tobacco use. Bivariate techniques were used to recognise the relationship of socio-economic and demographic characteristics on the prevalence of smoking and chewing. Multivariate technique, such as logistic regression analysis, was used in order to capture the indirect effect of socio-economic and demographic factors on the prevalence of smoking and chewing independently. The odds ratio for each category of independent variable obtained from the analysis indicated the adds of prevalence of the smoking and chewing, provided the effect of all other variables are kept constant.

RESULTS

- ❑ The sample consisted of 1,02,938 individuals aged below 25 years of age (49% males and 51% females).
- ❑ The prevalence of smoking was 9.7 per cent among males and 0.5 per cent among females. The prevalence of tobacco chewing was 14.1 per cent among males and 4.3 per cent among females.
- ❑ Among males 4.1 per cent used both forms of tobacco and prevalence of only smoking was 5.6 per cent and only chewing was 10 per cent. Significant variation was observed in the prevalence of smoking and chewing forms of tobacco among adolescent males and females (lower than males) in different states of India. The prevalence of smoking and chewing were highest in the state of Mizoram. Chewing was more prevalent than smoking form of tobacco in both males and females.
- ❑ Prevalence of smoking was significantly increased with increase in age in both the sexes. The chance of smoking prevalence was about four times higher for higher age groups than their younger counterparts.

Studies on Adolescent Girls

- ❑ Young men and women in rural areas had higher prevalence of smoking than urban youth. Rural adolescent males were 1.53 times more likely to use smoking form of tobacco than urban adolescents. Lower socio-economic level was very much associated with higher prevalence of smoking among male and female adolescents.
- ❑ Christian youth showed the highest prevalence of smoking in both the sexes in the bivariate analysis. The same trend was seen in multivariate analysis among males but a little variation in females with higher odds ratio for muslims. With reference to forward caste, other backward caste youth were more likely to use smoking form of tobacco among males as well as females.
- ❑ Compared to smoking, chewing prevalence was higher among males as well as females. The older age group youth had more than double chance of using chewing form of tobacco than younger age group youth. Males and females with lower standard of living had significantly greater chance of using chewing form of tobacco.
- ❑ A varying trend was seen with prevalence of chewing among different religious groups, with the highest prevalence for Christians. Backward caste adolescents were more likely to use chewing form of tobacco than their counterparts from forward castes.

CONCLUSION

There exist gender differential among adolescents and youth in the matter of tobacco consumption, with more males indulging in smoking. However, with advance in age during adolescence, no gender differential is seen in tobacco chewing. Rural areas are more affected by tobacco addiction and socio-economic status, caste and religion also show their effect on tobacco consumption patterns. Thus, the study throws up significant factors that could influence campaign strategy and content to discourage tobacco consumption.

Stories of Street Children: Findings from a Field Study

Mitra Kathakali, Deb Sibnath, Social Change December 2004; Vol, 34 No: 77-85.

INTRODUCTION

Street children including adolescents develop a characteristic dare devil attitude towards society. Disadvantaged children, especially street children, have been involved in a variety of criminal activities, and in some cases they were used by professional criminals. Besides poverty and illiteracy, parental factors (like lack of guidance and care, indirect encouragement by parents in deviant activities, deviant activities/ habits of one or both parents), stressful situation or sudden crisis in the family, environmental factors and/ or influence of peer groups/anti-socials were found to be very influential in leading innocent children to deviant activities.

OBJECTIVES

The objective of the study was to find out the reasons behind abandonment of children/adolescents by their families/ parents and their being compelled to accept street life.

METHODOLOGY

A total of 40 street children (18 boys and 22 girls), aged 9-19 years, attending an intervention programme of 'Rainbow School' (a programme for street children run by the Loreto Day School, Sealdah) were selected following random sampling technique. These children were either orphaned or had one/ both parents. Qualitative data collecting techniques like in-depth interview and the case study method were also adopted. Detailed case study were compiled for all 40 children.

RESULTS

- ❑ Most of the street children (45%) belonged to the 12-14 years age group (32% and 23% belonged to the 9-11 and 15-19 age groups, respectively). Most of them (62.5%) were at the primary level and about one-third (32.5%) were at the secondary level in the Rainbow School. About 50 per cent of the newcomers at the school were illiterate.
- ❑ Fathers of 25.8 per cent subjects were working as casual labour, followed by fathers who were unemployed (17.1%), rendering services (8.5%) and in occupations like selling fruits/ vegetables, shopkeeping and farming. Most of the mothers were housewives (33%) and maid-servants (24.2%). The rest of them were either involved in service and/or in petty business.
- ❑ About one-third (34.2%) of fathers were found to be substance-dependent. It was also reported that 31.4 per cent of the fathers physically abused their mothers. About 14.2 per cent of the children were subjected to physical punishment for minor mistakes.
- ❑ 37.1 per cent fathers and 15 per cent mothers of these children died due to varied reasons. About 14.2 per cent parents were either divorced or separated, while 8.5 per cent fathers and 15 per cent mothers

remarried. As many as 22.5 per cent of the fathers and 39.3 per cent of the mothers were reported to be regularly visiting the children at the school. About one-fifth fathers and an equal proportion of mothers were found to have taken the initiative to admit their children to the welfare organisation, due to its conveniences and better living arrangements.

- ❑ The findings revealed that 40.0 per cent, 20.0 per cent and 13.3 per cent of female children aspired to be a teacher, sister (in a religious order), and social worker, respectively. About one-fourth each of male children aspired to become doctors or join films. About 12.5 per cent dream of becoming commercial artists, drivers, and police personnel.

CONCLUSION

Life on the street exposes children and adolescents to different exploitative and life threatening situations. Some are fortunate enough to come in contact with welfare agencies, but the majority still live in the expectation that their living condition might improve ultimately, but the story remains the same. If these children and adolescents had been retained in schools where they receive meals and health care facilities, they might not have drifted into this vulnerable life style.

The reason why children and adolescents are pushed on to the street is linked to the difficult circumstances that many families face. Low income is also a part of the story in developing countries, where children and adolescents are obliged to work or beg on the streets instead of going to school.

A Study of Child Labour among School Children and Related Factors in Pondicherry

Nivethida T, Roy G. Indian Journal of Community Medicine. January- March 2005; Vol.30No. 1: 14-15.

INTRODUCTION

In a country like India, where 32 per cent of the population is below the poverty line, child labour is deemed a necessity for augmenting the family income. Therefore, poverty is a major determinant of such a practice. According to a 1996 report (ILO) the number of child labourers in India can be anywhere between 14 to 100 million. In attempts to eradicate child labour, the government has advocated compulsory education for all children throughout the country.

OBJECTIVES

The major objectives of the study were to assess the quantum and causes of child labour (including adolescents) among school children in Pondicherry, their academic performance in school and their contribution to the family's economic status.

METHODOLOGY

For the purpose of the study, four schools within urban area of Pondicherry were selected with comparable distribution of boys and girls both regular and shift schools. They were students of Government schools studying in classes from 5th to 9th during the academic year 2001-02. The children were administered a questionnaire and information on academic performance was collected from the school records. The data was analysed for descriptive details and necessary statistical tests applied.

RESULTS

- ❑ The four schools selected for the study registered a total of 1,305 children between classes 5 and 9, out of which 49 were boys and 807 were girls. There were a total of 196 students who said they worked outside school hours with a prevalence of 150/1000 school children, of which 117 were boys (89.6/1000 schools children) and 79 girls (60.5/1000 children).
- ❑ Girls started working at younger age than boys by an average of 1 to 2 years. By the age of 15, however, a larger proportion of boys than girls were working. It was observed that roughly half of the boys go for work only on holidays. In contrast, 60 per cent of the adolescent girls worked on all days, irrespective of the school timings.
- ❑ It was also found that adolescent girls worked for longer hours than adolescent boys. A quarter of the students, especially boys, worked for more than 10 hours per day. This is bound to have an adverse effect on the health and academic performance of these children,

- ❑ Children are employed in homes, shops, workshops or companies. More than 90 per cent of those working in houses are adolescent girls but there are no girls working in workshops. Boys constitute only 10 per cent those working in homes, whereas 90 per cent of those working in shops are boys. Almost an equal number of these adolescent boys and girls are employed in small manufacturing companies.
- ❑ 177 (85.2%) of the children said they worked due to poverty in the family. Other reasons included giving help to parents in their work to learn the job. However, 167 (85%) of the children responded that they worked without being forced to do so. Around 15 per cent children were compelled to work by their mothers.
- ❑ Percentage of attendance is not affected much upto class 8, but a drastic fall is noticed among students of class 9 in case of both adolescent girls and boys.
- ❑ The ratio of below average students among those working is only slightly higher than those not working.

