Does involvement of women in BRAC influence sex bias in intra-household food distribution?

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Working Paper Number: 25

BRAC-ICDDR,B Joint Research Project
Dhaka, Bangladesh
1998

FOREWORD

Empirical evidence point to a causal relationship between the socioeconomic status of individuals and communities and their health. Indeed improvement in health is expected to follow socioeconomic development. Yet this hypothesis has rarely been tested; at least it has not undergone the scrutiny of scientific inquiry. Even less understood are the processes and mechanisms by which the changes are brought about.

The Rural Development Programme (RDP) of BRAC is a multisectoral integrated programme for poverty alleviation directed at women and the landless poor. It consists of mobilization of the poor, provision of non-formal education, skill training and income generation opportunities and credit facilities. The programme is the result of 20 years of experience through trial and error. However evaluation of its impact on human well-being including health has not been convincingly undertaken.

The Matlab field station of ICDDR,B is an area with a population of 200,000, half of whom are recipients of an intensive maternal and child health and family planning services. The entire population is part of the Center's demographic surveillance system where health and occasionally socioeconomic indicators have been collected prospectively since 1966.

A unique opportunity arose when BRAC decided to extent its field operations (RDP) to Matlab. ICDDR,B and BRAC joined hands to seize this golden occasion. A joint research project was designed to study the impact of BRAC's socioeconomic interventions on the well-being of the rural poor, especially of women and children, and to study the mechanism through which this impact is mediated.

In order to share the progress of the project and its early results, a working paper series has been initiated. This paper is an important addition in this endeavour. The project staff will appreciate critical comments from the readers.

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ACKNOWLEDGEMENTS

This study was done under the auspices of the BRAC-ICDDR,B joint research project, Matlab. The project is currently supported by the Aga Khan Foundation and the Ford Foundation. The BRAC and ICDDR,B are supported by countries and agencies which share their concern for health and development problems of developing countries. Current ICDDR,B and BRAC donors include: the aid agencies of the Governments of Australia, Bangladesh, Belgium, Canada, China, Germany, Japan, the Netherlands, Norway, Republic of Korea, Saudi Arabia, Sweden, Switzerland, the United Kingdom and the United States; international organizations including Arab Gulf Fund, Asian Development Bank, European Union, International Atomic Energy Centre, the United Nation's Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA) and the World Health Organization; private foundations including Aga Khan Foundation, Child Health Foundation, Ford Foundation, Population Council, Rockefeller Foundation, NORAD, OXFAM, Pathfinder International, and the Sasakawa Foundation; and private organizations including American Express Bank, Bayer A.G., CARE, Family Health International, Helen Keller International, the John Hopkins University, Procter Gamble, RAND Corporation, SANDOZ, Swiss Red Cross, the University of California Davis, and others.

The authors highly acknowledge the contribution of all the researchers and consultants involved in the joint research team since beginning of the project for their valuable inputs in designing the research, planning and implementing the field work and data analyses. Nevertheless, special thanks go to the interviewers and inhabitants of Matlab whose active and honest participation made this research project a success.

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ABSTRACT

This study assessed the sex preferences in intra-household food distribution among school going siblings in a rural area of Bangladesh. The study also examines the effect of women's involvement in BRAC's rural development programme in reducing gender gaps in intra-household food allocation. The study was conducted in 14 villages of Matlab thana as one of the sub-studies of the BRAC-ICDDR,B joint research project. A total of 376 school-going siblings (188 brothers and 188 sisters) aged 10-14 years from BRAC member and non-member households were included in this study. Both quantitative, i.e., survey, and qualitative, i.e., observation and focus group discussion, research methods were used for data collection. One of the villages was chosen for direct observations of food distribution behaviour. Six focus group discussions were also conducted with mothers of the siblings in two selected villages. The survey found no significant sex bias in food distribution during 3 major daily meals. However, boys were given preference in the distribution of special foods such as meat, fish and milk products. Brothers consumed greater amounts of special foods compared to their sisters ($p<0.001$). Direct observations of food distribution and focus group discussions indicated a preferential food distribution pattern favouring sons, that was consistent across the socioeconomic classes. Observational data suggested that food was more equitably distributed between sons and daughters within BRAC member households compared to non-member households.

