

Evaluation of the Effectiveness of the HERhealth Model for Improving Sexual and Reproductive Health and Rights Knowledge and Access of Female Garment Factory Workers in Bangladesh

Md. Irfan Hossain
Abdullah Al Mahmud
Ashish Bajracharya
Ubaidur Rob
Laura Reichenbach

SEPTEMBER 2017

RESEARCH REPORT



Evaluation of the Effectiveness of the HERhealth Model for Improving Sexual and Reproductive Health and Rights Knowledge and Access of Female Garment Factory Workers in Bangladesh

Md. Irfan Hossain
Abdullah Al Mahmud
Ashish Bajracharya
Ubaidur Rob
Laura Reichenbach

SEPTEMBER 2017

The Evidence Project

Population Council

4301 Connecticut Avenue, NW, Suite 280

Washington, DC 20008 USA

tel +1 202 237 9400

Population Council

House 12, Road 25/30

Gulshan 1, Dhaka 1212

tel +880 2 984 2276

evidenceproject.popcouncil.org



USAID
FROM THE AMERICAN PEOPLE

The Evidence Project is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of cooperative agreement no. AID-OAA-A-13-00087. The contents of this document are the sole responsibility of the Evidence Project and Population Council and do not necessarily reflect the views of USAID or the United States Government.



The Evidence Project uses implementation science—the strategic generation, translation, and use of evidence—to strengthen and scale up family planning and reproductive health programs to reduce unintended pregnancies worldwide. The Evidence Project is led by the Population Council in partnership with INDEPTH Network, International Planned Parenthood Federation, PATH, Population Reference Bureau, and a University Research Network.



BSR is a global nonprofit organization that works with its network of more than 250 member companies and other partners to build a just and sustainable world. HERproject is a collaborative initiative of BSR that strives to empower low-income women working in global supply chains. Bringing together global brands, their suppliers, and local NGOs, HERproject drives impact for women and business via workplace-based interventions on health, financial inclusion, and gender equality. Since its inception in 2007, HERproject has worked in more than 620 workplaces across 14 countries, and has increased the well-being, confidence, and economic potential of more than 700,000 women.

Published in September 2017.

Suggested citation: Hossain, Md. Irfan, Abdullah Al Mahmud, Ashish Bajracharya, Ubaidur Rob, and Laura Reichenbach. 2017. “Evaluation of the Effectiveness of the HERhealth Model for Improving Sexual and Reproductive Health and Rights Knowledge and Access of Female Garment Factory Workers in Bangladesh,” Research Report. Washington, DC & Dhaka, Bangladesh: Population Council, The Evidence Project.

Photo credit for all photos in report: BSR

© 2017. The Population Council, Inc.

Table of Contents

Acknowledgments.....	vii
List of Acronyms.....	viii
Executive Summary	1
Introduction	4
Methodology	8
Results.....	12
Demographics	12
Sexual and Reproductive Health Knowledge.....	16
Sexual and Reproductive Health-related Practices	20
Experience with and Perceptions of On-site Clinics	23
Experience with and Perceptions of the HERhealth Intervention.....	24
Program Effectiveness.....	25
Stakeholders' Views	28
Challenges and Solutions	37
Discussions and Recommendations	38
References	41

List of Tables and Figures

Table 1.	Characteristics of Female Factory Worker Respondents (Percent)	13
Table 2.	Employment Characteristics of Female Factory Worker Respondents (Percent)	14
Table 3.	Media Exposure Characteristics of Female Factory Worker Respondents (Percent).....	15
Table 4.	Food Intake and Nutrition Status of Female Factory Worker Respondents (Percent).....	15
Figure 1.	Sexual and Reproductive Health Knowledge.....	16
Figure 2.	Sexually Transmitted Infection (STI) Knowledge	17
Figure 3.	HIV/AIDs Awareness and Knowledge	18
Figure 4.	Knowledge of SRH Service Delivery Points.....	18
Figure 5.	Family Planning Knowledge	19
Figure 6.	Recommended Number of ANC Visits	20
Figure 7.	Menstrual Hygiene Management	20
Figure 8.	Use of Family Planning Methods	21
Figure 9.	Popular Family Planning Methods	22
Figure 10.	Services Received During Pregnancy	23
Figure 11.	Services Sought at On-site Clinic.....	24
Figure 12.	Average Knowledge Retention Performance Score of all PHEs, by Factory Type	26
Figure 13.	Average Knowledge Retention Performance Score of Matched PHEs, by Factory Type	26

Acknowledgments

This report is part of the project “Evaluation of the effectiveness of the HERhealth (Health Enable Returns Project) model on improving sexual and reproductive health and rights (SRHR) knowledge and access of female factory workers in the garment sector in Bangladesh” led by the Population Council, under the Evidence Project.

