



Received: 13 October 2017  
Accepted: 16 April 2018  
First Published: 25 May 2018

\*Corresponding author: Ashraful Kabir, Dushtha Shasthya Kendra, Dhaka, Bangladesh  
E-mail: [ashraful262@yahoo.com](mailto:ashraful262@yahoo.com)

Reviewing editor:  
Andrew Kiyu, Universiti Malaysia Sarawak, Malaysia

Additional information is available at the end of the article

## PUBLIC HEALTH & PRIMARY CARE | RESEARCH ARTICLE

# Exploring the effects of health shocks on anti-poverty interventions: Experience of poor beneficiary households in Bangladesh

Ashraful Kabir<sup>1\*</sup> and Mathilde Rose Louise Maitrot<sup>2</sup>

**Abstract:** How and whether health shocks impact poverty reduction interventions remains a largely unexplored topic to which not much attention has been paid. This study explored whether and how health shocks affect anti-poverty interventions targeted to extremely poor households using data from 8 focus group discussions and 12 case studies. Those in extremely poor households mostly experienced episodes of chronic disease that incurred greater health-care costs, largely financed by the out-of-pocket payment system. The majority of those from poor households met health-care costs by selling their means of livelihood, borrowing cash, and marketing physical assets. This study argues that livelihood support alone is likely to be insufficient to reduce poverty. Health needs, subsequently, should be prioritized while designing an anti-poverty program.

**Subjects:** Development Studies, Environment, Social Work, Urban Studies; Social Sciences; Behavioral Sciences; Development Studies; Health & Society; Health Conditions; Public Health Policy and Practice; Social Work and Social Policy



Ashraful Kabir

### ABOUT THE AUTHOR

We, the research team, worked with Economic Empowerment of the Poorest/Stimulating Household Improvements Resulting in Economic Empowerment (EEP/Shiree) program in Bangladesh—one of the largest poverty reduction interventions in Bangladesh. Our research focuses on the interconnectedness of health shocks and impoverishment mainly among extremely poor households. The research work in this paper addresses whether and how health shocks affect anti-poverty interventions targeted to extremely poor households that contribute to the information gap in the poverty discourse. Specifically, we are interested in exploring health-care cost and resilience to poverty among low- and middle-income households.

### PUBLIC INTEREST STATEMENT

The relationship between poverty and illness is well documented. According to the World Health Organization (WHO), in each year, nearly 100 million people are pushed into poverty due to catastrophic health-care expenditure. In Bangladesh, this aspect remains a largely unexplored topic, especially from the perspective of anti-poverty interventions. This article explores whether, how, and to what extent health shocks impact the anti-poverty interventions targeted to the extremely poor households from a project known as “EEP/Shiree.” Findings indicate that people from extremely poor households mostly encountered episodes of chronic disease that incurred greater health-care costs, which were largely financed through the out-of-pocket payment system. Members of such households had no option but to sell income generating activities (IGAs), borrow cash from cooperatives, and market physical assets, all of which dragged them into poverty again. Our findings subsequently argue that health needs should be incorporated into anti-poverty interventions because livelihood support alone might not be sufficient to lift such households out of poverty.

**Keywords:** anti-poverty program; Bangladesh; chronic diseases; health shock; health-care cost; NGO; out-of-pocket

## 1. Introduction

The relationship between poverty and health shock, which is defined as “unpredictable illnesses that diminish health status” (Leive & Xu, 2008), is intertwined (Grant & Hulme, 2008; Meessen et al., 2003). Better health significantly helps reduce poverty at the individual and/or household level. In contrast, ill health leads to impoverishment and diminishes people’s well-being. Globally, greater health-care costs negatively affect individuals and/or household economies and lead to impoverishment. In 2015, the World Health Organization (WHO) estimated that globally, each year, 400 million people lack access to one or more basic health-care services; 150 million suffer catastrophic health-care expenditure due to the out-of-pocket (OOP) payment system and 100 million people are pushed into poverty (World Health Organization, 2015). Even in the USA, a resource-affluent country, census results released in 2011 showed that 10 million Americans are pushed into poverty due to overwhelming health-care costs (Collin, 2011). Furthermore, the poor in low- and middle-income countries (LMIC) have relatively inadequate access to health-care services and are thus placed in a disadvantageous position. Such disadvantages and deprivation often prevent the poor from accessing reliable health services and subsequently trap them into poverty (Peters et al., 2008).

Although Bangladesh’s health gains in the past years have been remarkable and applauded by international communities (Chowdhury et al., 2013; El et al., 2013), they are not enjoyed or distributed equitably throughout the population. Rather, the access to health and its outcomes vary with regard to income, gender, age, and geographical location (Gwatkin, Bhuiya, & Victora, 2004; Rahman, Gilmour, Saito, Sultana, & Shibuya, 2013). Members of extremely poor households are more likely to experience health shocks and vulnerabilities. Every year, approximately, 4–5 million people are forced into poverty due to greater expenditure caused by health shocks (Soor et al., 2015). Existing literature indicates that health shocks are more likely to be prevalent among people from extremely poor households, which results in loss of income, greater treatment tariffs, and high opportunity costs (Meessen et al., 2003). Unexpectedly, members of poor households are likely to have less access to health-care services and, consequently, receive a lower level of health-care support from the public sector. Further, it is alarming that 66% of their health-care cost is borne by the OOP financing mechanism, which gradually increased from 1997 to 2007 (Huda, Khan, Ahsan, Jamil, & El, 2014). According to the Bangladesh Demography and Health Survey report in 2011, the per capita health-care expenditure is \$27, of which approximately two-thirds is financed through OOP payments, which indicates that extremely poor households enjoy no or limited health-care support (Islam & Biswas, 2014). Few studies have indicated the catastrophic health-care costs related to noncommunicable diseases (NCD) and their impact on poverty or economic growth at the household level (Mirelman et al., 2016) although whether and how health shocks impact poverty reduction interventions is a largely unexplored topic to which less attention has been paid.