INTRODUCTION

In Bangladesh, female children are disadvantaged within the family compared to their male counterparts in terms of care and food resulting in lower nutritional status and higher mortality (1). Because of maldistribution of food and other resources, availability of food at the household level often does not ensure the availability of adequate food for all household members. Among various reasons of the unequal distribution, sex is considered as one of the leading factors rooted in the culture of many societies. In Matlab, Chen *et al*. have documented absolute differences in food intake between male and female children (aged 0-4 years). They argued that it was not only the access to food but health and medical care that results in sex differentials in survival and nutritional status (7). In consequence, females remain nutritionally vulnerable during whole length of their life cycle, and furthermore, when male and female children are not treated equally, it affects not only the physical growth of the females but also their psychological and mental development.

Although a number of studies have attempted to document food allocation patterns within the household, it (7-10) their measurement has presented many methodological challenges. In urban Guatemala, Engle and Nieves observed dietary patterns and mealtime behaviour, and used a method of direct weighing of foods for the main meal (8). Chen et al. in Bangladesh collected prospective data on anthropometry, morbidity and nutrient intake of the under-five children within a household (7). In rural Nepal an interesting methodology was applied to explore intra-household food allocation pattern between male and female family members which focused on the mealtime behaviour of both food servers and consumers (9). Abdullah documented intra-household food distribution in a rural area of Bangladesh using direct weighing of foods of all household members eaten for 3 consecutive days in four different seasons (10). Beyond the usual operational limitations associated with food intake assessment, most of these methodologies emphasis the quantity of food consumed, and pay secondary importance to the behavioural and cultural issues surrounding food distribution and consumption. The Nepalese study is innovative in this respect, gathering data on both quantity of food consumed and mealtime behaviour. The methodology developed and applied in this study is complex and time consuming; regarding considerable expertise is required in both qualitative and quantitative data collection, analysis and interpretation.

This study is part of the larger BRAC-ICDDR,B joint research project, which aims to assess the impact of BRAC's rural development interventions on health and human well-being (11). BRAC's rural development programme attempts to improve the socioeconomic situation of the rural poor through organizational development, training, credit, education, income generation and social development activities. It is expected that participation in BRAC programme would not only improve socioeconomic status of the village organization (VO) members, it would also increase participation of women in household decision making and enhance favourable attitudes towards women and girl children. Traditionally women are in-charge of household food preparation and distribution. It was assumed that membership in BRAC's Rural Development Programme (RDP) would positively affect women's behaviour regarding the allocation of food and other household resources. Because of the complexity of the type of information needed to assess the behaviour in relation to food distribution, this in-depth study was undertaken using both qualitative and quantitative data collection techniques.

OBJECTIVES

This study aimed to investigate sex differentials in intra-household food distribution among school-going siblings in a rural area of Bangladesh and to assess mother's knowledge and behaviour with respect to intra- household food distribution. The study also examined the effect of women's involvement in BRAC's rural development programme on reducing gender gaps in intra household food allocation.

METHODS AND MATERIALS

The methodology applied in the study is a much simplified version of Gittelsohn's approach to measuring on intra-household food distribution develop for application in Nepal (9). Gittelsohn applied both anthropology and nutritional science to obtain a wide range of data pertaining to intra-household food distribution behaviour. The study focused on food distribution and consumption of all the family members. The present study gathered data from siblings aged 10-14 years. A pilot study was conducted to test the feasibility and accuracy of the method to obtain the required information. Based on the pilot study, some appropriate modifications were made in the methodology in order to make the data collection procedure simpler and quicker (12).

