

**Article**

# **Impact of development interventions of NGOs: A case study of Protyashi activities in rural setting**

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Received 09 March, 2015; Accepted 09 March, 2015

The main objective of the study is to measure the change that might have taken place for having various interventions in the rural community. The survey was conducted in two locations: one, where specific program interventions took place (Experimental area) and two, where specific interventions did not take place (Control area). A total of 300 female respondents were interviewed at their residence; of them 200 were from the experimental area and 100 from the control area. They were selected using systemic random sample technique. Data were collected using an interview schedule having both open and close ended questions. Data were analyzed using Statistical Package for Social Science (SPSS). Analysis mostly remained at univariate and bivariate levels. Statistics used are mostly frequency distribution, measures of central tendency, measures of dispersion, and Chi-square tests. The mean and median ages of the respondents were 36 and 35 years respectively. The literacy rate is 70% in experimental area as against 64% in control area. The overwhelming majority of the respondents (91%) are housewives in both study places. The per capita income of the experimental area is Tk. 125,425.0 as against Tk. 101,325.0 of the control area and experimental area has 80% nuclear families as against 72% in control area. Experimental area sanitation condition was better (94%) than control area (85%). About 88% respondents (experimental area) have knowledge on hygienic habits as against 65% of the control area. Respondents of experimental area use tube well water (92%) for cooking purpose, 77% for bathing purpose, 84% use own tube well and control area about 80% use water for cooking, 13% for bathing and 49% has own tube well respectively. The contraceptive use rate was in experimental area about 63% while it was only 45% in control area respondents. But home delivery rate is lower (68%) compared to the control area (82%) and experimental area is ahead of the control area on every count of microcredit, such as credit disbursement, saving collection, IGA training and development activities.

**Key words:** Development interventions, rural setting, impact, programme.

## **INTRODUCTION**

Nearly 50% of the total population of Bangladesh live below poverty level and 26% under sever poverty (UNDP, 2011). The government and non-government organizations (NGOs) of the country have been engaged

in development activities through different interventions for year to reduce poverty. The NGOs' interventions are in the form of specific programs like microcredit, sanitation, safe drinking water, family planning, child

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health etc. Most of these programs receive funds from national and international donor agencies. Despite debates on the effectiveness of NGOs in reducing poverty thousands of them have programs around the country. Some of Bangladeshi NGOs have expanded their activities across the globe. Protyyashi is a national NGO having programs in all over greater Chittagong. Over the last three decades it has been implementing projects on microcredit, education, women empowerment, integrated model village, homestead-agro forestry, eradication of child labor, safe drinking water and sanitation, horticulture and afforestation, maternal and child health, gender awareness, housing, governance, nutrition support program, family planning etc. Most of these projects were implemented as per donors' specification and with immediate satisfaction of donor and protyyashi. No program can be considered successful unless it has left permanent impact upon the community for which the interventions were introduced. Protyyashi has taken initiative to access the impacts of its programs upon the community in terms of overall wellbeing of the people, for which the organization was formed and working for last three decades. Therefore, the purpose of the study is to measure the changes that have taken place in the life of people of the community for whom the organization is formed and committed.

### **Objective of the study**

The major objective of the study is to measure the changes that might have taken place for having various programs in the rural community.

Specific objectives of the study are

1. to assess the present socio-economic status of the study population
2. to measure the achievement of the sanitation program
3. to identify the sources and use pattern of drinking, cooking, and bathing water
4. to determine status of child health in terms of incidences of sickness, malnutrition, immunization, antenatal and postnatal care, and
5. to determine the contraceptive prevalence rate.

### **METHODOLOGY**

#### **Selection of study locations**

A simple survey was conducted in two locations: one, where program interventions were present (Experimental area) and two, where interventions were absent<sup>1</sup> (Control area). The locations were selected discussing with the executive director and other field officials of the organization and reviewing office records. The study locations were selected most objectively none but the top members of the organization want this evaluation for their own understanding of the success and failure of their projects. The study respondents were female because they could give detailed information on issues

like family planning, child health, immunization, and water and sanitation for being directly involved with them.

#### **Construction of interview schedule**

Data were collected through an interview schedule which had both open and close ended questions. It was pretested in a non-sampled area and necessary changes were made based on the pretest experiences. All questions were on implemented programs of the experimental area. Interviewers had bachelor degree and acquainted with the study area. They were trained on interview techniques and on the meaning of every question of the interview schedule. There was a strong supervision team in the field for ensuring the quality of data. All filled-in schedules were edited immediately after the completion of the interview, first by the interviewers themselves and then by the supervisor.

#### **Sampling**

Multi-staged sampling techniques were used for the study. As a first step of sampling areas having various we identified areas of various interventions and then those areas were divided into 7 clusters. One of those seven clusters was selected considering communication facilities, cost of collecting data, presence of multiple programs, and willingness of the people to participate in the study. After selecting the cluster an estimate of total households was made using Union Council records and perception of knowledgeable persons of the community. The estimated number of households was divided by 325 which was our target for interview. The result of the division was necessary to determine the exact gap that had to be given for applying systematic random sampling technique to make the final selection of respondents. The result of the division being 4.2, we selected every 4<sup>th</sup> household from the arbitrary first selection until reached the desired number of 325. We completed interview of 325 respondents making replacement in case of refusal or absence of selected respondents but finally retained 300 rejecting mostly incomplete and poor interviews. It is to be noted here that 67 and 33% of the respondents belong to experimental and control areas, respectively.

