

# Socio-demography characteristics of parents of the adolescent girls in a nutrition education based intervention study in rural Bangladesh

## Abstract

Socioeconomic status (SES) can be broadly conceptualized as one's situation in the society. A large and growing body of evidence shows those socio demographic factors and socioeconomic status, such as income and education, can influence health and nutritional outcomes. This study analyzed the socio-demographic characteristics of the parents of adolescent girls in rural settings of Bangladesh. The study was nutrition education-based intervention study among the adolescent girls in three rural areas of a North-West part of Bangladesh. Exactly the same number (n=250) of adolescent girls was randomly assigned to a control and an intervention group and at end line, 241 adolescent girls from intervention group and 236 from control group were finally interviewed. About 24% of the fathers of the adolescents were illiterate. The control group had a higher percent of illiterate father compared to the intervention group (37.5% vs. 23.6%). In the control group, most of the mothers were illiterate (41%) whereas intervention group had about 26% of mothers with no education. Day labor and small business were found the most frequent occupation of the adolescents' father in the study area. In the intervention group about 29% of the adolescents' fathers were day laborer whereas in the control group about 29% of the fathers were small businessmen. This study also reported that about 25% to 27% of the mothers were related to economical activity other than housewives. In all the groups and on different timelines about 68% of the adolescents' father had monthly income within the limit of 3000-10000 BDT. In conclusion, more than one-fourth of the adolescents had parents with no education and subsistence level of monthly household income.

**Keywords:** adolescence girls, socioeconomic status, parents, nutrition education

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## Introduction

Adolescence is age between 10 to 19 years old. In this stage rapid physical, psychological and emotional changes occur in the human body system. For proper human development the stage demands balance of diet.<sup>1-3</sup> About one-fifth of the world's populations are adolescent girls and 84% lives in developing countries.<sup>4</sup> Bangladesh has an adolescent and youth population of approximately 52 million, which is quantifying to one third of the country's total population. This major percentage, however, will not remain unchanged and it is proposed that by 2050, only ten to twenty percent of Bangladesh's population will consist of young people.<sup>5</sup> What this means for a country like Bangladesh is that it needs to spend in young people and focus on meeting their health and nutritional needs without further delay. Often health and nutritional status of adolescent girls are direct reflection of the cumulative effects of physical growth, the onset of menarche and increase in fat and muscle mass which place extra nutrition requirements on them. Physical growth of adolescent girls related to their dietary behaviour. If this dietary behaviour is compromised with unhealthy diet, adolescent girls are the worst sufferers of the ravages of various forms of malnutrition because of their increased nutritional needs and low social power. Further low literacy levels, lack of awareness about nutrition and health and poverty aggravate this dismal situation. The cycle of poor nutrition perpetuates itself across generations particularly in girls.

The influence of socio-economic status (SES) on health and consequently nutritional status is assumed to begin early in life, perhaps even in the prenatal environment, and continue to accumulate throughout life. SES is thus more than financial well-being or educational achievement; it encompasses a lifetime of access to knowledge, resources, and opportunities.<sup>6,7</sup> A large and growing body of evidence shows those socio demographic factors- age, race, ethnicity, and language, for example - and socioeconomic status, such as income and education, can influence health and nutritional outcomes.<sup>8</sup> Ever-increasing evidence suggests that the health and nutritional status of a population is greatly determined by the social and economic circumstances of that population, as well as its access to health care services.<sup>9,10</sup>

It is very much true that the growth and prosperity of a nation depends heavily on the status and development of adolescent girls as they not only constitute one tenth of its population but also influence the growth of the remaining population. It is also required to assess the socio-economic status and determinants of sound health and nutrition of the adolescents. Therefore, it is required to identify the socio demographic determinants which are most significantly associated with poor nutritional status of adolescent girls belonging to low income families. Therefore, this study was undertaken to identify and assess the socio demographic factors of adolescent girls and their parents in rural Bangladesh.

## Methodology

### Study design

A randomized control trial of nutrition education package was designed for this study. Exactly the same number (n=250) of adolescent girls was randomly assigned to a control and an intervention group. After two years of nutrition education intervention the groups were assessed at the end line of the study. At end line, 241 adolescent girls from intervention group and 236 from control group were finally interviewed to evaluate the role of the intervention, the nutrition education, among the adolescent girls.