Study area and population

The study was conducted in the Matlab Demographic Surveillance System (DSS) area (13) as a part of the BRAC-ICDDR,B joint research project. This project was initiative in 1992 with a baseline survey of 60 villages. Further in-depth survey work was conducted in 1995 on a sub-sample of 14 villages. The present study draws its sample from two sub-sets of villages. Sample selection was based on the following criteria:

Age: Siblings aged between 10 and 14 years were eligible for inclusion in the study. According to the Bangladesh RDA (recommended dietary allowance), differences in the major nutritional requirements of male and female children of this age group is minimal based on considerations of body size and activity levels (14).

School-going children: *A* further criteria for inclusion in the study was that the sibling pair be currently enrolled in a non-formal or formal school. A sibling pair was selected if they attended the same school and thus had similar exposure to the school environment, in terms of knowledge and awareness. Moreover, it was assumed that school-going children in the age group would have the capacity to provide reliable information regarding the quality and adequacy of their food consumption including their perception about food distribution at home.

BRAC and non-BRAC: Sibling pairs were selected from BRAC and non-BRAC households i.e. households with or without a BRAC member. Eligibility for participation in BRAC is based on two main criteria: that the household owns less than 50 decimals of land and the principal earner sells manual labour for at least 100 days over the last one year. It was assumed that, in addition to other credit-based programme inputs of BRAC, skill training, legal awareness and health education components would influence mother's knowledge and behaviour such that she places equal emphasis in caring for sons and daughters, with the results of reducing gender gaps in intra-household food distribution.

Sample selection
In 1995, a nutrition survey was carried out in 14 villages of Matlab thana which included a total of 2,076 households (13). From the sample, 203 households were identified based on the availability of eligible sibling pairs and the informed consent of their mothers to participate in the study. Of the 203 households, 63 were BRAC member and 140 were non-member households. From the sample, all siblings' pairs from BRAC households were retained for the study. For non-BRAC sibling pairs a random sampling technique was employed to select 125 out of 140 non-member households. The final sample composed 188 brother-sister sibling pairs from 188 households: 63 BRAC member and 125 non-member pairs.

Based on the level of previous interactions and rapport with the villagers, one village was selected from the survey area to conduct direct mealtime observation to record the behaviour related to food distribution and consumption of the food servers and consumers. Focus group discussion (FGD) was also conducted in this village, and a neighbouring one. In total, six FGDs were conducted on separates groups of mother representing BRAC and non-member households.

Data collection
Data were collected during October-December, 1996 through survey, observation and focus group discussions.

Survey
Questionnaire survey: A structured questionnaire was prepared and finalyzed during school and household visits to obtain data on the previous day's food intake of the sibling pairs and their socioeconomic background. Interviewed separately, brothers and sisters were asked to recall the previous day's food intake including main meals taken at home, meal taken outside home and snacks. Information obtained during the interview included the type, amount and frequency of food items consumed, perceptions of whether the food was equitably distributed, sibling meal order and whether snacks were eaten. Sibling meal order was quantified by giving the following scores, 1 = eaten before; 0.50 = eaten together; 0.25 = eaten after and 0 = not eaten. A brother or a sister who ate before his/her sibling was assumed to have received preference in terms of intra-household food distribution. Scores to denote perceived adequacy of intake of individual meals were, 1= adequate; 0.50 = inadequate; and 0 = not eaten. Data on special foods were collected after determining what constitutes special foods. A series of questions were also asked about the types of special foods cooked in the preceding three days, and who received more and why. A list of food items, which were treated as special in the community was prepared beforehand by discussing with the adult men and women in the same area. The interview was done with each brother and sister separately on the same day and preferably at the same location, i.e. at home.