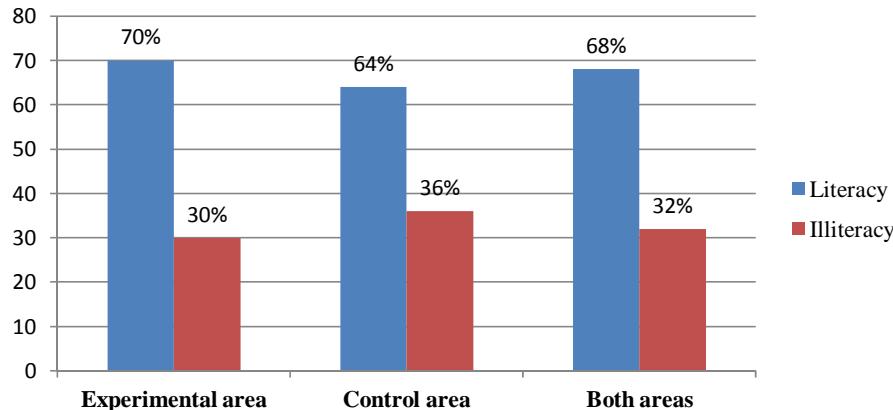
#### **Data analysis and management**

Pre-coded responses were directly entered into computer while open ended responses were coded entered into computer. Statistical Package for Social Science (SPSS) was used for analysis of the data and statistical calculations. Both univariate and bivariate analysis are done. Statistical used are frequency distribution, measures of central tendencies, and tests of significance. Graphs are used for easy understanding of the contents of the findings.

### **FINDINGS**

#### **Socio-economic characteristics of respondents**

All study respondents are women. The mean and median ages of the respondents are 36 and 35 years, respectively. Each family on an average has 3.1 children. One should note here that 3.1 children per family is not the completed family size rather on an average each mother is left with 13 years of their reproductive period with the possibility of having few more children if she



**Figure 1.** Percentage distribution of literacy among the respondents.

does not mechanically limit the family size. The mean size of children in a family in experimental area is 2.8 as against 3.3 in control area. The literacy rate among the respondents is 68%, while national adult female literacy is about 53% (BBS, 2011). The literacy rate is slightly higher in the experimental area (70%) than the control area (64%) but the difference is not found statistically significant (Figure 1).

Since all respondents (91%) female are housewives but 9% of them engaged in income earning occupations, such as mat and flower basket making, pickle making, handicraft and sewing cloths. Only 8% of the total respondents have secondary occupations and those are mostly tailoring and farming. The annual average households' income of all sources amounts to Tk. 117, 393.0 ranging from Tk. 18, 000.0 to 800, 000.0. At present the estimated per capita annual income is around US\$ 845.0 which in local currency is Tk. 69, 290.0 (Metro/News, 2012). The family size in this study being 5.9 (including dependents) the average annual household income should be Tk. 408, 811.0; but on the contrary it is only Tk. 117, 393.0. The per capita income, however, is higher in the experimental area (Tk. 125, 425.0) compared to the control area (Tk. 101325.0). The study finds only about 20% families extended, 77% nuclear, and 3% single parent. There is a higher trend of nucleation of families in the experimental area than the control one although it is statistically significant. The former has 80% nuclear families and the latter 72%.

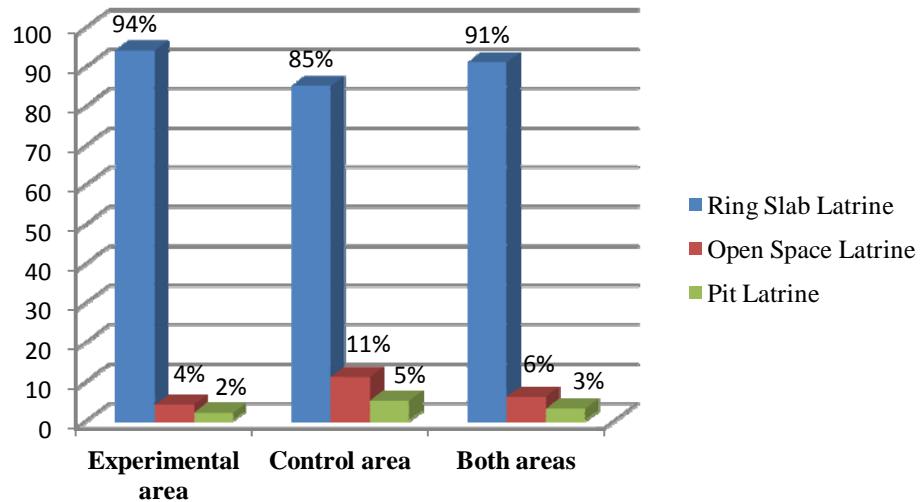
## Sanitation

At present nearly 91% of all respondents families use ring slab latrine, 3% pit latrine without slab and 6% open space for defecation. Some difference between experimental and control areas is found regarding use of types of latrine. Nearly 94% families of the experimental area use ring slab latrine as against 85% of the control area. These figures are above the national figure of 79% in the

