

**Health Seeking Behavior and Growth of
Adolescent Girls**

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SUMMARY

Adolescence is a period of rapid growth that is only surpassed by the growth rate *in utero* and in infancy. There is little information on growth pattern and health status of adolescents in Bangladesh. In most countries this information is provided through regular weighing in the schools. Since BRAC is operating 3,436 Non-formal Primary Education Schools mainly for adolescent girls, a research project was initiated by the Research and Evaluation Division (RED) of BRAC in collaboration with Bangladesh Population and Health Consortium (BPHC) to explore the possibility of school students collecting their own growth and health status information.

Twenty schools in Manikganj district under Primary Education for Older Children (PEOC) of BRAC's education program were selected for the research project. A total of 458 girls participated in the project. The researchers designed special health cards which were given to the school girls to record data related to their illnesses, treatment, weight, and height. Aside from recording of illnesses and its treatment, once a month, at the school the girls worked in pairs to record their own weight and height. A special team experienced in taking anthropometric measurements trained the school teachers on how to take weight and height measurements accurately. The teachers instructed the students on accuracy of measurements and explained the significance of this project for their personal health and well-being. All the cards were photocopied and sent to the RED head office, Dhaka for computer entry and final analyses. The girls comprised 76% of all the pupils in the schools

and their ages ranged between 11 to 16 years. The average age of the girls was 13 years. According to the EPI criteria, 14% of the girls were eligible for Tetanus Toxoid shots and 18% of the girls had received at least one dose. A third of the girls had received the BCG vaccine. Nearly 66% of the girls recorded at least one episode of illness in the first eight months of the program. About 44 different types of illnesses were recorded by the girls for which they sought 23 different types of cures. The illnesses have been classified into eight major categories: fever, cold, headache, skin infection, gastrointestinal diseases, infectious diseases, accidents and others. We have classified the cures into the following five categories: going to a doctor, taking medication, going to a kabiraj, not taking any action and others. Certain trends were observed in seeking treatment for different types of illnesses. Fever was the most predominant illness reported. The most common cure for fever was self-medication, usually paracetamol tablet. However, with recurring fevers, there was a tendency to go to the doctor. For infectious diseases, particularly measles, the common practice was to go to a kabiraj rather than seeking allopathic treatment. With accidents such as snake-bite and dog-bite, they went to a kabiraj. Surprisingly beliefs on the supernatural etiology of disease and its cure were rarely recorded.

The anthropometric measurements suggest that students are able to take their own weight and height measurements and can record it on the health cards. The weight and height data generated by the students are comparable to that collected in the 1981-82 National Nutrition Survey conducted by the Institute of Nutrition and Food Science (INFS), University of Dhaka.

Health Seeking Behavior and Growth of Adolescent Girls

INTRODUCTION

Background

Adolescence is a period of transition from childhood to adulthood in which interlocking changes in the body, mind, and social relationship take place. The growth spurt in adolescence is the period of highest growth after infancy (Tanner, 1978)¹. Unfortunately there is little recognition of this as a special time with special needs in most developing countries and development programs. The special needs of the adolescents are often neglected. A study done in India documents a wide range of misbelief regarding the health and nutrition of adolescent girls (Kanani, 1994)². In Bangladesh, most adolescents are burdened with adult responsibilities. Girls especially are considered ready for marriage when they reach menarche (Huq & Khan, 1991)³. Development programs have only recently become sensitized to these issues. However, there is a dearth of data on adolescence in Bangladesh. Few studies have been done on growth and health status of adolescents in this country. In the developed countries, inadequate food intake and poor knowledge on nutrition are the common causes of malnutrition among the adolescents⁴. The national nutrition survey (INFS, 1982) provides some data on nutritional status for the adolescents⁵. Recently, development practitioners and policy makers have been given much emphasis on adolescent girls' health as an approach to improve women's and children's nutritional status (ACC/SCN, 1992)⁷. Adequate information particularly on adolescent girls' health and nutrition could be obtained from different schools through their regular school attendance. Weighing and health check-up are not a regular feature in the formal schooling system in Bangladesh. The rationale for such a research project was that adolescent girls may be made responsible for recording their own health information and thus increase their awareness of health and nutrition. It is hoping

that this would sensitize them to their problems and help them take action. Adolescents can be made conscious of their needs and they can be convinced more easily to adopt healthier habits than the older generation.