The authors wish to acknowledge the contributions of many individuals and institutions who made this study possible. We are thankful to two Research Assistant for this project, Heeyam Sayeed and Ahasan Habib for their diligent support on the qualitative analysis of the study. We are thankful to Marat Yu, Jessica Wan, and Abil Bin Amin of BSR for their unwavering support in the very essential and effective brand engagement in the garment factories where the study took place.

We are indebted to Nazneen C. Huq, Tahmina Begum, and Taslima Sultana of Change Associates Ltd. for their invaluable support and assistance in liaising with factory management throughout the study. We thank all the facilitators of Change Associates Ltd. for providing quality training to female garment workers who have benefited from this project.

We are grateful to A.N.M. Amir Faisul of Esses Fashions Limited, Cdr. M Baniz Ali of Opex & Sinha Textile Group, Md. Sawkat Ali and Amir Hossain Chowdhury of Panwin Design Limited, Khandaker Ilias Hossain of Southern Services Limited, Md. Amir Hossain of Elegant Group, Md. Saiful Islam of Divine Group, Capt. (Retd.) Md. Moniruzzaman Monir of Nassa Group, Engr. S. M. Shahin of Trouser Line Limited and other personnel from these factories who have provided excellent support to conduct the study. We also cordially acknowledge the brand support in this study.

A warm thanks also goes to our Population Council colleagues on the Evidence Project. Many thanks to Kate Gilles for her valuable assistance with review and to Anneka Van Scoyoc for formatting the report. Special thanks to Dipak Kumar Shil, Julia Adams, and Afzal Kuhnaward for managing the study funding, budget, and expenditure reports. Thanks to Karen Hardee, for support for the study and review of the report. We thank Mamun-or-Rashid and Joynal Abedin, who provided day-to-day administrative support for this project.

List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
BDT	Bangladeshi Taka
BMI	Body Mass Index
BSR	Business for Social Responsibility
FP	Family Planning
HIV	Human Immunodeficiency Virus
IDI	In-depth Interview
IUD	Intrauterine Device
NGO	Nongovernmental Organization
OSH	Occupational Safety and Health
PC	Population Council
PHE	Peer Health Educator
PNC	Postnatal Care
PPE	Personal Protection Equipment
RH	Reproductive Health
RMG	Ready-made Garment
RTI	Reproductive Tract Infection
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health and Rights
STI	Sexually Transmitted Infection
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

Bangladesh, with its high-quality production and low labor costs, is an important contributor to the global garment industry. As the first major manufacturing sector in the country to employ a predominantly female workforce, the ready-made garment (RMG) sector is seen as a major factor in women's autonomy and self-sufficiency, mobility, financial literacy and inclusion, and economic and general empowerment. Although employment in the garment industry has improved women's financial situation, female factory workers are still vulnerable to a myriad of health issues. Over the last several years, particularly against the background of major disasters in the sector in terms of worker occupational safety and health (OSH), there have been increasing efforts to address the health, safety, and wellbeing of garment factory workers in Bangladesh. One such program is Business for Social Responsibility (BSR)'s HERproject. One of HERproject's pillars is HERhealth, which uses the HERproject methodology of capacity building and workplace strengthening to improve the health-related knowledge and behaviors and access to health services and products of low income working women. In Bangladesh, this project specifically addresses menstrual hygiene, sexually transmitted infections (STIs) and HIV/AIDS, nutrition, family planning (FP), early detection of breast and cervical cancer, and OSH.

The Population Council, under its USAID-funded Evidence Project, partnered with BSR to conduct operational research to evaluate the effectiveness of the HERhealth model for improving female factory workers' health and find ways to optimize program inputs and processes to support future scale-up of the intervention. This report presents findings from a pre- and post-intervention quantitative study of female factory workers from 10 factories; a qualitative study with factory managers, service providers, and implementing partners; and self-administered retention assessments of the Peer Health Educators (PHEs) from 6 factories in Dhaka, Gazipur, and Narayanganj districts.

