J. Patuakhali Sci. and Tech. Uni. 2017, 8 (1): 63-70 ISSN 1996-4501

IMPACT OF MICROFINANCE ON HEALTH STATUS OF RURAL HOUSEHOLDS: EMPIRICAL EVIDENCE FROM BANGLADESH

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Abstract

Microfinance operations in Bangladesh have existed since late-1970s, but the relationship between microfinance and microfinance participant's health status has not been extensively investigated. This paper attempts to analyse the impact of microfinance programs upon the health status of member households of microfinance in Bangladesh. Our analytical framework is built upon the household economic portfolio model. With the purpose of measuring the impact of microfinance on health, primary data on 439 households across 20 villages were collected using a quasi-experimental survey approach. Findings of the study suggest that the overall impact of microfinance operations on the health status of the participants is positive. Microfinance participant's health related issues as indicated by antenatal care, maternal care, diarrhoea, malaria etc. increased significantly after introducing the microfinance.

Keywords: Microfinance, Health services, Quasi-experimental survey, Investigation, Impact and Bangladesh.

Introduction

Health is one of the critical importances to any nation and put challenges to policy makers in developing countries. People below the poverty line in developing countries experience poor sanitation conditions, undesirable shelter, water quality and lack of contraceptive facilities, which expose them to a high probability of illness. The Millennium Development Goals include reducing the population without sustainable access to drinking water and basic sanitation by 50 percent by 2015 (World Health Organization, 2005).

As per the constitutional commitment of the Government of Bangladesh to provide medical facilities to all citizens, the government has been developing health infrastructure as well as strengthening the health and family planning services with special attention to the rural people (Hamid, Roberts & Mosley 2011) . Despite the infrastructure for healthcare delivery, the government has failed to fulfill the healthcare needs of the rural people due to various reasons. Firstly, doctors reluctance to stay at upazilla health complex; secondly, lack of input and skill mix due to recruitment problems; and finally, improper behavior of the service providers to the rural people. In this regard, there are few microfinance institutions that have come forwarded to provide healthcare services in addition to disbursing credit to the participants. Now this is the crying need from the end of the rural people to support them in regards of providing healthcare services associated with the credit disbursement by the microfinance institutions (MFIs).

Although there are many studies on the impact of microfinance on poverty alleviation, there have been very few studies on the impact of microfinance on health in Bangladesh. For policy implication, it is essential to investigate the impact of microfinance on health. Therefore, this study will add to the existing knowledge on the topic and will provide implications for policy makers in developing countries. Furthermore, the study will also benefit the participants of microfinance in Bangladesh as well as the policymakers of the country.

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However, unlike other countries like Indonesia, Latin America, Africa, where potential impacts of microfinance on health has been thoroughly examined (see for example (DeLoach & Lamanna 2011; Maldonado & González-Vega 2008), few attempts have been taken in Bangladesh to test the efficiency of microfinance as an instrument to improve the health quality. Only in the most recent study conducted by Islam and Choe (2013), they showed the impact of microcredit on schooling only but did not show any impact on health. They used secondary panel data but we will use primary data through field survey which will be more representative and will add new insight into the research. In another study conducted by Duong and Nghiem (2013) in Vietnam showed the impact of microfinance on income and consumption but they did not do any investigation on the impact of microfinance on health and education.

The available evidence from the existing studies suggests that microfinance generally has a positive impact on the health outcome of the participants. Amin, Shah and Becker (2010) carried out a study in Bangladesh where they showed that there was a positive relationship between microcredit participation and the use of trained providers of Antenatal care (ANC). Similarly, Leatherman and Dunford (2010) have argued that MFIs had the capability to contribute towards improving health services and health outcomes through educating clients, accelerating access to private and public providers, giving health financing and delivering clinical care. MkNelly and Dunford (1999) found that microfinance is related with better maternal health and nutrition practices in Bolivia and Ghana. Pronyk et al. (2006) found that microfinance is associated with reduced risk of physical or sexual abuse in South Africa. Similarly, Barnes, Gaile and Kimbombo (2001) found that microfinance is positively related to the increase of HIV/AIDS prevention practices in Uganda. In a qualitative study, conducted in Burkina Faso, by Hennink and McFarland (2013) showed that microfinance enhances the health behaviour and health expenditure choices of women. In Ghana, De La Cruz et al. (2009) found that microfinance institutions can effectively contribute to community and national malaria initiatives by increasing knowledge, leading to increased insecticide-treated bed net ownership and use by vulnerable members of the household (Particularly pregnant women). The study conducted by Hamid, Roberts and Mosley (2011) investigated on GB, the largest MFI in Bangladesh, whether adding micro health insurance (MHI) to microcredit schemes can contribute to improving health awareness, health-seeking behaviour, and health status. And their results are statistically significant to show a positive relationship between MHI placement and all of the health outcome measures. On the other hand, a study was conducted based on quasi-experimental survey in Ecuador and Honduras and found interesting result. In both countries, health bank participation significantly raises subsequent healthcare over credit-only participation, and at least reduces the tendency to switch from breast-feeding to bottle-feeding as income rises (Smith 2002).

