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ABSTRACT

Background

Bangladesh, like many other countries, experienced a sharp rise in food price during 2007 and 2008, reaching the peak in early 2008. Since then, discussion about causes and consequences of price hike became an international issue and its humanitarian, socio-political and economic consequences dominated both literature and media. Less discussed, however, was the impact of price hike at household and individual level and the effectiveness of the contemporary development programmes, such as microfinance, in protecting the poor in the low-income countries. Lack of relevant data could be a deterring factor in exploring this important aspect. This paper examined the impact of price hike and membership of microfinance schemes on the meals of the poor by comparing data collected during pre and post price hike in Chakaria, a rural area of Bangladesh.

Methods

Data were collected through the health and socio-demographic surveillance system of ICDDR,B in Chakaria, an INDEPTH member site [1]. Information on meal skipping for food shortage and intake of legumes, milk, and meat during 12 months preceding the survey collected in 2003 and 2008 were used. Changes over time in food intake were examined by economic condition of the households and membership of microfinance schemes using cross-tabular analysis.

Results

In 2008, 32.8% households reported meal skipping due to food shortage compared to 18.5% in 2003. At the same time proportion of households never consuming milk increased substantially from 8.3% in 2003 to 70.9% in 2008. Meat intake was also seriously affected, 52.4% households reported no meat intake in 2008 compared to 5.0% in 2003. Intake of legume, however, did not fall much as compared to the other food items. The impact of price hike on meal skipping

was greater for the poor (33% for general population vs. 54.1% for poor in 2008). In 2003, 27 % of the poor who were members of microfinance had to skip meals compared to 33% of the poor non-members. But in 2008 the proportion increased to 55% and 54% among poor members and poor non-members respectively implying that the price hike affected both the groups almost equally. The level of legumes, milk and meat intake among the poor between 2003 and 2008 was not altered by NGO membership as well.

Conclusions

The findings indicate the negative effect of sudden economic instabilities due to incidences like price hike on the meals of the poor. There is a need for systematically collecting data to monitor adverse effect of such phenomenon and understand the context to help protect the poor from adversity.

Key words: meal skipping, price-hike, poor, NGO, Bangladesh.

BACKGROUND

Phenomenal hike in food price during the first quarter of 2008 had shaken the world community [2-4]. The World Food Programme (WFP) termed this high food price as a “silent tsunami” which threatened to plunge more than 100 million people on every continent into hunger [5, 6]. Poor nations including Bangladesh were the worst affected [7]. Many incidences of civil unrest from various parts of the world were reported [4, 8-11]. Some food exporting countries restricted food export [2, 3, 12, 13]. The discussion soon after the price hike was dominated by reactions both from the food exporting and food importing countries, reasons for price hike, quantum of food relief required to feed the world hungry, impact on overall development, especially of the low-income countries, and many other macro issues [2, 12]. In some instances the impact of price hike on the lives of the poor was assessed and the coping strategies the poor adopted during soaring price was documented [7, 11, 14]. Largely missing in the discussion was the effectiveness of popular contemporary development strategies such as microfinance in protecting poor people from hunger and other difficulties resulting from food price hike.

Bangladesh is globally recognized as the pioneer in microfinance programmes [15]. These microfinance schemes are part of the NGO development programmes that aim to improve the living standard of the poor and disadvantaged population [16]. In general, these programmes offer collateral free loans to poor households which they can invest in income generating activities and thereby improve their livelihood [17]. Investing in such activities are expected to ensure a constant minimum flow of income that protects the members from seasonal variation in consumption [16, 18]. Studies have shown that membership of microfinance programmes provides its clients

with the ability to better manage shocks [19]. The fact that micro finance programmes provide access to better living for the poor, it is expected that those who are members of such programmes are better equipped to face the challenge of economic hardship than those who are not.

The present paper, therefore, attempts to assess the impact of the price hike in 2008 on meals of the poor and the level of protection the microfinance schemes had provided to the poor to cope with the situation by comparing data of 2008 and a pre price hike period 2003 from Chakaria, a remote rural area in Bangladesh. However, it should be mentioned that, Non-availability of appropriate data from poor communities during pre and post price hike situation was a major barrier in assessing the actual impact and the level of protection the traditional pro-poor programmes lent to the poor.

