CROSS SECTIONAL STUDY REGARDING KNOWLEDGE, ATTITUDE AND AWARENESS AMONG ADOLESCENTS ON HEALTH, NUTRITION AND PSYCHOSOCIAL ASPECTS
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ABSTRACT: OBJECTIVE: To determine the awareness among medical and paramedical adolescent students regarding various aspects like nutrition, health and psychosocial, and to educate them on those issues. MATERIALS AND METHODS: This is a cross sectional descriptive study. We used pre-tested, structured, self-administered questionnaire regarding various aspects of adolescence like nutrition, health, education, development, and psychosocial factors. The questionnaire was developed after review of literature and pilot tested. Study subjects included 400 adolescent college going students between the age group of 16-19 years, studying in medical, pharmacology and nursing colleges. RESULTS: Of the 400 adolescent students, 47.3% were aware of daily nutritional needs, 43.8% were aware of usage of fats and oils, 49% were aware about the health care during pregnancy, 35.5% of them use helmet and 20.5% of them had suicidal tendencies. CONCLUSION: The knowledge regarding nutrition and development were good where as in some like health and psycho social aspects, the knowledge and attitude were similar to nonmedical / paramedical students of same age group in various other similar studies and thus there is a need for special adolescent education in medical and paramedical students.
KEY WORDS: adolescence, health, nutrition.

INTRODUCTION: Adolescents are young people between the ages of 10 and 19 years. According to WHO, nearly 2/3rd of premature deaths and 1/3rd of total disease burden in adults are associated with conditions or behavior that began in their youth, including: tobacco use, a lack of physical activity, unprotected sex or exposure to violence. Adolescence is a period of rapid development with changes in body shape and size. In addition to physical changes that occur, there is progress in maturation of cognitive, Psychological and social abilities.

Adequate nutrition, healthy eating habits and physical exercise at this age are foundations for good health in adulthood. At the peak of the adolescent growth spurt, the nutritional requirements may be twice as high as those of the remaining period of adolescence. Fast food restaurants have changed the way adolescents eat and contribute significantly to health problems. Soft drinks are a major source of added sweeteners in the diets of adolescents1, and increasing intake of caffeinated drinks, with increasing media advertisements2. If these eating habits become established, they could place young people at a higher risk for certain chronic illnesses, especially for cardiovascular diseases and certain forms of cancers3. The BMI limitations are useful in clinical and population health to identify over fat adolescents and those who have greater risk of developing weight-related cardiovascular diseases4.

Self-consciousness increases exponentially in response to the somatic transformations of puberty. Girls, in particular, are at risk for viewing themselves as overweight. Severe body image distortions, such as anorexia nervosa, also tend to appear at this age. Bulimia which is
more common than anorexia can occur in up to 5% of adolescent females. The condition may be then perpetuated by the biochemical changes induced by weight loss, ketosis, and the impact of the ensuing malnutrition on the brain (starvation illness). Healthy diet can prevent health problem such as obesity, dental caries and iron deficiency anemia and lowers the risk of three leading causes of death; cancer, heart disease and stroke.

Adolescents are self conscious about their appearance. Acne can cause lowered self esteem and social withdrawal. Unfortunately relatively few adolescents see clinician for treatment; instead using over - the- counter preparations that are aggressively marketed to a vulnerable audience.

Sexuality includes not only sexual behaviors but also interest and fantasies, sexual orientation, attitudes toward sex and its relationship to emotions, and awareness of socially defined roles and mores. Reliable information about sexuality in general and contraception in particular, remains sparse. Ready access to pornography on the Internet may increase the risk of premature sexual activity or exploitation. Up to 60% of all new HIV infections occur among 15 to 24 year olds. According to WHO every day 2400 more young people get infected with HIV and globally there are more than 5 million young people living with HIV /AIDS. Currently only 36% of young men and 24% of young women have comprehensive and correct knowledge that they need to protect themselves.