Some of the studies show their doubt on the conclusion that microfinance can improve the health outcomes of its clients either directly or indirectly. For example, Dohn et al. (2004) fail to show that participants in a microcredit program experienced any significant improvement for the eleven health indicators that they identify. Similarly, Mohindra, Haddad and Narayana (2008) find no relationship between participation in microfinance program and self-assessed health or management of health risk in Kerala, India. The microcredit program in Hyderabad, India also fails to show that the treatment group has better health outcomes than the control group (Banerjee et al. 2013). Moreover, most of the previous studies were based on either quasi-experimental survey or panel data survey. The main contribution of this research is the use of quasi-experimental survey (primary data) to address the self-selection problem in microfinance impact studies.

Methodology

Conceptual Framework

The relationship between microcredit and child health can be explained by employing the household economic portfolio model (HHEP) originally developed by (Cohen, Chen & Dunn 1996), where researchers only explained the effect of credit on household resources and household activities. This study, however, only measures one of the implications of household economic portfolio model; which is hypothesized as (H0): there is no significant difference on the health status of households of Bangladesh in the context of before and after joining in the microfinance program.

A test of quasi-experiment that is often called as a non-equivalent, post test-only quasi-experiment in which two groups of households were interviewed. A major problem with the non-equivalent i.e., quasi-experiment is that the two groups, treatment (member) and control (non-member), may differ in important ways that influence the decision of borrowing and on other issues. With a view to reduce potential selection problems, households who had self-selected to participate in microfinance program and had been accepted by the lender and therefore were actively participating in the microfinance program were eligible to be sampled as participant household group. Participants with loans in arrears were also included in the group to strengthen the internal validity. Similarly, Households who had self-selected to participate in a microfinance program and had not anyway accepted by the lender, but had not received any microcredit by the time the quasi-experiment was conducted, were eligible to be sampled as the non-participant household group. Thereby, the conceptual model of impact analysis used in the research can be illustrated as shown in Figure-1.

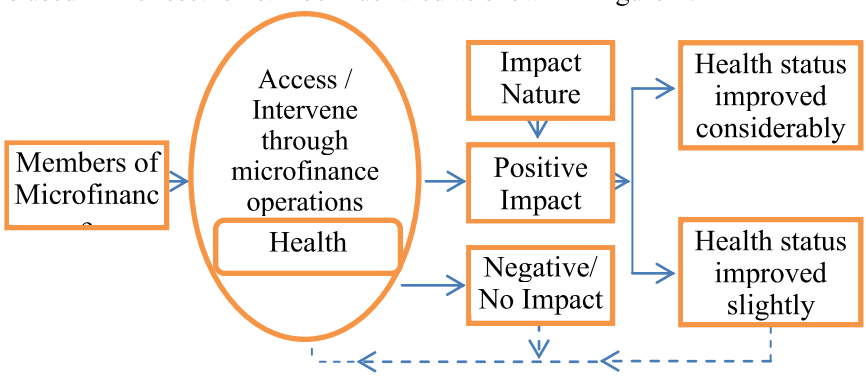

Figure -1: Conceptual model of microfinance impact analysis

From this model, it is presumed that members of microfinance are in microfinance program as shown in the first rectangle in the figure. The members are intervened or accessed to the microfinance institutions through some program. This microfinance access may be through micro credit program or health program. Members of the microfinance are gone through one or a multiple of these interventions. The access may either have positive or negative/no impact. When members of microfinance experience health impact which means health status has improved considerably, it means that the microfinance program or intervention is successful. On the other hand, if the impact of the microfinance program shows positive impact but health related issues could not improve substantially or if there is a negative impact, then there is a necessity to go back to the stage where the intervention was implemented. In this way, the type of intervention needs to be changed or alternative composition of interventions should be tried.