CONCLUSION

Abolishing child labour has to be a continuous process, in order to ensure that it is eradicated from its very root. Eradication of child labour is certainly a necessary exercise, however, ignoring facts that lead to adolescent boys and girls being used as cheap labour and factors that help in continuation of the practice might undo all the efforts put into eliminating it. It cannot be denied that child labour robs the children and adolescents of their childhood and its joyful experiences and hardly leaves any time and energy to concentrate on studies for a better performance to achieve their full potential.

Prevailing Conditions of Female Commercial Sex Workers/ Women in Prostitution

Akshay Nagar Pallisri Sangha, 24 Paraganas, West Bengal June, 2002.

INTRODUCTION

A rough estimate suggests that there are about thirty lakh sex workers in India. Majority of the sex workers (about 86%) hail from the States of Karnataka, Tamilnadu, West Bengal, Bihar, Maharashtra, Uttar Pradesh, Assam, Gujarat, Goa, Madhya Pradesh, Kerala, Meghalaya, Orissa, Punjab, Rajasthan and Delhi. Indian sex workers, trapped in prostitution, have to continue their profession in a most unhealthy social and physical environment surrounded by pimps, mafia, police, drug peddlers, smugglers and shabby customers. They work in a very difficult situation, demanding constant adjustments which are beyond their control and ability. The prevailing conditions of Commercial Sex Workers of red light area of West Bengal were studied to prevent trafficking of girls and women.

OBJECTIVES

The broad objective of the current research study is to have an assessment of the life conditions of women involved in sex trade, providing an understanding on its proliferation, its dynamics and also on incidence of AIDS/HIV/STD among them, including the reasons for further spread of those diseases through them in the society at large. Secondly, the study aims at finding out some effective ways and means to prevent the inflow of innocent minor girls from rural areas to red-light areas.

METHODOLOGY

The study was conducted in the red light areas of South 24 Parganas, North 24 Parganas, Howrah and Hooghly Districts of West Bengal. For selecting samples, the study used stratified random sampling procedure. Besides, qualitative data on the life style and perspectives of the sex-workers on various issues related to their lives were also collected using Participatory Rapid Appraisal technique and also through focus group interviews/ discussions. Various other important persons were contacted for their opinions on various issues relating to prostitution. Some brothel keepers, customers, pimps, police personnel, social workers, etc. were also contacted. In all, about 796 sex-workers (approximately 200 from each districts) respondents were interviewed during the field survey. Data/documents/ information were also collected from secondary sources like books, magazines, news papers, reports, etc.

RESULTS

- ❑ Information on age is very important because demand of women in prostitution is positively correlated with age. Earnings of a sex worker diminished gradually with advance in age. About three fourths of women involved in sex-trade (in the form of brothel-based prostitution are in the age group of nineteen to thirty years. Only 1.6 per cent of the prostitutes were in minor age group. Prostitutes above 30 years of age comprised about 23 per cent. Proportion of girls/women in sex trade under 18 years of age might have slightly been more, because of under-reporting of their age.

- ❑ About 60 per cent of the prostitutes belonged to weaker sections of our society i.e. STs, SCs and OBCs and fifteen percent of the prostitutes belonged to general caste groups. Majority of the prostitutes (55.7%) followed Islam. About 42.5 per cent respondents followed Hinduism and the rest 1.8 percent did not follow any religion.
- ❑ 93.1 percent of the prostitutes were of Indian origin and the rest (6.9 percent) were from foreign origin (Bangladesh 5.4 percent and Nepal-1.5 percent).
- ❑ About 97 per cent of the prostitutes came from various places within West Bengal, viz. Mursidabad, Berhampore, Bangaon, Burdwan, Baranagar, Dunkuni, Patipukur, Dakhineswar, Midnapore, Hooghly, Howrah, Bankura, etc. Inter-region migration of prostitutes is very common. This is because they prefer to carry on their occupation in places where they are unknown to the local customers. About 72 per cent of the prostitutes were of rural origin. Those coming from urban areas were mostly slum dwellers (79.5%). The lower middle class/poor families from town areas constitute 20.5 per cent of the total number of prostitutes having urban origin.
- ❑ Majority (94.7%) of the prostitutes are illiterate. Those who are semiliterate (who have reading skill but can not write) constitute 3.4 per cent of the sample. The highest level (comprising the non-metric only) constitute about 2 per cent of the prostitutes. Thus, there is a close correlation between illiteracy and prostitution.
- ❑ None of the prostitutes reported having relation with their previous husbands. About 61 per cent of the sex workers reported that they was having children either in course of legalized new marital relationship or even in course of the sex trade. However, the prostitute mothers strongly desired for proper up bringing of their children. They did not want to engage them in sex trade.
- ❑ Some of the prostitutes had houses of their own. They had plans to construct their residential houses and run some independent business immediately after they withdrew themselves from this profession. Ornaments, that included necklace, earrings, bangles, nose rings, leg chains etc., made of gold and silver were more valued assets of the prostitutes. These assets are possessed by 20.4 per cent prostitutes. The value of their ornaments varied between Rs. 500/- to Rs. 10,000/-. About 10 per cent prostitutes saved in private finance like Sahara, Peerless, Chit funds, etc. Quite a large number of prostitutes reported that they had lost their deposits in private financial institutions who assured lucrative returns. Only 3 prostitutes reported having Peerless polices and another 3 prostitutes reported that they won TV Bicycles were possessed by 6 prostitutes and gas cylinder for cooking by 21 prostitutes. About 75 per cent prostitutes possessed wrist watches.
- ❑ Normally a sex worker took a room on rent. In the red light areas of Kakdip, Naihati and Chowrasta (Howrah) and Bagnan, she had to share one room with a number of sex workers. The room had no ventilation. It was dirty, damp and unhygienic. The space was inadequate.
- ❑ Majority (46.6%) of the prostitutes in the study area earned a monthly income ranging between Rs. 2,000/- to Rs. 3,000/-, i.e., below Rs. 100/- per day and 34.5 per cent earned a net income below Rs. 2,000/-, being aged, weak and diseased women. These two low-income brackets together constitute about 71 per cent of the total number of prostitutes. About 15 per cent of the prostitutes earned income

between Rs. 3,000/- and Rs. 6,000/- per month, i.e., between Rs. 100/- to Rs. 200/- per day. Only 3.5 per cent of the prostitutes earn more than 6,000/- per month.

