Knowledge and practices associated with sexual and reproductive health among slum living young women: Impact of a cluster randomized controlled trial in Dhaka, Bangladesh

Paper presented at the Annual Meeting of the Population Association of America,
Session 98 Adolescent Sexual and Reproductive Health: Policy and Intervention
San Diego, April 29-May 2, 2015

Md. Irfan Hossain, Population Council
Sigma Ainul, Population Council
Eashita Farzana Haque, Population Council
Ruchira Tabassum Naved, icddr,b
Ashish Bajracharya, Population Council
Sajeda Amin, Population Council

Abstract

This paper evaluates the impact of a service provision and educational outreach (SAFE) intervention on changes in Sexual and Reproductive Health and Rights (SRHR) related knowledge and practices among young women living in Dhaka slums. A three arm cluster randomized evaluation was conducted among women ages 15-29 (samples of 4,458 at baseline and 4,581 at endline). All arms received fixed services. Outreach varied in the three arms: Arm 1: community mobilization and outreach with men and women; Arm 2: community mobilization with outreach with women only and Arm 3: community mobilization only. Difference-in-difference estimates showed significant positive impact of SAFE on knowledge about service delivery for both types of outreach. Improvement in knowledge of menstrual regulation (MR) attributable to sessions was significantly higher for the female outreach (Arm 2) only. However, significant improvement in behavior change in family planning (FP) use rates was shown only in the arm with outreach with men as well as women.

Introduction and Background:

Although Bangladesh has achieved considerable success in family planning and maternal health indicators, much of it has been a function of achievements for married and older women. Younger women and girls remain vulnerable to early marriage and early childbearing and continue to lack access to sexual and reproductive health (SRH) and other health services (Bangladesh Urban Health Survey Preliminary Results, 2013). Early marriage is common in Bangladesh (Amin, Selim & Waiz, 2006) as is early sexual debut. There is a strong cultural bias against sexuality education for young adolescents, rendering girls vulnerable to a range of negative SRH outcomes at a young age. Yet, adolescent girls become sexually active soon after marriage and often without adequate knowledge or understanding of sexual and reproductive health and rights (SRHR). Although problems associated with early marriage and childbearing and limited access to services exist throughout the country, they are worse in urban areas, and particularly so for women residing in urban slums relative to women living in urban non-slum areas (Rashid, 2006). Use of contraceptives and utilization of reproductive health services in urban slum areas, although rising, remains very low.

Bangladesh has among the highest rates of urbanization in the world, much of it as a result of high rates of rural to urban migration. Most slum dwellers are among the most recent migrants to Dhaka city and a significant proportion of them are women. These women face strong vulnerabilities both socially and in terms of health status and service access. The level of SRH services provided by the government in rural areas is not available in urban areas where residents have to rely on services from local organizations and NGOs. These services are often sporadic, uncoordinated, and of uneven quality. It is thus not surprising that compared to the national rate of contraceptive use (61% current users), use rates are considerably lower in urban slums, particularly so among younger women. Only 44% of currently married women aged between 15 to 19 years were using any contraceptive method. There are other indicators of poor access to and utilization of sexual and reproductive health services among urban slum dwellers. Approximately 28% of women living in urban slums did not receive any antenatal care (ANC) service and 58% did not receive any postnatal care (PNC) services. Among these women who delivered, more than half (63%) were attended by untrained attendants (Bangladesh Urban Health Survey Preliminary Results, 2013). Although migrants are the largest and fastest growing segment of the urban population, their needs are not fully addressed in national policy (Bangladesh development series, paper no 19: World Bank, 2007).

Literature review

There is a small but growing body of literature that provides insights into impacts of programming for SRHR of young women, particularly those that use strong evaluation designs. In general, the number of rigorous

evaluations of programs offering SRH services, either experimental or quasi-experimental, has been small. The few rigorously evaluated programs that have shown impact on SRH indicators have been programs originally designed as HIV prevention and care programs.