Considering the scant evidence available, we investigated whether and how health shocks affect poverty reduction interventions targeted to extremely poor households. This study will contribute to the information gap in the discourse on poverty, which will also help develop better poverty reduction programs and strategies.

## 2. Methods and materials

### 2.1. Research design

We used an exploratory qualitative research design for this study.

### 2.2. Participants

The study participants were recruited from among the Economic Empowerment of the Poorest/ Stimulating Household Improvements Resulting in Economic Empowerment (EEP/Shiree) project

beneficiaries and frontline program staff who implemented the interventions. We conducted focus group discussions (FGDs) with the program staff and project beneficiaries separately in order to prevent the staff from influencing the beneficiaries during the discussion. Among the participants, both male and female beneficiaries were included in the same session because the moderator facilitated a dynamic and interactive discussion where the participants talked to one another by elaborating, clarifying, querying, explaining, agreeing, or disagreeing with the topic. Thus, gender dominance was avoided as the moderator maintained a good balance of controlling and motivating the dominant participants (predominantly males) in the sessions. We conducted 8 FGDs and 12 case studies with household members who participated in the EEP/Shiree interventions—4 FGDs and 6 case studies under each district (Table 1). By applying an inclusion criteria—participants were aged 18 and above and volunteered to participate—we purposively recruited the study participants to address the research objectives. In this process, we invited individuals who showed a proactive interest to share their experiences, ideas, opinions, and time. Further, we conducted informal talks/discussions with health providers and/or community leaders to understand the dynamics at play, although we did not include this information in our analysis. Out of four FGDs in each district, three were conducted with program beneficiaries, while one was conducted with the frontline project staff. In each FGD, we included 6–10 participants, a number that is considered to be ideal in qualitative research (Krueger & Casey, 2000).

### 2.3. Intervention description—EEP/Shiree project

The Government of Bangladesh (GOB) is committed to achieving Millennium Development Goal 1, which aims at eradicating extreme poverty and hunger by 2015. To achieve this target, the program EEP/Shiree was designed to support the government’s efforts. This program was developed as a partnership between the UK Department for International Development, the Swiss Agency for Development and Cooperation, and the GOB under the Rural Development and Cooperative Division of the Ministry of Local Government, Rural Development and Cooperatives (LGRD) in 2008 with a focus on achieving sustainable economic empowerment through livelihood development supports for 1 million people across the country. The aim of this program is to lift members of extremely poor households out of poverty and to improve their resilience to natural disasters, economic shocks, health hazards, and many other adverse circumstances. To achieve these outcomes, EEP/Shiree provided resources to national and international NGOs working in Bangladesh through two separate categories of funds—scale fund and innovation fund. Scale

**Table 1. Methods and participants**

Data collection tools	Participants	Sites
1 FGD	10 Frontline staffs of partner NGO	Pirojpur
2 FGD	EEP/Shiree beneficiaries including 4 males and 2 females	Pirojpur
3 FGD	EEP/Shiree beneficiaries including 5 males and 5 females	Pirojpur
4 FGD	EEP/Shiree beneficiaries including 4 males and 5 females	Pirojpur
5 FGD	9 frontline staffs of partner NGO	Bagerhat
6 FGD	EEP/Shiree beneficiaries including 3 males and 5 females	Bagerhat
7 FGD	EEP/Shiree beneficiaries including 4 males and 3 females	Bagerhat
8 FGD	EEP/Shiree beneficiaries including 3 males and 5 females	Bagerhat
6 Case studies = selected in-depth interview	EEP/Shiree beneficiaries including 2 males and 4 females	Pirojpur
6 Case Studies = selected in-depth interview	EEP/Shiree beneficiaries including 3 males and 3 females	Bagerhat

funds are provided to NGOs that have the capacity to facilitate large-scale interventions using tested methods, while innovation funds are provided to those NGOs that offer innovative approaches and initiatives to reduce extreme poverty in Bangladesh.

#### **2.4. Study time and settings**

This study was conducted between April and August 2016. Data were collected from two scale fund NGOs named Oxfam and Save the Children in Bangladesh (SCiBD), which are participating in the implementation of interventions. Each of these NGOs has designed interventions to achieve sustainable economic improvements of extremely poor households based on their own approaches, which are tested and implemented in the southern parts of Bangladesh. Oxfam and SCiBD are working in the Pirojpur and Bagerhat districts of Bangladesh. Oxfam is implementing the program by collaborating with a local NGO named “Dak Diye Jai” while SCiBD is implementing the intervention with a local NGO named “CODEC.” Both districts are located in south-western Bangladesh, nearly 300 km from the Dhaka, the capital city.

Oxfam’s program strategy is to form community-based organizations (CBOs). Each CBO has an executive committee that comprises a chairman, president, cashier, and general member who meet on a monthly basis to organize group activities and share their views and actions. Each beneficiary maintains a bank account and passbook for savings and loans. The beneficiaries were supplied with input supports that included a mixture of farm and off-farm entrepreneurship such as fisheries, livestock, vegetable cultivation, and grocery shops.

SCiBD’s program strategy is more or less similar to that of Oxfam. The field staff identify potential beneficiaries on the basis of the EEP/Shiree inclusion criteria. Following consultations with potential beneficiaries, particularly considering their skills and vocations, the field staff develop income generating activity (IGA) plans that include livestock, small business, vegetable cultivation, fishing business, and shrimp cultivation. Unlike Oxfam, SCiBD’s beneficiaries voluntarily meet in groups and share their actions, challenges, opportunities, and other emerging issues. However, the group functions were not operated under the structured CBO formation and procedures.

#### **2.5. Data collection procedure**

The study participants were selected purposively to achieve the study objectives. The medium of conversation was Bangla—the native language of both the interviewers and participants. The interviews were recorded in audio format. A research officer, who was a graduate in anthropology and public health, moderated the conversations while a research assistant took notes. A semi-structured questionnaire that was piloted beforehand in other settings was used. Both the research officer and assistant were trained and experienced in the qualitative research approach and data collection techniques. Before starting data collection activities, the research team established good rapport with the participants and other community members by describing the purpose of the study and engaging in other informal talk about their daily lives, livelihoods, interesting issues, etc. Each FGD took approximately 90–120 min on an average. Several follow-up visits were made in some cases to obtain missing information as well as to further probe some issues.