OBJECTIVES

The objectives of the study are to:

1. explore whether if female adolescent students can record their height, weight and maintain a health card for themselves;
2. get an overview of the health concerns of adolescent girls and the kinds of treatment that are available to them;
3. see if a growth pattern can be identified among adolescent girls from their own records.

MATERIALS AND METHODS

The Research and Evaluation Division (RED) of BRAC initiated a pilot project in collaboration with Bangladesh Population and Health Consortium (BPHC) from March 1991 to study if the NFPE's adolescent girls could record their monthly weight and height data and also could record different sickness episodes experienced by themselves and its treatment. The data presented here are generated from the pilot project from March 1991 to November 1991.

The pilot project was carried out in twenty NFPE schools for adolescents in Manikganj and Gheor thana. A total of 458 girls participated in the program. A specially designed health card developed by the RED of BRAC was given to each of the study girls at the beginning of the project to record their own health and anthropometric information. A special team trained in taking anthropometric measurements trained the school teachers on how to use scales and to take height and weight measurements accurately. The respective teachers taught the same to the study girls.

The girls also recorded the history of immunization and different sickness episodes they had suffered including its treatment. At the start of the program, teachers explained to the girls that these measures were taken simply as a record for the girls themselves that would allow them to know what was happening to themselves in terms of growth and to take action accordingly. The teachers also explained the correlation between nutrition and growth to the girls. Every month, on a fixed day of the week, the girls took their weight on a bathroom scale up to the accuracy of 0.5 kg. In each school, the field research team drew a scale for height measurement on the wall of the classroom. The height scale allowed to take measurements up to the accuracy of 0.5 cm. The weight and height were measured by the girls themselves under the supervision of the teacher. For the sake of accuracy, the girls took each measurement twice and plotted the average figure on the cards. The girls took each other's weight and height in pairs.

All the cards provided for this pilot project were photocopied and brought to RED head office at Dhaka. A field trip was taken to observe how the actual project had been operated. The researchers organized discussions with the students and teachers about preserving the health cards. The information from the cards were checked and entered into the computer and analyzed for frequencies and means at the Research and Evaluation Division (RED) of BRAC. Cross tabulations were done to correlate illnesses with their corresponding treatments. Data analyses were completed using SPSS/PC+ software packages.

RESULTS

It is revealed from table 1 that twenty schools in Manikganj were included in the pilot project. There were a total of 458 girls in the twenty NFPE schools. Figure 1 further reveals that the girls were aged between 11-16 years. Majority of the girls fell in the 12-14 year age range (Figure 1). The average age of the study girls was 13.13 ± 1.36 years.

Immunization

It is revealed from figure 2 that nearly 32% of the girls reported that they had received BCG vaccine. Only 1.3% of the girls had reported being immunized against polio. Nearly 2.7% of them had received at least one dose of DPT. Surprisingly, 8% had been vaccinated against measles. 18 Percent of the girls had received one dose of tetanus toxoid (TT).

Reporting of Illnesses and Cures

Of the 458 girls in this program, 66% (304) had recorded at least one bout of illness over the period of eight months (Figure 3). Of the girls who had recorded an illness, 22% had recorded a second, 6% a third and 0.7% a fourth illness. The girls reported 44 different illnesses for which they sought 23 different types of cures.

Illnesses which had been reported by the study girls are classified under eight major categories respectively (figure 4). They include fevers (60%), cold (4%), headache (6%), skin infection (4%), gastrointestinal (G.I.) diseases (11%), infectious diseases (10%), accidents (1%) and others (4%).

The cures reported by adolescent girls are classified into five categories (table 2). They are: going to the doctor (31.8%); taking self medication¹ (36.5%); going to the kabiraj (9.9%); other types of treatment that include home remedy with traditional medicine and ORS, supernatural healing, and homeopathy (3.5%); and did not take any action (18.4%).

¹ The tendency was to take medication without the prescription of a doctor. Commonly they took drugs which may have been suggested by family members or relatives or friends who may have had similar experiences. The terms "self-medication" or "self-prescribed" are used to describe this process of taking drugs which were not prescribed by their health practitioners.