### Study area

The data was collected from North West part of Bangladesh under Sirajonj District. Three study areas named kaliya, horipur, khokshabari, saydabad under Sirajonj sadar sub-district were selected for this study (Figure 1).



Figure 1 Map of the study areas.

### Study sample

A total of 500 adolescent girls from Sirajonj sadar sub district within the age range of 10-19 years from rural areas of North West part of Bangladesh who were available at the time of data collection were selected for this study.

### Study variables

Socio-demographic variables: Age, sex, education of parents, religion, occupation of parents, family size, monthly family income, marital status, marriage age, number of children, and age of the last child.

### Data management and analysis

Data collection was done with the help of data collector by providing proper training. Collected data was edited and analysis done by using statistical packages for social science (SPSS). Descriptive statistics was calculated for the study variables. Percentages were the preferred option for presenting the data of this study.

## Results and discussion

The education level of the adolescent girls' father and mother were categorized into six different levels namely, illiterate, literate, primary level, below SSC, SSC, and HSC or above.

Table 1 illustrates the education level of Participant's father and mother. In the intervention group, most of the fathers of the adolescents (34.7%) were educated up to the primary level. About 24% of the fathers of the adolescents were illiterate. Among the other categories of education, fathers of participants; 21.5% literate, 12.8% below SSC level, 3.7% SSC level, and 3.7% were HSC and above. The control group had a higher percent of illiterate father compared to the intervention group (37.5% vs. 23.6%). In addition, about 26% of fathers in the control group had the primary level education. Among the mothers of the participant, 25.6% were illiterate, 31.6% literate, 27.6% primary, 14.8% below SSC, 0.0% SSC and 0.4% were HSC or above in the intervention group. In the control group, most of the mothers were illiterate and it was about 41% of the mothers in the control group whereas intervention group had about 26% of mothers with no education. In addition, in the control group the mothers of the participants were 22.4% literate, 24.0% primary, 10.8% below SSC level, and 2.0% SSC level. None of the mother in the control group had education level higher than HSC level whereas in the intervention group none of the mother was found to have education level at SSC level. There is a discrepancy was observed between the father and mother education level of the adolescent girls. Both in the control and intervention group mothers were found to have no education compared to the fathers of the adolescents. This data indicates that the mothers' education level in this study area of Bangladesh was not in accordance with the literacy rate of Bangladesh which is 83.30%.<sup>11</sup> Besides this our data also indicated that the education level more than SSC was very low among the parents of the adolescents. Very few parents had education level above the SSC level. This is observed from this study that higher education was not increasing among the parents in the rural areas of Bangladesh. Besides this, it is also alarming that the education level above the SSC was negligible among the mothers of the adolescents this is probably due to the early marriage of the girls.

The occupation of adolescent girls' father was categorized into six different groups - Farmer, day labor, small business, rickshaw puller, service holder, and others. Table 2 shows the occupation based on the above mentioned six different groups of the participant's father. In the intervention group about 29% of the adolescents' fathers were day laborer whereas in the control group about 29% of the fathers were small businessmen. Only 10% of the fathers were service holder in the control group but fathers with service holder in the intervention group were about half of the control. In addition, the fathers of the adolescents 12.8% were farmer, 21.5% were Small businessmen, 8.7% were rickshaw puller, and 22.3% had others occupation. On the other hand, in the control group, 16.7% father were farmer, 4.6% were rickshaw puller, and 14.2% had others occupation.

Day labor and small business were found the most frequent occupation of the adolescents' father in the study area. More than half of the adolescents' fathers survive on these two occupations. Day labor and small business are occupation with a very minimum income which could reflect the subsistence level of live among the rural people of Bangladesh. In Bangladesh, most of the rural people are survive on income deviated from small business and day labor. In our study, we found that only 13% of the father in the intervention group and 17% of the father in the control group were farmers which indicate that this

occupation was in minimum number in our rural study area where usually in rural Bangladesh most of the people survive on farming.

**Table 1** Percentage distribution of parents' education level of the adolescent girls

	Father's education		Mother's education	
	Intervention	Control	Intervention	Control
Illiterate	23.6	24.6	25.6	40.8
literate	21.5	22.5	31.6	22.4
Primary	34.7	35.7	27.6	24
Below SSC	12.8	13.8	14.8	10.8
SSC	3.7	4.7	0	2
HSC or Above	3.7	4.7	0.4	0

\*Based on Base line data.