#### **2.6. Data analysis**

We used the thematic analysis approach, which is frequently used in qualitative research (Braun & Clarke, 2006). Initially, we translated all these interviews verbatim before translating them into English. We did not use any software; rather, we manually analyzed textual data. We generated “codes”—meaningful and significant information, ideals, or dimensions—concentrating on our research objectives. Thereafter, we looked for a cluster on the basis of the nature of such codes. Finally, once a cluster was formed, we looked for a theme or concept comprising a few clusters. The researchers independently coded the text in order to increase data validity. We also performed a triangulation of data collection techniques—a methodological mix-up of FGDs and case studies (selected interviews)—to increase the validity.

### **2.7. Ethical consideration**

The study proposal was presented to the ethical review committee of EEP/Shiree. The respective persons reviewed issues involving human subjects and approved the study. We developed a paper-based consent form and obtained signatures of the participants. Verbal consent was obtained and documented through audio recordings. Prior to obtaining consent, we described the study objective, pros and cons, importance of the study, confidentiality, and the participants' rights to leave the conversation at any stage. We provided participants with a telephone number so that they could seek further information if required. Personal and medical information such as participants' name, age, sex, income, health-care costs, and disease episodes was gathered. Participants' identity was used throughout the data analysis but was removed before reporting the findings.

### **3. Results**

In this section, we present the sociodemographic (Table 2) characteristics of the study population to contextualize a number of aspects under which the study was conducted. In the later part, we present the results.

As shown in the table, the combined median age of FGD participants was 34.29 years, while the average age of the participants in Pirojpur was slightly lower than those of Bagerhat. A total of 48 beneficiaries participated in the FGD (48% males and 52% females). The average monthly household income was BDT  $5,600 \pm 750$  in *Pirojpur*, and  $6,100 \pm 590$  in *Bagerhat*; (considering 78 BDT = 1 US\$). More than half (60%) of the participants received first to fifth grade schooling, while 6% of them received no schooling. The level of education was much lower than the national average. More than half (52%) of the participants were from joint families. The highest number (29%) of participants was provided livestock support such as ducks, chickens, cows, and goats. The second highest number of participants received small-scale business support such as cloth, shrimp, fishing, furniture, etc. The remaining participants received support such as small-scale business of handicraft (17%), rickshaw/van (10%), vegetable/farming (6%), and grocery shop (4%).

Three themes emerged from the data, which we renamed as (1) chronic condition and higher OOP, (2) little/inadequate health service information and health-seeking behavior, and (3) episode of illness and households' poverty. Within these themes, 11 subthemes emerged as shown in Table 3.

#### **3.1. Chronic condition and higher OOP payment mechanism**

Our data showed that almost all participants reported experiencing the burden of chronic conditions in their households. Such conditions mostly included NCD that require continuous medical care and, subsequently, prolonged facility-based and family support. Although the extent of such adverse conditions differed between households and had varied effects on their IGAs, the impacts were commonly found to be negative in terms of the economic status and well-being of the household. Participants commonly reported such chronic illnesses as the most frequent and prevalent causes of failure. Families with such chronic conditions experienced loss of regular income and subsequently had to bear considerable health-care costs. Participants from all fields reported that chronic disease of the family members, particularly in those who were the primary income earners, incurred considerable expenses due to health care. The chronic conditions required long-term treatment and prolonged absence from work. Furthermore, such chronic conditions, particularly in the male earning members, worsened the economic status of the families as it resulted in long-term and/or routine medication. Additionally, female members who underwent surgery due to childbirth and/or uterus tumors/infections reported to incur higher expenses, which was largely beyond the capacity of these families. Most of the household financed the health-care cost in similar ways; that is, by discontinuing their IGAs, borrowing money from relatives and microfinance institutes, and selling the physical assets of the household. Almost all participants reported that such adverse shocks exposed them to catastrophic health-care expenses. Table 3 shows the pattern of health shocks, expenditure, and its consequence on the interventions in individual beneficiary households.

**Table 2. Socio demographic characteristics of FGD participant of EEP/Shiree project beneficiaries in Pirojpur and Bagerhat in 2016 (n = 48)**

Characteristics	Sites		Combined
	Pirojpur	Bagerhat	
<b>Median age (years)</b>	32.69	33.87	34.29
<b>Sex</b>			
Male	13 (27%)	10 (21%)	23 (48%)
Female	12 (25%)	13 (27%)	25 (52%)
<b>Monthly household income in BDT (mean ± SD)</b>	5,600 ± 750	6,100 ± 590	5,700 ± 650
<b>Education of the participants</b>			
No schooling	2 (4%)	1 (2%)	3 (6%)
1–5 (years)	14 (29%)	15 (31%)	29 (60%)
6–10 (years)	9 (19%)	7 (15%)	16 (34%)
<b>Religion</b>			
Muslim	17 (35%)	8 (17%)	25 (52%)
Hindu	8 (17%)	15 (31%)	23 (48%)
<b>Family type</b>			
Nuclear	14 (29%)	9 (19%)	23 (48%)
Joint	11 (23%)	14 (29%)	25 (52%)
<b>IGAs support</b>			
Small business	5 (10%)	8 (17%)	13 (27%)
Livestock	11 (23%)	3 (6%)	14 (29%)
Grocery shop	2 (4%)	0 (0%)	2 (4%)
Rickshaw/Van	3 (6%)	2 (4%)	5 (10%)
Vegetable/Farming	2 (4%)	1 (2%)	3 (6%)
Handicraft (bamboo)	0 (0%)	8 (17%)	8 (17%)
Others	2 (4%)	1 (2%)	3 (6%)