Research Design

According to Montgomery and Weiss (2011), impact assessment methodology addresses how participation in microcredit program affects the selected variables with how those same selected variables would be in the absence of microfinance program. The most appropriate method to address the question would be by employing an experimental design. Since it is just not possible to control all the factors while measuring the impact of micro credit (Hulme 2000). Thereby, full experimental approach is not feasible for assessing the impact of microcredit programs (Montgomery & Weiss 2011; Pitt & Khandker 1998; Swain & Varghese 2009). This study uses a quasi-experimental survey approach to measure the impact of microcredit. In quasi-experimental approach, control and treatment groups are used to measure the impact of microcredit programs of selected microfinance institutions.

Study Area and Sample Selection

The four districts of Bangladesh were selected for the field survey on the basis of three criteria: (i) Considering the density of Micro Finance Institutions (MFI) on the particular district; (ii) No exclusive study on that selected criteria; (iii) Enough sample population of member and non-member with similar characteristics. Three NGOs were selected by applying purposive sampling technique. The Development Initiative for Sustainable Development (DISA) was chosen purposively because the organization received the first national promising MFIs award in the year 2009 from the PKSF. The Grameen Bank (GB) and the Bangladesh Rural advancement Committee (BRAC) were selected as they were the largest and most renowned MFIs in Bangladesh. Then two kinds of respondents, member and non-member households, were selected with the assistance of DISA personnel.

In the survey, member-households were sampled from a list of microfinance members in each village. For non-member households, the sample frame consist of households who own less than half an acre of land and was ranked as poor by village heads. It was planned to select 25 households per village, however some households could not be found or had no adult at home and hence could not be interviewed. Thus, the total number of households interviewed was 439, or about 22 households per village.

Result and Discussion

Table 1 presents health outcomes of the sample respondents before and after joining microfinance operations. Table shows that most of the respondents (43%), before joining microfinance programs, use shallow tubewell as sources of drinking water. The number has reduced by 10 % and consequently using deep tubewell has increased by 12% after joining microfinance programs, which cannot be said significant improvement. On the other hand, 30% respondents used full sanitary latrine before joining microfinance while this figure went up by 99% after joining microfinance program which could refer outstanding development. Similarly, in case of providing antenatal care facilities, 25% respondents were provided this services before joining microfinance programs while the number increased by 145% after joining the microfinance which showed tremendous improvement. The scenario of immunization has turned to be better after joining microfinance. Data shows that 28% immunization has been improved after joining microfinance. A high increase (67%) on any kind of diarrhoea remedies for children has been revealed after joining the microfinance. Data also revealed that while after joining microfinance program, almost 60 % participants receive maternal care services which is

106% higher than before joining microfinance operations. And similarly, the number of participants having provided with family planning services is found significant increase (87%) after joining the microfinance. The contribution of microfinance towards malaria/TB treatment has found to be 108% more than before joining microfinance. A very significant portion of improvement has been made in case of medicines accessibility/ affordability to cure diseases (77.7%) after joining microfinance which is 150% more than before which can be thought for a positive transition of their lives.

Table 1. Descriptive Statistics

Variable	Range	Before Joining MF		After Joining MF		% of Changes
		Frequency	Percent	Frequency	Percent	
Sources of drinking water	Deep Tube=1	194	53.3	218	59.9	12 (+)
	Shallow=2	156	42.9	140	38.5	10 (-)
	River=3	14	3.8	6	1.6	57 (-)
Change in toilet condition	Full Sanitary=1	110	30.2	219	60.2	99 (+)
	Half Sanitary =2	185	50.8	135	37.1	27 (-)
	Open=3	69	19.0	10	2.7	86 (-)
Any Antenatal care facilities provided	Yes-1	92	25.3	225	61.8	145 (+)
	No=2	272	74.7	139	38.2	49 (-)
Any Immunization provided	Yes=1	249	68.4	318	87.4	28 (+)
	No=2	115	31.6	46	12.6	60 (-)
Any kind of Diarrhoea remedies for children	Yes=1	178	48.9	297	81.6	67 (+)
	No=2	186	51.1	67	18.4	64 (-)
Any kind of family planning services provided	Yes=1	151	41.5	283	77.7	87 (+)
	No=2	213	58.5	81	22.3	62 (-)
Any kind of maternal care services received	Yes=1	104	28.6	214	58.8	106 (+)
	No=2	260	71.4	150	41.2	42 (-)
Malaria/TB treatment	Yes=1	91	25.0	189	51.9	108 (+)
	No=2	273	75.0	175	48.1	36 (-)
Medicines accessible/ affordable for curing diseases	Yes=1	113	31.0	283	77.7	150 (+)
	No=2	251	69.0	81	22.3	68 (-)