- ❑ Almost all the prostitutes took alcohol to satisfy the customers' whims or to overcome their guilt of being in a sinful profession. Regular intake of alcohol was reported by about 67 per cent of the prostitutes.
- ❑ Women in the brothels had little time for rest. However, listening radio, songs, playing cards and gossiping were the most common means of their recreation, during leisure hours. They also watched cinema in the halls occasionally either in groups or alongwith their favourite customers. Some of them went for outing with their clients. A few prostitutes had television in their rooms. They enjoyed blue films occasionally.
- ❑ Majority (96.7%) of the prostitutes trapped in this profession are of the age between 13 to 20 years, which is the most crucial period of one's life. About 86 per cent of the prostitutes reported having got involved in the profession of prostitution below 20 years of age. About 92.6 per cent of the women in prostitution were motivated by the agents/ brokers with whom they came into contact either at the work place or introduced by known persons, not always friends or relatives. They were attracted mostly by false promises, like marriage.
- ❑ Emotional blackmail was the prime cause for the victimised women to join prostitution. About 81 per cent of the prostitutes reported that they were deceived by someone through false promises of better employment opportunities, glamorous life, etc. Divorce /desertion and torture by parents/husbands was the second most important reason for being trapped in sex-trade.
- ❑ About 90 per cent of the sex workers suffer from sexual diseases, about 12 per cent from other serious diseases like leucorrhoea, anaemia, T.B., etc. Almost of all the sex workers (98.1%) suffer from common diseases like cold, cough, headache, backache, inflammation of legs and hands etc. Most of the women in prostitution have gone for sterilisation with the belief that would prevent STDs.
- ❑ Around 98 per cent of the prostitutes were aware of STD/HIV/AIDS. Equal number of prostitutes were aware about the preventive measures. About 72 per cent reported that despite their sincere attempts to make their customers use a condom as a preventive measure, they failed to do so because they entertain shabby/ drunken customers from lower strata of the society. About 85 per cent of the prostitutes reported that they tried to use condom only when they were supplied free of cost by the local NGOs.
- ❑ About 98 per cent of the prostitutes admitted that they did not receive proper health care services, particularly with regard to the STDs. Majority of them did not have any knowledge about the Govt. clinics that provided counselling, medical check-ups, etc. to the STD patients. They reported attending private clinics in case of emergency and treatment of STDs.
- ❑ The dynamics of sex trade in the study area were understood as a heinous game under the network of brothel keepers, land owners, pimps, police, coal dons and of course, the sex workers. Sex mafias are never in the scene. They have connections with high ups in politics and administration. The whole set of intermediaries misappropriate a sizeable proportion of the income earned through the flesh trade.

CONCLUSION

Prostitution is more of an urbanised phenomenon. Innocent and poor women/ girls who migrate to towns in search of job are the victims of sex trade. A large proportion of the prostitutes are illiterate, deserted, poverty-stricken and sexually abused. Majority of them have no identity. Prostitution signifies the worst form of marketised or commoditised culture that had root in the modern market-based (capitalist) economy. Prostitutes were the victims of the circumstances and they had never desired to accept prostitution as a profession voluntarily. They were engaged in sex-trade not because they liked or enjoyed sexual activities but because They had no alternative source of income to support their living. They lacked a living space for their survival (that included minimum basic necessities like proper housing, safe drinking water, etc.). Any organised movement of the prostitutes aiming to achieve that basic minimum standard of living is justifiable and genuine.

Advertisement and Smokeless Tobacco Use of Adolescents in Sikkim, India

Sinha DN. Gutka. Indian Journal of Community Medicine; January-March 2005; Vol.30, No.1; 18-20.

INTRODUCTION

The Tobacco Free Initiative of the World Health Organisation, in collaboration with the office on Smoking and Health, Centres for Disease Control, USA had undertaken Global Youth Tobacco Survey (GYTS). The GYTS includes data on prevalence of tobacco use, as well as information on access, availability, and price; environmental tobacco smoke exposure (ETS); school curriculum; media and advertisement; and cessation.

Earlier published reports on the Global Youth Tobacco Survey had not covered issue of Gutka advertisement in different media and its impact. Gutka is one of the industrially prepared and highly advertised tobacco product in India and quite popular among all smokeless tobacco products, especially among the youth.

OBJECTIVES

The present study was conducted to investigate tobacco use prevalence and related issues among 13-15 years old students in Sikkim, India.

METHODOLOGY

The study was carried out during January - March, 2001. In Sikkim, as also in rest of India, 13-15 year old students correspond to grades 8-10. A survey through anonymous, self-administered questionnaire on a two-stage probability sample, proportional to the enrollment size study design, was used to produce representative sample of students. A weighting factor was applied to each student record to adjust for non-response and for the varying probabilities of selection. SUDAAN, a software package for statistical analysis of correlated data, was used to compute 95 per cent confidence intervals.

RESULTS

The study represents result for a sample of 15,247 school going students in Sikkim aged 13-15 years. Among 2,236 respondents, 55 per cent were boys and 45 per cent were girls; 51.5 per cent were tribal and 48.5 per cent were non-tribal; 52 per cent were Hindus, 36 per cent Christian and 10 per cent Buddhists and rest were from other religions.

- The overall response rate was over 85 per cent and the proportion of boys was 55 per cent.
- There were no significant differences in current smokeless tobacco (boys 35.5-49.5%; girls 27.2-36.4%) and gutka (boys 8.4-22.2%; girls 14.2-22.2%) use among boys and girls.
- Boys and girls reported exposure to gutka advertisements equally.
- Current smokeless tobacco users than never tobacco users were significantly more likely to watch gutka

advertisements in all media to have information on gutka brand names and predictably, had a positive attitude towards tobacco use. Such strong findings support the view that advertisement works and it targets youth.

CONCLUSION

Strong association between exposure to gutka advertisement and current smokeless tobacco use among boys and girls in Sikkim has been demonstrated by this study. Stronger restriction on advertising campaigns needs to be exercised by the government as adolescents get influenced by glamour of the advertisement.

Sween Adolescents in Drug Net

Indian Journal of Population Education, September 2006: 53-58.

INTRODUCTION

Adolescents have fanciful ideas about the future picked up from media and magazines. When their dreams suffer, they feel cheated by their family and society and become bitter and aggressive. Deviant behaviour sets in. Drug addiction is like a plague that can strike high and low, rich and poor, ugly and beautiful, young and old, yet it is the young who are most at risk, especially those in their teens. Causes can be varied, e.g., economical, social, demographic, family, psychological, educational, etc. There is an urgent need to convert this perceived "Burden" of adults into an "Asset" of human resources. The adolescents can neither be allowed to get lost nor exploited, nor left out of the mainstream at this age. This will affect their own life pattern and of the next generation. It will also be against the national interest.

OBJECTIVES

To find out the personality traits and parental attitudes of the drug abusers.

METHODOLOGY

The sample of 40 secondary school students of 16 to 17 years of age, was selected randomly from in and around Chandigarh. The adolescents were divided into two groups of 20 students each, on the basis of their background and socio-economic status.

All subjects were administered Multi-phasic Personality Questionnaire and Parental Attitude Questionnaire (Murphy) to measure the personality co-relates like anxiety, depression, hysteria, schizophrenia, etc.

RESULTS

- ❑ The results of the Personality Questionnaire indicated that 60 per cent of subjects in both the groups showed anxiety and depression, implying that these trait of anxiety and depression were quiet common in drug abusers from both the groups and the number was quiet high (12/20 in each group). In case of schizophrenia, only one subject in each category had this psycho-pathic trait.
- ❑ However, group-II had 50 per cent hysteric subjects as compared to 30 per cent in group-I, i.e., 10 out of 20 in urban families had hysteric tendencies, whereas in rural poor families this trait was less prevalent with 6 out of 20 subjects showing hysterical tendencies.
- ❑ Both rural and urban drug abusers (80% of the total subjects) perceived their families to be less harmonious. Thereby, 16 out of 20 in each group shared this feeling.
- ❑ Around 60 per cent of the urban adolescents coming from educated families found their mothers to be having positive attitude, whereas in group-I only 40 per cent of the subjects found their mothers to be

positive. On the variables of mother's democracy, the numbers of subjects in both the groups was found to be the same (20%).