Chronic diseases such as uterus tumor/infection, chronic respiratory illness, paralysis, post-cesarean complications, and hypertension/chest disease were more likely to hinder families from achieving economic progress. Table 4 shows that the beneficiary's families mostly experienced chronic diseases (NCD) and spent Bangladesh currency, BDT 4,000–350,000 (US\$ 52–4,487, considering 78 BDT = 1 US\$) to improve their conditions. Uterus infection and/or tumor (40%) were found to be the most frequent NCD among female household members. Other chronic diseases included post-cesarean infection (8%), hypertension, and respiratory illness. The data show that the cost of health-care expense is much higher for extremely poor families/households, and the situation worsens when the patient receives no and/or little assistance (medicine, surgical expenses, user fees, etc.) from the public health-care facilities. Yet, almost all episodes of diseases involved a higher opportunity cost as the patient experienced prolonged hospitalization when the earner of the family discontinued IGAs or became irregular in labor work. In a few cases, the patient could not respond to the full course of medicine and other related pathological test and/or follow-up visit due to higher OOP payment. One of the participants stated:

**Table 3. Emerging themes and subthemes**

	Major themes		
	Theme 1	Theme 2	Theme 3
	<b>Chronic condition and higher OOP</b>	<b>Little/Inadequate health service information and health seeking behavior</b>	<b>Episode of illness and households' impoverishment</b>
Subthemes	Experienced/Need to undergo chronic condition, i.e., uterus tumor, chronic respiratory illness, paralysis, post-caesarean complication, hypertension/chest disease	Little and/no information about available health-care services specially for public health-care facilities	Lost daily income and experienced impoverishment caused by absence of works following health shocks
	Stayed long period in hospitals/clinics for the recovery	Sought health care to different facilities at different time	Experienced multiple health-care costs—direct cost and opportunity cost
	Expended larger amount of money for treatment	Traditional providers— <i>Kobiraj</i> , village doctor, medicine outlet shopkeeper were the primary health-care providers	Sold out/discontinued IGAs to bear health-care cost
	Cost was borne by the service user (patients/ households)	Multiple visits incurred larger cost and deteriorated the condition	

IGA: Income generating activities.

**Table 4. Diseases incidence and its consequences on interventions among EEP/Shiree BHH in 2016**

Type of illness/ health shock	Gender	Cost of illness	Consequences
Uterus tumor/ infection	Female	Up to BDT 4,000 (US\$ 52)	Loss of daily/regular income/opportunity cost
Chronic respiratory illness/paralyzed	Male, female, and child	Up to BDT 350,000 (US\$ 4,487)	Loss of IGAs (sold out)/ opportunity cost
Post C-section complication	Female	Up to BDT 40,000 (US\$ 512)	Discontinuation of IGAs/ opportunity cost
Hypertension/ Chest pain	Male/Female	Up to BDT 20,000 (US\$ 256)	Breaks of saving/ opportunity cost
Others diseases occurrence	Male, female, and child	Up to BDT 70,000 (US\$ 897)	Debt/Selling household assets (land/live stocks)/ opportunity cost

IGA: Income generation activities.

I visited many healthcare providers—village doctors, *Kobiraj*, and homeopath. Finally, a doctor (MBBS) suggested a 6-month treatment course (medication and rest) but I have no money to respond doctor's advice. I have already spent BDT 12,000 (US\$153). If I wish to continue the treatment, I need to sell my IGA. If I sell my IGA, it will have a negative impact on my family's daily subsistence. (A female beneficiary from Bagerhat)

A parallel observation was made by the program staff. In many cases, chronic diseases are poorly controlled by medication and follow-up visits as many of them cannot afford the expenses. One of the participants stated:

It is very common for patients to have loss of follow-up visits and interrupted medication. This is mainly due to higher healthcare cost (A field staff from Pirojpur)

Each family, therefore, experienced higher opportunity cost, which lowered the household income for many months. A member of a poor household described how a sudden illness of her son negatively affected their efforts to improve their economic status.

My 11-year old son Birek (pseudo name), suddenly stopped talking and showed symptoms of “mrigi rog” (Epilepsy). Initially, he was taken to a quack (village doctor) who suggested transferring him to a “district hospital”. They (district hospital) referred him to Shatkhira Medical College Hospital (SMCH) as the condition was deteriorating. My son had seven months of hospitalization to improve his condition. Meanwhile, we spent nearly BDT 4 lac (US \$5128) for his treatment. Having no alternative, we sold our IGAs (cattle, chicken, and vegetable garden) and borrowed money from relatives and local cooperatives. [...] EEP/ Shiree has tried to help but the sudden illness of the son sunk all their efforts. We are now surviving on the kindness of others. (A beneficiary from Pirojpur)

### **3.2. Little/Inadequate health service information and health-seeking behavior**

Our data suggest that the illness lasted longer and worsened because most participants lacked adequate health information. In most cases, they sought care from traditional healers and informal health-care providers who were inappropriate to treat the conditions, which was detrimental to their health. They reported paying more money due the complexity caused by the traditional healers and informal health-care providers. This was stated by many participants in *Pirojpur* and *Bagerhat*.

We sought treatment from a traditional healer and expected that my son’s condition will improve but it deteriorated. Now, he is still sick. He has developed a mental problem. [...] We will have to incur higher costs for the rest of his life” (A beneficiary from Bagerhat)

Almost all beneficiaries visited the Kobiraj (traditional healers), village doctor (quack), or local medicine outlet (pharmacy) as primary health service providers. Our data show that the participants could not anticipate the severity of such chronic diseases and assumed that it was a normal episode that required usual intervention; the Kobiraj, village doctor, or medicine outlet shopkeeper was the potential care provider in such cases. Lack of health information triggered their care-seeking behavior, wherein the participant commonly reported to have insufficient health services and information in the communities. Some of the participants even reported not having adequate information and precise idea on when and how to visit Upazila Health Complex, the first-line hospital of Bangladesh. One of the participants stated:

We usually seek care from the pharmacy shopkeeper or village doctor, Kobiraj, homoeopath, or herbalist for general illness. How can I anticipate that for such chronic conditions we need to visit medical professionals? I do not have any information about which facility is better for what.