Source: Author's own calculation based on Field Survey, 2014

Respondents health status were assessed on the basis of sources of drinking water, toilet condition, antenatal care, immunization situation, diarrhoea remedies, family planning facilities, maternal care services, malaria treatment and medicines affordability. The percentage distribution of the above variables in the context of before and after joining microfinance is presented in the Table 2 below. It shows that after joining microfinance there is no significant changes in the situation of sources of drinking water as evident from the Chi-Square test. The p-value of Pearson's Chi-Square test indicates no significant association between respondents participation status with the sources of drinking water (p-value = 0.065). On the other hand, the p-value (0.00) for Pearson's Chi-Square test indicates that respondent's participation status (before and after) is associated with the changes in toilet condition.

With regard to the antenatal care facilities provided, 225 out of 364 respondents reported that the antenatal care facility is better than before participation. The p-value (0.00) for Pearson's Chi-Square before and after joining microfinance test indicates that there is association between participation status of the respondents before and after joining microfinance. In case of immunization provided, association in the participation status (before and after) is also found which is evident from the p-value (0.00). To consider the diarrhoeal remedies for children, it is noted that the p-value is less than the chosen 5% level of significance indicating that there is difference in the situation before and after participation in microfinance program.

Other household health status related variables include family planning services, maternal care services, malaria/TB treatment and medicines accessibility. Findings from this study indicate that there is significant improvement on the above mentioned situation after joining the microfinance. In all the cases, the p-value is less than the chosen 5% level of significance which proves that there is significant difference in the situation before and after joining the microfinance.

Therefore, The Pearson Chi-Square test results rejected the null hypothesis that there is no significant difference between the situation before and after joining the microfinance programs. As in case of all the selected variables except one (sources of drinking water) mentioned the p-value is less than the chosen 5% level of significance.

Table 2. Microfinance participation impact on health status

Variable	Range	Before Joining MF		After Joining MF	
		N	%	N	%
Sources of drinking water	Deep Tube=1	194	53.3	218	59.9
	Shallow=2	156	42.9	140	38.5
	River=3	14	3.8	6	1.6
Pearson Chi-Square Test	Value	5.463			
	p-value	0.065 > 0.05			
Change in toilet condition	Full Sanitary=1	110	30.2	219	60.2
	Half Sanitary=2	185	50.8	135	37.1
	Open=3	69	19.0	10	2.7
Pearson Chi-Square Test	Value	87.988			
	p-value	0.000 < 0.05			
Any Antenatal care facilities provided	Yes-1	92	25.3	225	61.8
	No=2	272	74.7	139	38.2
Pearson Chi-Square Test	Value	98.840			
	p-value	0.000 < 0.05			
Any Immunization provided	Yes=1	249	68.4	318	87.4
	No=2	115	31.6	46	12.6
Pearson Chi-Square Test	Value	37.968			
	p-value	0.000 < 0.05			
Any kind of Diarrhoea remedies for children	Yes=1	178	48.9	297	81.6
	No=2	186	51.1	67	18.4

Pearson Chi-Square Test	Value p-value	85.785 0.000 < 0.05			
Any kind of family planning services provided	Yes=1 No=2	151 213	41.5 58.5	283 81	77.7 22.3
Pearson Chi-Square Test	Value p-value	99.413 0.000 < 0.05			
Any kind of maternal care services received	Yes=1 No=2	104 260	28.6 71.4	214 150	58.8 41.2
Pearson Chi-Square Test	Value p-value	67.563 0.000 < 0.05			
Malaria/TB treatment	Yes=1 No=2	91 273	25.0 75.0	189 175	51.9 48.1
Pearson Chi-Square Test	Value p-value	55.738 0.000 < 0.05			
Medicines accessible/ affordable for cure diseases	Yes=1 No=2	113 251	31.0 69.0	283 81	77.7 22.3
Pearson Chi-Square Test	Value p-value	160.028 0.000 < 0.05			

Note: Chi-square test reveals conditions before and after participating in microfinance significantly differ at 5% significant level.

Conclusion

Now a days, worldwide, health systems are proving to be inadequate at meeting population needs. The global health community could broaden its contribution to achieve MDGs and strengthening health system worldwide through inter-sectoral programming that utilizes a microfinance platform to reach poor and underserved populations. Our preliminary results on the beneficial health practices among the participants in microfinance can be used as a starting point for further studies investigating the links between microfinance and health behaviour.