METHODS

The study area and study period

Data for this paper have been collected from eight unions of Chakaria upazila (sub-districts) in Bangladesh. It is situated in the south-east coast of the country. It had a population of around 416,110 in 2008 [20]. The climate of Chakaria from May to September is characterized by tropical monsoons and heavy rainfall and is mostly dry during the remainder of the year. The main economic activities in the area have been agriculture, forestry, and sea fishing. The population of Chakaria is relatively young, 41% of the population is under age 15, while 4% is 65 or older [21].

The study area being located in the eastern part of the country, shares socioeconomic, demographic and health characteristic quite comparable to the rest of the eastern part which lags behind rest of the country in terms of health and development indicators. The scenario in terms of healthcare provision compares well with

the national scenario and confronts health systems challenges facing the nation in general and the rural areas in particular. The area also has some unique features such as endemicity of malaria, prevalence of rickets, vulnerability to cyclone and tidal surge and other issues related to climate change. The area also has relatively less concentration of NGOs. ICDDR,B has been running a Health and Demographic Surveillance System (HDSS) in the eight unions of Chakaria since 1999. Chakaria HDSS is a member of the INDEPTH since 2007[1].

Data from two different study periods, namely 2003 and 2008, were compared to assess the impact of price hike. The economic indicators for the country revealed that year 2008 experienced a general inflation rate twice that of 2003 (4.38 in 2003 vs. 9.94 in 2008). More specifically, the food inflation rate in 2008 was 12.28, which was only 3.46 in the year 2003. For this, we considered year 2003 to represent pre price hike situation (i.e. the base year) and year 2008 to reflect the situation post price hike.

Data collection

Data from two different rounds of HDSS have been used for this paper. The first one was carried out during May-July 2003 in a sample of 400 randomly selected households from around 6,000 households included in the HDSS. The second one was carried out in all the 6,426 households included in the HDSS during August-November 2008. Both the surveys used the same questions and reference period used was 12 months preceding the data collection. Trained female field workers with at least 12th grade of schooling collected data from the head of households or any other informed member in case of the absence of the head of household. All of the interviewers were from Chakaria. The field supervisors re-interviewed 5% of the households to ensure quality of data. Discrepancy between the information collected by the interviewers and their supervisors was discussed and necessary corrections were made by further field verification.

The questionnaire collected data on socio-economic and demographic characteristics of households, asset ownership. Among

other variables data were collected on availability of resources to meet basic need of households, which comprises of availability of food, shelter, clothing, health needs, and state of households in terms of social inclusion.

Definition of variables and analysis of data

Meal skipping was defined in terms of skipping of regular meals for shortage of food. Questions about availability of legumes, milk, and meat for consumption was asked for the household. Meal skipping by any member of the households was assessed by asking the frequency of any household member skipping a meal due to shortage of food during the last 12 months. The answers were recorded as 'never', 'one to four days a month', and 'more than four days a month'. Similar questions and categorization of answers were used for consumption of legumes and milk.

Shortage of food intake in terms of meat consumption was assessed by asking how frequently meat had been available for the household during the last 12 months. The answers were recorded as 'never', 'less than four days a month', and 'almost every day'. Availability of meat during Eid Ul Azha, a festival of the Muslims involving slaughtering animal and distributing meat among poor neighbours, relatives and poor was excluded in considering overall availability of meat.

NGO membership was defined as any household member having membership of any non-governmental organization (NGO) commonly providing microfinance.

Assessment of economic condition of household was based on occupation of household members. Households with any member selling manual labour for making a living and households with members engaged in occupations such as agricultural labourer, pulling of non-mechanical tricycle for carrying passengers and/or goods were considered as poor. All other households were classified as better-offs. This categorization has been used to make it compatible with the ones used for targeting population in the NGO development programmes.