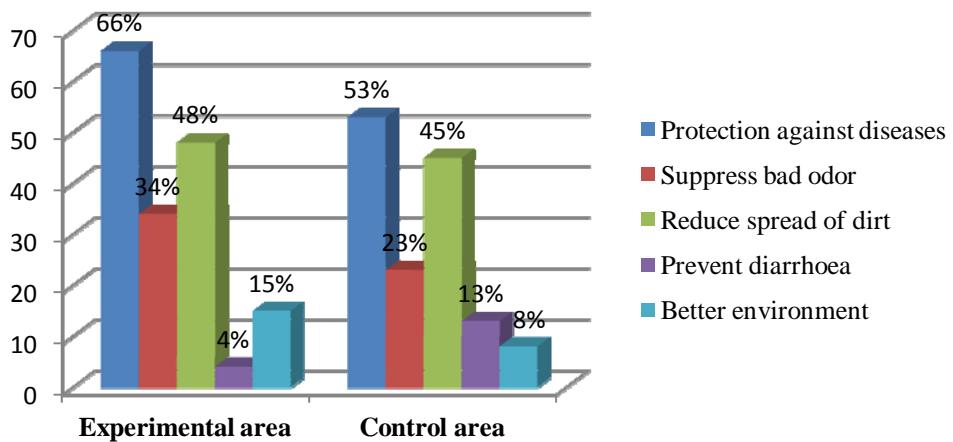
rural areas of Bangladesh (UNICEF, 2010). Also open space users are more than three times in the control area than the experimental area. Almost double the percentage of pit latrine users in the control area than the experimental area (Figure 2). About 95% of the respondents have heard about benefits of using latrine while the remaining 5% are ignorant about it. It is a matter of great surprise to know that some families are still ignorant about its benefits despite sanitation program launched not only by Prottyashi but also by other NGOs and the Government. However, in the experimental area about 95% of the respondents have heard about the benefits of slab latrine as against 89% of the control area. This difference of knowledge of benefits of slab latrine is found statistically significant at .001, Chi square value being 25.9 and Cramer's V=.29.

Figure 3 shows much higher percentage of respondents of the experimental area than the control area know several benefits of using slab latrine, such as protection against diseases, suppression of bad odor, reduction of spreading undesirable dirt, and betterment of environment. In the control area three times more families than the experimental area know the effectiveness of slab latrine in preventing diarrhea. There is no doubt that once people enjoy these benefits of using slab latrine will always keep maintain it. The Chi-square test shows that there is a significant difference between experimental and control areas regarding the knowledge of specific benefits of using slab latrine (Chi-square=11.2, significant=.05, Cramer's=.18).

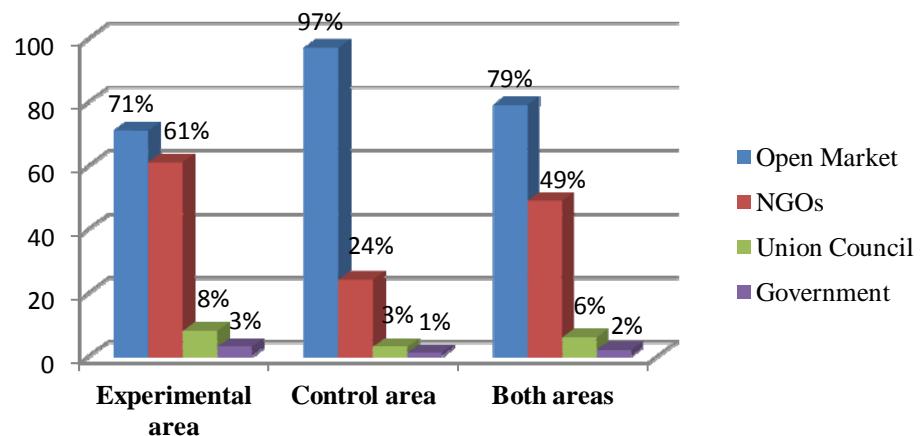
About 93% of the respondents have the information about sources of obtaining a ring slab latrine. A significant percentage of all respondents seem to have more than one source of information. There are four major sources of information in their regard and those are NGOs (49%), Union Council (5%), Open Market (79%) and Government (2%) (Figure 4). Usually except 'Open Market' all other organizations give subsidies to the poor constructing a slab latrine. It is interesting to observe that over 97% of the respondents of the control area as