Fever

Table 2 shows that fever was the most common (63.5%) of all reported illnesses. Self medication (47.7%) was the most common practice to cure fever followed by going to a doctor (35.9%). In case of self medication, paracetamol tablet was used by most of the study girls which was not prescribed by a medical professional. When the girls experienced repeated bouts of fevers, they were more likely to approach a doctor. Only 2.7% cases approached to a kabiraj to sought treatment for fever. A sizable proportion (12.5%) did not report taking any action for fever.

Gastrointestinal (G.I.) Diseases

G.I. diseases were the second most common (10.9%) type of illness reported by the girls. G.I. diseases that were reported include primarily diarrhoea and dysentery. It is revealed from table 2 that the cure sought most frequently for G.I. diseases was going to a doctor (29.5%) followed by oral saline (22.7%)², self medication (20.4%), and kabiraj (15.9%). A sizable proportion (11.4%) did not take any action.

Infectious Diseases

It was the third most prevalent (10.7%) type of illness. As shown in table 2, Kabiraji (traditional herbal medicine) treatment was the most frequently (41.9%) sought treatment for infectious diseases followed by a visit to the doctor (27.9%). A large proportion (20.9%) did not seek any treatment. Practice of self medication was much lower (9.3%). Further discussion with the study girls reveal that infectious diseases reported by the girls included measles, whooping cough, typhoid and chicken pox. Of the infectious diseases, measles was most common and the girls were more likely to seek treatment from a kabiraj or to not do anything for measles, whooping cough, and chicken pox.

Cold, Headaches, and Skin Infection

Colds without fever accounted for only 4.2% of all the reported illnesses. Majority (58.8%) of them took no action for the cold.

² Indicated as 'others' in table 2.

Some (23.5%) took drugs, usually paracetamol tablets for the cold. Doctors were visited by a few (11.8%) and even fewer went to a kabiraj (5.9%). 6% reported headaches for which 50% of them sought treatment. Some went to the doctor (20.8%), others took tablets (16.7%), and a few went to a kabiraj (12.5%) (table 2). Skin infections accounted for only 4% of all the reported illnesses. Skin infections include: scabies, itching, abscess, ear infection, and sores. Most (37.5%) of the girls did not do anything for a skin infection. Some (25%) practiced self medication - which included ointments sold in local drug stores. Only 18.7% of the girls went to a doctor and even fewer went to a kabiraj (12.5%).

Accidents

Only three girls reported to suffer from accidents. One was bit by a snake, for which she sought treatment from a kabiraj. Another girl was bit by a dog, for which she also sought treatment by a kabiraj. Another girl reported a burn injury for which she sought treatment from a doctor (table 2).

Weight and Height

Weight

The weight of the girls ranged from 24 kg to 47 kg. Average weight in the first month was 32 ± 7 kg and in the last month was 34 ± 7 kg. The average weight of girls aged 11 to 16 is shown in Table 3. The maximum weight gain is seen between the girls aged 12 and 14 year whereas the minimum weight gain is seen between 11 and 16 year old girls. (Table 3).

Height

In the first month, height of the girls ranged between 90 and 156 cm. The average height was 131 ± 14 cm. After eight months, the average height was 134 ± 13 cm. The range was between 90 and 160 cm (table 3). The average height of girls aged between 11 to 16 years is shown in table 3. It is also revealed from table 3 that the highest increase in height was observed between the age of 12 and 14 year. The lowest increase was seen among the girls aged 16 year.

DISCUSSION

This pilot project explains that it is possible for the non-formal primary education school (NFPE) children to document the illnesses suffered and cures sought and also to measure their weight and height. It was revealed from discussion with the school teachers and the adolescent girls that all of them enjoyed this exercise and did not over burden regular school activities. The girls recorded the illness episodes and its cure by themselves whenever they liked to and took weight and height measurements during the leisure hours. All the school girls belonged to households who possessed less than 50 decimal land and the major share of household income came from selling of manual labor.

The immunization records reflect that nearly a third of the girls had received the BCG shots. This was easy for the girls to find out as it could be verified from the scars on their arms. For other vaccination, the girls had to rely on their parent's memory. About 2.6% had received at least one dose of the DPT vaccination, which tallies with the 2% coverage before EPI (Expanded Program on Immunization). These girls were eligible for DPT 5-10 years before EPI. Surprisingly, nearly 8% reported being immunized for measles. According to the criteria, these girls would have been vaccinated 5-10 years before the EPI program. Comparative data for DPT leads one to speculate whether they had been vaccinated during EPI program. About 14% of the girls were eligible to be vaccinated for TT according EPI. The records show that 18% of the girls had received at least one dose of TT. Thus it may say that these girls were not left out of the EPI program and could record the information fairly well.