For example, The Stepping Stones interventions in South Africa, were designed to prevent high-risk sexual behaviour associated with HIV and evaluated in a randomised controlled trial (RCT). While the interventions did not have the desired impact on HIV prevalence, there were significant changes in SRH related behaviours. In particular, condom use reported by men increased in a manner attributable to the knowledge interventions (Jewkes et al., 2008). Several HIV interventions that have engaged men have similarly shown impact on their own reported behaviour (Pulerwitz et al., 2004). In Uganda, a rigorous evaluation of BRAC's Empowerment and Livelihood for Adolescent (ELA), a youth economic and social empowerment mostly targeting out-of-school girls showed impact on both SRH knowledge as well as behaviour indicators. Program beneficiaries showed significant improvements in HIV and pregnancy related knowledge. In addition targeted populations were almost 29% less likely to report childbirth and pregnancy, and among those who were sexually active, routine condom usage increased by almost 50% (Bandiera et al., 2012). Similarly, in Kenya, an HIV intervention conveyed messages regarding relative risk associated with choice of sexual partner and HIV. This program resulted in reduced pregnancy rates by 28% (Dupas, 2011).

Non-HIV focused programs targeted towards adolescents and youth have also shown some promise in improving SRH outcomes. A quasi-experimental evaluation of the Kishori Abhijan program in rural Bangladesh showed statistically significant increase in reproductive health knowledge and delayed marriage relative to girls in control groups. The impact was strongest among poor girls. Girls in the Kishori Abhijan program villages reported higher HIV knowledge (47 percentage points) and pregnancy knowledge (7 percentage points) at follow-up compared to girls in comparison villages. These girls were also 19 percentage points more likely to report always using condoms at follow-up; use of other contraceptives increased by 8 percentage points. Also, they were 3 percentage points less likely to have a child (Amin, 2011). Similarly, evaluation results from the PRACHAR intervention in Bihar, India, also, gathered evidence to show that knowledge about contraceptives increased in both intervention and comparison areas, though increases were significantly larger in intervention areas (Pathfinder International, 2011). In rural Ethiopia, a study evaluated an RH program for married adolescent girls and an analogous program where their spouses were involved. Improvements in spousal support, FP usage, couples' VCT and reduced violence were recorded when both spouses participated in programs. Results from the study indicated potential for higher impact when both members of the family are targeted rather than just females (Erulkar & Tamrat, 2014).

It is clear from this review that there are relatively few instances of rigorous evaluations of SRH programs and interventions. Among those that were evaluated using at least a quasi-experimental design, while

programs were able to demonstrate change in terms of knowledge and attitudes related to SRH, only a few interventions were able to document significant behaviour change.

The Intervention: Growing Up Safe and Healthy[1]

SAFE targets young women living in urban slums. It is designed as an integrated program of prevention and response to improve sexual and reproductive health and rights (SRHR) and reduce child marriage and gender based violence among these vulnerable women residing in the slums of Dhaka.

The SAFE study uses a multisite cluster randomized controlled trial (MSCRT) design, to test two intervention strategies across three arms using blocking before randomizing clusters in the slums of Mohakhali, Mohammadpur and Jatrabari in Dhaka City. Dhaka is one of the most rapidly grown metropolises globally. Its population is expected to exceed 20 million by 2015. Young men and women move to the city in unprecedented numbers every year in search of work. Migration to the city represents a significant departure from the past for women; urban lifestyles and shifting norms resulting from women's entry into the work force challenge existing gender roles. The baseline and endline surveys are repeated cross-sectional samples of individuals age 15 to 29 for women.

The interventions were designed to inform women about rights as well as to promote their capacity to exercise these rights. Interventions also provided access to services. Outreach personnel provided referrals to encourage utilization of health and legal services. Training materials provided information on rights and laws related to marriage registration, recovery of maintenance and dowry money, the role of marriage witnesses, early and child marriage, dowry, abandonment, polygamy and divorce. Group sessions were also organized to discuss sexual harassment, rape, domestic violence and other forms of violence. During these sessions, information about locally available services was provided to group members.

Interventions falling under the SAFE study were delivered for 20 months from February 2012 to October 2013. These interventions included:

- Group sessions to raise awareness
- Community mobilization campaigns
- Health and legal aid services
- Networking and advocacy

These interventions were delivered to four target populations:

1. Adolescent girls and young women aged 10-29 in the project areas

[1] For detail description of SAFE intervention visit "www.safeprojectbd.org"

2. Young men aged 18-35 from the project areas
3. Community leaders from the project areas
4. Different stakeholders in Dhaka (e.g., judiciary, parliamentarians, police, NGOs, etc.)