- ❑ However, 20 per cent of the subjects of group-I found their fathers to be democratic, whereas 30 per cent of group-II subjects thought so about their fathers. This meant that 80 per cent of group-I and 70 per cent of group-II adolescents who were interviewed, respectively thought that their fathers were not democratic.
- ❑ With respect to fathers' positivity, only 30 per cent of group-II subjects and 20 per cent of group-I subjects found their fathers to be positive. As many as 16 drug abusers of group-I and 14 from group-II did not perceive their father as positive.
- ❑ Adolescents indulge in drugs most often for fun sake and to get kicks. As many as 60 per cent in both the groups in each case showed this characteristic. Stress of studies was quite prevalent reason amongst group-II (70%), whereas peer pressure was another reason to which 70 per cent of the subjects of group-I succumbed.
- ❑ Almost, 40 per cent of the subjects from group-II took drugs because of peer pressure, strains of everyday life, to overcome boredom and to get better sleep while sleeping. Studies and boredom were not reported to be the very important reasons for taking drugs in case of group-I. Peer pressure wielded more influence amongst group-I (70% of the subjects) than in group-II (50% of the subjects).

CONCLUSION

There is no urban-rural differential in the matter of resorting to drug abuse by adolescents. Perceived lack of harmony at home, academic pressure, peer pressure and perceived autocratic approach of fathers at home are the major factors that push adolescent boys and girls towards drug abuse. Aimless drug abuse, for fun-sake or to relieve boredom, though not common, is still in vogue. All de-addiction programmes and anti-drug campaigns are required urgently in both, rural and urban areas and have to base their strategies on the findings of such studies.

IX

*Sex Education, Life Skill Education and
Nutrition and Health Education*

Sex Education, Life Skill Education and Nutrition and Health Education

Nutrition and health education falls under the long-term strategic interventions to improve adolescent health and nutrition. Health education leads to better health awareness and higher the frequency of health education sessions, greater the level of awareness. A few studies conducted on nutrition and health education of adolescents give an insight into the strategic implications of reaching the adolescent girls effectively.

Research on adolescent girls showed that audiovisual educational material on health and nutrition had greater impact when coupled with discussion, as compared to such material being presented without discussion. Information-based programmes on television and social awareness, though less preferred, would through consistent exposure on social problems, help them to develop a positive attitude towards social issues and concerns. The 'question box' method emerged as the most effective tool to assess training needs of adolescent girls in the area of sex education.

Reproductive health education of married adolescents with the help of community-level educators was found to be an effective strategy. The usage of clinical services, antenatal services seeking behaviour and referrals from the educational sessions increased as a result of such intervention. Attending even half the scheduled sessions raised the awareness levels of married adolescents regarding RCH to such an extent so as to understand the need for antenatal care, recognise danger signs during pregnancy and the advantages of using a condom. Even the qualitative data indicated better communication between adolescent spouses on sexuality and reproduction.

Some of the research studies showed that more than 60 per cent of the married adolescents did not know about HIV/AIDS, syphilis and gonorrhoea, and the level of knowledge and awareness regarding these topics improved with interventions like interpersonal communication, distribution of pamphlets and video presentation. A well-planned intervention through a package of life skills education and RCH led to not only higher level of awareness but also to greater degree of confidence in handling communication within and outside the family and contribution to decision making within the household.

Adolescent girls were more positive towards the concept of family planning in the field areas where NGOs were involved in RCH programme. When food safety and food handling behaviour of adolescents were studied, no gender differentials were observed in mean scores but food safety and handling during cooking food and cleaning were identified as difficult areas. The adolescents knowingly chose to take risk in food handling and personal hygiene before food consumption in commercial establishments like cafeteria of school or a restaurant, thus pointing towards the need to emphasise food safety and hygiene.

The need of the hour is also to make adolescents conscious of food handling and personal hygiene matters consistently, even when consuming food outside the home and also during cooking and cleaning procedures to promote family health through best practices in food and personal hygiene.

The research during last five years has confirmed the effectiveness of the strategy of government-NGO partnership in development programmes. Audio-visual material coupled with interpersonal communication has emerged as a viable training methodology option. The efforts to empower adolescent girls towards joint decision-making in

family issues like determination of family size and child spacing, etc. would help in achieving the policy directives of the Government. Data also shows that the focus in nutrition and health should not only be on consumption of nutritious food, but also the environment in which the food is prepared and served and the hygiene of the food handler.

Research in the near future may be geared towards studying:

- Best practices in promoting small family norm.
- Documentation of case studies on successful life skill education projects for adolescent girls.
- Intra-family communications on reproductive health issues, with special reference to adolescent girls.
- Status of empowerment of adolescent girls regarding their nutritional and health needs.

Gender Inequality among Adolescents in Participation of Activities for Self-Development in Rural West Bengal

Das D K Biswas R. Indian Journal of Community Medicine, January-March 2006; 31 (1): 44-45.

INTRODUCTION

The word 'Adolescence' is derived from the Latin term 'Adolescere' meaning to grow up. WHO has defined 'Adolescence' as the period between 10 to 19 years, a critical period of life characterised by rapid growth and development, both physiologically and socially.

This period is also a time of preparation for undertaking greater responsibilities and a time to ensure healthy all-around development. Even in response to social pressures, the adolescents are often expected to take on responsibilities of adulthood. It is this dichotomy of roles and societal expectations, which makes the adolescents particularly vulnerable. The marked differences between the sexes that accompany adolescence have profound implications for health and development. Adolescent boys and girls develop at different rates and are generally treated differently and thus, they are unequally vulnerable to health problems. Recently the importance of adolescent health promotion has gained increasing recognition and priority throughout the world and the reasons for this focus of attention are multiple.

OBJECTIVES

The present study was conducted to ascertain inequality in participation and the time spent for educational, sports, recreational, household activities and wage-earning activities by adolescent boys and girls.

MATERIAL AND METHODS

A community-based, cross-sectional, observational study was conducted in the catchment area of Beraberia Primary Health Centre (PHC) under Amdanga Block, North 24 Paraganas district, West Bengal, India.

The study population comprised of adolescent boys and girls (10-19 years), both married and unmarried, of the families residing in the study area. The sample was selected by multi-stage sampling procedure. From the list of households of the 3 selected villages, a sampling frame of eligible household, i.e., households with one or more adolescent girl of 10-19 years was prepared and 25 per cent of them were included in the study by systematic random sampling technique. Out of 93 such selected eligible households in this stage, 32 were found with both adolescent boys and girls. All the adolescent boys and girls from the selected households were included in the study. Thus, a sample of 38 adolescent boys and 45 adolescent girls were obtained for comparison.

A semi-structured schedule was used to collect the data. Age was recorded in completed years based on birth certificate or school records. The activity of schedule of both adolescent boys and girls of the same families were reviewed through interviews by recall method to record participation and average time spent in different activities.

RESULTS

- ❑ Adolescent boys and girls of same families were found universally participating in any kind of recreational activities and almost equal proportion of boys (65.8%) and girls (62.2%) in educational activities ($Z=0.34$, $p>0.05$).
- ❑ However, there was no significant difference ($Z=0.82$, $p>0.05$) between proportion of boys (42.1%) and girls (33.3%) participating in wage-earning activities.
- ❑ Also, no significant difference in average time spent per day by adolescent boys and girls of the same families in recreational and educational activities was observed, though boys were spending significantly more time ($Z=2.19$, $p<0.05$) compared to their counterparts in wage earning activities.
- ❑ The proportion of adolescent boys (84.2%) participating in any kind of sports was higher ($Z=4.97$, $p<0.01$) as compared to adolescent girls (37.8%); in household activities, 100 per cent of adolescent girls were participating as compared to 57.9 per cent of the adolescent boys ($Z= 5.26$, $p<0.01$). However, it was also found that average time spent per day in sports was significantly more ($Z= 5.61$, $p<0.01$) in case of boys (0.92 hours).
- ❑ For household activities average time spent per day by girls (1.82 hours) was significantly higher ($Z= 6.35$, $p<0.01$) as compared to adolescent boys (0.34 hours) of the same families.

CONCLUSION

The 'social environment' offers great opportunities for improving the health and well being of adolescents, but gender considerations are fundamental in this regard. The marked differences between the sexes, which accompany adolescence, have profound implications for health and development. Usually adolescent boys and girls develop at different rates and are also treated differently.