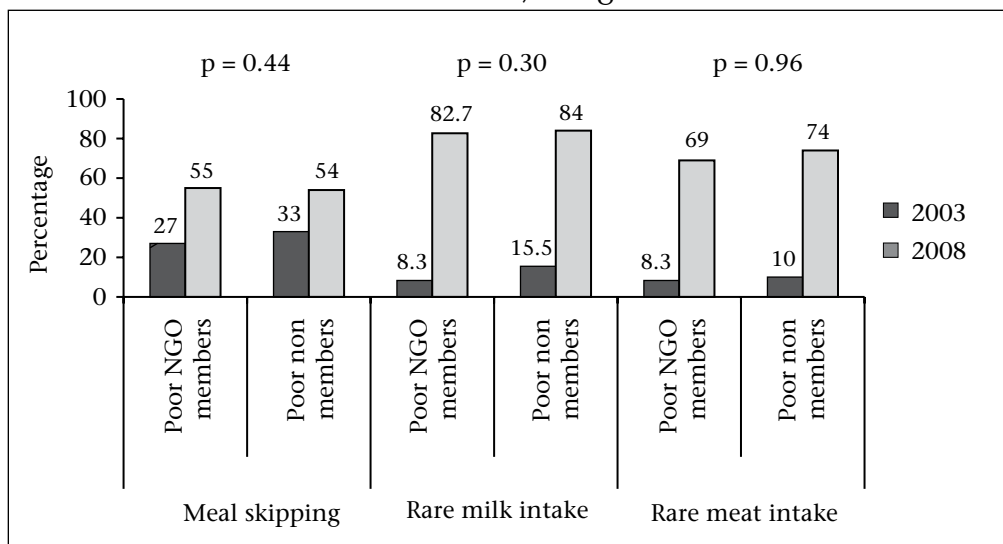
Data analysis

In analyzing the data, Year 2003 was treated as the base year with which data from year 2008 was compared to assess the effect of price hike. Meal skipping and intake of meat, legume, and milk were categorized as binary variables. For meal skipping the two categories were 'never skipped' and 'skipped at least once a month'. For intake of meat, legumes and milk the two categories were 'never available' and 'available for 4 or more days a month'.

Cross tabulations of the dependant variables by independent variables were prepared to examine the association between the dependent variables and the independent variables e.g. year of the survey, economic condition of households and membership of microfinance organizations.

Predicted probabilities of skipping meal, consumption of meat, milk and legume were calculated among NGO members and non members according to their socioeconomic status. A variable (SES_NGO) reflecting combination of socioeconomic status and NGO

Fig 1. Meal skipping and rare intake of milk and meat among the poor NGO members and poor NGO non-members during 2003 and 2008 in Chakaria, Bangladesh



membership of a household was created with four categories: poor and microfinance members, poor and microfinance non-member, better-off microfinance members and better-off microfinance non-members. This made the groups more comparable to examine the effect of membership of microfinance on the dependent variables. A chart comparing predicted probabilities of rare intake of the food items (meat and milk) and meal skipping during 2003 and 2008 by poor microfinance members and non-members was prepared and presented in fig 1.

Logistic regressions were run to verify the impact of NGO membership, socioeconomic status and time on status of meal skipping, rare intake of meat, milk and legume. The independent variables included study year and the combined variable SES_NGO. Later on an interaction term including the combined variable SES_NGO and study year was introduced to see whether this modifies the findings of the main effect model. It should be mentioned that detailed results of the logistic models are not presented in the paper for simplicity.

RESULTS

Proportion of households with members skipping meals for shortage of food had increased substantially in 2008 compared to 2003. At the same time intake of milk and meat had fallen drastically between 2003 and 2008. The proportion of households with members consuming legumes also decreased but not as much as the other items.

In the base year 2003 nearly one-fifth of households had to skip a meal due to shortage of food. Following the nationwide price hike in the early 2008, this proportion jumped to 33% (table 1). The impact of price hike on meal skipping was greater for the poor compared to the better-offs (increasing from 31% in 2003 to 54.1% in 2008 for

the poor households). For the better-offs the change in proportion of households experiencing meal skipping in 2008 over 2003 was relatively small (10.3% in 2003 to 15.4% in 2008) (table1). On the other hand, in 2003 no significant difference was observed in meal skipping between NGO members and non members. Surprisingly in 2008 more NGO members (35.9%) were skipping meal as a result of price hike compared to the non-members (30.4%) (table 1).