The evaluation for the SAFE program and its arms were designed as follows:

Arm 1	Arm 2	Arm 3
1 Stop service	1 Stop service	1 Stop service
Community campaign	Community campaign	Community campaign
Female groups	Female groups	
Male groups		

Objective:

The focus of this paper is to evaluate the impact of SAFE study on changes in

(1) **SRHR** related **knowledge**
(2) **SRHR** related **practices** including **institutional service utilization** of young females of Dhaka slums.

Data and Methods:

The sample for this paper comes from a larger sample of the SAFE study and deals with data from the female sample only. Sample for this paper comprises 4,458 young females aged 15-29 year from the SAFE Baseline & 4,581 females aged 15-29 from SAFE Endline Surveys. A sub sample of ever-married females (2,989 from baseline and 2,950 from endline) has been considered for indicators on SRHR practices. The baseline and endline surveys sampled individuals who lived in communities that were offered interventions. As such they are an intent-to-treat sample and not a sample of individuals who were direct program participants. In order to identify outreach strategies that work, magnitude of relative changes in baseline and endline values {100*(endline-baseline)/baseline} of selected indicators were evaluated. Then, Difference-in-Djfferences (DID) estimates of baseline and endline were carried out to evaluate the impact of the SAFE intervention using STATA SE12.1. Difference **"d"** is a more accurate estimate of the impact of the SAFE study if there is good reason to assume covariate balance and baseline trends were parallel prior to the intervention. The equation of 'd' is:

$$\hat{d} = (\bar{Y}^{\text{Endline}}_{\text{Intervention}} - \bar{Y}^{\text{Baseline}}_{\text{Intervention}}) - (\bar{Y}^{\text{Endline}}_{\text{Comparison}} - \bar{Y}^{\text{Baseline}}_{\text{Comparison}})$$

Outcome Variables: SRHR outcome measures include SRHR related knowledge and practices, and service seeking behaviors. In **SRHR knowledge**- knowledge about MR, knowledge about family planning methods, knowledge of STI, knowledge of HIV, aware of service delivery points for sexual health related problems- these indicators have been considered. For **SRHR practices**; use of modern FP methods, use of condom in the last 12 months for preventing STI have been included. For assessing **SRHR institutional service utilization**; ANC, PNC service uptake, institutional delivery and service seeking for STI in last 12 months have been considered.

Results:

Table 1 shows background characteristics of the ever-married women constituting the sample for this study. The samples of ever-married women in the baseline and endline within each intervention group (Arms 1, 2, and 3) were statistically similar and comparable in terms of age, marital status, place of origin, migration status and orphanhood. However, some statistical differences with regard to education and work status were found. The endline sample was more educated and more likely to be working. Approximately 22% of women in the endline had no education compared to 28% in the baseline. Forty-one percent were currently working as opposed to 29% in the baseline. These differences among ever-married women, as with the sample as a whole, were probably attributable to the higher rates of in-migration of young women with education who moved to the slums seeking work opportunities.

Change in SRH knowledge

At baseline and endline, women were asked whether they knew about modern family planning methods, menstrual regulation (MR) and MR services and assessed on their ability to correctly identify potential adverse effects of teen pregnancy for the mother and the child. Table 2 shows responses to these indicators in the three different arms. At baseline and endline, awareness levels of modern family planning methods and adverse effects of teen pregnancy were high with little room for improvement at endline relative to baseline. Also, impact of both male and female sessions, for increasing usage rate of FP methods, found to be positive and highly significant (DID 6.9 percentage points; p-value<0.05).

Awareness of services where MR is available increased between baseline and endline in all arms (44-47% vs. 65-71%). Knowledge of MR services increased more in the arm where female group sessions (Arm 2) were held than in the comparison arm (Arm 3). The increase in knowledge about MR attributable to outreach with female groups was statistically significant (DID 7.5 percentage points; p-value<0.05). By contrast, the change in women's MR knowledge in the arm with male and female groups (Arm 1) was lower than the arm where

female groups and the community awareness campaigns (Arm 2) were given. Awareness of service delivery points for Sexual Health Problems increased across all three arms.