It was surprising to see the wide range of illnesses reported by the girls. Although the most commonly identified and reported illnesses were fever followed by gastrointestinal and infectious diseases, girls also reported "headaches" as a state of ill-health. The girls usually reported fever by itself, but the cards do not

provide any idea about the causation of fever. However fever along with other symptoms like cold, cough, headache and bodyache were also mentioned. It is interesting to see that girls had identified headaches as an illness. Women continue to work until they are incapacitated by a major illness⁸. This suggests that adolescent girls and women recognize when they are feeling unwell, and if given access to necessary health resources may even do something about it before the symptoms become too serious. Most of the girls used ORS for gastrointestinal diseases. Some of them went to the doctor as well suggesting perhaps that they are now able to distinguish between diarrhoea that can be alleviated through ORS and dysentery that needs medical attention. This issue should be explored further through research.

The reports from the health cards suggest a tendency among the girls to rely much more on allopathic medicine, whether through going to the "doctors" or through use of drugs commonly prescribed by themselves or the family. It is important to investigate whether treatment by traditional healers was under reported by the girls or whether they really believed more in allopathic medicine. Secondly, the safety of going to "doctors" who may be different types of health practitioners (health assistants, quacks etc.) of allopathic medicine should be investigated. Self-prescription of drugs and their effects and implications also require an in-depth investigation. The recorded health cards suggest that it is practiced widely among the girls.

For infectious diseases (measles was most commonly reported by the girls) there was a tendency to go to a kabiraj. It seems that people have a classification of diseases for which they seek different types of cures. For example, out of three accidents reported, two who suffered from a snake-bite and a dog-bite went to a kabiraj.

The girl who had a burn injury went to a doctor. Thus a variety of healing systems--allopathy, homeopathy, kabiraji, supernatural--all seem to coexist and the same patient may go to more than one type of healer. For example, one girl had an illness that was supernatural in etiology and she went to a supernatural healer. At the same time she took a paracetamol for her fever.

Only three accidents were reported by the girls, perhaps an indication of the secluded and sedentary life they lead. The census data show greater mortality for males in early adolescence related to accidents (e.g., falling off a tree, being hit by motor vehicle). Further research looking at incidence and types of accidents in boys and girls would not only provide insights into the gender based experience of adolescence, but would also better equip the emergency health service and education.

The anthropometric measurements suggest that while the girls could take their own weights and heights, it may be advisable to check the accuracy of the measures. A proper instrument to measure height is needed. The actual results show that indeed Bangladeshi female adolescents are smaller than their western counterparts. Secondly, the data generated by them are comparable to those reported in the national nutrition survey (Table 4). Both the height and weight data suggest that the adolescent growth spurt primarily occurs in the 12-14 age range. Further research on this is very important as it has implications for possible nutrition interventions.

Finally, it should be said that the pilot program has proved that school-going adolescents can become important data collectors of their own health not only as a tool for their own enhancement but also for an information base to researchers and policy makers.

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Table 1
Study Area and Population Profile

Village	No. of Schools	Union	No. of Girls
Chorkhosta	1	Betilla	20
Nolora	1	Betilla	19
Nayabari	1	Bayan	25
Thakurkundi	1	Baniajuri	24
Goaljangi	1	Baniajuri	30
Kotai	1	Gorpara	23
Bilmalai	1	Gorpara	24
Ranadia	1	Gorpara	22
Bhauri	1	Gorpara	21
Chutibhatbaur	1	Gorpara	27
Joyra	1	Jagir	26
Madhyabari	1	Krishnapur	21
Madhayburundi	1	Krishnapur	22
Kaziparakoitta	1	Krishnapur	23
Gujuri	1	Krishnapur	18
Pouli	1	Manikganj	26
Purbodomoda	1	Manikganj	23
Kumarchor	1	Manikganj	22
Bolar	1	Nobogram	20
Nobogram	1	Nobogram	22
Total	20		458