Mealtime observation
Qualitative information on food serving and consumption behaviour was collected through direct observation of one major meal using a checklist. Direct observations focused on the serving behaviour of a food server. Five different types of serving behaviours such as, automatically served (AS), consumer asked and served (CA), self (consumer) served (SS), served on demand (SD) and not served on demand (NSD) were used during mealtime observation. Mealtime norms and attitude regarding food distribution and consumption were also observed. Efforts were made to minimize disruption of regular/usual mealtime behaviour, and to establish a friendly rapport such that mothers felt comfortable distributing foods in front of the researcher. The observer selected a place in the house from where the activities related to food distribution and consumption could be observed.

Focus group discussion (FGD)
Six FGDs were held with women (aged 22-45 years) belonging to eligible BRAC member, eligible non-member, and non-eligible non-member groups. The FGDs were conducted in order to solicit mothers' opinion and behaviour regarding food distribution to male and female children. Each session involved by 6 mothers and continued for nearly an hour.

Definition of terms
Special food: The terms `Special food' refer to food that is cooked only occasionally at home. A list of special foods was prepared in consultation with the adult men and women in the study village. Food considered as special included sweet rice, rice cake and shemai (noodles cooked in milk and sugar). Big fish and meat cooked occasionally are also considered as special foods.

Snacks: Snacks included light foods eaten during morning, afternoon and in the school, in addition to three regular meals. In the village context *muri* (puffed rice), biscuits, *chanachur, gur* (molasses), *achar* (pickle) etc. are considered snacks.

Automatically served: A food server serves food without asking or without being requested by the consumer.

Server asked and served: Server asks the consumer if she/he needs a second serving.

Consumer asked and served: Food is served in response to a consumer's request.

Self-served: A consumer takes food from the pot without server's help.

Not served when demanded: A consumer demands more food and is ignored by the server.

RESULTS

The mean age of the siblings was 12 years (range: 10-14 years). All of them were enrolled in schools and were studying in grade three to four. Mean family size was 6.5.

Survey findings

24 hours food recall survey revealed that major food items consumed by the siblings were rice, pulses, fish and vegetables. Food items such as meat and egg were rarely part of regular diet. Except for pulses, no gender differences were evident in terms of types of the food items consumed. The frequency of pulse intake was higher among brothers (11%) than sisters (4%) ($p<0.01$) (Table 1).

Table 1. Distribution of respondents consuming different food items at least once a day by sex.

Food Items	Brother (n=188) % (n)	Sister (n=188) % (n)	p-value
Rice	97.3 (183)	96.3 (181)	0.769
Pulses	11.2 (21)	3.7 (7)	0.010
Fish	56.4 (106)	65.4 (123)	0.090
Vegetables	61.2 (115)	61.2 (115)	0.178
Fruits	8.0 (15)	6.9 (13)	0.844
Milk	5.3 (10)	3.7 (7)	0.619
Others	15.4 (29)	13.3 (25)	0.659

Table 2 shows the mean score of the order of food intake by brothers and sisters. Brothers had a higher mean score (0.63) compared to their sisters (0.57) for the order of morning meal intake although this was not significant. No difference in the mean scores between brothers and sisters for noon and evening meal was apparent ($p>0.10$).

Table 2. Mean score of the order of food intake.

Meal time	Mean score		p-value
	Brother	Sister	
Morning	0.63	0.57	0.09
Noon	0.58	0.60	0.50
Evening	0.53	0.53	0.89

The mean score for perceived adequacy of meal intake by brothers and sisters in shown in Table 3. There was no significant difference between brothers and sisters in their perception of the adequacy of food intake during morning, noon and evening meals.

Table 3. Mean score of perceived adequacy of food intake.

Meal time	Mean score		p-value
	Brother	Sister	
Morning	0.93	0.93	1.00
Noon	0.97	0.94	0.18
Evening	0.93	0.95	0.22

Among those that reported inadequate intake, respondents were asked to list the reasons why this was so. The most common responses were that: not enough food was available at home, they did not like certain food items, mothers favoured sons during food shortage and food avoidance due to sickness. Sickness as a reason for inadequate food intake was reported more frequently by sisters than brothers. Interestingly, 'girls should get lesser amount' as a reason for inadequate food intake by sisters was mentioned by two brothers. The other reasons for inadequate food intake mentioned only by sisters were: sisters favoured their brothers, brothers got angry if not given larger share and the youngest brother should receive a grater share (Table 4).