**Table 2** Percent distribution of father's occupation of the adolescents

	Father's occupation intervention	Father's occupation control
Farmer	12.8	16.7
Day labour	28.9	25.8
Small Business	21.5	29.2
Rickshaw puller	8.7	4.6
Service holder	5.8	9.6
Others	22.3	14.2

\*Based on Base line data.

The occupation of adolescent girls' mother was categorized into six different groups - House wife, Cigarette Maker, Day Labor, Service holder, Cotton worker and others. Table 3 shows the percentage of mothers fall into those categories. Most of the mothers of the adolescents in both the intervention (77.2%) and control (75.6) groups were housewives. About 10% of the mother in the intervention group worked as cotton worker and 11% of the mothers in the control group worked in cigarette industries. About 4% mothers in the control group were day laborer. Percentage of Service holder mother was found twice in the control group compared to the intervention group (4% vs. 2%) though the percentage is very low. Housewives mother were usually found more in the rural community of Bangladesh where due to religious and traditional constraints women were not usually allowed to work outside home. Recently due to poor economical conditions and vigorous activity by both government and NGOs related to women empowerment, women are allowed to work outside their home. Our study supported this issue as this study found that about 25% to 27% of the mothers were related to economical activity other than housewives.

**Table 3** Percent allocation of mother's occupation of the adolescents

\*Based on Base line data.

	Mother's occupation intervention	Mother's occupation control
House Wife	77.2	75.6
Cigarette Maker	5.6	11.2
Day Labour	0.4	3.6
Service Holder	2	4
Others	5.2	1.2
Cotton Worker	9.6	4.4

Monthly income of participant's father is classified into four ranges - below 3000 BDT, 3000 - 6000 BDT, 6001 - 10000 BDT and above 10000 BDT. Table 4 states monthly income of participant's father in BDT. In all the groups and on different timelines about 68% of the adolescents' father had monthly income within the limit of 3000-10000 BDT. In the base line survey among the intervention group 7.9% father had income below 3000, 34.7% had 3000-6000, 36.4% had 6001-10000 and 21.1% had monthly income more than 10000 BDT. In the base line survey among the control group 2.9% father had income below 3000, 35.4% had 3000-6000, 32.9% had 6001-10000 and 28.8% had monthly income more than 10000 BDT. On the other hand, in the end line survey among the intervention group; 3.3% father had income below 3000, 34.0% had 3000-6000, 34.4% had 6001-10000 and 28.2% had monthly income above 10000 BDT. In the end line survey among the control group; 2.5% father had income below 3000, 38.1% had 3000-6000, 28.4% had 6001-10000 and 30.9% had monthly income above 10000 BDT.

**Table 4** Distribution of father's monthly income of the adolescent girls

	Intervention		Control	
	Baseline	End line	Baseline	End line
Below 3000	7.90%	3.30%	2.90%	2.50%
3000 - 6000	34.70%	34.00%	35.40%	38.10%
6001 - 10000	36.40%	34.40%	32.90%	28.40%
Above 10000	21.10%	28.20%	28.80%	30.90%

## Conclusion

More than one-fourth of the adolescent girl had parents with no education and subsistence level of monthly household income. Moreover, three-fourth mothers of the adolescent girls were housewives. No education and low level of monthly income may have a negative impact on the nutritional status of adolescent girls. Lack of education and income does not directly cause malnutrition in adolescent girls or family members of a household. These are not the direct causes of malnutrition rather than these are the underlying cause of malnutrition. Lack of these parameters may lead to malnutrition

through other causative pathways in the route to malnutrition. Malnutrition persists in food-insecure household. Low level of income leads to food insecurity and lack of dietary diversity which results in malnutrition. In the vicious cycle of poverty and malnutrition; income poverty in the household leads to malnutrition in the adolescents and family members through low food intake, frequent infection, hard physical labor, and misallocation of food. Lack of education leads to lack of proper knowledge for the caregivers or parents to maximize their resources allocation and provide nutritious food to their family members. Due to lack of knowledge, the parents do not have a very good household food allocation system and which leads the adolescents especially girls in our country to feed less.

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## Conflict of interest

The author declares no conflict of interest.

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