

THE HEALTH SITUATION OF ADOLESCENTS: A LITERATURE REVIEW

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ABSTRACT

This review paper addresses the health situation of the adolescents. Most of the studies we found were conducted in countries other than Bangladesh. The medical care of the adolescent has always been neglected in the developing world until recently. While their medical needs are now being considered with an increased emphasis, their psychosocial needs, which are so important have not been adequately addressed. A few studies have been conducted in Bangladesh on issues of reproductive health. These studies suggests that early marriage is a serious problem for adolescent girls resulting in early pregnancy and thus enhances other reproductive health problems.

WHAT IS ADOLESCENCE?

Adolescence is a period of transition from childhood to adulthood marked by changes in the body, the mind, and in social relationships (1). Adolescence has been defined chronologically by the World Health Organization as being between the ages of 10 and 20, which identifies the precise timing of the biological, social, and psychological changes that characterize it (2).

In the western World, about 20% of the population are in this age group, while in Bangladesh it is around 22% (3).

IMPORTANCE OF ADOLESCENT HEALTH

Adolescent health is considered important for the development of human being during the transition from childhood to adulthood. It has a long lasting influence during the rest of the life. Some salient features are listed below:

- o Significant increase in the physical dimensions are observed during this phase (4).
- o Nutritional requirements increased during this period.
- o Transition of behaviour in relation to family and social context.
- o Change of position in family and society.
- o About 80% of women get pregnant during adolescence.

FACTORS AFFECTING ADOLESCENT HEALTH

The socio-cultural context in which adolescent development takes place has a profound influence on individual health. Adolescent health depends on two vital factors: environmental and behavioural.

NUTRITION IN ADOLESCENCE

Adolescence is a period of rapid change and development. Female adolescents usually complete their growth by the age of 15 years, but they are not physically mature until 4 years after menarche, which occurs, on an average by the age of 17. During this period they need sufficient nutritious foods. Moreover, pregnancies increase the nutrition needs of adolescents (5).

A study showed that adolescents crave for sweets which helps them obtain energy they needed (6). Kapil et al (7) reported that a majority of the Indian adolescents have a correct

knowledge about their diet during diarrhoea, pregnancy and lactation.

Indian urban adolescent girls have correct knowledge on breast-feeding but they do not know about the role of diet in breast-milk secretion. They also know about the hazard of bottle feeding (8).

The adolescent girls of BRAC's NFPE programme have better knowledge on health and nutritional aspects than the adolescent girls who never went to school or are in the formal education.

In British adolescents, low energy intake results in low mineral intake. This is of great concern to most of the adolescents' parents (9).

In the USA, there was a high preference for fatty and fried foods and a low preference for desserts and sugared foods. Males preferred a great variety of foods than female particularly for meat and wild game (10).

In the USA, clinical evidence of folate deficiency in adolescents is rare but consumption of folate may not be optimal in female adolescent (11).

The fact that the nutritional status influences the age at which menstruation begins is fairly certain. The mean body weight of an Indian rural girl at the age of 14 years, which is the mean age of menarche, is 33.5 kg. This value is essentially similar to the 34.3 kg of urban girls at the age of menarche (12).

Sarojini and Vijayalakshmi (13) commented that recommended dietary allowance (RDA) for adolescents must be as per their activity level.

EARLY MARRIAGE

Early marriage, particularly for women, is a social problem and it affects adolescent health adversely. Although legislation prohibits marriage for girls under 18 years, the fertility survey found that 25% of 14 years old girls in Bangladesh, and 34% in Nepal were married (14). The trend for early marriage is more common in rural areas.

The average age of marriage was found 16.5 years in Manikganj, Bangladesh (15). In rural Bangladesh, the girls are expected to get married once they have reached menarche (16). After the onset of menarche, adolescent girls experience different kinds of pains and urinary tract infections (17).

A notable number of girls (11%) are married even before their menstruation starts, a practice which may be more common in Hindu community (18).

EDUCATION

In most cases in rural Bangladesh, adolescent girls stop education after they get married and start bearing children (16). Girls with 10-12 years of education got married 3 years later than girls with no education. Primary education had a minor effect (<4 months). Only 43% of the adolescent girls had a say in their marriage arrangements (18). The literacy rate among adolescents in Bangladesh is low: 33.2% among boys and 25.6% among girls (3).