[...] I do not know who can provide good-quality or realistic care for a particular disease such as heart disease, renal failure, and diabetes. [...] We visited the hospital but it was too late; therefore, more money was required to treat the diseases. (A beneficiary from Pirojpur)

A similar experience was shared by a participant from Bagerhat as follows:

Village doctor and/or medicine outlet are the first destination for people who seek care. I have been seeking care from them since a long time. [...] I do not understand where I should go first for such chronic conditions. (A beneficiary from Bagerhat)

One of the program staff shared information about how inadequate health information can make the patients go from provider to provider, which leads to considerable health-care costs.

Most of the poor have little information about the availability of care in terms of severity and type of illness. They usually cannot identify the severity of an illness and the need for special care. They go from village doctor, to Kobiraj, to MBBS randomly. [...] Thus, this leads to higher health risk and medical expenses. (A NGO staff from Bagerhat)

### **3.3. Episode of illness and impoverishment of the household**

The most frequent cause of the failure of the program intervention was the illness of family members. Our data show that the episodes of illness faced by the members of the household led to lower economic improvement and/or being impoverished. However, the occurrence of illness in the primary income earners had a strong impact on the daily income of the household, which led to impoverishment. Illness of the household's income earners led to multiple costs—direct health-care cost and opportunity cost. In many cases, the opportunity cost led the beneficiaries to discontinue their business and livelihood-related activities. This further worsened when the illness required special medical care which was not available in local health-care facilities. In such cases, the household members moved to adjacent divisional towns—usually Khulna and Barisal. The female household members (usually the wife) accompanied the patients when the patient was taken to health-care facilities and undertook the role of the family caregivers. We found that a few female beneficiaries accompanied their young children to the hospital that required their physical presence in the hospital premises constantly. Although the male household members did not constantly serve the patient with their physical presence, they regularly visited the respective health-care facilities. Therefore, they faced problems with the continuation of business or undertaking other IGA. The discontinuation of their business or inability of undertaking other IGA worsened the household's economic status. The situation further deteriorated when the male member suffered from an illness, which required constant care from the female members (usually the wife) along with discontinuing the household's regular income. The following case sheds light into this problem. Such episodes of illness adversely affected their efforts in all intervention aspects. The beneficiaries and NGO staff explained the situations as follows:

Whenever we make some savings, it is entirely spent on treatment cost. This is why I am still in extreme poverty. (A beneficiary from Pirojpur)

A similar observation was noted in *Bagerhat* as follows:

Falling sick is one of the biggest reasons for failure of the interventions. Families with sick members tend to have little or no success. (A NGO staff from Bagerhat)

In some cases, the episode of illness required family care at home and health-care facilities, which restricted the beneficiaries from continuing their work. Ultimately, the active beneficiaries and/or income earners remained absent from their daily labor work and received limited income, as expressed by a beneficiary below. The following case describes how health shock pushed Nupur's (EEP/Shiree beneficiary) family from a moderately well-off condition to destitution.

Nupur's husband met with a road accident and was taken to a quack (village doctor). He had to undergo a surgical procedure that involved expensive injections—each costing BDT 395 (US\$ 5) for four consecutive months along with other medications. Unfortunately, the surgery led to an infection of the incised areas, which required another surgery. He spent four months being bed-ridden. Subsequently, the family decided to sell 40 decimal of the inherited land to finance their healthcare cost. Due to aging, she had a tumor in the uterus, which cost BDT 45,000 (or US\$576) for a surgical operation. The family had no other option but to break their financial capital (business capital) and discontinue their IGA (cloth shop) for a few months. She was forced to leave her son with a relative as she was not able to feed him.

Participants from all FGD and cases stated that the consequences of illness were detrimental, which resulted in failure to achieve economic improvement as was aimed by the implementation of the *EEP/Shiree* interventions.

#### 4. Discussion

In this study, we aimed to understand the effects of health shocks on anti-poverty interventions among extremely poor households in two districts of Bangladesh from a poverty reduction project perspective. Our study indicated that an epidemiological transition is likely under way, wherein NCD diseases emerge (Karar, Alam, & Streatfield, 2009; Hamid, Ahsan, & Begum, 2014; Khan et al., 2015), which severely affected the economic status of the poor households in the *EEP/Shiree* intervention. Our findings showed that female household members often suffered from chronic diseases, such as uterus tumors, infections, and reproductive complication, which led to financial hardships. Previous studies have indicated that the chronic condition presumably affects the rich quintile and is traditionally thought to be prevalent in wealthy countries (Gupta et al., 2003; Reddy et al., 2007). However, our findings suggest that poor households are heavily affected by the occurrence of chronic diseases, which is inconsistent with the earlier findings. Other studies in Bangladesh and South Asian countries (Biswas, Islam, Linton, & Rawal, 2016; Turin et al., 2013) have indicated that over the past years, epidemiologic transition is under way, wherein the poor are exposed to increasing vulnerabilities. They have limited or no access to health-care service for chronic conditions. This further worsens the chronic condition that requires continuous health care and prolonged facility- and family-based support that entail greater health-care costs. As health-care costs can be catastrophic and public health-care system remain insufficient and provide unrealistic services, the expenses were largely financed through OOP payment system (Hamid et al., 2014), and a majority of the poor households met the required costs through selling their means of livelihood, borrowing money, and selling their physical assets. This finding is concordant with those of international studies (Bhojani et al., 2012; Falkingham, 2004; Garg & Karan, 2009; McIntyre, Thiede, Dahlgren, & Whitehead, 2006). For example, Bhojani et al. in India showed that high rate of OOP payment due to chronic conditions further push poor households into poverty. Although the study of Bhojani et al. found that an overall 16% of the households experienced financial catastrophic health-care expenditure, we assume that the participants in our study might have experienced higher expenditure; it is not possible to quantify the exact percentage of catastrophic expenditure due the design of this study (qualitative study design). Yet, limited or no studies in Bangladesh have shown the precise number or percentage of households/families that become victims of catastrophic expenses and poverty due to health shocks. Some studies have estimated that chronic diseases alone contribute to 50% of the total disease burden in the household in LMIC (Abegunde, Mathers, Adam, Ortegón, & Strong, 2007). This indicates that extremely poor households lack effective and available interventions that can significantly improve their household economic growth and well-being as stated in the Commission on Macroeconomics and Health in 2005 (Jha et al., 2002). Rather, the extremely poor households are more likely to become victims of higher health-care expense due to chronic disease burden as seen in many other regions of Asia and sub-Saharan and Caribbean countries (Bales, 2013; Dans et al., 2011; Knaul, Wong, Arreola-Ornelas, & Mendez, 2011; Samb et al., 2010). However, Gwatkin et al. (Gwatkin, Guillot, & Heuveline, 1999) estimated that the burden of communicable diseases (CD) will reduce until 2020 but its benefits might not be equally experienced by the rich and poor, indicating that poor households are more likely to be susceptible to both CD and NCD.