Key Findings

The HERhealth intervention had a positive impact on some aspects of sexual and reproductive health knowledge and behavior. In particular, workers in factories where the HERhealth intervention was implemented showed improved knowledge and behavior related to menstrual hygiene. This is likely related, in part, to the intervention's facilitation of relationships between factories and menstrual products suppliers, which made it possible for factories to offer reduced-cost sanitary pads to workers. Furthermore, a positive impact was observed on workers' knowledge of STIs and HIV/AIDS, knowledge of recommended antenatal care, and use of contraception.

Periodic knowledge retention tests revealed variable performances of the PHEs, depending on the topic. The assessments found that PHEs performed highest on the round three topics (Preventing STIs and HIV/AIDS) and round six topics (Occupational Safety and Health). In all five assessment rounds, PHEs at intervention factories showed significantly better retention performance than those at post-intervention factories (where the intervention had been completed before the start of this evaluation). This provides evidence of the need to maintain the knowledge and skills of PHEs and to continue regular HERhealth activities.

These findings are supported by factory managers' reports that they observed positive effects on workers' health-related knowledge, awareness, and behaviors, particularly related to hygiene and nutrition. Factory managers were generally supportive of the intervention and seemed to understand the value of healthy workers for improving business outcomes. They mentioned, in particular, decreased absenteeism as a result of improved worker health and were also generally appreciative of the positive impact of offering low-cost sanitary pads.



Managers were supportive of the PHEs, although it should also be noted that implementing partners described challenges in persuading management to invest the time necessary to fully implement the PHE model.

The impact of the HERhealth intervention on FP knowledge was less clear, as levels of knowledge of FP among factory workers were very high at all factories at baseline. The study was also unable to determine the impact of the HERhealth intervention on service seeking during pregnancy, or testing and treatment for STIs and HIV/AIDS.

The intervention did not appear to have a positive impact on workers' knowledge of SRH service delivery points, which illustrates an area in which the intervention could be improved in the future.

Results from this study show that the HERhealth model was appreciated by the top-level factory managers, as workers' health conditions, consciousness, and commitment were improved through the intervention. The intervention was also perceived to have a positive correlation with decreasing absenteeism and increasing productivity. Managers indicated that they thought the PHE model was effective, as it ensures that knowledge is shared with all the PHEs' coworkers, raising the consciousness of all factory workers.

Results show generally good awareness of the availability of doctors and medical assistants at on-site factory clinics, though healthcare providers also reported problems with overcrowding when large numbers of workers arrive at the clinic at the end of a shift, which delays service delivery. Workers received free basic medicines

from the clinics and were referred to tertiary health facilities, with costs covered, when they had a serious illness. Unfortunately, family planning products like oral pill, condom, injectable, and IUDs were not provided by any factory clinic. Since the intervention was intended to strengthen provision of family planning services at factory-based clinics, in addition to other health services, this points to another area for future investment and revision in the HERhealth intervention.

Discussions with key implementing partners also showed that through the HERhealth intervention, workers' awareness about their basic health needs and their health-seeking behavior was changed. Factory managers also responded positively about the importance of workers' health, and had learned that the HERhealth intervention could bring positive business outcomes, and that healthy workers can ensure healthy business.

Findings from both the quantitative survey and qualitative interviews indicate that the HERhealth project, by educating female garment workers through a peer health educator model, is an effective model when fully implemented.

Study findings also point to several recommendations for improving the sustainability of this project:

- **Extending training content and duration:** A large number of the female factory workers who were exposed to the HERhealth program (both PHEs and general workers) recommended more trainings on health-related issues. Some also suggested reducing the duration of each training session but extending the span of the training period.
- **Engaging male workers:** Qualitative findings from in-depth interviews with factory managers suggested the adoption of a similar program for male factory workers. The argument was that sensitizing male workers may result in changes in their spouse's knowledge and behavior also. Although the proportion of male workers in these factories varied from 35 to 70 percent, no SRHR-related interventions were found that focused on male workers.
- **Regular follow up:** Regular follow up by the implementing agency should be ensured at factories where the HERhealth intervention has been completed. There should be a liaison between the implementing agency and factory so that, after finishing the intervention, welfare officers at individual factories can forward the key messages from the six rounds of training to the PHEs and thus continue the process of educating all the female workers. If this sort of follow up is not ensured, workers will gradually forget what they learned through HERhealth, especially in the context of higher turnover.
- **Engaging factory management:** Among the two post-intervention factories (where the intervention was completed before the start of this study), the study also found that HERhealth had been scaled up by the management at one factory, but not at the other. Findings from qualitative interviews with implementing partners suggest that factory managers should be sensitized periodically to ensure the sustainability of this project.