The difference might be a reflection of the socio-culturally determined traditional roles of the boys and girls in the families. Participation in the household activities by the girls is almost a universal phenomenon, particularly in rural India. Probably, an attitudinal change towards education of the girls might have resulted in almost equal proportion of boys and girls participating in educational activities. However, the necessity of equal opportunities in access of both boys and girls to socially desirable activities like education, recreation, sports, etc. can never be overstated.

Study of Need of Awareness Generation Regarding Component of Reproductive and Child Health Programme

Haldar A, Ram R, Chatterjee T, Misra R, Joardar GK. Indian Journal of Community Medicine, April-June 2004; XXIX (2): 96-98.

INTRODUCTION

Reproductive and Child Health is defined as "a state when people have ability to reproduce and regulate their fertility, women are able to go through pregnancy and child birth safely, the outcome of pregnancy is successful in terms of maternal and infant survival and couples are able to have sexual relations free of fear of pregnancy and of contracting diseases." Knowledge about reproductive health and its practical implementation play a very important role in healthy development of adolescent girls, reduction of maternal morbidity, mortality and child survival.

OBJECTIVES

The present study was carried out with the following objectives:

- (i) To gather information about some aspects of reproductive health from unmarried adolescent girls.
- (ii) To find out the scope of awareness generation regarding its improvement.
- (iii) To make them aware about reproductive health care.

METHODOLOGY

The cross-sectional study was conducted on all unmarried girls (n= 156) in the age group of 10-19 years in all the slums of the Ward no. 38 of Howrah Municipal Corporation selected randomly from 50 Wards of that area.

Socio-economic status (SES) was calculated by modified Kuppuswamy scales. The girls were divided into two age groups, i.e., lower age group (L) 10-15 years and higher age group (H) 16-19 years. Chi-square was applied to the data.

RESULTS

- ❑ Majority of the girls (75.6%) belonged to low socio- economic group and only 8.33 per cent were illiterate while the rest were studying from the class IX to graduate standard.
- ❑ Out of 156 girls, 93 per cent had experienced their menarche and 50 per cent of them had achieved it by 12 years of age.
- ❑ Majority (60.9%) of the girls had menstrual cycle of 30 days and only 1.28 per cent had 21 days cycle, in the case of the rest it varied from 26 to 29 days.

- ❑ In the lower age groups (L), 21.25 per cent used sanitary napkins as compared to 35.5 per cent in higher age group. Similarly, users of clean cloth were more in 'L' age group (65%) as compared to those in 'H' age group (57.85%).
- ❑ Though 75 per cent of the study population was aware about legal age of marriage as being 18 years, yet only 8.96 per cent favoured it.
- ❑ Decision-making regarding child birth by both husband and wife was favoured by only 41.67 per cent of the adolescents.
- ❑ Delivery in hospital and home was favoured by 78.55 and 9.23 per cent adolescents, respectively.
- ❑ The study showed that 50 per cent of the total girls preferred family planning methods.
- ❑ It was found that 1.66 per cent preferred quacks, 4.13 per cent were ignorant and 78.51 per cent preferred hospital, out of the total abortion-pleaders in case of unwanted pregnancy.
- ❑ Around 32.05 per cent get knowledge of reproductive health from television and almost one-fourth of the girls were ignorant about source of information in this regard.
- ❑ About 62 per cent of adolescents did not know about AIDS, syphilis and gonorrhoea.
- ❑ Around 42.31 per cent suffered dysmenorrhoea, though 47 per cent in higher SES sought medical treatment for it as compared to 16.32 per cent in lower SES.

CONCLUSION

Improvement of general educational level along with awareness generation on reproductive health through IEC with the help of mass media and health workers are of utmost importance, which in the long run, would reduce the morbidity and mortality of girls in reproductive age group. A lot of work through appropriately designed nutrition and health education programme has to be done in the area of reproductive health, with a focus to generate awareness about, prevent and treat the reproductive tract infections. Management of menstruation and observation of personal hygiene among adolescent girls is essential for their reproductive health and needs due emphasis.

Hygiene Education and Health Awareness in Tribal Students: An Intervention Study

Hassan M.K, Jayaswal M, Hassan P. *Social Change*, December 2001;31(4):76-92.

INTRODUCTION

The term health awareness may be defined as scientifically correct knowledge, attitudes and practices in relation to illness of body, food materials, drinking water and such other self-care practices which provide protection from disease and contribute to healthy living and consequently, to human and social development. Though urban population is more aware of its health needs, the rural and tribal areas generally lag behind.

OBJECTIVES

The main objective of the present research was to study the extent of health awareness in tribal children and measure the impact of hygiene education through assessment of health awareness in the rural tribal school students, by conducting hygiene intervention and studying its impact and to study gender-specific impact of education material on tribal adolescents.

METHODOLOGY

The sample for the study was selected from Kasturba High School, Kharasidag, Namkum, located in a rural block of Ranchi district, consisting of 150, ninth and tenth grade tribal students selected on a stratified random basis, the stratification being based on sex. Seventy-five male and 75 female students were divided into three groups-one control and two experimental groups, each group being represented by 25 male and 25 female students.

Personal Data Questionnaire and Health Awareness Scale were used for assessment. The health awareness was measured on the basis of three sets of data: (1) Baseline data of control and experimental groups; (ii) Re-Survey data of data of control group; and (iii) Intervention impact data of experimental group-I (with discussion) and of experimental group-II (without discussion). ANOVA was applied to examine the main, as well as the interaction effects of intervention (control vs. two experimental groups), frequency of interventions and sex on health awareness scores

RESULTS

- ❑ Out of three factors, namely intervention, sex and frequency of intervention, the first and the third, namely intervention and frequency of intervention produced significant effects on health awareness. There seemed to be no significant effect of sex on health awareness, as the males and females did not differ significantly.
- ❑ The range of mean scores based on baseline and re-survey data for the control group was 69.56-70.80, while that for the experimental group-I was 68.36-144.64 and the experimental group-II was from 69.06 to 137.26. It is evident that the control group (not exposed to hygiene education) had more or less constant information and knowledge about health and illness. On the other hand, the health awareness of the experimental group, which had received audio-visual educational materials, went on increasing with

successive interventions. This reveals that exposure to hygiene education leads to increase in the scientific knowledge and information about health-related matters.

- ❑ The health awareness tended to increase significantly with the frequency of interventions. The mean health awareness scores obtained after interventions were significantly higher than pre-intervention mean scores.
- ❑ The health awareness went on increasing with the frequency of interventions for experimental group-I, the mean score increased from 68.36 (no intervention) to 144.64 (fourth intervention) and for experimental group-II the corresponding increase was from 69.06 to 137.26.
- ❑ The increase in the health awareness was proportionately much higher in the group that held discussion than in the group which did not discuss the educational materials. The rise was from 69.06 to 79.48 after first intervention, to 88.54 after second intervention, to 118.16 after third intervention and 137.26 after fourth intervention. The corresponding rise in the mean scores for the former group was from 68.36 to 79.78, 96.36, 131.54 and 144.64.

CONCLUSION

The following main conclusions emerge from the analyses of data presented above:

- (i) Health awareness is strikingly low even in the 9th and 10th grade tribal students considered to be literate section of the society;
- (ii) Health education leads to the improvement in the health awareness;
- (iii) Health awareness increases with the frequency of exposure (interventions) to health education; and
- (iv) Audio-visual educational materials presented with discussion have more powerful effects than those presented without discussion on the improvement of health awareness.

Social Awareness in Relation to Media among High School Students

Lavalekar A. Psychological Studies, 2000; 45 (3):178-180.

INTRODUCTION

Today, media serves as a highly influential factor in moulding the sensitivity of adolescents. An average high schooler watches television (TV) for a minimum of 2.5 hours a day and heavy TV watching is related to low educational achievement. The basic functions of media are surveillance, interpretation, linkage, transmission of values and entertainment. Media, therefore, plays a major role in shaping the attitudes, perception and beliefs of adolescents. It also has power to create and change stereotypes.