References

Amin, R, Shah, NM & Becker, S .2010. 'Socioeconomic factors differentiating maternal and child health-seeking behavior in rural Bangladesh: A cross-sectional analysis', *Int J Equity Health*, 9(9): 1-12.

Banerjee, AV, Duflo, E, Glennerster, R & Kinnan, C. 2013. 'The miracle of microfinance? Evidence from a randomized evaluation'. American Economic Journal:Applied Economics, 7(1)

Barnes, C, Gaile, G & Kimbombo, R. 2001. 'Impact of three microfinance programs in Uganda'. Assessing the Impact of Microenterprise Services (AIMS) Project in association with the Makerere Institute of Social Research (MISR).

Cohen, M, Chen, MA & Dunn, E. 1996. 'Household economic portfolios', *Available:* www.eldis.org/vfile/upload/1/document/0708/DOC2932. pdf,(18 November 2010).

De La Cruz, N, Crookston, B, Gray, B, Alder, S & Dearden, K .2009. 'Microfinance against malaria: impact of Freedom from Hunger's malaria education when delivered by rural banks in Ghana', Transactions of the Royal Society of Tropical Medicine and Hygiene, 103(12): 1229-36.

DeLoach, SB & Lamanna, E .2011. 'Measuring the impact of microfinance on child health outcomes in Indonesia', World Development, 39(10): 1808-19.

Dohn, AL, Chávez, A, Dohn, MN, Saturria, L & Pimentel, C . 2004. 'Changes in health indicators related to health promotion and microcredit programs in the Dominican Republic', Revista Panamericana de Salud Pública, 15(3): 185-93.

Duong, HA & Nghiem, HS. 2012. 'Effects of Microfinance on Poverty Reduction in Vietnam: A Pseudo-Panel Data Analysis'. Journal of Accounting, Finance and Economics, 4(2): 58-67.

Hamid, SA, Roberts, J & Mosley, P. 2011. 'Evaluating the health effects of micro health insurance placement: Evidence from Bangladesh', World Development, 39(3): 399-411.

Hennink, M & McFarland, DA. 2013. 'A delicate web: Household changes in health behaviour enabled by microcredit in Burkina Faso', Global public health, 8(2): 144-58.

Hulme, D (2000), 'Impact assessment methodologies for microfinance: Theory, experience and better practice', World Development, 28(1): 79-98.

Islam, A & Choe, C. 2013. 'Child labor and schooling responses to access to microcredit in rural Bangladesh', *Economic Inquiry*, 51(1): 46-61.

Leatherman, S & Dunford, C. 2010. 'Linking health to microfinance to reduce poverty', Bulletin of the World Health Organization, 88(6): 470-1.

Littlefield, E, Morduch, J & Hashemi, S . 2003. 'Is microfinance an effective strategy to reach the Millennium Development Goals?', Focus Note, 24 (2003): 1-11.

Maldonado, JH & González-Vega, C. 2008. 'Impact of microfinance on schooling: Evidence from poor rural households in Bolivia', World Development, 36(11): 2440-55.

MkNelly, B & Dunford, C. 1999. 'Impact of credit with education on mothers and their young children's nutrition: CRECER credit with education program in Bolivia', Freedom from Hunger Research Paper, 5.

Mohindra, K, Haddad, S & Narayana, D. 2008. 'International Journal for Equity in Health', International journal for equity in health, 7: 2.

Montgomery, H & Weiss, J. 2011. 'Can commercially-oriented microfinance help meet the millennium development goals? Evidence from Pakistan', World Development, 39 (1): 87-109.

Pitt, MM & Khandker, SR. 1998. 'The impact of group-based credit programs on poor households in Bangladesh: Does the gender of participants matter?', Journal of political economy, 106 (5): 958-96.

Pronyk, PM, Hargreaves, JR, Kim, JC, Morison, LA, Phetla, G, Watts, C, Busza, J & Porter, JD. 2006. 'Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial', The lancet, 368(9551): 1973-83.

Smith, SC. 2002. 'Village banking and maternal and child health: evidence from Ecuador and Honduras', World Development, 30(4): 707-23.

Swain, RB & Varghese, A. 2009. 'Does Self Help Group participation lead to asset creation?', World Development, 37(10): 1674-82.

World Health Organization 2005, Retrieved from http://www.who.int/en/ on April, 2015