EMPLOYMENT

Table 1. Age-specific labour force (percentage)

Age in years	1981		1983-84		1989	
	M	F	M	F	M	F
10-14	35.2	3.4	38.0	8.1	40.9	31.3
15-19	65.6	4.1	69.8	7.0	70.7	55.2
20-24	80.1	4.5	85.6	8.7	82.5	64.9
25-29	90.0	4.7	96.5	7.7	96.5	68.9

BBS (3)

The sharp increase in participation of adolescent girls in labour force during 1989 was due to a new definition introduced to calculate the women labour. Besides, during recent years, actual involvement of adolescent girls in labour force has increased due to the rapid growth of garments industry in urban areas and NGOs in rural areas.

MORTALITY

Mortality among adolescents is generally low. The mortality rates among the females are more than males. The major causes of mortality among the female adolescents are: complications of pregnancy, child birth and the puerperium (19).

Table 2. The age specific mortality rate

Age in years	Male	Female
15-19	0.9%	2.8%
20-24	2.2%	3.1%
25-29	2.8%	2.5%

Rahman (20)

Maternal mortality

Maternal deaths in some parts of Asia have been shown to be five times higher among the girls aged 10-14 years than among the women aged 20-24 years (21). In Bangladesh maternal mortality rate (MMR) was 5.4 per 1,000 live births (under 19 years), and 2.7 per 1,000 live births (20-24 years). Age was not found to be a factor in the specific causes of deaths (22). According to BBS-UNICEF report, MMR in Bangladesh in 1994 was 4.5 per 1,000 live births.

USE OF CONTRACEPTION

In the USA, teenagers were far more likely to use contraceptives in the 1980s rather than the 1960s or even 1970s (23). In Kenya, most of the sexually active adolescent (89%) have never used contraceptives. Fewer than 8% could correctly identify the fertile period in women's menstrual cycle (24). In Chile, 48% of female and 57% of male adolescents use contraceptives (25).

Lack of knowledge among younger teens accounts for their unplanned pregnancies. The younger teenagers used contraceptives less often and were less effective users than older teens (26).

Family planning services can play an important role in convincing school girls to protect themselves from all the negative consequences of pregnancy (27).

In Bangladesh context, one study showed that 12% of girls in 1985 and 22% of girls in 1993 used contraceptives immediately after marriage. There is a general fear that they may not be able to conceive later if they use contraceptives immediately after marriage (18).

ADOLESCENT PREGNANCY

More than 40% (approximately 1 million) of the teenagers become pregnant in the USA each year, and more than half give birth (5, 28). The average age of first intercourse in Norway in 1991 was 17.3 years among girls. This indicates that the chance of getting pregnant of these girls are at the late adolescence (29).

In Bangladesh, teenage pregnancy is considered a high risk factor for maternal and child death. A number of factors contribute to this problem which include social and family pressure for early marriage, lack of adequate knowledge about sexual matters, and family planning. In Bangladesh, adolescent pregnancy has been reported to be 240-274 per 1,000 pregnancies while in Europe and Africa they are 70 and 130 respectively (30).

In Bangladesh, about 70% of the adolescent girls became pregnant at least once during their first few years of marriage. Over 50% of the girls became pregnant within 2 years of marriage (18).

COMPLICATIONS DURING PREGNANCY

A very high portion of all pregnancies occur before the age of 19 years. As a consequence there is a very high rate of complications, such as: anaemia, spontaneous and illegal abortion, prematurity, pre-eclamptic toxemia, obstructed labour, recto-vaginal fistula, vesico-vaginal fistula, uterine prolapse, post-partum haemorrhage and puerperal infection (16).

Pregnancy wastage in teenagers are high compared to women in the age group 20-30 (21).

ABORTION AMONG ADOLESCENT GIRLS

In Nairobi, young women aged 15-19 account for one-third of all abortions (24). In Gambia, about 12% of the pregnancies reported to have ended in an induced abortion (31). It has been estimated worldwide that 30% of the illegal abortions occurs under 18 years of age (32).

Obaidullah (33) reported an abortion rate of 15 per 1,000 women aged 15-49 years in Bangladesh. Of these abortions, 53% was

spontaneous and 47% induced. Age specific abortion rate was 12.7 per 1000 live births in 15-19 years age group, and 21.5 in 20-24 years age group.

Muslims and Buddhists had more abortion and pre-maturity than Hindus (18).

PREGNANCY OUTCOME

In 1990, 25% of the Mexican population was between 10 and 19 years of age. About 17% of live births occurs under 20 years of age (34).

Adolescent pregnancies are of particular concern because they frequently result in the delivery of low birth-weight babies who are at a risk of dying during the first 28 days of life. Several maternal risk factors, including low maternal weight gain, pre-eclampsia, anaemia, smoking and genitourinary tract infection (GTI), have been associated with low birth-weight delivery (35).