Some of the health issues affecting young people are early pregnancy and childbirth. About 16 million girls aged 15 to 19 years give birth every year, roughly 11% of all births worldwide. Vast majority in developing countries. Conditions associated with pregnancy under the age of 15 years are preterm birth, still births, low birth weight (4 times higher), sudden infant death syndrome (SIDS) (3 times higher), congenital malformations (1.5 times) more than other ages. Pregnant adolescents are more likely to have unsafe abortions. Pregnant teens have long term socio economic disadvantages including lack of advancement in education, poverty and poor out comes in emotional and social development of their children.

Alcohol use starts at a young age. worldwide14% of adolescent girls and 18% of boys in low and middle income countries are reported to use alcohol. It reduces self control and increases risk behavior. Worldwide, 5% of all deaths of young people between the ages of 15 and 29 year are attributable to alcohol use. Vast majority of tobacco users worldwide began when they are adolescents. Today an estimated 150 million young people use tobacco.

Rubella and congenital rubella syndrome were documented as significant public health problems. A comprehensive approach is necessary, including introducing rubella vaccine in the routine program, assuring immunity among women of child bearing age, strengthening routine immunization, integrating rubella surveillance with measles.

India, with approximately one sixth of the world's population, bears one fifth of the world's burden of cervical cancer. Vaccines preventing human papillomavirus (HPV) infection, the primary cause of cervical cancer, offer dramatic new opportunities for reducing cervical cancer related deaths. Increase in incidence rates for some HPV-associated cancers and low vaccination coverage among adolescents underscore the need for additional prevention efforts for HPV-associated cancers, including efforts to increase vaccination coverage.

Unintentional injuries are leading causes of death and disability among young people. Road traffic injuries take the lives of staggering 1049 young people every year.

Injuries are major threat to adolescent health. Apart from being a leading cause of death among young people, injuries are also recognized as major contributory factors to morbidity, disability and other costs such as lost future work and quality of life. According to WHO in European countries, head injuries contribute to around 75% of deaths among motorized two-
wheeler users; in some low-income and middle-income countries head injuries are estimated to account for up to 88% of such fatalities.

**MATERIALS AND METHODS:** This is a cross sectional descriptive study conducted in B.G. Nagara, mandya district, Karnataka, India. We used pre-tested, structured, self-administered questionnaire among study subjects containing their socio demographic profile and the questions regarding various aspects of adolescence like nutrition, health, education, development, and psychosocial factors. The questionnaire was developed after review of literature and pilot tested.

Study subjects included adolescent college going students between the age group of 16-19 years, studying in medical, pharmacology and nursing colleges. Data was checked for missing values, entered and analyzed using SPSS version 16. Statistical data contains percentages and proportions.

**RESULTS:**

**Table 1.** Distribution of study subjects with respect to awareness regarding nutrition among study subjects

<table>
<thead>
<tr>
<th>SL NO</th>
<th>NUTRITION</th>
<th>AWARENESS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exclusive breast feeding</td>
<td>371</td>
<td>92.8</td>
</tr>
<tr>
<td>2</td>
<td>Junk foods and obesity</td>
<td>376</td>
<td>94</td>
</tr>
<tr>
<td>3</td>
<td>Vitamin D source</td>
<td>319</td>
<td>79.8</td>
</tr>
<tr>
<td>4</td>
<td>Vitamin A deficiency</td>
<td>231</td>
<td>57.8</td>
</tr>
<tr>
<td>5</td>
<td>Quality proteins</td>
<td>271</td>
<td>67.8</td>
</tr>
<tr>
<td>6</td>
<td>Oil and fat</td>
<td>175</td>
<td>43.8</td>
</tr>
<tr>
<td>7</td>
<td>Daily nutrition</td>
<td>189</td>
<td>47.3</td>
</tr>
</tbody>
</table>

47.3% are aware of daily nutritional needs, 43.8% are aware of usage of fats and oils, 49% are aware about the health care during pregnancy, and nutritional needs. The knowledge about daily vitamin requirements and its availability is not uniform among students, awareness among nursing students is less, compared with medical students requires education (data not shown).