Table 4. Reasons for not getting adequate amount of regular food as stated by brothers and sisters.

Reasons	Brother (n=33) % (n)	Sisters (n=36) % (n)
Food was not adequate	60.6 (20)	47.2 (17)
Did not like the food	24.2 (8)	14.0 (5)
Mother favoured son	6.1 (2)	14.0 (5)
Felt sick	3.0 (1)	22.2 (8)
Girls should get lesser amount	6.1 (2)	-
Sister favoured her brother	-	5.5 (2)
Brother get angry if not given larger share	-	8.3 (3)
Youngest brother should receive a greater share	-	5.5 (2)

Special food: Survey results show that about 58% of the brothers and 61% of the sisters consumed special food during the preceding three days.

Table 5. Proportion of brothers and sisters received special food.

Sibling	Received special food		p-value
	Yes (%)	No (%)	
Brother	57.5	42.5	
Sister	60.6	39.4	0.53

Siblings were then asked about their perceived adequacy of special food consumption. According to Table 6, 87.3% of the brothers and 38.4% of the sisters perceived that they consumed adequate amounts of special foods. A similar pattern was found when the study population was categorized by BRAC membership status. In all social groups, a significantly higher proportion of brothers compared to their sisters stated that the amount of special food consumed by them was adequate ($p<0.001$) (Table 6). The proportion of sisters who perceived that their consumption of special food was adequate was higher in BRAC member households (40%).

Table 6. Distribution of siblings according to their perception on adequacy of special food intake.

Population type	Brother %	Sister %	p-value
BRAC member	92.9	40.0	0.00
BRAC non-member	84.1	37.4	0.00
All	87.3	38.4	0.00

When sibling pairs were asked why they received inadequate special foods, the most common response were that there was not enough food available at home and that mothers generally favoured their sons when distributing special foods (Table7). Many sisters emphasised that brothers get angry if they do not received a larger share of a special food item. It is not surprising to note that 36.8% of sisters recognise and accept that they should get a lesser share of a special food compared to their brothers.

Table 7. Reasons for not getting adequate amount of special food stated by brothers and sisters.

Reasons*	Brother (n=14) % (n)	Sisters (n=76) % (n)
Food available is not adequate	28.6 (4)	15.8 (12)
Mothers favour sons	21.4 (3)	31.6 (24)
Brother gets angry if not given large share	7.1 (1)	13.2 (10)
Sisters should get less food	-	36.8 (28)
Youngest brother gets more food	-	21.1 (16)
Other reasons	43.0 (6)	9.2 (7)

* Multiple answers were considered

Snack intake: Siblings were asked about their consumption of snacks in addition to the three major meals. *Muri* (puffed rice), bread, peanuts, *chanachure* (fried snacks), and fruits were reported to be the major snacks eaten by the sibling pairs regularly at home and school. There was a consistent trend of high snack consumption by brothers than sisters across the population groups, however, the differences were not statistically significant ($p>0.10$) (Table 8).

Table 8. Proportion of children taking snacks by household category and sex

Household category	Brother	Sister	p-value
BRAC member	82.5	76.2	0.48
BRAC non-member	80.0	73.0	0.60
All	81.4	73.9	0.20

In the case of brothers and sisters, fathers and mothers were the main sources of money to buy snacks. Some also reported that elder brothers, sisters and relatives provided money to buy snacks (Table 9).