OBJECTIVES

The present study was planned with the objectives of assessing the degree of awareness and attitude pertaining to social problems and media options among high school students, besides finding out which media inputs are facilitating the social awareness of students and vice-versa.

METHODOLOGY

Forty-five (20 girls and 25 boys) eighth grade students belonging to middle and upper middle class from a private coaching centre in Pune participated in the study. Media Awareness Questionnaire (MAQ), Attitude Towards Social Problems Scale (ASPS) and Social Awareness General Knowledge Scale (SAGKS) were the assessment tools used to evaluate the data. The measures were administered in two separate sessions with a gap of two days in between.

RESULTS

- ❑ It was observed that a large section of students (51%) favoured sports supplement with first priority, followed by movies (20%) and science supplements (22%). Only 6 per cent of the students opted for editorial and critical articles as their first choice. However, in the choice of magazines, students were equally divided in choosing magazines with information input (48%) and mere entertainment input (52%).
- ❑ The choices of TV programmes reflected a similar picture. Around 80 per cent students favoured programmes based on movie songs, fiction and music, while only 20 per cent of them favoured programmes giving informative and evaluative input about the world, current events, etc.
- ❑ It was seen that most of the students liked to discuss the entertainment programmes among themselves and very few choose the informative ones for discussion.
- ❑ The students' low score on ASPS who were more exposed to masala movies ($M=54.05$) as compared to those having less exposure, ($M=45.2$) support the fact that media often presents a distorted picture of social facts, which keeps them away from the true nature and gravity of the social problems.

- ❑ The choice of media and children's awareness of social problems were positively related. The students with over-exposure to movies also had a slightly unfavourable (negative) attitude towards the problems of social injustice (M=44.38) than the students having less exposure to films (M=53.38).
- ❑ Students who preferred to read mostly the sports and movie supplements had significantly less information about social problems as compared to those who preferred science supplement ($p < 0.05$). As science was associated to each part of life, these students might have benefited in getting objective and impartial information about social facts.
- ❑ Students choosing sports and movie supplements and those choosing science supplements did not differ significantly in their attitudes regarding problems of social injustice.
- ❑ Students who preferred the informational input had more information about social problems (M=55.25) than those who choose only entertainment programmes (M=42.21) ($p < 0.01$). This supports the fact that television can make the students aware of what lies beyond their immediate environment.

CONCLUSION

The results indicated that if media is used properly and methodically according to the needs of different age groups, it can work wonders. However, if the media exposes children to a world for which they are too young and immature to comprehend and internalise, it can do a great damage. With the increasing network of various channels, even an Indian adolescent is exposed to a large number of such violent incidents but they are not mature enough to separate them from real life settings. Though adolescents are able to think and associate different pieces of abstract concepts and information, their ability to apply those skills to practical and personal problems is limited.

Thus, media can definitely be used to develop awareness about social problems among adolescents if it is used systematically and in a balanced manner, e.g., the print media can provide articles giving objective information about various social problems, experiences of people working on it, different policies and programmes undertaken by government or NGOs, etc. Similar programmes can be launched on television. Good movies depicting social problems in an effective manner can be shown to children. It seems that a consistent exposure to programmes giving information on social problems in different ways may shape the attitude in a more positive manner than exposure to mere entertainment on television.

Need Assessment of Adolescents in Bageshwar District, Uttranchal

Mishra A K. Indian Journal of Population Education, March 2006: 26-35.

INTRODUCTION

The term adolescence meaning, 'to emerge' or 'achieve identity' is relatively a new concept, especially in development thinking. Adolescents aged 10-19 years account for more than one-fifth of the world's population. In India, this age group forms 23 per cent of the total population. Characterised by distinct physical and social changes, the separate health, education, economic and employment needs of adolescents cannot be ignored. They are entitled to enjoy all basic human rights-economic, social, political and cultural-but their inability to exercise these rights places the onus on policy makers and adults to implement several measures to ensure their rights. Moreover, it is necessary to invest in adolescents as the future leaders and guardians of the nation's development.

OBJECTIVES

To undertake need assessment of adolescents, study the prevalent situation and views of adolescents about education and health.

METHODOLOGY

The study was confined to Bageshwar district of Kumaon region of Uttaranchal, which is in the first year of implementing the Continuing Education Programme. The cross-sectional study design included 150 adolescent boys and girls from different classes and castes, covering differing ages from 10-19 years. The data collected was analysed to see the prevalent trends regarding the awareness level and knowledge of the changes occurring during adolescence and the psychosocial impact of the stresses perceived during this period.

RESULTS

- ❑ More than 30 per cent respondents were not aware of the different life stages but open-ended questions revealed that almost 100 per cent of respondents were not aware of the significance of the adolescent stage in life.
- ❑ Almost 100 per cent respondents have gone through the following emotions, i.e., feeling of loneliness, lack of attention, lack of confidence and higher stress level due to changes occurring during the adolescent phase.
- ❑ About 77 per cent of respondents have idea of physical and psychosocial changes occurring during the adolescent phase but from the open-ended questions it was found that almost all the respondents do not know about causes and processes of such changes.
- ❑ More than 90 per cent respondents received some information about the changes occurring during the adolescent stage from books, friends and family members. Around 5 per cent received the information from other sources. Although, the information imparted was not sufficient and scientific.

- ❑ As far as spending time was concerned, around 90 per cent respondents claimed to spend time with family and friends, whereas approximately 10 per cent liked to spend time alone.
- ❑ Around 25 per cent respondents claimed that they were included in the family's decision-making, 15 per cent were not included, whereas 60 per cent were included only sometimes. Thus, around 75 per cent felt left out in the family decision-making process during this stage.
- ❑ Around 7 per cent respondents were unaware of the harmful effects of early marriage, whereas 93 per cent were aware of various maladies and ill effects as a result of early marriage, i.e., high maternal morbidity and mortality, improper physical and mental growth of the child born to the young adolescent mother.
- ❑ More than 50 per cent of adolescents were unaware of the reproductive rights and responsibilities of adolescents.
- ❑ About 95 per cent of respondents had heard of AIDS/HIV but 68 per cent of respondents did not have any idea of occurrence, mode of infection and symptoms of AIDS.
- ❑ Almost 92.62 per cent respondents were supportive of small family size, whereas 7.38 per cent respondents were not in favour of small family size.

CONCLUSION

The study confirms the need to focus on adolescents' developmental needs of knowing the phenomenon and significance of adolescence, as a developmental phase in life. The emotional turmoil and insecurities are invariably experienced by all adolescents and the requirement to build emotional strength but there is a dearth of programmes to deal with it. Though loneliness is uncommon among adolescents, yet it has to be identified and handled. The area of reproductive rights, responsibilities and health requires focus in nutrition and health interventions. Care has to be taken by the families that adolescents do not feel ignored in the matter of family decisions, as it could be a major triggering point of lowering of their self-esteem and loss of self-confidence.

Evaluation of Sex Education and AIDS Prevention Project in Secondary Schools of Pune City

Pratinidhi A K, Gokhale R M, Karad S R. Indian Journal of Community Medicine, July-September 2001; XXVI (3): 155-161.

INTRODUCTION

Presently, there is neither a drug treatment for cure of AIDS nor any effective vaccine to prevent the disease by medical intervention. Hence, health education, i.e. IEC (Information, Education and Communication) activities bringing about behavioural changes in the community, promoting healthy sexual behaviour and preventing the risk is the best possible solution to the problem of AIDS. Majority of the victims of HIV/AIDS are very young (under the age of 30 years) and in the sexually active phase of life. Promotion of safe sex practices and prevention of high risk behaviour by sex and AIDS education to secondary school children can be considered as the most cost-effective way of combating AIDS, as school children are easily accessible.

OBJECTIVES

To determine the change after training in relation to : (i) Sex knowledge; (ii) AIDS knowledge; (iii) Attitude towards HIV-infected person; and (iv) Decision making skills for promoting healthy sexual behaviour.