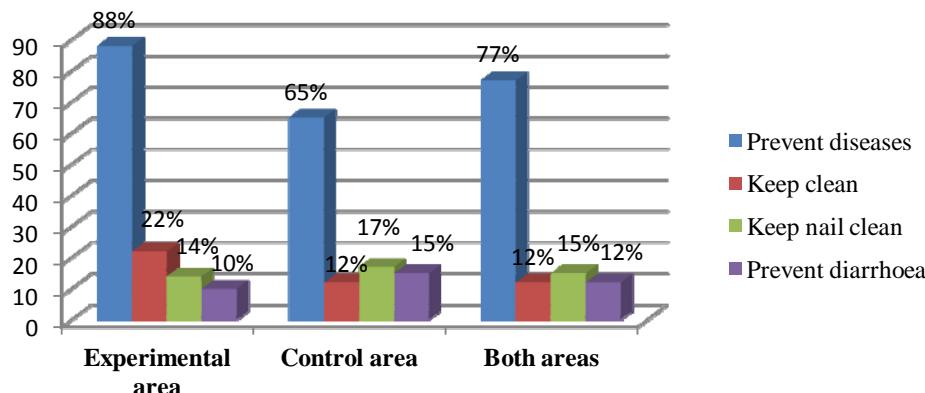
**Figure 2.** Percentage distribution of use of different types of latrine.



**Figure 3.** Percentage distribution of benefits of using ring slab latrine.



**Figure 4.** Percentage distribution of sources of obtaining ring slab latrine.



**Figure 5.** Percentage distribution of benefits of hand washing after defecation.

against 71% of the experimental area know about 'Open Market' as a source.

### Hygienic habits

Almost all respondents wash their hands after using toilet, which means the people in the locality have developed a very health habit. Soap is the most frequently used material for washing hands, although occasionally mud and ash are used in the absence of soap. People have developed this healthy habit knowing benefits of this practice as overwhelming majority (77%) of total respondents believe this will protect them from getting certain diseases, keep them clean (22%), keep their nails and hands clean (15%), and will protect them against diarrhea (12%). However, some differences are found in the perception of benefits between the respondents of experimental and control areas. The major difference exists with regard to prevention of diseases due to hand washing habits. About 88% of the respondents of the experimental area as against 65% of the control area believe that diseases can be prevented to a great extent by washing hands after defecation (Figure 5).

Another good health habit of almost all respondents of both areas is wearing sandal while using toilet. This indicates people's change of attitude with the change of economic condition. The significant difference between the respondents of experimental and control areas is only on their perception of benefits about prevention of sickness due to use of sandal in the toilet. About 88% of the former respondents believe in the prevention of sickness due to sandal use while 55% of the latter believe in it.

### Water use

All respondents of both experimental and control areas seem to have high dependency upon the tube-well for drinking (100%), cooking (80%), and bathing (77%) water (Figure 6).

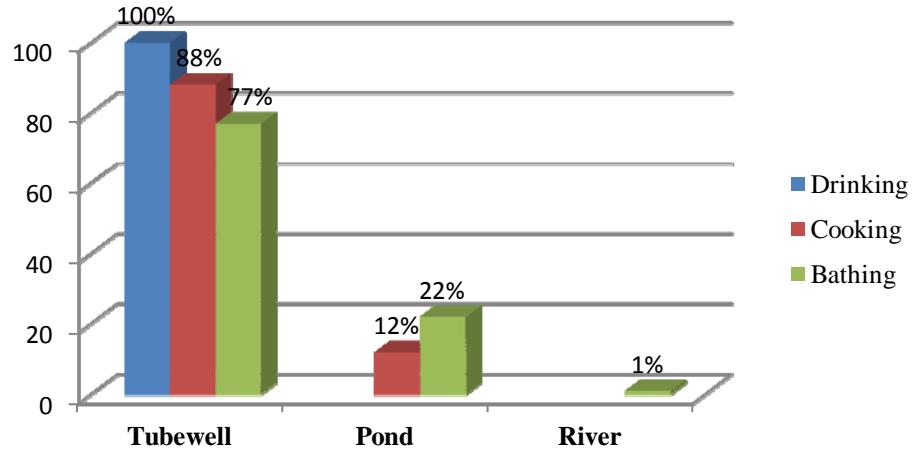
Slightly one-fifth of the respondents use pond water for bathing. It may be mentioned here that the high use of tube-well water for bathing could be for respondents being women, who cannot go to pond outside home for cultural and religious restrictions.

A big difference is observed between experimental and control areas on the use of water for bathing. Figure 6 shows that 77% of the respondents of the experimental area as against only 12% of the control area use tube-well water for bathing. The difference between the experimental and the control areas is statistically significant at .001 according to Chi-square (Chi-square =32.4, Cramer's V=.29). According to all respondents over 71% of the tube-wells are maintained by the owner themselves followed by 25% by the Public Health Department of the government, and 4% by the Union Parishad (Figure 7). About 84% of the respondents of the experimental area maintain their own tube-wells compared to 49% of the control area. The role of Union Parishad in maintaining tube-well in both areas is minimal. The NGO's activities in the experimental area might have inspired the community people to become independent and self sustaining resulting in greater community involvement in acquiring and maintaining their own tube-wells.