In 2003, before the price hike, intake of legumes was quite common with almost no household skipping consumption of legume. However, in 2008 10.6% of the households was found never consuming legume in a month. In 2003 there were no significant difference in consumption of legume between the poor and the better-offs. In 2008, however, percent of poor households never consuming legume in a month was significantly higher than that of better-off households. NGO membership did not make a difference as consumption of legume was similar for NGO members and non-members both in 2003 and in 2008.

Percentage of households never consuming meat in the last 12 months significantly increased from 5% in 2003 to 52.4% in 2008. Percent of households never consuming meat in the last 12 months was greater for poor households than that of better-offs both in 2003 and in 2008 (table 1). NGO members and non-members skipped consuming meat alike in 2003. But in 2008 NGO membership again failed to protect households from the adverse effect of food price inflation. NGO members, contrary to our expectation, skipped meat consumption significantly more than the non-members (54% vs. 51%) (table 1).

A drastic increase in percentage of households skipping consumption of milk was observed between 2003 and 2008 (8.3% vs. 70.9%). Poor households skipped consumption more than the better-off in both the years. NGO membership did not make any difference as members and non-members skipped consumption alike in both the survey years (table 1).

Table 1. Meal skipping, intake of legumes, milk, and meat during 2003 and 2008 by socioeconomic status and NGO membership of households in Chakaria, Bangladesh

Independent variables	Meal skipping (skipped meal at least once a month)		Rare intake of legume (never consumed in last 12 month)		Rare intake of milk (never consumed in last 12 month)		Rare intake of meat (never consumed in last 12 month)	
	2003 (N=400) % (n)	2008 (N=6426) % (n)	2003 (N=400) % (n)	2008 (N=6426) % (n)	2003 (N=400) % (n)	2008 (N=6426) % (n)	2003 (N=400) % (n)	2008 (N=6426) % (n)
Socio-economic status								
Poor	31 (49)	54.1 (1565)	0.0 (0)	15.4 (445)	13.3 (21)	83.3 (2411)	9.5 (15)	71.7 (2075)
Better-off	10.3 (25)	15.4 (543)	0.4 (1)	6.7 (237)	5 (12)	60.7 (2144)	2.1 (5)	36.6 (1295)
t-Test	P=0.00	P=0.00	P=0.42	P=0.00	P=0.00	P=0.00	P=0.00	P=0.00
NGO membership								
Member	19.1 (18)	35.9 (1016)	0.0 (0)	10.2 (289)	7.5 (7)	71.5 (2027)	4.3 (4)	53.9 (1526)
Non member	18.3 (56)	30.4 (1092)	0.3 (1)	10.9 (393)	8.5 (26)	70.4 (2528)	5.2 (16)	51.3 (1844)
t-test	P=0.94	P=0.00	P=0.58	P=0.34	P=0.75	P=0.31	P=0.71	P=0.04
All	18.5 (74)	32.8 (2108)	0.3 (1)	10.6 (682)	8.3 (33)	70.9 (4555)	5.0 (20)	52.4 (3370)

We then concentrated on the status of meal skipping and compromised consumption of the three necessary food items (i.e. milk, meat and legume) among the poor households disaggregated by membership of NGOs. The objective was to find out whether membership in the development programmes of NGOs work as a protective factor for these households in avoiding the negative impact of food price hike in early 2008. For the interest of the current paper we calculated the predicted probability of meal skipping, rare intake of milk, meat and legumes for both poor households that have NGO membership and poor households that do not have NGO membership.

Logistic regressions were run including a combined variable (SES_NGO) indicating socioeconomic status and membership of NGOs, study year and an interaction term including these two variables. The coefficients for study year came out to be significant whereas SES_NGO and the interaction between study year and SES_NGO were insignificant (results of logistic regression not reported in current paper for simplicity of presentation). This indicates proportion of meal skipping and rare intake of food (milk and meat) to be similar for NGO members and non-members.

Figure 1 presents the predicted probability of meal skipping, rare intake of meat and milk for poor NGO members and poor non-members. The predicted probability for legume, however, could not be calculated due to almost 100% households consuming legume in 2003 leaving 0 observations for some of the categories. Results show that the increase in meal skipping among the poor households between 2003 and 2008 was similar for households having NGO membership and for those not having any membership ($p=0.44$). Proportion of poor NGO member households skipping meal increased from 27% to 55% between 2003 and 2008 and for poor non NGO members this increase was from 33% to 54% during the same time period. Similar results were observed in case of reduced intake of milk and meat (Fig1).