Babies born to teenage mothers are more likely to be of low birth-weight (35, 36). The incidence of low birth-weight (67.3%), neo-natal death (136.2 per 1,000 live births) are significantly higher among adolescents (37).

Pregnant teenagers face a greater risk of pre-eclampsia. Pelvic bone immaturity increases the likelihood of cephalopelvic disproportion, which is associated with a higher incidence of prematurity and prolonged labour (38).

The consequences of teenage childbirth are serious. The infant mortality rate for babies born to teenagers is double than that of the babies born to mothers in their twenties (36, 38). The average relative risk of death before the age of five years is about 46% higher for children born to mothers aged below 18, and 13% higher for those born to mothers aged 18-19, compared to children of mothers aged 20-34 (38).

About 23% of the births result in a fetus, infant, or child death. The majority were miscarriages or still births (18).

STDs IN ADOLESCENTS

Approximately one in every four people in the world have been infected by any sexually transmitted diseases (STD) by the age of 21 years. An increasing number of adolescents are becoming infected with the human immunodeficiency virus (HIV). Although relatively few of the reported acquired immunodeficiency syndrome (AIDS) cases have occurred among adolescents, about one-fifth

have occurred among persons in their twenties. Because the average incubation period is about 10 years, many of them in the age group 20-29 years may have been infected as teenagers (28).

About 23% of women in the world, aged 15-19 years, seeking ante-natal care had gonorrhea, chlamydia, or herpes (39). In the USA, women aged 15-19 have highest incidence of gonorrhea and men aged 15-19 year have the second highest incidence (40).

PSYCHOLOGICAL FACTORS

Adolescents are different physically and mentally from both children and adults. Enormous amounts of physical growth and development occur during these years, adolescents experience psychological and social changes (41).

The behaviour of adolescents is undoubtedly governed by the equilibrium between psychological maturity and social maturity (42).

Medical care for adolescents has always been neglected until recently (43). While their medical needs are now being considered with an increased effort, their psychological needs, which are equally important, have not been adequately addressed (44).

The adolescents of Adedoyin's (45) study demonstrated the reality of adverse psychological consequences attributable to 'Sickle Cell' diseases, this causes considerable psychological trauma on the patients.

Substance abuse was associated with major depressive disorder and with other psychiatric diagnoses as well (46).

SMOKING AND SUBSTANCE ABUSE

Adolescence is a crucial stage for the formation of habits, such as smoking, driving automobiles or other vehicles at high speeds, and consuming alcohol and various drugs, and for developing social habits (42).

Primary health care providers can play a significant role in helping young patients to avoid the use of tobacco (47). Attitudes, particularly among girls, were important predictors of the uptake of smoking (48). Increasing frequency of alcohol and cigarette use may be the marker for more serious pattern of substance use (49).

Mexican-American 8th graders rate higher than non-Hispanic 8th graders based on life time prevalence (50). They also reported a higher frequency of high risk drug behaviours. The

pattern was reversed among 12th grade students.

There is an emergent pattern of class-based differences in adolescent smoking behaviour, as young people make the transition towards adulthood (51).

Smoking prevalence was 10% among adolescent boys but none among adolescent girls (52) in Manikganj, Bangladesh.

RESEARCH ISSUES

1. Impact of NFPE-AG programme on KAP regarding health and nutrition issues.
2. Effect of BRAC programmes on adolescent health.
3. Morbidity pattern among adolescents.
4. Child rearing practice among adolescent girls.
5. Perception of adolescents regarding health problems and needs.
6. Effect of deworming programme on health status of adolescents.
7. Effect of food supplementation on nutritional status among adolescent girls.
8. Effect of home-gardening on nutritional blindness and nutritional status.
9. Knowledge amongst adolescent girls about nutrition value of foods and diets during disease, pregnancy, and lactation.
10. Gender difference among adolescents regarding dietary practices.
11. Nutritional status of adolescents.
12. Smoking and substance abuse among adolescents.

