

Status of Food Security and Its Impact on Quality Education among High-School-Students in Village Shimulia

[Mr. Nazmul Huda]

Abstract—Green revolution aims to create hunger free world. However, it had bypassed the crisis issues including food security among the developing nations. Inflationary pressure and increasing tendency of food prices play a crucial role for food insecurity. Bangladesh – a highly populated country, estimated 7,400,000 children enrolled as high-school-students every year, mostly depends on agriculture. No doubt, these children, by acquiring quality education, will contribute to creating a beautiful Bangladesh – a hunger free, technologically advanced, and globally adjustable Bangladesh. Thus, only quality education, including quality learner, can ensure proper social development which was actually demanded by the government of Bangladesh. The objective of this study is to show the relationship between food security of high-school-students and their quality education. The study has been carried out through purposive sampling with 167 high-school-students who were studying in class-6 to 10 and living in a semi-remote Village named Shimulia, Bangladesh. For this study, semi-structured questionnaire for surveying and Key Informant Information (KII) were used as tools of data collection. The study was undertaken from July, 2014 to December, 2014. The study revealed that family food production is moderately (.69) related to quality education where household availability of food (.78) and accessibility of food for the family (.87) are associated with quality education among high-school-students in Bangladesh.

Previous studies showed so many factors were associated with quality education but not with food security. Nevertheless, this study will enrich the factors affecting quality education.

Eventually that will create a new bridge between food security and quality education.

Key words: Quality education, Food security, High-school-students, Food Insecurity, Food Consumption.

I. Introduction

Food security and food insecurity are the terms used to describe whether or not all people at all time have physical and economic access to sufficient, safe and nutritious food for a healthy and active life [1].

Food security is multi-dimensional and its major components are: (a) availability of food, (b) access to food, (c) quality or nutritional adequacy of food, and (d) utilization of food [2].

Again food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. To discuss food security, three important aspects must be considered e.g. availability of adequate food, stability in food supplies, access to food, and nutrition security. Despite the growth in food production and its availability, food insecurity is still a major problem mainly because of the lack of purchasing power and thus of access to food, especially for the ultra poor community in Bangladesh [3].

Bangladesh is still fighting for supplying the basic needs of her people. Food is one of the basic needs of human and the situation of food security in Bangladesh is still in a very miserable condition especially in the cities. There are around 20,000 pavement dwellers in Dhaka city and so many of them in different cities in Bangladesh who are the vary risk group of the food security. Though the percentage is very low in terms of total population, the development of food security is still ignoring this huge population of the country [4].

Quality education includes learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities; environments that are healthy, safe, protective and gender-sensitive, and provide adequate resources and facilities; content that is reflected in relevant curricula and materials for the acquisition of basic skills, especially in the areas of literacy, numeracy and skills for life, and knowledge in such areas as gender, health, nutrition, HIV/AIDS prevention and peace; processes through which trained teachers use child-centred teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities; outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society [5].

The study attempts to create a new dimension that food security affects quality education with small scale evidence.

II. Objective

The main objective of the paper is to find relationships between food security and quality education. Besides it also go beyond the present situation of quality education and family food security of the respondents.

III. Literature

To combat food insecurity the Government of Bangladesh initiated the Public Food Distribution System (PFDS) to make food accessible for the vulnerable group through price subsidies and targeted food distribution programs such as VGF (vulnerable group feeding), VGD (vulnerable group development) , FFW (food for work), TR (Test Relief), GR (Gratuitous Relief) and FFE (food for education). The PFDS is made up of 5 silos, 13 central storage depots and 578 local storage depots. Bangladesh maintains a national food reserve of around 800 thousand metric tons of food grains of which about 450 thousand metric tons are intended to meet the food crisis during emergencies. In the lean season the PFDS becomes operational through open market sales (OMS), where the government seeks to prevent large

fluctuations in rice prices as a means to enhance the overall food security status of the poor. The amount of food withdrawn from the PFDS during the lean periods is also an indication of the severity and extent of seasonal food shortage. On off-take of food from PFDS for OMS it becomes evident that for the last two years the food crisis has been more acute during the month of February and March rather than in October and November. Under the PFDS the off-take of food was highest during FY 2004-2005, i.e. about 1.37 million mt. which was 39 percent higher than the PFD of the previous year [6].

The Food for Education (FFE) program was introduced to Bangladesh in 1993. It is described by Xin Meng and Jim Ryan (2007) that the program is successful in that the FFE program increased the school attendance rate of the treated group by 15 to 26 percentage points, and increased their duration of schooling by 0.7 to 1.05 years [7]. Most of all the literature shows that the government of Bangladesh emphasized much to ensure education quality in primary education. It is hard to find any literature regarding quality education in secondary level (high-school) in Bangladesh.