**Table 2.** Distribution of study subjects with respect to awareness regarding health among study subjects

<table>
<thead>
<tr>
<th>SL NO</th>
<th>HEALTH</th>
<th>AWARENESS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Early pregnancy/age of marriage</td>
<td>368</td>
<td>92</td>
</tr>
<tr>
<td>2</td>
<td>Acne and oily diet</td>
<td>175</td>
<td>43.8</td>
</tr>
<tr>
<td>3</td>
<td>Delivery by trained personnel</td>
<td>339</td>
<td>84.8</td>
</tr>
<tr>
<td>4</td>
<td>Sports and games</td>
<td>278</td>
<td>69.5</td>
</tr>
<tr>
<td>5</td>
<td>Alcohol and smoking hazards</td>
<td>360</td>
<td>90</td>
</tr>
</tbody>
</table>

Risk of pregnancy before 18 yrs was known among large majority of pupils (92%), and knowledge of all deliveries that should be conducted by trained personnel was 84.8%. Around 90% had told that occasional consumption of smoking and alcohol is acceptable.
Table 3. Distribution of study subjects with respect to awareness regarding psychosocial issues among study subjects

<table>
<thead>
<tr>
<th>SL NO</th>
<th>PSYCHOSOCIAL</th>
<th>AWARENESS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use of helmet</td>
<td>142</td>
<td>35.5</td>
</tr>
<tr>
<td>2</td>
<td>Need for sex education</td>
<td>359</td>
<td>89.8</td>
</tr>
<tr>
<td>3</td>
<td>Age of voting</td>
<td>351</td>
<td>87.8</td>
</tr>
<tr>
<td>4</td>
<td>Female infanticide</td>
<td>346</td>
<td>86.5</td>
</tr>
<tr>
<td>5</td>
<td>Population control</td>
<td>208</td>
<td>52</td>
</tr>
<tr>
<td>6</td>
<td>Suicidal tendencies</td>
<td>82</td>
<td>20.5</td>
</tr>
<tr>
<td>7</td>
<td>HIV transmission and usage of condoms to prevent transmission</td>
<td>253</td>
<td>88.3</td>
</tr>
</tbody>
</table>

Knowledge regarding need for usage of condoms to prevent transmission of HIV and other STD’s, female infanticide and population control was 88.3% and uniform in all sectors of studying subjects.

Table 4. Distribution of study subjects with respect to awareness regarding growth and development among study subjects

<table>
<thead>
<tr>
<th>SL NO</th>
<th>GROWTH AND DEVELOPMENT</th>
<th>AWARENESS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Growth in adolescents</td>
<td>287</td>
<td>71.8</td>
</tr>
<tr>
<td>2</td>
<td>Intra uterine growth</td>
<td>196</td>
<td>49</td>
</tr>
</tbody>
</table>

Regarding growth and development, the growth spurt during adolescence is known in 71.8% subjects. The effect of pregnant women working habits on fetal growth was known only among 49%.

Table 5. Distribution of study subjects with respect to awareness regarding education among study subjects

<table>
<thead>
<tr>
<th>SL NO</th>
<th>EDUCATION</th>
<th>AWARENESS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acquiring knowledge</td>
<td>227</td>
<td>56.3</td>
</tr>
<tr>
<td>2</td>
<td>Internet usage</td>
<td>178</td>
<td>44.5</td>
</tr>
<tr>
<td>3</td>
<td>Extracurricular involvement</td>
<td>278</td>
<td>69.5</td>
</tr>
</tbody>
</table>

Only 35.5% of students admitted that they wear helmet while riding two wheelers and Suicidal ideation were noted among 20.5%.