REFERENCES

1. Friedman H L. 1989. The health of adolescents: Beliefs and behaviour. Soc. Sci. Med. Vol. 29, No. 3, pp. 309-315.
2. WHO. 1977. Health needs of adolescents. Report of a WHO Expert Committee. Technical Report Series 609. WHO, Geneva.
3. BBS. 1993. Statistical Year Book of Bangladesh 1993. Bangladesh Bureau of Statistics. Statistics Division, Ministry of Planning. Government of the People's Republic of Bangladesh.
4. Rao SS, Joshi SB, Kanade AN et al. 1989. Variations in energy intake in relation to adolescent growth among rural boys. Ind. J Nutr. Dietet. 26: 288-96.
5. Dunn C, Kolasa K, Dunn P C and Ogle MB. 1994. Dietary intake of pregnant adolescents in a rural southern community. Journal of the American dietetic association, Vol. 94, No. 9.
6. Pope JF, Skinner JD and Carruth BR. 1992. Cravings and aversions of pregnant adolescents. Journal of the American Dietetic Association. Vol 92(12): 1479-82.
7. Kapil A, Bhasin S and Manocha S. 1991. Knowledge amongst adolescent girls about nutritive value of foods and diet during diseases, pregnancy and lactation. Indian Paediatrics. Vol 28 (october): 1135-39.
8. Kapil U and Manocha S. 1990. Knowledge and attitude towards breast feeding among adolescent girls. Indian Journal of Pediatric. Vol 57: 401-4.
9. Barber SA and Bull NL. 1985. Food and nutrient intakes by BRITish women aged 15-25 years with particular reference to dieting habits and iron intakes. Ecology of Food and Nutrition. Vol 16: 161-69.
10. Story M, Bass MA and Wakefield L. 1986. Food Preferences of Cherokee indian teen-agers in Cherokee, North Carolina. Ecology of Food and Nutrition. Vol 19: 51-9.
11. Tsui JC and Nordstrom JW. 1990. Folate status of adolescents: Effects of folic acid supplementation. J Am Diet Assoc. 90:1551.
12. Srikantia SG. 1989. Pattern of growth and development of Indian girls and body size of adult Indian women. pp 108-125.
13. Sarojini KS and Vijayalakshmi P. 1989. Adequacy of recommended dietary allowances of ICMR for adolescent girls. The Indian Journal of Nutrition and dietetic. Vol 26: 149-55.

14. WHO/UNFPA/UNICEF. 1989. Cited from Anonymous. 1992. Women's nutritional status. ACC/SCN 2nd report on the World nutrition situation, chapter, 4.
15. Goodburn EA, Chowdhury AMR, Gazi R, Marshall T, Graham W and Karim F. 1994. Maternal morbidity in rural Bangladesh: An Investigation into the nature and determinants of maternal morbidity related to delivery and puerperium. BRAC in collaboration with LSHTM. Dhaka. Bangladesh.
16. Rahman S, Rahman S, Ali R and Ali HA. 1986. Reproductive health of adolescents in Bangladesh. Bangladesh Fertility Research Programme.
17. Khan MR and Haque N. 1991. A study on menstruation: Beliefs and practices of adolescent girls. BRAC Health Studies. Vol. IX.
18. Brown I, Khatoon N, Nahar S and Mannan F. 1993. The Child Bride. Save the children US, Bangladesh.
19. Ojeda EN, Roberts E, Korin D et. al. 1985. Adolescence and youth: Demographic and Epidemiological Aspects. In: The health of adolescents and youths in the Americas. Pan American Health Organization, WHO. pp6.
20. Rahman S. 1981. Determinant of Utilization of MCH Services, NIPORT, Dhaka, Bangladesh.
21. Anonymous. 1994. Adolescent is a dangerous stage for young women. The Morning Sun. Dhaka, Nov. 22.
22. Jahan FA. 1984. Use of traditional Birth Attendants for monitoring Maternal and Neonatal Deaths, Report of Multi-institutional Contraceptive Safety Research Programme. PIACT/PATH, Bangladesh, Dhaka.
23. Bury JK. 1991. Teenage sexual behaviour and the impact of AIDs. Health Education Journal. Vol. 50(1):
24. Ajayi AA, Marangu LT, Miller J and Paxman JM. 1991. Adolescent sexuality and fertility in Kenya: A survey of knowledge, perceptions, and practice. Studies in Family Planning. Vol. 22 (4): 205-16.
25. Herold JM, Valenzuela MS and Morris L. 1992. Premarital sexual activity and contraceptive use in Santiago, Chile. Studies in Family Planning. Vol 22(3): 128-36.
26. Philliber SG, Namerow PB and Jones JE. 1985. Age variation in use of a contraceptive service by adolescents. Public health reports. Vol. 100 (1): 34-40.