Further, the poor have less or little health service information which results in them seeking care primarily from individuals or facilities that are inappropriate for the particular disease. In many cases, the primary person of contact for illnesses (mostly Kobiraj, quack, or pharmacy shopkeeper) handled the cases with inappropriate knowledge and expertise to manage the problem. Such unskilled service providers contributed to deterioration of the problem and incurred higher expenses for further health care. Due to the shortage of facility-based skilled health-care providers, 67% of the people in rural Bangladesh seek first line care from village doctor (quack) (Mahmood, Iqbal, Hanifi, Wahed, & Bhuiya, 2010). Other studies have shown that the village doctor or drug seller in medical outlet play the vital role for providing care and related information (Haque et al., 2013; Rahman et al., 2015). Our findings are consistent with those of the studies mentioned above, wherein the majority of patients primarily sought

care from informal health-care providers. The consequence of such behavior had a negative impact on both disease consequences and health-care costs. Such health-care behavior can be attributed to the low literacy rate and level of health education of patients (*EEP/Shiree* beneficiaries) and/or inadequate emphasis of the importance of health-care issue within the program intervention. Our findings further indicate that despite the overwhelming outcomes, public health-care services face challenge in delivering services to those with chronic conditions.

#### 4.1. Limitation of the study

The findings of this study were based on a small sample size in a coastal region of Bangladesh. Therefore, the generalizability of the findings to other areas might be limited due to the contextual characteristics. Nevertheless, considering the triangulation of methods and participants, we believe that this study provides an in-depth understanding of the effects of health shock on anti-poverty interventions in Bangladesh.

#### 4.2. Implications

Due to the small-scale nature of the study, the findings might be limited to be easily generalized to other contexts. However, the aim of this study was to provide a detailed and in-depth understanding of whether and how health shocks have an impact on the anti-poverty interventions among extremely poor households. The findings of this study indicate that despite providing concerted support, many of the beneficiaries failed to achieve optimum outcomes due to health shocks. The occurrence of chronic conditions along with limited or no health-care information further led them to incur high health-care costs, which were borne by the households through OOP payment system. The findings implicate that anti-poverty initiatives are likely to focus on financial support (asset transfer), wherein the health-care aspect remains less prioritized. In this context, health-care support should be considered within the anti-poverty intervention program to achieve and sustain the program outcomes.

### 5. Conclusions

The findings of this study suggest that health shock led to poor households experiencing failure in achieving sustainable economic empowerment despite the implementation of the anti-poverty intervention. The households experienced financial hardships, and this was further deteriorated by the existing health service delivery system. Catastrophic OOP payments led to impoverishment although realistic livelihood support was provided in line with the program strategy. Most of the households failed to continue their IGAs as they had to arrange for OOP payments by selling off their IGAs and physical assets and accumulating debt. Livelihood support alone was likely to be insufficient to reduce poverty and improve their economic condition; therefore, health-care support should be considered within the anti-poverty intervention to achieve sustainable poverty reduction goals.

#### Acknowledgments

The authors wish to express their gratitude to the respondents for their time and willingness to participate in the study. We are also indebted to local NGO staff members of Dak Diye Jai and CODEC for assisting us in accessing remote field sites and to our research assistants for coordinating the fieldwork.

#### Funding

The data analysis and write-up of this work was partly supported by the Economic and Social Research Council (ESRC) Global Challenge Research Fund under Project number R120409 and Grant number ES/P010245/1.

#### Competing interests

The author declares no competing interests.

#### Author details

Ashraful Kabir<sup>1</sup>  
E-mail: [ashraful262@yahoo.com](mailto:ashraful262@yahoo.com)  
Mathilde Rose Louise Maitrot<sup>2</sup>  
E-mail: [mathilde.maitrot@york.ac.uk](mailto:mathilde.maitrot@york.ac.uk)  
ORCID ID: <http://orcid.org/0000-0001-9365-6380>

<sup>1</sup> Dushtha Shasthya Kendra, Dhaka, Bangladesh.

<sup>2</sup> Lecturer in International Development and Global Social Policy, Department of Social Policy and Social Work, The University of York, York, United Kingdom.

#### Citation information

Cite this article as: Exploring the effects of health shocks on anti-poverty interventions: Experience of poor beneficiary households in Bangladesh, Ashraful Kabir & Mathilde Rose Louise Maitrot, *Cogent Medicine* (2018), 5: 1468233.

#### References

- Abegunde, D. O., Mathers, C. D., Adam, T., Ortegon, M., & Strong, K. (2007). The burden and costs of chronic diseases in low-income and middle-income countries. *The Lancet*, 370(9603), 1929–1938. available from: PM:18063029.doi:10.1016/S0140-6736(07)61696-1
- Ahsan, K. Z., Alam, N., & Kim, S. P. (2009). Epidemiological transition in rural Bangladesh, 1986–2006. *Global Health Action*, 2 (pp.1–9). Available from: PM:20027273.
- Bales, S. (2013). Impact of health shocks on household welfare in vietnam - estimates using fixed effects