Figure-1
Distribution of Girls by their Age

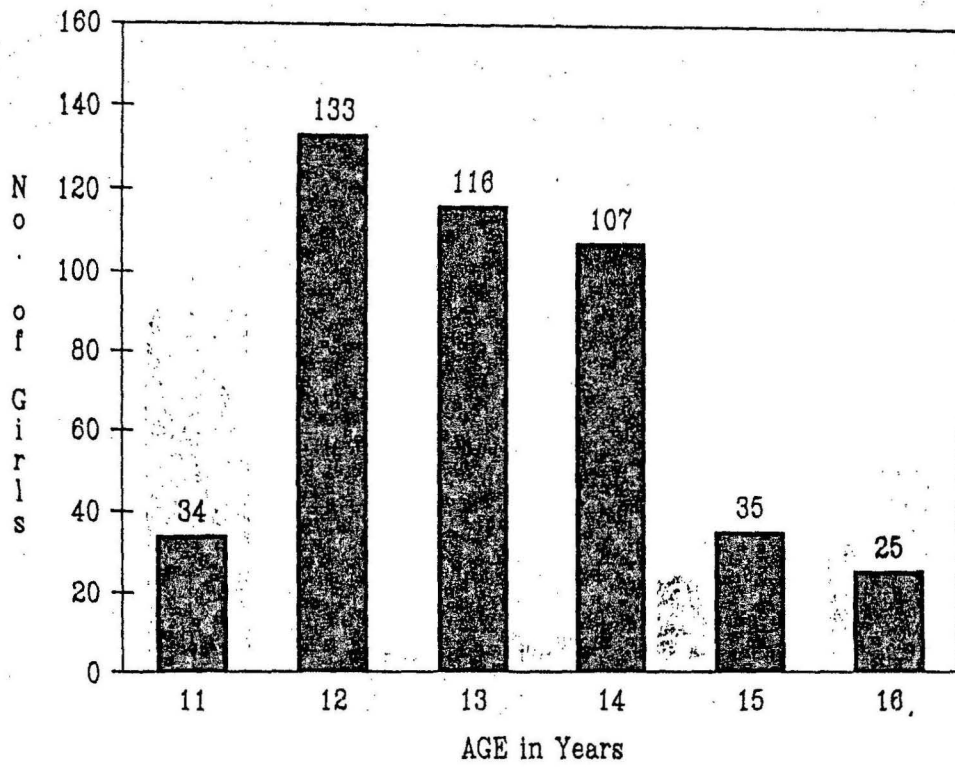


Figure-2
Immunization Coverage of the
Study Girls

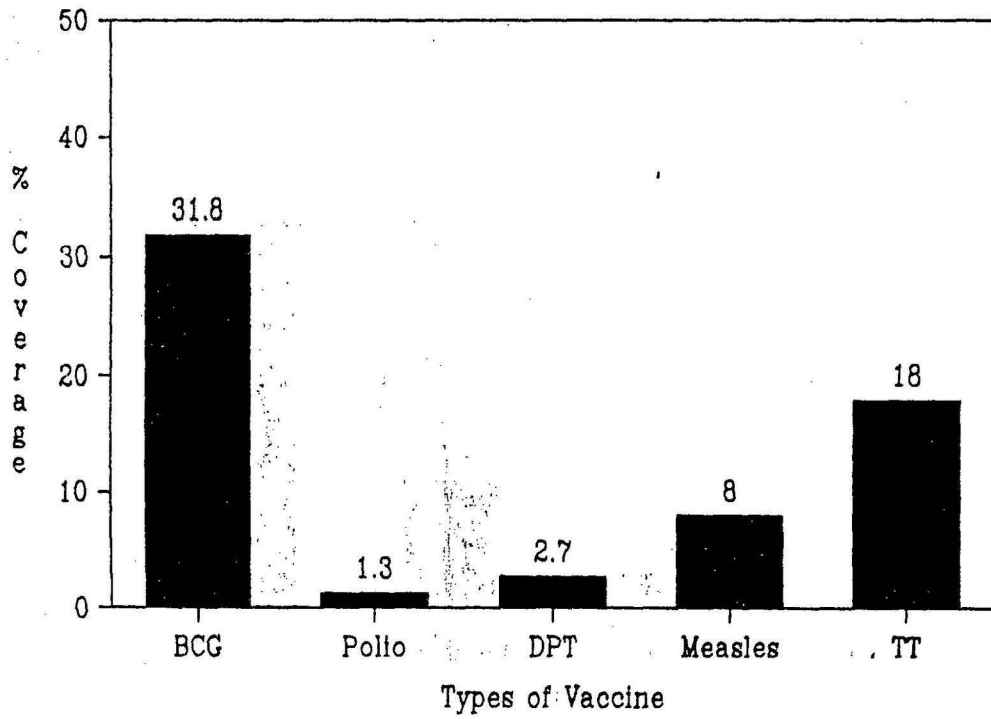


Figure-3
Bouts of Illnesses Reported by the
Study Girls

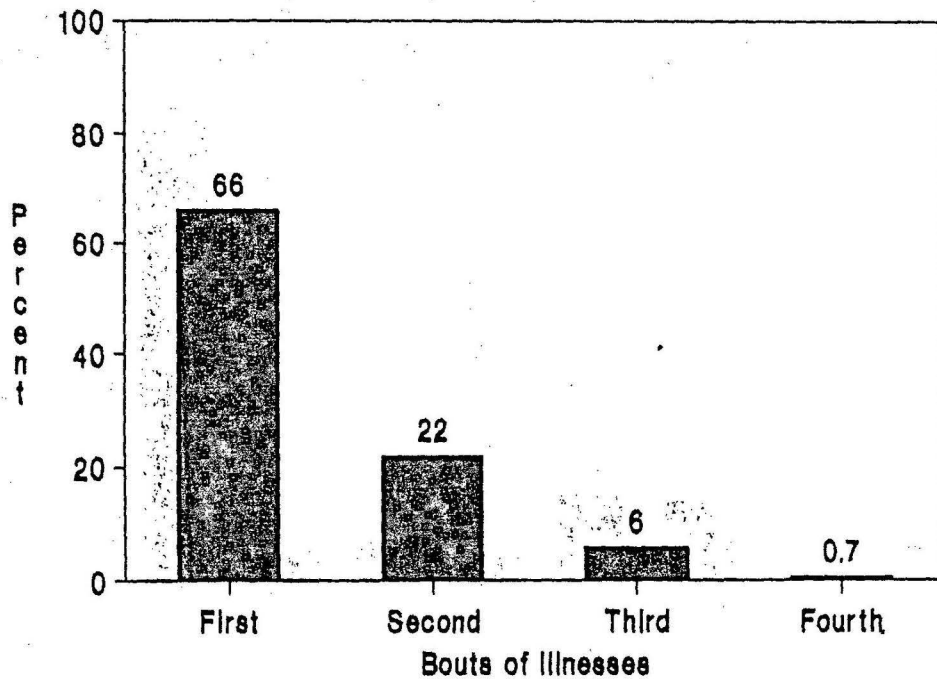


Figure-4
Distribution of Girls by Illness
Episodes

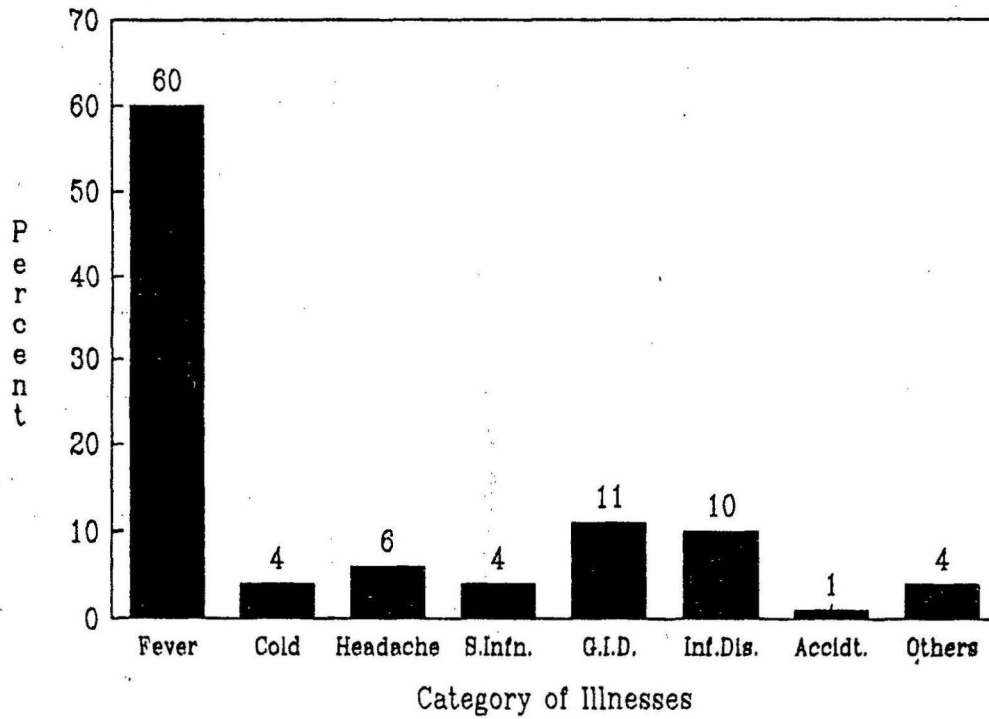


Table 2

Different Illnesses and its Cures south by the Study Girls
(Figures in parentheses indicates percentages)

ILLNESSES	TYPE OF CURES					TOTAL
	DOCTOR	DRUG ³	KABIRAJ	OTHERS ⁴	NONE	
A: FEVER						
1st Bout	51	106	4	2	22	185
2nd Bout	31	10	3	1	9	54
3rd Bout	9	5	-	-	1	15
4th Bout	1	1	-	-	-	2
ALL	92	122	7	3	32	256
(%)	(35.9)	(47.7)	(2.7)	(1.2)	(12.5)	(63.5)
B: COLD						
1st Bout	-	2	1	-	4	7
2nd Bout	1	1	-	-	5	7
3rd Bout	1	-	-	-	1	2