Introduction

The rapid growth of Bangladesh's ready-made garment (RMG) manufacturing sector during the last three decades has transformed the country's economy and created new opportunities for millions of Bangladeshi workers. These impacts have been particularly significant for women, who comprise more than 80 percent of the approximately four million RMG workers in Bangladesh (World Bank 2017). The RMG industry is now the dominant manufacturing sector in Bangladesh and is the primary source of foreign revenue, accounting for almost 80 percent of all Bangladeshi exports, and \$25 billion (USD) in exports in the 2014-15 financial year (BGMEA 2017).

The RMG sector has global economic importance, with supply and value chains spread across many countries and continents. The garment market's main producing and exporting countries changed significantly in the late 20th century, with a general shift to the least developed and developing countries. In 1970, Japan, United Kingdom, Canada, Italy, and France were among the biggest exporters to the United States of America (USA). By 2011, the USA was receiving most of its imports from countries like China, Cambodia, Pakistan, Mexico, and Bangladesh (Martin 2013). Amongst the countries that export to the USA, Bangladesh and Cambodia have the lowest garment sector wages, at 68 USD and 128 USD respectively (Quadir, Hookway and Narin 2014).



Bangladesh, with its high-quality production and low labor costs, is an important contributor to the global garment industry. The RMG industry is, in turn, the backbone of the Bangladeshi economy and a catalyst for the country's development, contributing to a 6 percent annual average GDP growth rate and remarkable social and human development in a country with limited natural resources. The RMG sector has grown exponentially since the 1980s (Khondhker et al. 2005), from only 50 factories employing just a few thousand people to approximately 5,000 factories in 2017. Since 1991, the RMG sector's contribution to national GDP has risen from 3 percent to around 15 percent. The USA is the largest importer of Bangladeshi RMG products, followed by Germany, UK, France, and other E.U. countries.

As the first major manufacturing sector in the country to employ a predominantly female workforce, the RMG sector is seen as a major factor in women's autonomy and self-sufficiency, mobility, financial literacy and inclusion, economic and general empowerment. In a country with endemic gender inequities and high rates of early marriage, the RMG sector provides an alternative path for young women (Ainul et al. 2013). Factory work is also seen as enabling young women to be independent, through residential and financial autonomy and self-sufficiency (Kibria 1998). Most garment workers are recent migrants to urban areas where factories are located, and most are unmarried when they begin work. Many female workers are important earners and breadwinners for their natal households and, like other migrants, a significant portion sends remittances to their rural families. Several studies have found that these female workers are not just wage earners, but active savers as well (Amin 2006, Newby 1998, Hewett 2001, Amin et al. 1998).

Although employment in the garment industry has improved women's financial situation, female factory workers are still vulnerable to a myriad of health issues. Bangladeshi women in general experience higher rates of anemia and other micronutrient deficiencies such as vitamin A. Sanitation, access to water, and health taboos and prejudices impact women's menstrual hygiene and reproductive health. Reproductive tract infections are common among female workers, and many of them miss work during their menstrual cycle due to pain and embarrassment. In addition to limited access to family planning and reproductive health (FP/RH) services and products at the workplace, many female workers lack awareness, or their knowledge is restricted by cultural biases or gender-based power structures that affect decision-making. They are often reluctant and uncomfortable asking questions or seeking advice in public settings about reproductive health, and family planning.

Over the last several years, particularly against the background of major disasters in the sector in terms of worker occupational safety and health (OSH), there have been increasing efforts to address the health, safety, and wellbeing of garment factory workers in Bangladesh. Beyond programs addressing OSH, there are increasing efforts to address other issues that are important to women in this sector, including reproductive health (RH), family planning (FP), sanitation, hygiene, and nutrition. One such program is BSR's HERproject. HERproject is a collaborative initiative that strives to empower low-income women working in global supply chains. Bringing together global brands, their suppliers, and local NGOs, HERproject drives impact for women and business via workplace-based interventions on health, financial inclusion, and gender equality. One of HERproject's pillars is HERhealth, which uses the HERproject methodology of capacity building and workplace strengthening to improve the health-related knowledge and behaviors and access to health services and products of low income working women. In Bangladesh, this project specifically addresses menstrual hygiene, sexually transmitted infections (STIs) and HIV/AIDS, nutrition, FP, early detection of breast and cervical cancer, and OSH.