- estimation (pp. In 1–38). Singapore: National University of Singapore.
- Bhojani, U., Thriveni, B., Devadasan, R., Munegowda, C., Devadasan, N., Kolsteren, P., & Criel, B. (2012). Out-of-pocket healthcare payments on chronic conditions impoverish urban poor in Bangalore, India. *BMC Public Health*, 12, 990. available from: PM:23158475. doi:10.1186/1471-2458-12-990.
- Biswas, T., Islam, M. S., Linton, N., & Rawal, L. B. (2016). Socio-economic inequality of chronic non-communicable diseases in Bangladesh. *PLoS One*, 11(11), e0167140. available from: PM:27902760. doi:10.1371/journal.pone.0167140
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. doi:10.1191/1478088706qp063oa
- Chowdhury, A. M., Bhuiya, A., Chowdhury, M. E., Rasheed, S., Hussain, Z., & Chen, L. C. (2013). The Bangladesh paradox: Exceptional health achievement despite economic poverty. *The Lancet*, 382(9906), 1734–1745. available from: PM:24268002. doi:10.1016/S0140-6736(13)62148-0
- Collin, S. S. (2011). *New census poverty measure shows medical expenses push 10 million more americans into poverty*. The Commonwealth Fund, Washington, DC, USA. Retrieved June 11, 2016, from [www.commonwealthfund.org/.../new-census-pover](http://www.commonwealthfund.org/.../new-census-pover)
- Dans, A., Ng, N., Varghese, C., Tai, E. S., Firestone, R., & Bonita, R. (2011). The rise of chronic non-communicable diseases in southeast Asia: Time for action. *The Lancet*, 377(9766), 680–689. available from: PM:21269677. doi:10.1016/S0140-6736(10)61506-1
- El, A. S., Christou, A., Reichenbach, L., Osman, F. A., Azad, K., Islam, K. S., ... Peters, D. H. (2013). Community-based approaches and partnerships: Innovations in health-service delivery in Bangladesh. *The Lancet*, 382(9909), 2012–2026. available from: PM:24268607. doi:10.1016/S0140-6736(13)62149-2
- Falkingham, J. (2004). Poverty, out-of-pocket payments and access to health care: Evidence from Tajikistan. *Social Science & Medicine*, 58(2), 247–258. available from: PM:14604611. doi:10.1016/S0277-9536(03)00008-X
- Garg, C. C., & Karan, A. K. (2009). Reducing out-of-pocket expenditures to reduce poverty: A disaggregated analysis at rural-urban and state level in India. *Health Policy and Planning*, 24(2), 116–128. available from: PM:19095685. doi:10.1093/heapol/czn046
- Grant, U., & Hulme, D. (2008). Service delivery and the poorest Services for the poorest: from angst to action, Chronic Poverty Research Centre (CPRC) Working Paper 128, ISBN: 978-1-906433-29-1; available from: [https://www.files.ethz.ch/isn/127263/WP128\\_Grant-Hulme.pdf](https://www.files.ethz.ch/isn/127263/WP128_Grant-Hulme.pdf) commissioned paper for the reaching the very poorest team, department for international development, UK.
- Gupta, R., Gupta, V. P., Sarna, M., Prakash, H., Rastogi, S., & Gupta, K. D. (2003). Serial epidemiological surveys in an urban Indian population demonstrate increasing coronary risk factors among the lower socioeconomic strata. *The Journal of the Association of Physicians of India*, 51, 470–477. available from: PM:12974428.
- Gwatkin, D. R., Bhuiya, A., & Victora, C. G. (2004). Making health systems more equitable. *The Lancet*, 364(9441), 1273–1280. available from: PM:15464189. doi:10.1016/S0140-6736(04)17145-6
- Gwatkin, D. R., Guillot, M., & Heuveline, P. (1999). The burden of disease among the global poor. *The Lancet*, 354(9178), 586–589. available from: PM:10470717. doi:10.1016/S0140-6736(99)02108-X
- Hamid, S. A., Ahsan, S. M., & Begum, A. (2014). Disease-specific impoverishment impact of out-of-pocket payments for health care: Evidence from rural Bangladesh. *Applied Health Economics and Health Policy*, 12(4), 421–433. available from: PM:24854546. doi:10.1007/s40258-014-0100-2
- Haque, M. A., Budi, A., Azam, M. A., Suzanne, Y. S., Louis, V. R., & Sauerborn, R. (2013). Health coping strategies of the people vulnerable to climate change in a resource-poor rural setting in Bangladesh. *BMC Public Health*, 13, 565. available from: PM:23759111. doi:10.1186/1471-2458-13-565
- Huda, T., Khan, J. A., Ahsan, K. Z., Jamil, K., & El, A. S. (2014). Monitoring and evaluating progress towards Universal Health Coverage in Bangladesh. *PLoS Medicine*, 11(9), e1001722. available from: PM:25244599. doi:10.1371/journal.pmed.1001722
- Islam, A., & Biswas, T. (2014). Health system in Bangladesh: Challenges and opportunities. *American Journal of Epidemiology*, 2(6), 366–374. doi:10.11648/j.ajhr.20140206.18
- Jha, P., Mills, A., Hanson, K., Kumaranayake, L., Conteh, L., Kurowski, C., ... Sachs, J. D. (2002). Improving the health of the global poor. *Science*, 295(5562), 2036–2039. available from: PM:11896266. doi:10.1126/science.295.5562.2036
- Khan, J. A., Trujillo, A. J., Ahmed, S., Siddiquee, A. T., Alam, N., Mirelman, A. J., ... Peters, D. H. (2015). Distribution of chronic disease mortality and deterioration in household socioeconomic status in rural Bangladesh: An analysis over a 24-year period. *International Journal of Epidemiology*, 44(6), 1917–1926. available from: PM:26467760. doi:10.1093/ije/dyv197
- Knaul, F. M., Wong, R., Arreola-Ornelas, H., & Mendez, O. (2011). Household catastrophic health expenditures: A comparative analysis of twelve Latin American and Caribbean Countries. *Salud Publica De Mexico*, 53 (Suppl 2), s85–s95. available from: PM:21877097.
- Krueger, R. A., & Casey, A. M. (2000). *Focus groups: A practical guide for applied research*. SAGE Publications, London, UK.
- Leive, A., & Xu, K. (2008). Coping with out-of-pocket health payments: Empirical evidence from 15 African countries. *Bulletin of the World Health Organization*, 86(11), 849–856. available from: PM:19030690. doi:10.2471/BLT.00.00000
- Mahmood, S. S., Iqbal, M., Hanifi, S. M., Wahed, T., & Bhuiya, A. (2010). Are 'Village Doctors' in Bangladesh a curse or a blessing? *BMC International Health and Human Rights*, 10, 18. available from: PM:20602805. doi:10.1186/1472-698X-10-18
- McIntyre, D., Thiede, M., Dahlgren, G., & Whitehead, M. (2006). What are the economic consequences for households of illness and of paying for health care in low- and middle-income country contexts? *Social Science & Medicine*, 62(4), 858–865. available from: PM:16099574. doi:10.1016/j.socscimed.2005.07.001
- Meessen, B., Zhenzhong, Z., Van, D. W., Devadasan, N., Criel, B., & Bloom, G. (2003). Iatrogenic poverty. *Tropical Medicine & International Health*, 8(7), 581–584. available from: PM:12828538. doi:10.1046/j.1365-3156.2003.01081.x
- Mirelman, A. J., Rose, S., Khan, J. A., Ahmed, S., Peters, D. H., Niessen, L. W., & Trujillo, A. J. (2016). The relationship between non-communicable disease occurrence and poverty-evidence from demographic surveillance in Matlab, Bangladesh. *Health Policy Plan*. available from: PM:26843515. doi:10.1093/heapol/czv134
- Peters, D. H., Garg, A., Bloom, G., Walker, D. G., Brieger, W. R., & Rahman, M. H. (2008). Poverty and access to health care in developing countries. *Annals of the*