All women were also asked about their knowledge of sexually transmitted infections (STI) and HIV/AIDS. Their responses are also presented in Table 2. Results indicated similar pattern of positive change across all program arms. The respondents were also asked questions to assess their knowledge about service delivery points for sexual health related problems. Table 2 shows increased levels (72-79% vs. 97-98%) of awareness regarding service delivery for sexual health related problems across all three arms. Significant positive impact (DID 4.4 percentage points; p-value<0.05) of session with female only arm and highly significant positive impact (DID 6.2 percentage points; p-value<0.01) of both female & male sessions' arm over community has been observed in awareness about service delivery points for sexual related problems (Table 2).

Change in SRH behavior

Women were asked about their **utilization** of modern family planning methods and menstrual regulation (MR) services regardless of their marital status. Very few never married women responded to these questions, thus only ever-married women's responses were considered in analysis. Table 3 displays these indicators at both time points across the three different arms. Very few ever-married women reported experiencing an MR in the last 12 months (2% at endline vs. 6% at baseline). Women who lived in communities that received outreach sessions with both men and women (Arm-1) had the largest improvement in use of a modern FP method. These increases were highly significant (DID 6.9 percentage points; p-value<0.05). The change in use of modern methods in the other two arms was very small.

Service utilization for STI management was also assessed for all women from questions regarding their service seeking in the last 12 months. Only ever married females were asked whether they sought ANC, the type of delivery and PNC services. To be able to evaluate the impact of the SAFE interventions, we considered ever married women who had given birth in the two years preceding the survey for these sub-analyses. Institutional service uptake increases for PNC were observed to be the strongest, followed by ANC and STI management while the magnitudes of increases on institutional deliveries were negligible (Table 4). However, for these indicators no significant DID estimates were observed.

Discussion:

SAFE, a multi-sectoral and integrated intervention to promote positive change in sexual and reproductive health, offered some key lessons of value for programs and policies in low resource settings. It showed that engaging men in addition to engaging women in group outreach programs is more effective in changing SRH practices and behavior than working with women only. In the communities where both men and women participated in sessions, there was a statistically significant greater increase in modern contraceptive uptake and a commensurate decline in MR seeking services. These changes were greater than the changes observed in the community where only women were engaged in group sessions. The decline in the use of MR services indicates that access to and effective use of contraception reduced the need for abortion services.

The greater impact of working with men on behavior change is particularly striking given that the improvement in knowledge of SRHR service delivery points was greater and statistically significant in the communities where only women were reached. The results presented here show that there was significant improvement in most SRHR knowledge and awareness related indicators in all three arms between baseline and endline. Results show that the magnitude of net impact (DID) on knowledge indicators is higher for the arm where only female groups were conducted compared to those where both female and male groups were conducted. In general, most of the indicators of SRHR knowledge among females show that working with female group is more beneficial than working with men. The arm-wise comparison shows SAFE has impact on awareness about service delivery points for sexual health problems in all the arms.

While this evaluation was conducted with a rigorous RCT design, it is not without its limitations. It is not possible to attribute all changes in SRH knowledge and awareness to the intervention. Some changes may be a reflection of secular changes or due to other interventions taking place in the study area. However, the magnitude of change over a relatively short period of time, all of the communities received quite substantial input in terms of enhanced fixed site services, and the fact that we have a comparison group, we are able to account for these changes to some extent and that it gives us more confidence in our results in the informed conclusion that the observed changes were at least partially attributable to SAFE.

The fact that behavioral indicators results are more favorable when outreach activities involve working with both men and women has important implications for programs as well as for offering insights into factors that influence behaviors. This is particularly striking given the overall changes observed in knowledge across all indicators. Women who lived in communities that received outreach sessions with both men and women had the greatest improvement in use of a modern FP method. This is an interesting result as it may indicate

that community sessions involving both men and women may foster better spousal communication and joint awareness regarding effective family planning, which subsequently is manifested in better FP uptake outcomes.