The scenarios of secondary schooling in Bangladesh as regards GER, NER, dropout rate, completion rate, and survival rate are not at a satisfactory level. BANBEIS (2012) evinces that the GER at secondary level for grade 6 to 10 is 50.94 percent on an average in 2012, while it is 56.63 percent for female students and only 45.70 percent for male students. Following table indicates that the number of secondary age population aged from 11 to 15 was nearly 1.56 crore, while total enrolment in grade 6 to 10 was barely 8 million and enrolment of students aged from 11 to 15 in grade 6 to 10 was nearly 7.1 million.

TABLE I. GROSS AND NET ENROLMENT RATE IN SECONDARY SCHOOLS IN 2012

Indicators	Both	Male students	Female students
Gross Enrolment Rate (%)	50.94	45.70	56.63
Net Enrolment Rate (%)	45.80	41.42	50.56
a) Secondary Age Population (11-15 years)	1,55,81,326	81,13,214	74,68,112
b) All Enrolment in grade VI to X	79,37,235	37,07,943	42,29,292
c) Enrolment of students aged from 11 to 15 in grade VI to X	71,36,801	33,60,842	37,75,959

Source: BANBEIS (2012) [8]

TABLE II. COMPLETION, DROPOUT, AND SURVIVAL RATES IN SECONDARY SCHOOLS IN 2012

Indicators	Both	Male students	Female students
Completion Rate (%)	53.30	59.56	48.17
Dropout Rate (%)	46.70	40.44	51.83
Survival Rate (%)	66.34	72.75	61.06

Source: BANBEIS (2012) [9]

The quality of education in secondary schools in Bangladesh cannot also be reckoned satisfactory, though a dramatic increase in average pass rate has been noticed lately in both Secondary School Certificate (SSC) and Higher Secondary Certificate (HSC) examinations (89.03 percent in SSC in 2013 and 74.30 percent in HSC in 2013).

While secondary education set the scenes of higher education under such major streams as science, humanities and business studies, the performance of students in qualifying examinations of universities, especially of some public universities, is quite incongruous vis-à-vis their results in SSC and HSC levels. The quality of secondary education in Bangladesh remains unsatisfactory due mainly to lack of modern pedagogical thinking among the teachers, underemphasized practical learning especially in science stream, lack of modern educational equipments and less scope of creative thinking for the students. In addition, poor physical infrastructure causes the institutions rendering secondary education in Bangladesh, especially in rural areas, to impart education of poor quality as well. [10]

TABLE III. NUMBER OF INSTITUTIONS HAVING ELECTRICITY AND MULTIMEDIA FACILITIES, 2012

Type of School	Management	Institutions having Electricity connection (%)	Institutions having computer facility (%)	Institutions having multimedia facility (%)
Junior Secondary	Private	41.6	24.1	2.7
Secondary School	Public	96.6	99.7	39.7
	Private	82.4	76.9	10.1
	Total	82.6	69.1	10.7
School and College (School Section)	Public	100	100	60
	Private	94.1	99.1	24.7
	Total	94.2	99.1	25.2
All	Public	96.7	99.7	40.4
	Private	76.7	69.8	9.6
	Total	77.0	70.3	10.1

Source: BANBEIS (2012) [11]

It is evident that the high schools are still going without electric facility. And surely institutions having multimedia facility are not satisfactory. Another study, worked by Rushad aridi and Syed Naimul Wadood showed household head's level of education and food security situation in Bangladesh. The table showed a clear picture.

TABLE IV. HOUSEHOLD HEAD'S LEVEL OF EDUCATION AND FOOD INSECURITY SITUATION IN BANGLADESH.

Highest grade by household head	% Food Insecurity
Primary or less (1-5 years)	42.0
Secondary or less (6-10 years)	37.1
Higher secondary or less (11-12 years)	38.8
Graduate or less (13-16 years)	44.4

Source: Rushad Faridi and Syed Naimul Wadood [12]

A study on char people showed that the year of schooling and household food security condition were significantly and positively correlated. That is, the educated char people are more food secure [13]. Besides, though development partners and donor organization in Bangladesh report frequently that food security can ensure quality education in rural area, government of Bangladesh still implement hardly programs for food security to ensure quality education for high school students. [14] There are a huge lack of study related to food security and quality education in Bangladesh.

iv. Conceptual frame

Hannah Pieters¹ et al. outlined a framework to analyze the determination of food and nutrition security which showed a clear relationship between food security and education at micro level [15]. Present study defined the concept of food security in a different way.