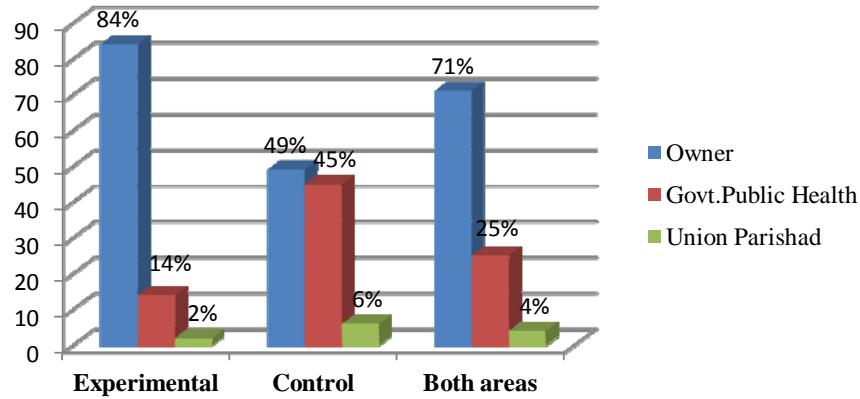
The main purpose of promoting safe drinking water is to protect people from deadly water borne diseases like cholera, diarrhea, dysentery, and jaundice. About 81% of the total respondents are aware of common water borne diseases. Over 87% of the respondents know diarrhea as a deadliest of all water borne diseases, followed by cholera 38%, Jaundice (38%), dysentery (22%), and Typhoid (11%). There is very little difference between the respondents of experimental area and control areas regarding knowledge of respondents of different kinds of water borne diseases (Figure 8).

### Family planning

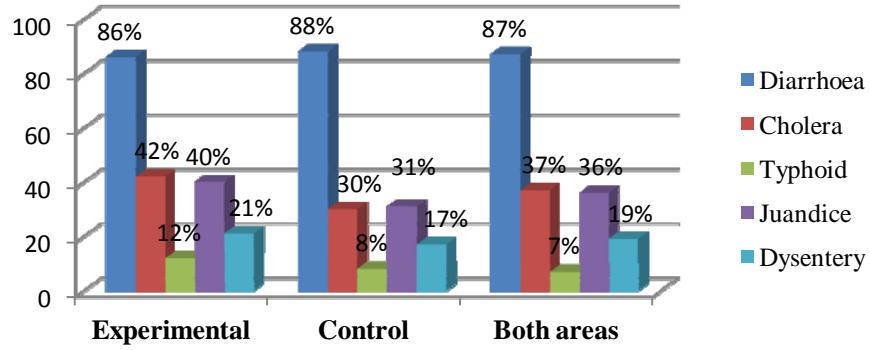
Population is number one problem of the country as most



**Figure 6.** Percentage distribution of water use for drinking, cooking and bathing.



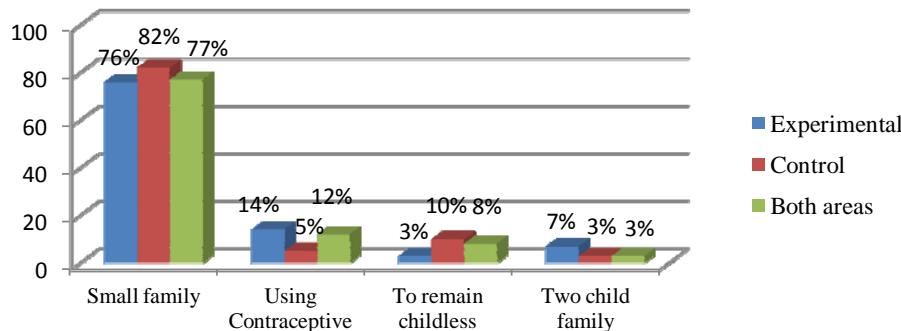
**Figure 7.** Percentage distribution of maintainers of tube-well in different areas.



**Figure 8.** Percentage distribution of diseases known to respondents as water borne.

achievement is neutralized by the growing numbers. Family Planning (FP) program is introduced and implemented by the Government and NGOs simultaneously at the grass root level. Protyashi is one of the NGOs that implemented a FP program with funding from a donor

agency in the experimental area. The project ended but we have tried here to find out the impact of it after over 5 years. About 88% of all respondents have heard about family planning. About 95% of the respondents of the former have heard about FP as against 77% of the latter.



**Figure 9.** Percentage distribution of respondents' concepts of family planning.

This difference is found statistically significant at .001 level (Chi-square value =20.3, Cramer's V=.26). This difference implies a successful dissemination of FP information by Prottyashi the experimental area.