METHODOLOGY

For selection of sample, stratified random cluster sampling method was adopted. From each stratum, schools were randomly selected in which a cluster of 20 students was then identified from each selected school. The Headmaster/ Principal, two nodal teachers and two peer educators from each school were interviewed. Thus, it included 600 students, 60 peer educators, 60 nodal teachers and 30 headmasters. In addition to pre and post training, self-filling of close-ended questionnaire, observations were made on AIDS-related activities in the school like, essay competition, drama, street march, etc. Anonymity and confidentiality were maintained throughout the study.

RESULTS

- ❑ The highest scores in areas of sex knowledge, attitude and decision-making skills were observed in XI standard students and these were also significant ($p < 0.05$, $p < 0.001$, < 0.001 respectively).
- ❑ There was a significant improvement in the three areas of testing for both IX and XI standard students, except in decision making skill for which, XI standard students when tested independently.
- ❑ Improvement in the area of attitude was maximum for IX standard students followed by AIDS and sex related knowledge, whereas, for XI standard students same level of increase, i.e. 21.43 per cent, was seen in all the three areas. Improvement in decision making skills appeared to be most difficult.

- ❑ Post-training mean total score was significantly higher for XI standard students as compared to IX standard students, with significant improvement in each area.
- ❑ The total mean post, training scores were significantly higher in the peer educators as compared to the students of the corresponding standards. A marked improvement in post-training phase was seen in both, IX and XI standard peer educators, but it was significantly more in the XI standard peer educators. A higher mean score was seen for attitude of the peer educators of XI standard as compared to the students of the same standards, as they had received training in the specially conducted two days workshops by Sevadham Trust.
- ❑ It was observed that the students having access to mass media, i.e., television, radio and newspaper had higher scores of total mean marks as compared to those who did not have access to any mass medium and the difference was statistically significant. The significant difference in the total mean marks persisted even in the post-training phase.
- ❑ Most of the Headmasters/Principals were convinced about the necessity of AIDS and Sex Education Programme. The difficulties painted out by them were inability to spare time and limited capacity for conducting the AIDS and sex education activities. To sustain the programme, training of more teachers as nodal teachers was suggested. Similar response was received from the nodal teachers, with emphasis on need as per the local situation.
- ❑ The peer educators told that when AIDS and sex education was given by them to the general student population, some students asked questions and peer educators could not give satisfactory answers to all the questions. Hence, they demanded periodic visits by the training team to answer these queries.
- ❑ The students were eager to know more and had many doubts, questions about sex and AIDS and felt embarrassed to ask such questions from their teachers and parents. Hence, they recommended that a 'Question Box' should be kept in all schools, wherein the students can drop chits of questions.

CONCLUSION

Educational intervention strategy is useful for improving the knowledge of the students in relation to sex and AIDS, mode of transmission of STDs and HIV and importance of healthy sexual behaviour, with the help of peers and specifically trained teachers.

Effectiveness of Various IEC in Improving Awareness and Reducing Stigma Related to HIV/AIDS among School Going Teenagers

Raizada N, Somasundaram C Mehta JP, Pandya VP. Indian Journal of Community Medicine January-Mar 2004; XXIX (1): 30-34.

INTRODUCTION

Stigma and discrimination relating to HIV/AIDS undermines public health efforts to combat the epidemic and negatively affects preventive behaviours such as condom use, HIV test-seeking behaviour and quality of care given to HIV-positive patients. Therefore, decreasing stigma is a vital step in stemming the epidemic. Thus, it is critical that interventions which effectively reduce AIDS stigma be identified and implemented.

OBJECTIVES

The major objective of the study was to find out the effectiveness of various IEC activities in improving awareness and reducing HIV/AIDS-related stigma among adolescents of age group 15-19 years.

METHODOLOGY

A simple random sampling technique was used to select 7 High schools and therein 1000 students, including 620 boys and 380 girls from class XI & XII were randomly selected and equally divided into 4 groups according to intervention methods - interpersonal communication, distribution of pamphlets, AIDS educational movie and combination of all three methods. A questionnaire was developed to assess knowledge and stigmatising attitudes of the respondents before intervention (pre-test), after intervention (post-test) and after a time period of 3 months follow up.

RESULTS

- ❑ It was observed that the reduction in coercive attitude towards people living with HIV/AIDS (PLWHA) was higher among Group-4 (23-33%) as compared to Group-1 (21-26%), i.e., maximum reduction was seen where all the three methods were used.
- ❑ Interpersonal communication was most effective while pamphlets was found to be least effective as far as individual methods were concerned.
- ❑ A reduction in avoidant behavioural intention towards PLWHA was maximum in Group-4 (6-39%), followed by Group-1 (15-19%). Minimum involvement was observed in Group-2.
- ❑ Reduction in the blaming attitude towards (PLWHA) was seen to be maximum in case of Group-4 (28-33%), followed by Group-1 (9-18%), while Group-2 showed a reduction of 7-8s per cent and Group-3 of 4-11 per cent.
- ❑ Sympathetic feeling towards PLWHA increased after 3-months follow-up and was maximum in Group-4 (21-32%) followed by Group-1 (13-21%), whereas minimum improvement was observed in Group-2.

- The awareness and knowledge regarding HIV/AIDS ranged from 32-40 per cent in Group-1, 32-41 per cent in Group-2, 34-43 per cent in Group-3 and 30-46 per cent in Group-4 before interventions. After intervention, awareness level rose upto 81 to 100 per cent in all the four groups. The high awareness level was sustained till the time of follow-up in all four groups which ranged from 70-90 per cent in Group-1, 60-76 per cent in Group-2, 62-96 per cent in Group-3 and 72-96 per cent in Group-4.

CONCLUSION

Frequent interpersonal communications and sensitisation on stigma-related issues among in HIV improves the attitude of adolescents towards PLWHA. Appropriately designed training material helps in reducing avoidant behaviour, blaming attitude towards PLWHA and enhances sympathetic attitude towards them. Thus, socially desirable responses towards PLWHA can be inculcated among adolescents to help rehabilitate PLWHA.

Inclusion of the topic of HIV/AIDS in the curriculum with frequent updating is desirable and inter-personal communication programmes like debates, chat-shows, interactive sessions, will be more effective in building healthy and supportive attitude of adolescents towards PLWHA.

Reproductive and Sexual Health Education, Care and Counselling for Married Adolescents in Rural Maharashtra

Pande Rohini, Kuz Kathleen, Wodia Sunayana, Mac Quarrie Kerry, Jain Saranga, KEM Hospital Research Centre (KEM), Pune in "Improving the Reproductive Health of Married and Unmarried Youth in India. Evidence of Effectiveness and Costs from Community-based Interventions. Final Report of the Adolescent Reproductive Health Program in India, International Centre for Research on Women (ICRW, 2006:15-17)".

INTRODUCTION

The study examined the feasibility and effectiveness of providing a package of services in a rural community to improve married adolescents' sexual and reproductive health knowledge and status, and use of services.

OBJECTIVES

The main objective of the study was to test whether it was possible in a rural area to overcome the limitations of providing only health education without clinical services or only clinical services with no health education by integrating the two and simultaneously providing both sets of services.

METHODOLOGY

The feasibility study was undertaken in Dhamari village in Pune district of Maharashtra. The study population included 129 couples, comprising of married male and female adolescents and young adults from the ages of 14 to 25 years. Interested local school teachers were trained as reproductive health educators and lay counsellors, besides training various levels of health providers in reproductive health education and to recognise and refer people for counselling or health services. Parents, in-laws, kins and other community members informally participated in all activities.

The package incorporated seven sessions of reproductive health education (RHE); sexuality counselling sessions for young married couples; and clinical referral for those who needed treatment for reproductive morbidities. In addition, the model added marital counselling, a service rarely provided to rural youth. The feasibility of the integrated approach was assessed. The baseline-endline comparisons captured any changes that might have taken place in adolescent reproductive and sexual health knowledge.