We also explored the status of meal skipping and compromised food intake for the non poor community by their membership status at the NGO development programmes. Membership at the NGOs

failed to provide any protection against price hike for the non-poor community as well (results not presented here).

It is clear that the changes in the proportions from 2003 to 2008 are almost similar irrespective of whether the households were members of microfinance schemes. This implied that the membership of microfinance schemes could not reduce the negative impact of price hike on frequency of meal skipping and consumption of milk, meat and legumes for their member households.

DISCUSSION

Three major issues emerged out of this analysis. They are: 1) the situation of intake of food prior to the nationwide price hike in early 2008, 2) changes in level of intake of food during the period with price hike (i.e. during 2008), and 3) level of protection against compromised food intake by virtue of household membership at microfinance schemes.

The impact of price hike in 2008 was more on consumption of milk and meat than legume. This is an apparent finding as meat and milk are considered comparatively expensive food items than legume.

It was striking to find that even before the price hike, in the base year, nearly one fifth of the households were subject to meal skipping due to shortage of food and as expected the prevalence was much higher among the poor compared to the better-offs. In 2003, the base year, the proportions of households skipping meals among the NGO members were similar to that of non-members. It is expected that financial instruments like those offered through the various NGO programmes enhances the capacity to save or borrow of their members [22]. This should provide the member of NGO programmes, particularly those belonging to lower socioeconomic status, the ability to cope with shocks that make them vulnerable. Contrary to this thought, our findings show that even during a period

without any severe inflation, microfinance could not eliminate hunger among those who joined their scheme. This pattern of either small or no impact of microfinance schemes on intake of meat, legumes, and milk among the poor during the base year was also persistent. As a consequence of price hike the prevalence of meal skipping among the poor had increased substantially and strikingly enough the proportions of the poor households skipping meals with or without membership of microfinance became almost equal. The situation was similar for intake of meat, legumes, and milk. This implies that membership of microfinance schemes did not protect the poor households from the consequences of price hike.

Now the question is while membership in microfinance schemes were found to have positive impact on health and wellbeing of their members in the past [23, 24], why the same schemes were failing to perform when measured in terms of food intake of the member households in times of serious price fluctuation. An understanding of this is important to equip contemporary development programmes such as microfinance schemes to be well prepared to face similar situations in the future.

In this context it is important to discuss the way microfinance works and where things can go wrong. Microfinance as expected is a lending vehicle for the poor to enable them to be economically productive and make money after servicing the debt from the schemes. The loans are prescheduled for repayment with interest. The households who take advantage of the microfinance are poor anyway and use the money in farming, small trading and the like. During the price hike in 2007-2008, some of their products also had rise in price which would mean that they had the opportunity of making more money out of the crisis. The findings that the poor in general and the microfinance members in particular had the same level of hunger and food deprivation during price hike is an indication that whatever additional income they could have was not enough to protect them from hunger. It was reported that households had to spend as much as 80% of their income on food expenditure during the price hike compared to 65% during normal time [7]. Thus, the households had to baffle to meet the food cost and to remain compliant with repayment of loans [25] [26].

Studies to observe coping mechanism for members in times of economic hardship (e.g. flood, draught, cyclone) have shown that NGO members adopt various coping strategies to repay their loans. This includes loan recycling (that is, pay off previous loans with new ones) and cross-financing, without having the ability to repay which increases borrower's debt liability considerably, taking children out of schools, reduce non-food expenditure, reduce food intake etc. [11, 26-28]. For our case, it seems that the NGO members had chosen to skip meals over delaying loan repayment to cope with increased food expenditure. It was however, not known whether they could reschedule the loan taken from microfinance schemes during such crisis periods. Even if they could reschedule the repayment of loans, findings suggest that it would not be good enough to avoid negative impact on the meals of the poor.

CONCLUSIONS

The above scenario of the impact of price hike on meals of poor is quite expected however the non-protective nature of membership of microfinance schemes against the negative effect was a surprise. There is a need to generate data such that situations can be monitored and understood to better equip the contemporary development approaches to face this type of situations effectively in the future.

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