Among all respondents who have heard about FP overwhelming majority (85%) of them refer its meaning to a small family without assigning any specific number. Other concepts of FP mentioned by respondents are: using contraceptives (12%), two child family (3%), and childless couple (8%). It is a matter of great surprise to learn that some consider remaining childless' is doing FP (Figure 9). The responses show that respondents have more or less clear idea about the meaning of FP. Despite having a FP program in the experimental area by Prottyashi there is no reflection that its people have better concept of FP than respondents of those of control area. The respondents of both areas together who have heard about FP seem to have wide spread knowledge of contraceptives. The major four contraceptive known to them are oral pill (87%), condom (33%), injection (32%), and ligation (23%). About 93% of the respondents of the control area know about oral pill as against 85% of the experimental area, 41% of the respondents know about condom in the control area as against 30% of the experimental area, and 35% of the respondents of the experimental area know about injection as against 31% of control area. About 64% of the total respondents now use contraceptive for keeping their families small. This percentage of contraceptive prevalence is slightly above the national rate of 61% (NIPORT et al., 2012). The respondents of experimental and control areas differ significantly in their use of contraceptives. The former has a prevalence rate of 73% as against 45% of the latter.

This difference is found statistically significant at .05 level (Chi-square =9.6, Cramer's V=.18). This finding proves that knowledge level of both categories of respondents are almost close but adoption level is different, which means it is not enough to provide only information for adoption rather motivation for it is also necessary although the role of information can't be undermined. Only 16% of the contraceptives users among all respondents have experienced some discom-

forts after using contraceptives, which are headache (59%), head whirling (43%), weakness (21%), and pain at the ligation point (15%). The side-effects as mentioned by the users don't seem to be of serious in nature.

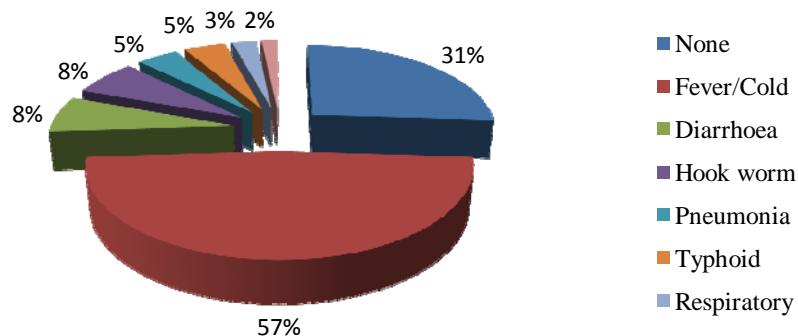
### Child health

It is matter of great surprise to learn that nearly 31% of the respondents who have children under five years of age did not fall sick during the last six months. However, there are numbers of children who had multiple diseases during the period mentioned above. The highest number i.e., 57% of the respondents reported children having cold/cough followed by diarrhea, hook worm, pneumonia, typhoid, and other diseases, but percentage of variations were only from 2% to 8% only (Figure 10).

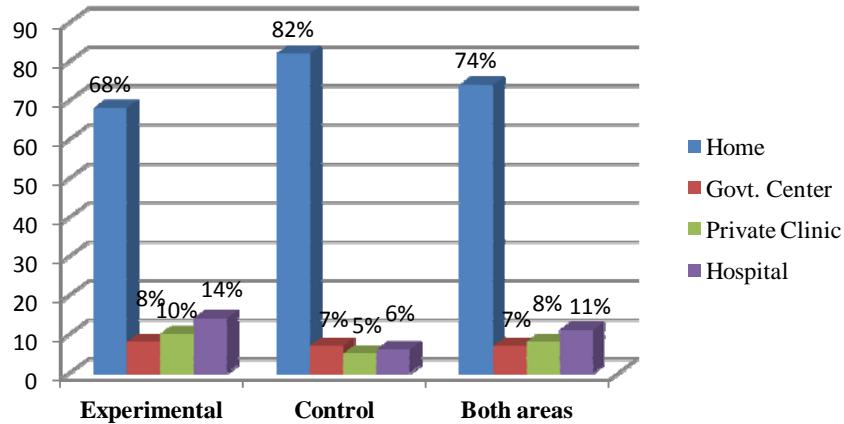
In recent years Bangladesh has made commendable achievement in reducing maternal mortality through grass root services to pregnant mothers in rural areas. The maternal mortality has declined to 194 per 100, 000 from 322 per 100, 000 in 2001 (Subhan, 2012). There have been attempts by the Government and NGOs to train midwives and encourage expectant mothers to go to hospitals and clinics for safe delivery. Prottyashi had a program to popularize safe delivery by motivating people to go to hospitals or clinics or trained midwives. The statistics of the study show that 74% of the babies of all sampled respondents were born at home and the rest in hospitals (11%), private clinics (8%), and government health centers (7%) (Figure 11).

Over 72% of the total respondents had received antenatal care from the physician or other service providers. It should be noted here that 28% expectant mothers had put themselves in great danger by not seeking antenatal help. About 76% of respondents of experimental and 66% of the control areas sought antenatal help. Two most dominant antenatal service providers in both study areas are allopathic physicians (58%) and family health workers (27%). Besides these two major groups others are medical assistants (9%), family planning workers (3%), and homeopathic physicians (3%). It may be noted

### Percentage Distribution of Diseases Experienced by Children under Five Years During Last Six Months



**Figure 10.** Percentage distribution of diseases experienced by children under five years during last six months.



**Figure 11.** Percentage distribution of places of delivery of babies.

noted here that the expectant mothers seek service from modern service providers although all of them live in rural areas. Postnatal care although equally important as that of antenatal care is often ignored in our society. But this is not so in the study area. About 61% of all study respondents sought postnatal services at least once. About two-thirds of the respondents of both experimental and control areas have received postnatal care services from the physicians. Other service providers are government clinics, village physicians, FP, Health workers, homeopathic physician, and others.