- New York Academy of Sciences*, 1136, 161–171. available from: PM:17954679. doi:10.1196/nyas.2008.1136.issue-1.
- Rahman, M. H., Agarwal, S., Tuddenham, S., Peto, H., Iqbal, M., Bhuiya, A., & Peters, D. H. (2015). What do they do? Interactions between village doctors and medical representatives in Chakaria, Bangladesh. *International Health*, 7(4), 266–271. available from: PM:25406239. doi:10.1093/inthealth/ihu077
- Rahman, M. M., Gilmour, S., Saito, E., Sultana, P., & Shibuya, K. (2013). Health-related financial catastrophe, inequality and chronic illness in Bangladesh. *PLoS One*, 8(2), e56873. available from: PM:23451102. doi:10.1371/journal.pone.0056873
- Reddy, K. S., Prabhakaran, D., Jeemon, P., Thankappan, K. R., Joshi, P., Chaturvedi, V., ... Ahmed, F. (2007). Educational status and cardiovascular risk profile in Indians. *Proceedings of the National Academy of Sciences*, 104(41), 16263–16268. doi:10.1073/pnas.0700933104
- Samb, B., Desai, N., Nishtar, S., Mendis, S., Bekedam, H., Wright, A., ... Etienne, C. (2010). Prevention and management of chronic disease: A litmus test for health-systems strengthening in low-income and middle-income countries. *The Lancet*, 376(9754), 1785–1797. available from: PM:21074253. doi:10.1016/S0140-6736(10)61353-0
- Soor, W., De Man, J., Ndiaye, P., Dhkimi, N., Van De Pas, R., & Criel, B. (2015). *Towards universal coverage in the majority world. Transversal findings & lessons learnt, a summary*. ITM, Antwerp, Belgium. Retrieved July 11, 2016, from [https://www.researchgate.net/.../300389541\\_Towards\\_universal\\_coverage\\_](https://www.researchgate.net/.../300389541_Towards_universal_coverage_)
- Turin, T. C., Shahana, N., Wangchuk, L. Z., Specogna, A. V., Al, M. M., Khan, M. A., ... Rumana, N. (2013). Burden of Cardio- and Cerebro-vascular diseases and the conventional risk factors in south asian population. *Global Heart*, 8(2), 121–130. available from: PM:25690377. doi:10.1016/j.ghart.2012.01.001
- World Health Organization. (2015). *Universal health coverage (UHC): Fact sheet N°395*. WHO, Geneva. Retrieved May 2, 2015, from <http://www.who.int/mediacentre/factsheets/fs395/en/>

## Appendix A

### A1: Guideline for Focused group Discussion (FGD)

- (I) Sociodemographic information of the participants (name, age, occupation, education, religion, income, support received, number and age of household members)
- (II) To what extent the economic condition of you household has changed since the intervention of EEP/Shiree? (How, why, and why not?)
- (III) Did your household face any health shocks/disease during EEP/Shiree intervention? If yeas; what type of health shocks/diseases? What was the initiative? Who was involved in managing these shocks? (Please discuss elaborately when, how, why, and why not?)
- (IV) What strategies/action did you use to cope up with this shocks/disease? How did you manage these courses of action? (Please discuss elaborately when, how, why, and why not?)
- (V) In your opinion, how and what extend shock/disease affect household well-being, livelihood support, and/or income generation activities? (Please discuss elaborately when, how, why, and why not?)
- (VI) In your opinion, what can be done to improve these conditions? (Why and why not?)

### A2: Guideline for case study (selected interview)

- (I) Sociodemographic information of the participants (name, age, occupation, education, religion, family structure, income, number and age of household members)
- (II) Would you please say something about health shock/disease? (What is meant by shock/disease?)
- (III) What type of health shock/disease you experienced/would you please describe your sufferings/pains?
- (IV) What strategies/action did you use to cope up with this shocks/disease? How did you manage these courses of action? (Please discuss elaborately when, how, why, and why not?)
- (V) In your opinion, how and what extend shock/disease affect household well-being, livelihood support, and/or income generation activities? (Please discuss elaborately when, how, why, and why not?)



© 2018 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

**Cogent Medicine (ISSN: 2331-205X) is published by Cogent OA, part of Taylor & Francis Group.**

**Publishing with Cogent OA ensures:**

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

**Submit your manuscript to a Cogent OA journal at [www.CogentOA.com](http://www.CogentOA.com)**