RESULTS

- ❑ Results show that the extent of participation and intervention feasibility varied for the three elements. Community-level educators were effective, people accessed the counselling services and a large proportion of clinical referrals came from the other two elements of the programme.
- ❑ In both phases of the intervention, more than two-thirds of the educators were able to conduct sessions effectively.

- ❑ Attendance at health education showed more mixed results, While close to 90 per cent of the eligible couples attended at least one session, about three-quarters attended four of the seven sessions and less than half attended the full series of sessions due to work or childcare responsibilities, not getting permission from family elders and in some cases seasonal migration.
- ❑ Before the intervention, no sexuality counselling was available to this population. During the intervention, almost a third of the couples attended a counselling session and more than half returned for follow-up sessions.
- ❑ An increase in usage of clinical services for several reproductive symptoms, and a large proportion (70%) of all referrals was from the health education sessions.
- ❑ Those who attended four of the seven health education sessions had similar levels of change as those who attended the full course. Those who attended at least four sessions, had better knowledge about antenatal care and recognition of certain danger signs during pregnancy.
- ❑ Most youth were aware at the endline that both irregular menses among women and semen problems among men can cause infertility.
- ❑ Awareness also improved with respect to condom use as a way to prevent STIs and HIV; the need to treat partners as a part of STI treatment; and knowledge of the specific ways to test for HIV. The increase in condom awareness in the context of HIV was particularly noteworthy. At baseline, only 37 per cent of respondents mentioned condom use as important for HIV prevention, but it more than doubled to 83% by the endline.

CONCLUSION

Qualitative data and feedback from the community are consistent with the quantitative findings about the feasibility of this approach. The qualitative data suggests that couple communication increased where husbands and wives had previously been reluctant to discuss sexuality and reproduction with each other. The community's appreciation of this intervention was clear from their request to KEM to start such a programme with unmarried girls, pointing out that girls need reproductive and sexual health information before they get married.

The Need of Sex Education among Youths: Present Perspectives and Future Prospects

Tiwari V K, Kumar A. Demography India 2002; 31 (1): 129-159.

INTRODUCTION

The adverse social, demographic, economic and health implications of pre-marital sex is becoming the subject of common concern and discussion all over the world. Due to several positive developments like improved nutrition and better health care, puberty now begins quite early among youth. Generally, girls enter puberty between age 8 to 13 years and reach menarche thereafter, while boys enter puberty between ages of 9 to 14 years. As a result, their interest in sexual desire increases due to hormonal changes and young people's decisions and experiences during their transition to adulthood can affect rest of their lives.

OBJECTIVES

The main objective of the study was to explain the need of sex education among adolescents and youth and to also discuss future prospects.

METHODOLOGY

Adolescent boys and girls aged 15-24 years from schools, colleges, working women's hostels and slums of Delhi and Lucknow were randomly selected. The total sample consisted of 2,107 respondents from Delhi and 1,146 respondents from Lucknow. A self-administered anonymous and structured questionnaire was used to gather the information from urban areas while in case of slums the interview method was used. The technique of Focus Group Discussion was used at least with one group from each category to cross-check findings and also to get additionally qualitative information.

RESULTS

- ❑ In Delhi, more females (29.7%) were aware about the fertile period than males (23.8%). However, in Lucknow the knowledge among females was less (19.3%) than males (20.2%), though the difference in level of knowledge being less. Knowledge among males (22.2%) and females (26.9%) is found in combined sample.
- ❑ Approximately one-third of respondents were not knowing at least one symptom of early pregnancy. Such respondents were 38 per cent in Lucknow and 34 per cent in Delhi. Most prominently known symptoms of early pregnancy were 'Stopping of menses' (42.5%) and 'Morning sickness/nausea' (33.4%).
- ❑ Condom and oral pills were known among 60.6 per cent and 58.1 per cent of respondents, respectively. The Copper-T, tubectomy, and vasectomy were known among relatively lesser proportion of respondents (41-48%). Knowledge about injectibles, implants and emergency contraceptives was almost nil among various categories of youth and was found very low (7-17%) among medical professionals.

- ❑ Most widely known sources of availability of condom among adolescents and youths was government dispensary/hospitals and medical stores/general stores. The next known source was private, clinic/hospitals (32.5%) and the poorly known source was the depot holder (29.3%). This was most likely due to the fact that depot holders are part of government family welfare programme and unmarried adolescents and youth may not have access to them.
- ❑ Less number of females (29.7%) knew about the provisions of the MTP Act than males (35.4%). Knowledge among male and female respondents was more in Delhi, in comparison to their counterparts in Lucknow.
- ❑ The ignorance about the appropriate place of abortion was more among female respondents (50.9%) than male respondents (34.4%). However, private nursing homes/clinics were most preferred answer (35.9%) in Delhi (37%) and Lucknow (34 %) and also among both the sexes - males (39.6%) and females (31.8%). The three prominent difficulties as perceived by the respondents regarding seeking abortion service were 'Social stigma', 'High fees in private clinics' and 'Lack of confidentiality in Government hospitals.'
- ❑ Around 13.6 per cent of respondents in Delhi and 20.2 per cent respondents in Lucknow did not know at least one consequence of HIV/AIDS. Though sex differential about not knowing at least one consequence was almost nil in Lucknow. However, in Delhi more females (16.2%) were ignorant than males (10.8%). The second well-known consequence of disease was found to be "Social stigma" while the first one remained to be "Death".
- ❑ The most widely known precautionary measure among respondents were 'not to go for sex with strangers' and multiple partners (73.4%) followed by 'avoid sex with commercial sex workers' (72%) use of condom during sex if unavoidable (71.4%). About 66 per cent respondents replied 'not to indulge in homosexuality'; 'keeping away from drugs and developing interest in other than sex as other precautionary measures.
- ❑ The male respondents (70%) are twice more likely than female respondents (32.5%) to develop sexual relations with their friends of opposite sex in near future.
- ❑ Around 26.3 per cent males had ever experienced sex in Delhi as compared to 34.4 per cent males in Lucknow. In case of females, the figure was reported as 5.8 per cent in Delhi as compared to 8.1 per cent in Lucknow. Thus, it was clear that higher percentage of males and females in Lucknow had indulged in pre-marital sex than in Delhi.
- ❑ In case of males, about 83 per cent and in case of females, about 92 per cent pre-marital sex partners are close people and important to note that percentage of relatives as partners is more in case of females (13.9%) as compared to males (11.0%). Further, it was found that it was the slum male youth (19%) who are visiting commercial sex-workers, as confirmed from focus group discussion organised in slums.
- ❑ About 65.4 per cent respondents (68% males and over 58% females) reported that condoms are used during such sex relationship and around 14 per cent respondents reported that contraceptives are not used mainly 'due to unplanned sex' (56%), 'hesitation in asking for contraceptives (39.3%), 'fear of side effects' (34.3%), 'due to reliance on traditional method (33.5%). Around one-third of youth quoted 'lack of proper information about source of contraception' as the reason for not using condom.

- ❑ More percentage of females (32.6%) were in favour of starting sex education earlier (11-14 years age group) than males (20.9%). However, the age group of 15-18 years emerged as most consensual among both the sexes for imparting sex education.

CONCLUSION

The findings of the study further strengthen the strategy and contents for the promotion of sex education. Organised and serious efforts are required to make youths aware about and multiple dimensions of physical and social-economic consequences of premarital sex. For developing sex education, information is required not only from males and females but, also across various socio-economic groups. The encouraging factors analysed in the study were more exposure to sex through mass media, influence of western culture, cherished behaviour among friends, lack of parental monitoring, more opportunities for them to be outside home for longer duration, increasing migration of youth in search of better education and employment opportunities, etc. There is a widening gap between exposure to sex and the lack of organized efforts for sex education among males and females in formal, as well as informal set up.

In India, sex education has still not reached a large majority of adolescents and youth. Health planners, Policy makers and NGOs should include the schemes for welfare of vulnerable groups like, street children and poor youth living in slums in order to protect them for becoming potential risk due to their sheer ignorance and indulgence in safe sex.