Figure 1. A pie diagram showing adolescents taking beverages
**Figure 2. A pie diagram showing in adolescent subjects with whom they share their feelings better**

- Coffee/tea 55%
- Pepsi/Cola 25%
- Milk 20%

**Figure 3. A pie diagram showing adolescent decision making on career**

- Parents 65%
- Friends 25%
- Siblings 10%

**DISCUSSION**: According to Misra A et al., School based, pretested questionnaire among 8-18 years, knowledge about protein was 14-17% & carbohydrate was 25-27% & fat was 18-32%. In our study, knowledge about oils and fats was 43.8% and protein 67.8% which is better.

According to Kapil U et al., knowledge that obesity is caused by excess intake of calories than required was known among 90.78% of adolescent school girls and 55.93% had incorrect knowledge about diet during pregnancy. In our study knowledge about diet during pregnancy was 49% which was equally comparable.

A cross sectional study by Sabya Sachi Ray et al, in school girls between 10-19 years showed, only 18% had good knowledge about puberty, puberty related problems and their prevention. 19.6% did not have any idea about mode of transmission of HIV/AIDS. In our study,
awareness about early marriage and pregnancy was 92%. Knowledge about HIV transmission and usage of condoms to prevent transmission was 88.3%. About 11.7% were not aware of the same. Comparatively in our study subjects has better knowledge about puberty and related problems.

According to Le Master PL et al, 50% of American Indian adolescents reported to use cigarette smoking.

According to Dechenla Tsering et al study conducted in West Bengal, India, level of knowledge about harmfulness of substance use among students was 84.6% in urban and 61.5% in rural high school students. Among 416 students 52 (12.5%) used or abused any one of the substance. Thus they concluded that in spite of being aware of harmful effects of substance use, adolescents take up this habit. In our study awareness of alcohol and smoking hazards were known among 90% of the subjects which is marginally better.

Reshma P Gadkari observed that, internet, pornographic movies, books and hindi movies were used as sources of information about sex by 17%, 18%, 40% and 24% of subjects respectively above the age of 15 years. In our study internet usage was up to 44.5% as a source of information about sex and pornography.

Global suicidal rate stands at 14.5 deaths per 10,000 as per The Lancet (vol363, P 1117) with suicide being fourth leading cause of death in 15-19 years of age group. Suicidal ideations were noted among 20.5% of our study subjects.

Usage of helmet among two wheelers was noted only among 35.5% of our study group. Knowledge about nutritional needs, puberty and related problem, hazards of substance use was better than in other studies. But knowledge about diet during pregnancy, HIV transmission was similar to other study groups. Consumption of smoking and alcohol were acceptable up to 90% of subjects. Hence the knowledge about health hazards did not have impact on the habit. Similarly very low usage of helmet among two wheelers showed the risk taking behavior. Suicidal ideation among almost one fifth for the students shows the magnitude of risk and the lack of ability to cope up with the situation.

CONCLUSION: Study group were medical and paramedical students in their late adolescence. The knowledge regarding nutrition, development and hazards of substance use were marginally high in our study group where as in some like health and psycho social aspects, the knowledge and attitude were similar to nonmedical / paramedical students of same age group in various other comparative studies.

Promotion of healthy lifestyles and reduction in health risk behaviors helps youths make decisions to prevent disease, and help long term positive health practices. Many youths need to realize that they are vulnerable, but they also need practical knowledge and skills. There are some major health issues of adolescents like dietary behavior, drug and alcohol, sexual behavior, injuries and physical activities. Healthy lifestyles and behaviors require correct knowledge, resources, and motivation. If the provider helps channel the motives, priorities and goals of the adolescents, then health promotion will succeed.

LIMITATIONS OF THE STUDY: The number of students were 400, belonging to medical and Paramedical colleges. More number of students and students from different parts of rural and urban areas might give better statistical results.

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