#### Immunization

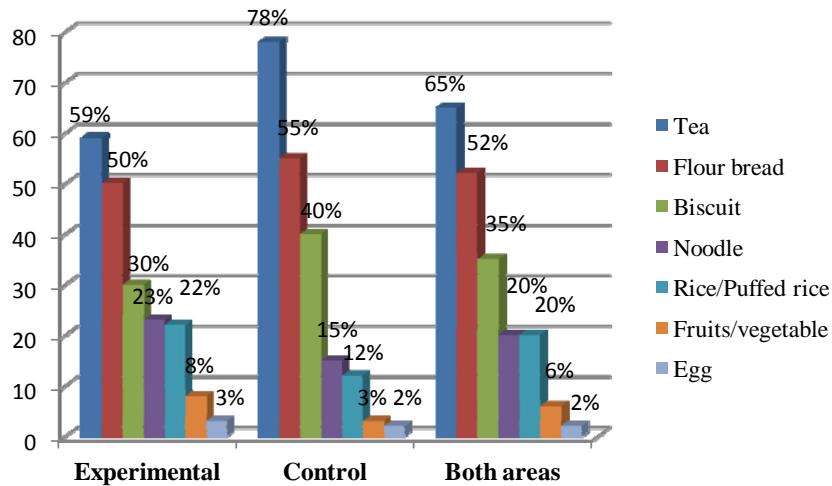
Bangladesh government has achieved 72% coverage by 2010 (WHO and UNICEF, 2012). Protyashi did not have an independent program but has provided support to it through its development activities. Therefore, we have tried to assess the impact, if any, has upon this program

in terms of coverage. All immunized children are given a card to record dates with number of doses administered. Our interviewers could find immunization cards of 71% of children of the total samples, which is almost equal to our national figure.

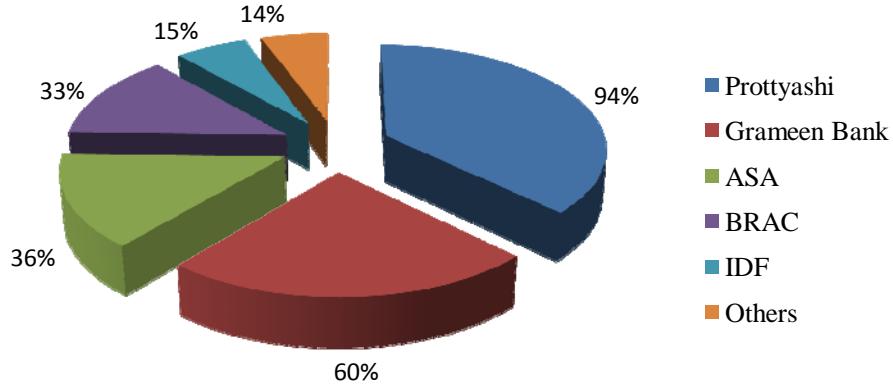
#### Nutritional status of children

The best way to determine the nutrition level of the respondents is to use Body Mass Index (BMI) but because of limited resources and time constrain we have just taken the stock of their regular items of breakfast, lunch, and dinner menu to have some idea of nutritional status of children. The three major items of breakfast are tea (65%), flour bread (53%), and biscuit (34%) for both areas. Next to these most common items are noodle and rice/puffed rice, which are eaten in the breakfast by 15% to 40% of the children (Figure 12).

All respondents have reported that their children eat



**Figure 12.** Percentage distribution of breakfast menu of children.



**Figure 13.** Names of NGOs working in microcredit in study area.

breakfast regularly but it is protein poor, which means children may suffer from malnutrition. Apparently some minor variations are observed in the breakfast menu of experimental and control areas but they are not statistically significant. The study children eat enough starch and protein in their lunch as 25% to 66% of the children have vegetable or fish or meat in their menu and the pattern of intake of children in the dinner is almost the same as that of the lunch.

### Microcredit

There are numbers of Non-Government Organizations (NGOs) working for promoting microcredit in both experimental and control areas. Five major organizations named by all respondents of both areas are Protyyashi (93%), Grameen Bank (60%), ASA (36%), BRAC (33%), and IDF (15%). Respondents have also mentioned few smaller NGOs all of which are placed under others (14%) (Figure 13).

The three major microcredit related activities are carried out by different NGOs, which are: a) collecting savings from the members on weekly basis (45%), b) disbursing credit to members (91%), and c) capacity building of members through IGA training (29%). Figure 13 illustrates the nature and concentration of microcredit activities in both experimental and control areas. The figure confirms that the experimental area is ahead of the control area on every count, such as credit disbursement, saving collection, IGA training, and development activities. Since Protyyashi has a well organized microcredit program in the area there is no reason why we should not assign the major credit of it to Protyyashi although we equally recognize others contribution in the area but in a lesser degree.