To determine food availability, present study concerns whether the family needs struggle to collect food or not and the production quantity of basic food grain. On the other hand, for food access it seeks family resources and the price of available food. And lastly availability, it tries to find out the dietary satisfaction level, hunger situation and tension for future food shortage to determine utilization of food.

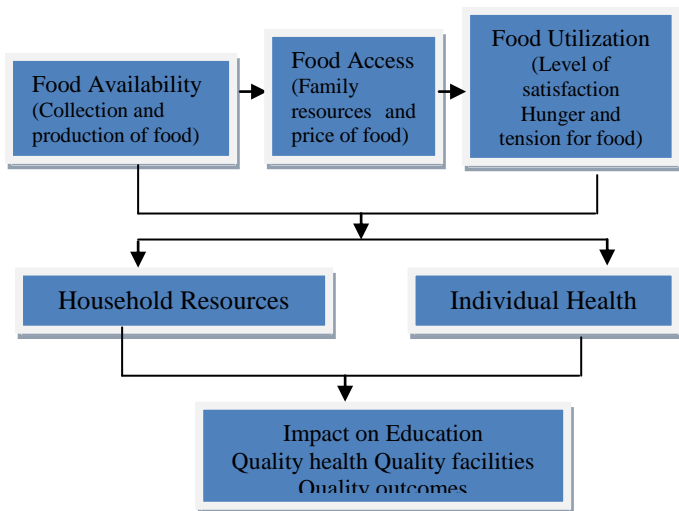


Figure 1. Conceptual framework of status of food security and its' impact on quality education (micro level)

v. Methodology

The study was conducted at a semi-remote village named Shimulia in Bangladesh. It is situated in the division of Khulna under the district of Narail. Village Shimulia is in Narail Sadar Upaziala under the union of Korola. There are 516 households in the village where 296 are Muslim households and rests of the household (220) are Hindu. There are 39 Hindu rishi (cobbler) and 21 Hindu karmakar (blacksmith) households. Again there are 29 Muslim tati (weaver) households. There are about 4300 population which comprises 1667 voters. Agdia Shimulia D A Latif Secondary School and Shimultola Girls High School which are in the village Shimulia, are taken into consideration for respondents. A semi-structured questionnaire schedule, and Key Informant Information were used to collect primary data. Data were collected from 167 high-school-students through survey. Besides, some qualitative data were collected from the teachers of the respective high schools through Key Informant Information (KII) tool.

vi. Result and discussion

More than half (60.5%) of the respondent's family didn't need to buy rice in last year and the rest of them (39.5%) needed to buy. In recent year Bangladesh has gained a plenty of rice production that of demand. In rural area,

almost all of the family produce rice in their own land or borrowed land. But, however, still, more than half of the families need to buy rice from local bazaar to manage round the year food demand to feed family members. Almost all (94.1%) of the respondent's family didn't face difficulties to collect food. The nearest local bazaar named 'Agida Barar is located within 2km. from any part of the village. Again a few (25.1%) of the respondent's family got at least one of the govt./NGO facilities of food provisions and rest (74.9%) of them didn't get anything. Assistances from govt. and NGO are not much they needed as the village is located on the peripheral of the district Narail. Most (73.05%) of the respondent's family faced problems to buy food for price hike and the rest (26.95%) of them didn't face it. Almost all of the people of village Shimulia directly depends on agriculture and most of them produce rice. A few land is used for three rotations of crops. Occupational variety does not exist. Thus, the income earning activities is in lowest form in comparison to other villages of the district. Thus, it is obvious that recent price hike of the food items make themselves faced difficulties to buy. More than half (53.2%) of the respondents, somehow, satisfied with their daily meal in last months. Only 33.7% of the respondents had fully satisfied in this regard and notable that 13.1% of the respondents had never satisfied with their daily meals in last month. A few (10.8%) of the respondents had experienced at least one of the hunger situations (e. g. fasting for one meal, shorten the food menu) in previous year whereas 77.2% of the respondent's family had worried with their food security for next year. A few of the respondents reported they had experienced hunger situation and had never satisfied with their daily meals in last months but surprisingly, most of the family members worried for next year food availability and accessibility. TABLE V. SALIENT FEATURES OF FOOD SECURITY