Table 9. Sources of money for buying snacks

Source	Brother % (n)	Sister % (n)	p-value
Father	54 (63)	51 (48)	0.74
Mother	31 (36)	35 (33)	0.63
Brother	6 (7)	8 (7)	0.08
Sister	1 (1)	-	-
Relatives	4 (4)	2 (2)	0.69
Others	4 (5)	4 (4)	1.00

Direct mealtime observation

Direct mealtime observations were performed to gain an in-depth understanding of food distribution behaviour among food servers and consumers. Observations were made on 25 siblings in 25 households in one selected village during a major meal. Distribution of one particular food item (i.e., curry) that was perceived by mothers as special for that day in terms of preference, quality and price was observed in particular.

Table 10 indicated food-serving patterns by household category and sex. For all 25 households, mothers were food servers. The staple food was rice and curry cooked with vegetables and fish and spices. Usually the first serving of rice and curry was served automatically by a mother without any observable gender discrimination. However, when any one of these siblings wanted more food as a second serving, boys were given preference. It was observed that frequency of self serving was higher among brothers than sisters suggesting that compared to their sisters, brothers enjoy more freedom in self serving. Girl, on the other hand, had to request a second serving more frequently than their brothers. It was also observed that the frequency of refusal (not served when demanded) was higher in case of girls than boys, which confirms the existence of gender bias in intra-household food distribution favouring male children (Table 10).

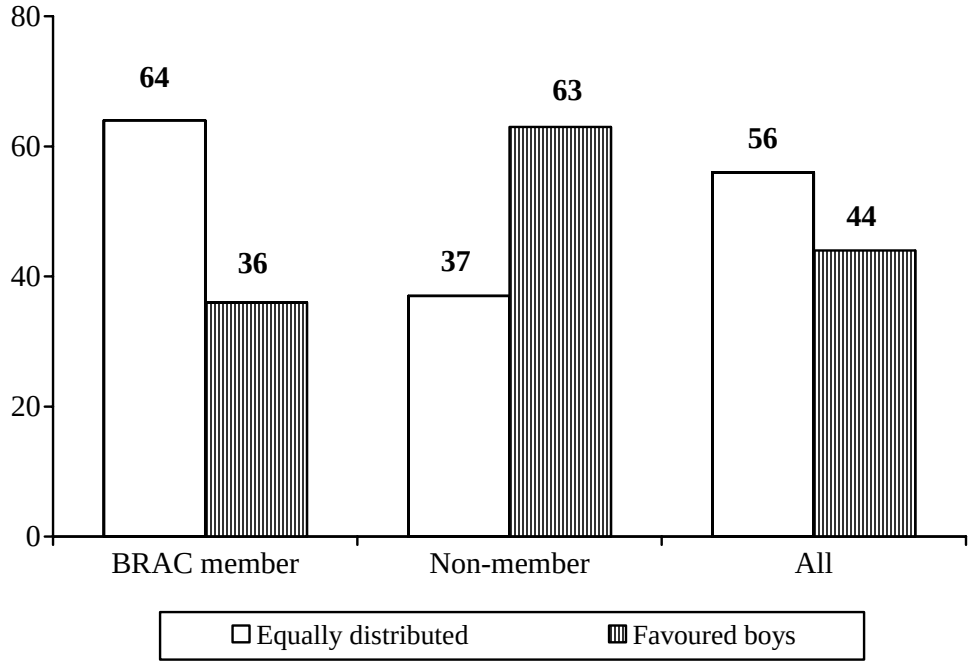
Table 10. Frequency of food serving patterns by membership status and sex.

Serving pattern	BRAC member (n=12 HH)		BRAC non-member (n=13 HH)		Total (n=50HH)	
	B	**S**	**B**	**S**	**B**	**S**
Automatically served	12	12	12	13	24	25
Server asked and served	-	2	1	2	1	4
Self (consumer) served	2	1	5	2	7	3
Served when demanded	6	3	2	4	8	7
Not served when demanded	-	1	1	2	1	3

B= Brother, S=Sister

As shown in Figure 1, mealtime observations also suggested that food was not equally distributed between boys and girls. Of the 25 households observed, an equal amount of food was served to boys and girls 56% of households. Food was distributed more equally among boys and girl in BRAC households (64%) compare to non-member households (17%).