It is not surprising that positive change in behavioral indicators was more modest than change in awareness. It should be noted that while there were substantial changes in the uptake of antenatal and postnatal care services there was no significant change in institutional delivery and use of services for treatment of sexual health. Impacts on knowledge are likely to be manifested in the short run but service utilization involves behavior change, which is affected by host of social norms related barriers as well as financial ones. Changes in behavior and practice thus would require longer exposure to intervention. With the 20 months intervention of the SAFE model, behavioral effects are more challenging to observe. This suggests that considering longer intervention periods while developing future programs and policies may be more useful for generating evidence.

The SAFE intervention also demonstrated that offering services with some community outreach can be important for changing knowledge and even behavior. The study was designed to assess the additional benefits of organizing regular awareness-raising sessions in small groups of women, and groups of men relative to offering fixed site services along with minimal community outreach.

The SAFE program's evaluation provides evidence to underscore the importance of working with men. Modern contraceptive use increased when men were engaged. In other assessments, such as on the impact of SAFE on gender based violence, the SAFE interventions were also found to be more effective when men were engaged (Naved et al, 2014). These interventions are distinguished by their multi-sectoral approach to raise awareness about rights, access to services and information about recourse in situations where rights are violated. These positive findings serve as testament to the innovative potential of integrated and multi-sectoral interventions to address complex issues such as access to MR and gender based violence.

Table 1: Background characteristics of ever-married women

Background Characteristics	Community+ Female + Male		Community + Female		Community		All Sites	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
N	***987***	***980***	***998***	***1013***	***1004***	***958***	***2989***	***2950***
Age								
15-19	16.7	17.6	17.6	17.9	16.5	16.9	16.9	17.5
20-24	39.8	42.6	41.4	37.6	41.9	41.0	41.1	40.4
25-29	43.5	39.8	40.9	44.5	41.7	42.1	42.0	42.2
Education[$]								
No education	30.1	22.4	28.3	23.6	25.6	19.3	28.0	21.8
Primary incomplete	28.0	26.0	25.3	26.4	26.5	24.6	26.8	25.7
Primary complete	16.7	19.4	14.7	19.4	14.5	18.7	15.3	19.2
Secondary incomplete	20.5	25.2	26.4	24.1	25.9	30.0	24.3	26.4
Secondary and above	4.7	6.9	4.7	6.5	7.5	7.4	5.7	7.0
Marital status								
Divorced/separated/widowed	4.4	6.2	5.7	5.8	5.0	4.9	5.0	5.6
Currently married	95.6	93.8	94.3	94.2	95.0	95.1	95.0	94.4
Current work status								
Not working	71.5	58.8	70.5	57.6	71.9	61.1	71.3	59.1
Working	28.5	41.2	29.5	42.4	28.1	38.9	28.7	40.9
Home division[$]								
Dhaka	47.8	49.0	49.8	49.2	49.4	48.9	49.0	49.0
Barisal	28.7	25.7	24.2	26.4	22.3	25.6	25.1	25.9
Chittagong	10.9	12.3	14.1	10.2	14.8	11.2	13.3	11.2
Rangpur	3.8	5.1	3.7	6.4	5.8	6.5	4.4	6.0
Khulna	3.7	4.2	3.9	3.7	4.6	4.1	4.1	4.0
Rajshahi	3.2	3.0	3.1	2.2	2.1	2.8	2.8	2.6
Sylhet	1.7	0.7	1.1	2.1	1.0	0.9	1.3	1.3
Migration status								
Migrated to Dhaka	80.2	82.1	82.8	83.2	82.6	82.8	81.8	82.7
Born in Dhaka	19.8	17.9	17.2	16.8	17.4	17.8	18.2	17.3
Orphan-hood								
Only one parent/none alive	34.0	33.8	31.6	34.7	32.4	33.1	32.7	33.9
Both parents alive	66.0	66.2	68.4	65.3	67.6	66.9	67.3	66.1
Wealth quintile								
Lowest	30.2	27.3	29.8	25.7	28.8	23.4	29.6	25.5
Second	10.0	8.5	8.1	9.9	7.4	9.2	8.5	9.2
Middle	19.5	21.5	22.5	22.8	22.8	18.9	21.6	21.1
Fourth	19.8	23.0	18.5	22.7	17.9	25.1	18.7	23.6
Highest	20.6	19.7	21.0	19.0	23.1	23.5	21.6	20.7