Indicators	Responses	Percent
Need to buy rice for family (previous year)	Yes	39.5
	No	60.5
Faced any difficulties to collect food (e.g. distance) (any time)	Yes	5.9
	No	94.1
Availability of food (average value)	Secured	22.5
	Insecure	77.5
Get any type of access from govt./NGO food (any time)	Yes	25.1
	No	74.9
Problems to buy food for price hike (any time)	Yes	73.05
	No	26.95
Accessibility of food (average value)	Secured	49.7
	Insecure	50.3
Level of satisfaction by taking daily meal (last month)	Fully satisfied	33.7
	Sometimes satisfied	53.2
	Never satisfied	13.1
Faced any type of hunger situation (e. g. fasting for one meal, shorten the food menu) in previous year	Yes	10.8
	No	89.2
Responses regarding food crisis (next year)	Yes	77.2
	No	22.8
Utilization of food (average value)	Secured	33.6
	Insecure	66.4

All most (71.3%) all of the respondents reported balanced in height-weight ratio according to BMI (body mass index) and the rest (28.7%) of them hadn't reported balanced. More than half (62.8%) of the respondents reported that they had at least one type of disease during last

year and the rest (37.2%) of them didn't have. WHO-UNICEF (2005) reported that only 32% of rural people use of sanitary latrines in rural area and 9% of the population use hanging latrines [16]. So it is obvious that most of the respondents had experienced at least one disease during last year. Distinguishable (43.1%) of the respondents had faced problems to pay school fee during high school study whereas almost half (49.7%) of them had faced problems to buy educational materials. Mainly because of price hike of basic human needs in recent year, people in rural area, are facing cash crisis that leads a critical situation of maintaining educational costs of children. It is crucial that 94.6% of the respondent's family members cared about home works. It is proved from KII that almost all of the parents in rural area believe that an educated children is necessary for future well being of their family thus they cared their school going students. A few (21.5%) of the respondents had community support for studying high school whereas 12.5% of the respondents had engaged with income earning activities along with their study. Still in village Shimulia, there are some families regarded as hard-core poor. The students come from those families, must engage themselves with income earning activities to contribute family income along with their study. Around half (48.5%) of the respondent's result is average where 14.9%, 22.1% and 14.5% had got excellent, good and poor result respectively.

TABLE VI. QUALITY EDUCATION

Indicators	Responses	Percent
Imbalance in height-weight ratio according to BMI (body mass index)	Yes	28.7
	No	71.3
Any type of disease (last year)	Yes	62.8
	No	37.2
Faced problems to pay school fee (during high school study)	Yes	43.1
	No	56.9
Faced problems to buy educational materials (during high school study)	Yes	49.7
	No	50.3
Caring of home work by parents (during high school study)	Yes	94.6
	No	5.4
Get any type of community support regarding high school study	Yes	21.5
	No	78.5
Engaged in income earning activities to support family (during high school study)	Yes	12.5
	No	87.5
Result of the respondents	Excellent	14.9
	Good	22.1
	Average	48.5
	Poor	14.5
Overall quality education among the respondents	Satisfactory	63.9
	Not-satisfactory	36.9

A positive correlation coefficient was found between the food security and quality education among high school students in rural area in Bangladesh. Nearly strong positive (0.78) correlation was found between availability of food and overall quality of education. And the value of $r=0.87$, 0.42 and 0.69 was found for the relation between accessibility of food and overall quality education, between utilization of food and overall quality education and between family food production and overall quality education respectively. The value of these correlation coefficient

indicate that as availability of food, accessibility of food, utilization of food and family food production increase, quality education increases, and conversely, as independent variables decreases, dependent variables decreases. Table: relationship between food security and quality education

TABLE VII. RELATIONSHIP BETWEEN FOOD SECURITY AND QUALITY EDUCATION

Relationship status	(r)
Availability of food and overall quality education	0.78
Accessibility of food and overall quality education	0.87
Utilization of food and overall quality education	0.42
Family food production and overall quality education	0.69

VII. Conclusion

Though Bangladesh has some food program for education like FFE (Food For Education), targeting increasing enrollment rate in primary level of education, there is still a gap of these program in secondary level. Several stipend programs, teachers training activities, academic building constructions are notable activities for ensuring quality education in secondary education. The paper found a significant positive correlation between food security and quality education among high school students. It is time to think ensuring food security among them which will lead quality education. The study was based on a semi remote small village in Bangladesh with small sample size. Further study, based on larger region with greater sample size will help to explore proper scenario in this regard.

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Nazmul Huda
Lecturer, Department of Humanities,
Bangladesh University of Engineering
and Technology (BUET),
Dhaka – 1000, Bangladesh