### DISCUSSION

We have selected two study locations: one, in which several projects were implemented (some simultaneously

and some at different times) and another where Protyashi did not have programs that are evaluated. Only those programs are selected for evaluations that have at least completed the first phase. The mean family size of the total respondents is 3.1 but in experimental and control areas the sizes are 2.8 and 3.3 respectively. These numbers are far above the national goal of 2 or less. Again the respondents on an average being only around 36 years of age there is a possibility of having few more children during the remaining reproductive period of the respondents if they don't practice FP, which is very much unlikely. The literacy rate of experimental area is only 6% higher in experimental area (70%) than the control one (64%), but these are far more than the national adult literacy of 53%. Per capita income of the experimental areas household is higher (Tk. 125, 4355.0) than the control area (Tk. 101, 325.0) but far lower than the national one (Tk. 408, 811.0). Therefore, despite having several development programs economic status development programs economic status has not improved as expected in the experimental area. One of the indicators of modernity is the nucleation of the family, which is taking place in both experimental and control areas. The former has 80% nuclear family compared to 72% in the control area. The use of ring slab latrine is very high in both experimental (94%) and control area (85%). A significant difference between these two is observed regarding knowledge about the benefit of ring slab latrine, which is 95% for the experimental area and 74% for the control area. With regard to knowledge of specific benefits of having ring slab latrine respondents of the experimental area than the control area are far ahead. All these differences between these two areas being statistically significant we may conclude that Protyashi sanitation program definitely bears a success story. It is interesting to note that knowledge of private sector source of obtaining a ring slab latrine is much higher (97%) in the control area than the experimental area (71%); this could be for growing market of slab latrine in the rural sector.

The percentage of respondents' knowledge of benefits of washing hands after defecation and wearing sandal while using toilet are found much higher in the experimental area than the control one. Project programs might have some positive impact upon the respondents of the experimental area.

All respondents irrespective of experimental and control areas use tube-well water for drinking while more families of the former than the latter use tube-well water for cooking and bathing. Safety possibly is the reason for it but definitely extensive use of ground water in no way environment friendly as depletion of it is not replenished given the present over use. Hence, the experimental area is in disadvantaged position than the control area regarding use of ground water. The purpose of promoting safe drinking water is to reduce incidences of water borne diseases among the rural population. More than four-

fifths of the respondents of both areas know about the major water borne diseases. However, the respondents of the experimental area than the control area are better informed about water borne diseases. This could be for having very intensive water and sanitation program of Protyashi. The respondents of experimental and control area who have heard about FP differ on the knowledge of contraceptive; the latter has more knowledge than the former. However, the prevalence rate of contraceptives is much higher among the experimental area than the control area. Therefore, we may conclude that the FP program of 'protyashi' has not gone in vain.

The key of reducing maternal mortality is to have safe delivery, which should be in the clinic or hospital. Unfortunately, most of the deliveries are still taking place at home by untrained 'dais'. Protyashi's efforts seem to have some success in this regard as 68% of the experimental area are taking place at home compared to 82% of the control area. It is observed that more expectant mothers of the experimental area seek antenatal care than the control area. Those who seek antenatal care most of them sought it from the modern physicians. About 70% of the respondents had their children either fully or partially immunized. There is virtually no difference between experimental and control areas in this respect. We could not rigorously measure nutritional status of children, but made some elementary assessment about the food items children eat during breakfast, lunch, and dinner. Apparently, children eat to some extent nutritious food in lunch and dinner but definitely missing very important items like egg and meat, which are crucial for children's mental and physical growth. Breakfast is really poor as protein is almost absent. There is virtually no difference between the two study locations regarding nutritional status of the children. With regard to microcredit the experimental area is ahead of the control area on every count, such as credit disbursement, saving collection, IGA training, and development activities. Since Protyashi has a well organized microcredit program in the area there is no reason why we should assign the major credit of it to Protyashi although we equally recognize others contribution in the area but in a lesser degree.

## Conclusion

Often modernity of a society is measured by family size, literacy, types of family, and income. The experimental area is ahead of control area with respect to modernity score on three counts (literacy, family size, family type) but equal regarding female occupations (91% housewives). The sanitation program of the experimental area is better than the control in terms of knowledge and installation of sanitary latrine. Hygiene habits like washing hands before and after eating and after defecation are more popular among the respondents of the experimental

area than the control area. The experimental area is also ahead of the control area in respect of water borne diseases, prevalence of contraceptives, babies born in clinics and hospitals, and microcredit achievements. The use of ground water for all purposes is much higher in experimental area than control area. This may ensure greater health safety but creating a future crisis by depleting ground water without sufficiently replenishing. Therefore, this might have negative consequences upon the community resources in the long run.

### **Conflict of Interests**

The author has not declared any conflict of interests.

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