27. Gorgen R, Maier B and Diesfeld HJ. 1993. Problems related to schoolgirl pregnancies in Burkino Faso. *Studies in family planning*. Vol. 24(5): 283-94.
28. Kirby D, Short L, Collins J, Rugg D, Kolbe L et al. 1994. School-based programs to reduce sexual risk behaviours: A review of effectiveness. *Public Health Reports*. Vol. 109(3): 339-60.
29. Kraft P, 1991. Age at first experience of intercourse among Norwegian adolescents: A lifestyle perspective. *Soc. Sci. Med.* Vol. 33, No. 2, pp. 207-213.
30. Hong S. 1980. Demographic Characteristics of Bangladesh. Cited from: Rahman S, Rahman S, Ali R and Ali HA. 1986. Reproductive health of adolescents in Bangladesh. Bangladesh Fertility Research Programme.
31. Kane TK, De Buysscher R, Thomas TT, Smith T and Jeng M. 1993. Sexual activity, family life education, and contraceptive practice among young adults in Banjul, The Gambia. *Studies in Family Planning*. Vol 24(1): 50-61.
32. Agostino M B and Wahlberg V, 1991. Adolescents attitudes to abortion in samples from Italy and Sweden. *Soc. Sci. Med.* Vol.33, No.1, pp. 77-82.
33. Obaidullah M. 1982. Incidence of abortion in rural area of Bangladesh, Bangladesh Fertility Research Programme, Seventh Contributors Conference, p 362.
34. De Weiss SP, Atkin LC, Gribble JN and Andrade-Palos P. 1991. Sex, contraception, and pregnancy among adolescents in Mexico city. *Studies in Family Planning*. Vol 22(2): 74-82.
35. Overturf CM, Smith AM, Engelbert-Fenton KA, Elster AB and Geiger CJ. 1992. Potential role of energy and nutrient intakes in decreasing the incidence of genitourinary tract infections in pregnant adolescents. *Journal of the American Dietetic Association*. Vol 92(12): 1513-17.
36. Wallace HW, Weeks J and Meduna A. 1982. Services for and needs of pregnant teen-agers in large cities of the United States, 1979-80. *Public Health Reports*. Vol. 97(6): 583-88.
37. Kushwaha KP, Rai AK, Rathi AK, Singh YD and Sirohi R. 1993. Pregnancies in adolescents: Fetal, neonatal and maternal outcome. *Indian pediatrics*. Vol. 30(April): 501-5.
38. LeGrand TK and Mbacke CSM. 1993. Teenage pregnancy and child health in urban Sahel. *Studies in Family Planning*. Vol. 24(3): 137-49.
39. Maggwa ADN and Ngugi EN. 1992. Reproductive Tract Infection in Kenya: Insights for action from Research. In: Germain A,

- Holmes KK, Pilot P and Wasserherit JN, eds. Reproductive Tract Infections: Global Impact and Priorities for Women's Reproductive Health. New York. Plenum Press. pp 275-95.
40. Centre for Disease Control (CDC). 1991. United States Department of Health and Human Services. Division of STD/HIV Prevention. Annual Report. p 313.
 41. Runyan TR. 1976. Nutrition for Today. Harper and Row, Pub., New York, pp 394.
 42. Cattell RB. 1950. Personality. New York, McGraw Hill. Cited from: The health of adolescents and youths in the Americas. Pan American Health Organization, WHO. pp 6.
 43. Jean M. 1983. Pain in children: a neglected area. In: Advances in Behavioural Medicine with children and adolescents. Forestone, Erlbaum, Hillsdale, New Jersey.
 44. Hodgson G, Feldman W, Corber S et al. 1985. Adolescent Health needs: Perspectives of Health Professionals. Can. J. Publ. Hlth. 76:167.
 45. Adedoyin MA. 1992. Psychosocial effects of sickle cell disease among adolescents. East African Medical Journal. Vol 69(7): 370-77.
 46. Deykin EY and Levy JC and Wells V. 1987. Adolescent depression, alcohol and drug abuse. American Journal of Public Health. Vol 77(2): 178-82.
 47. Gregorio D I, 1994. Counseling adolescents for smoking prevention: A survey of primary care physicians and dentists. American Journal of Public Health, Vol. 84, No. 7.
 48. Jarvis M J, Goddard E and McNeill A, 1990. Do attitudes predict uptake of smoking in teen-agers? Case not proven. Soc. Sci. Med. Vol. 31, No.9, pp. 997-1001.
 49. Bailey SL. 1992. Adolescents' multipurpose use patterns: The role of heavy alcohol and cigarette use. American Journal of Public Health. Vol 82(9): 1220-24.
 50. Chavez EL and Swaim RC. 1992. An epidemiological comparison of Mexican-American and white non-Hispanic 8th- and 12th-grade students' substance use. American Journal of Public Health. Vol 82(3): 445-47.
 51. Glendining A, Shucksmith J and Hendry L, 1994. Social class and adolescent smoking behaviour. Soc. Sci. Med. Vol. 38, No. 10, pp. 1449-1460.
 52. Nazrul MN. 1989. A household survey on smoking in six areas of Bangladesh. BRAC Health Studies. Vol. V. pp. 32-48.