[$] Significant ($P<0.01$) at baseline for arm-wise comparison

Table 2: Change in knowledge and awareness related to reproductive and sexual health

Knowledge/ Awareness Indicator	Intervention	Before (%)	After (%)	Change (%)	DID Estimates		
					Impact of Female Group [(c+f)-c]	Impact of Male Group [(c+f+m)-(c+f)]	Impact of Male + Female Group [(c+f+m)-c]
MR	Community	46.5	65.2	40.2***			
	Community+Female	44.3	70.5	59.1***	7.5**	-5.6*	1.9
	Community+Female+Male	44.3	64.9	46.5***			
Adverse effect of Teen Pregnancy	Community	96.1	99.4	3.3***			
	Community+Female	97.2	99.1	1.9***	-1.4	0.2	-1.2
	Community+Female+Male	97.2	99.3	2.1***			
FP methods	Community	87.4	97.6	11.7***			
	Community+Female	89.3	97.6	9.3***	-1.9	-0.1	-2.0
	Community+Female+Male	89.0	97.2	9.2***			
STI	Community	48.4	87.2	80.2***			
	Community+Female	44.7	85.3	90.8***	1.8	-3.9	-2.1
	Community+Female+Male	49.2	85.9	74.6***			
HIV	Community	46.8	86.8	85.5***			
	Community+Female	43.0	84.5	96.5***	1.5	-3.2	-1.7
	Community+Female+Male	47.2	85.5	81.1***			
Service delivery points for Sexual Health Problems	Community	78.7	97.8	24.3***			
	Community+Female	73.7	97.2	31.9***	4.4**	1.8	6.2***
	Community+Female+Male	72.0	97.3	35.1***			

***** p-value <0.01; ** p-value <0.05; *p-value <.10**

Table 3: Change in using Modern family planning methods

Practice Indicator	Intervention	Before (%)	After (%)	Change (%)	DID Estimates		
					Impact of Female Group [(c+f)-c]	Impact of Male Group [(c+f+m)-(c+f)]	Impact of Male + Female Group [(c+f+m)-c]
Use of modern FP methods	Community	69.8	74.0	6.0*	-0.6	6.9**	6.3
	Community+Female	67.2	70.8	5.4			
	Community+Female+Male	64.7	75.2	16.2***			
Used a condom to prevent disease in the last 12 months	Community	9.3	10.8	16.1	-1.3	0.4	-0.9
	Community+Female	8.7	8.9	2.3			
	Community+Female+Male	9.2	9.8	6.5			

***** p-value <0.01; ** p-value <0.05; *p-value <.10**

Table 4: Institutional Service Utilization

Service utilization Indicator	Intervention	Before (%)	After (%)	Change (%)	DID Estimates		
					Impact of Female Group [(c+f)-c]	Impact of Male Group [(c+f+m)-(c+f)]	Impact of Male + Female Group [(c+f+m)-c]
ANC service uptake[2]	Community	34.8	58.3	67.5***	9.2	-6.8	2.4
	Community+Female	25.7	58.4	127.2***			
	Community+Female+Male	31.7	57.6	81.7***			
Institutional Delivery[2]	Community	43.2	43.7	1.2	-0.3	2.6	2.9
	Community+Female	38.7	38.9	0.5			
	Community+Female+Male	44.6	47.7	7.0			
PNC service uptake[2]	Community	17.7	31.7	79.1***	0.8	7.4	8.2
	Community+Female	17.2	32.0	86.0***			
	Community+Female+Male	16.6	38.8	133.7***			
STI management[3]	Community	34.6	67.0	93.6***	-6.1	-6.3	-12.4
	Community+Female	33.6	59.9	78.3**			
	Community+Female+Male	29.2	49.2	68.5			

***** p-value <0.01; ** p-value <0.05; [2] Calculated using ever married & given birth within 2 years preceding the surveys subsample; [3] Calculated using those who have experienced an STI in last 12 months.**

References

Amin, S., Selim, N., & Waiz, N. K. (2006). *Causes and consequences of early marriage in Bangladesh*. Dhaka, Bangladesh: Population Council.