4th Bout	-	1	-	-	-	1
ALL	2	4	1	-	10	17
(%)	(11.8)	(23.5)	(5.9)	(-)	(58.8)	(4.2)
C: HEADACHE						
1st Bout	3	3	2	-	8	16
2nd Bout	2	1	-	-	3	6
3rd Bout	-	-	1	-	1	2
ALL	5	4	3	-	12	24
(%)	(20.8)	(16.7)	(12.5)	(-)	(50.0)	(6.0)
D: SKIN INFECH						
1st Bout	2	4	1	1	4	12
2nd Bout	1	-	1	-	1	3
3rd Bout	-	-	-	-	1	1
ALL	3	4	2	1	6	16
(%)	(18.7)	(25.0)	(12.5)	(6.2)	(37.5)	(4.0)
E: G.I. INFECH						
1st Bout	10	7	5	10	2	34
2nd Bout	3	2	2	-	2	9
3rd Bout	-	-	-	-	1	1
ALL	13	9	7	10	5	44
(%)	(29.5)	(20.4)	(15.9)	(22.7)	(11.4)	(10.9)
F: INFETUS DIS.						
1st Bout	9	3	14	-	7	33
2nd Bout	3	-	3	-	2	8
3dr Bout	-	1	1	-	-	2
ALL	12	4	18	-	9	43
(%)	(27.9)	(9.3)	(41.9)	(-)	(20.9)	(10.7)
G: ACCIDENT						
(%)	1	-	2	-	-	3
	(33.3)		(66.7)			(0.7)
ALL BOUTS (N)	128	147	40	14	74	403
(%)	(31.8)	(36.5)	(9.9)	(3.5)	(18.4)	(100)

³ The term "Drug" indicates self medication with allopathic medicine.

⁴ ORS, faith healers are defined as "Others".

Table 3

Average Weight and Height by Age of the Study Girls

Age in Years	11	12	13	14	15	16
N	34	151	100	106	38	22
Weight (kg) mean + sd	29 _± 11	31 _± 5	32 _± 6	36 _± 6	39 _± 5	40 _± 5
Increase in Weight (kg) mean + sd	1 _± 1	2 _± 1	2 _± 1	2 _± 1	1 _± 1	1 _± 1
Height (cm) mean + sd	133 _± 6	130 _± 14	132 _± 14	136 _± 14	137 _± 13	142 _± 6
Increase in Height (cm) mean + sd	3 _± 2	3 _± 3	3 _± 3	3 _± 3	3 _± 3	2 _± 3

Table 4

Average Weight and Height by Age of Girls in the National Nutrition Survey
1981-82, INFS

Age in Years	11	12	13	14	15	16
N	40	42	26	35	26	26
Weight (kg) mean + sd	23 _± 4	26 _± 5	31 _± 6	34 _± 7	37 _± 5	41 _± 5
Height (cm) mean + sd	128 _± 7	133 _± 9	139 _± 8	146 _± 8	146 _± 6	149 _± 5