Figure 1. Allocation of food to boys and girls at household level by BRAC membership status



Mothers' perception

Six FGDs were conducted in two villages to understand the food distribution behaviour of the mothers. Among the 36 mothers that took part, only six had formal education. One mother was involved with BRAC programme as a *Shasthya shebika (SS)* and all others worked in the home. Participants were asked to discuss their role in intra-household food distribution, such as whether they gave preference to certain people when serving meals. In general, women agreed that they had been observing gender discrimination favouring males in food distribution from their very youth. They reported having seen the very same practice among their mothers, mothers in law, and sisters-in-law. They also agreed that it is likely that they will transfer these same practices to their own daughters. Women agreed in common the practice of saving food for husbands followed by sons who were outside the home during meal times irrespective of the total amount of food available for all household members. They explained that it was important to maintain the good health of their husbands, as they were the primary bread earners even if it meant depriving other household members, in most cases, herself and her daughters, from having adequate food intake.

BRAC members emphasized that they usually did not discriminate between sons and daughters in terms of food distribution. According to them:
"Nowadays girls also work outside home, so we give equal food to sons and daughters."

The more positive attitude of BRAC women is not surprising as they received social awareness training through the 18 promises of BRAC. Through the promises, they learn about the importance of treating boys and girls equally. During direct mealtime observations, it was found that compared to non-member households, unequal food distribution occurred to a lesser degree in BRAC member households. Nevertheless, group discussion revealed that women have yet to overcome traditional values, which give preference to sons. According to a number of non-member women:

"Sons are the future security for parents and they also help their father at work so they deserve more food."
They further added:
"The daughters are less demanding in asking for additional food."
One mother mentioned:
"If there is less food available at home and I have to choose between roti (bread) or bhat (rice) to be served, if the roti is served to a daughter usually she does not complain. The rice has to be served to the son or less he refuses to eat".
It should be noted that rice has higher prestige than *roti* in the traditional rural diets in Bangladesh. Other mothers stated:
"Daughters finish a meal without complaining, but sons do not eat unless they are offered the best. Sons get larger share even if there is only one type of available vegetable (shak) in the meal."

DISCUSSION

The survey revealed no significant difference in intra-household food distribution between brothers and sisters in regular meals. Between both sexes, most report adequate food intake during regular meals. However, in rural Bangladesh, girls generally do not disclose that they receive inadequate food due to many complex social and cultural factors. FGDs revealed that mothers from all socioeconomic groups give preference to sons in intra-household food distribution. Findings also revealed that sibling trend to take their meals together. Both sisters and mothers felt that if a boy took more food he would grow-up healthy and assist his father in income earning activities. Meal observations also indicate that if the food cooked was not sufficient for all household members, mothers tented to serve more food to husbands and sons. Usually her husband was given priority followed by male children. Mealtime observations revealed that if fish was cooked boys were given a bigger share than their sisters. The children themselves were aware of sex discrimination in intra-household food distribution. Not only did sisters argued in favour of the existing gender differences, boys did not hesitate to disclose that at home they get larger share of food compared to their sisters.

Sex difference were found in the consumption of special food and snacks. Special foods are cooked occasionally, such as during religious occasions, when relatives come to visit, and during the harvesting period. The amount of special food is usually limited in quantity. It was found that in the distribution of special food mothers tented to give preference to sons. This is well recognised by both brothers and sisters. Sisters from all socioeconomic classes highlighted that a brother was the future security of the family, and they were willing to receive a lesser amount of food compared to their brothers. Mealtime observations of food distribution behaviour and focus group discussions with the mothers also confirmed the above findings.

In general, food distribution was found to be more equal among BRAC members although male-bias still very prevalent in observed behaviours. Coming in expectations that greater income might result in less gender discriminations in food distributions, observations and FGDs with relatively wealthy women (non-eligible to participate in BRAC), yielded similar results.

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