Amin, S. (2011) Empowering adolescent girls in rural Bangladesh: Kishori Abhijan. *Kishori Abhijan brief no.13*. Dhaka: Population Council.

Bandiera, O., Buehren, N., Burgess, R., Goldstein, M., Gulesci, S., Rasul, I., & Sulaiman, M. (2012). Empowering Adolescent Girls: Evidence from a Randomized Control Trial in Uganda. Working Paper. Retrieved from: http://econ.lse.ac.uk/staff/rburgess/wp/ELA.pdf

Dupas, P. (2001) Do teenagers respond to HIV risk information? Evidence from a field experiment in Kenya. *American Economic Journal: Applied Economics* (3), 1–34.

Erulkar, A., & Tamrat, T. (2014). Evaluation of a Reproductive Health Program to Support Married Adolescent Girls in Rural Ethiopia. *African Journal of Reproductive Health*; 18(2):68

Erulkar, A. S., & Muthengi, E. (2009). Evaluation of Berhane Hewan: a programme to delay child marriage in rural Ethiopia. *Int Perspect Sex Reprod Health* 35(1):6-14.

Field E, Glennerster R. *Empowering girls in rural Bangladesh: investigating how providing support, financial training and incentives to delay marriage can empower adolescent girls in southern Bangladesh* [Internet]. J-PAL; [cited 2015 March 12]. Available from: http://www.povertyactionlab.org/evaluation/empowering-girls-rural-bangladesh

Jewkes, R., Nduna, M., Levin, J., Jama, N., Dunkle, K., Puren, A., & Duvvury, N. (2008). *Impact of stepping stones on incidence of HIV and HSV-2 and sexual behaviour in rural South Africa: cluster randomised controlled trial.* BMJ. 337(a506):1-11.

Pathfinder International. (2011). *PRACHAR: Promoting change in reproductive behaviour in Bihar, India: summary report of phase II evaluation findings*. Watertown (MA): Pathfinder International.

Pulerwitz, J., Baker, G., & Segundo, M. (2004). Promoting healthy relationship and HIV/STI prevention for young men: positive findings from an intervention study in Brazil. *Horizons research update*. Washington DC: Population Council.

Rashid, S. F. (2006). Emerging Changes in Reproductive Behavior among Married Adolescent Girls in an Urban Slum in Dhaka, Bangladesh. *Reproductive Health Matters*, 14 (27), 151-159.

Ministry of Health and Family Welfare (MOHFW). (2006). Bangladesh Adolescent Reproductive Health Strategy. Dhaka: MOHFW.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International. (2009). *Bangladesh Demographic and Health Survey 2007*. Dhaka, Bangladesh and Calverton, Maryland, USA: National Institute of Population Research and Training, Mitra and Associates and Macro International.

National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR, B), and Associates for Community and Population Research (ACPR). (2008). *2006 Bangladesh Urban Health Survey*. Dhaka, Bangladesh and Chapel Hill, NC, USA: NIPORT, MEASURE Evaluation, ICDDR,B, and ACPR.

National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), US Agency for International Development (USAID), and Department for International Development (DFID). (2008). *Bangladesh Urban Health Survey 2013 Preliminary Results.* Dhaka, Bangladesh and Chapel Hill, NC, USA: NIPORT, MEASURE Evaluation, icddr,b, USAID, and UKAID

Naved, R. T., Mourin, S. A. & Parvin, K. (2014). Chapter 3: Impact of SAFE on spousal violence against women and girls and help seeking behavior. In R. T. Naved, & S. Amin (Eds.) *Impact of SAFE intervention on sexual and reproductive health and rights and violence against women and girls in Dhaka slums* (pp. 31-47). Dhaka; icddr,b.

USAID/Health Policy Initiative. (2009). *Early Marriage and Youth Reproductive Health: Fact Sheet on Youth RH Policy*.

World Bank. (2007). Dhaka: *Improving Living Conditions for the Urban Poor. Bangladesh development series* (Paper no.17). Retrieved from http://siteresources.worldbank.org/BANGLADESHEXTN/Resources/295759-1182963268987/dhakaurbanreport.pdf