The Population Council, under its USAID-funded Evidence Project, partnered with BSR to conduct an operational research study to evaluate the effectiveness of the HERhealth model for improving female factory workers' health and find ways to optimize program inputs and processes to support future scale-up of the intervention.

Program Description

The importance of the RMG sector within Bangladesh's economy is widely acknowledged, and its impact on women's economic empowerment has been well documented, but there is a clear lack of evidence on garment workers' health and wellbeing. Bangladesh has almost three million female garment workers, most of whom are in their prime reproductive years (18 to 35 years old) and a significant proportion of whom are unmarried. These women are especially vulnerable to many health issues, particularly related to sexual and reproductive health (SRH). Female factory workers, like many women in Bangladesh, lack adequate access to FP/RH services and to safe motherhood and maternal health services. Although women are largely responsible for the industry's success, there is limited research on how the RMG sector is addressing these fundamental aspects of women's health. Previous research studies (Nanda et al. 2013) have typically been formative and have not included control groups to conduct rigorous pre- and post-intervention evaluations of programs.

The Intervention

The HERhealth model is an intervention linking multinational companies and their factories with local nongovernmental organizations (NGOs) to create sustainable women's health programs that improve the general and reproductive health of women employed in Bangladesh's garment sector, while also improving key business outcomes for factories. Specific HERhealth intervention areas include hygiene, menstrual hygiene, infections, maternal health, and FP. In Bangladesh, HERhealth specifically addresses pre- and postnatal care, HIV/AIDS, nutrition, FP, early detection of breast and cervical cancer, and OSH. BSR, which designs and manages HERhealth, has partnered with more than 50 multinational companies worldwide and operates in Bangladesh, Cambodia, China, Egypt, Ethiopia, Haiti, India, Indonesia, Kenya, Myanmar, Pakistan, and Vietnam. Participating companies include Abercrombie & Fitch, Columbia Sportswear, Hewlett Packard, J. Crew, Levi Strauss & Co., Li & Fung, Marks & Spencer, Microsoft, Nordstrom, Primark, Talbots, and Timberland. HERhealth offers a unique business model of public-private partnerships, in which companies share local program costs. In Bangladesh, HERhealth is being implemented in more than 75 factories in seven districts with 18 participating companies. HERhealth is implemented by two organizations in Bangladesh - Change Associates Ltd. and Mamata.

Training Modules by Peer Health Educators

The HERhealth intervention is 18 months long and delivered via peer educators through a series of workplace trainings; training content is tailored to the Bangladeshi context, based on the identified health needs of that factory, from needs assessment in each factory. In participating factories in Bangladesh, the following three-hour trainings, with a one-hour follow up one month later, were offered as part of the 18-month intervention for female garments workers:

1. Our health is important (introductory module); Personal hygiene; Waterborne diseases
2. Eating healthy; Female body & menstruation
3. Maternal health; Family Planning
4. Preventing STIs, HIV and AIDS
5. Serious illness – Malaria and Dengue fever; Reproductive cancers
6. Occupational health and safety



Training modules were provided to female factory workers in groups of 10-40, depending on factory size, and were led by Peer Health Educators (PHEs) recruited and trained by BSR. Since some of the topics contained sensitive material, female trainers conducted the trainings for Peer Health Educators and ensured confidentiality of the sessions. Peer Health Educators were taught to communicate effectively through careful listening, to encourage active participation from factory workers, and to use a non-judgmental tone when delivering the modules. Modules were designed to be interactive and involved group activities for each topic, including the use of flipcharts, drawings, and diagrams. When appropriate, role-play was used to illustrate concepts. After each module, female factory workers were given a short assessment to test their knowledge from the day's activities.

Most factory programs in Bangladesh also included efforts to link improvements in health awareness among factory workers with health services, through strengthening factory-based clinics. In Bangladesh, factory-based clinics are supposed to provide a comprehensive set of basic services for FP and RH services for factory workers. This is not always the case in practice, and the HERhealth intervention was intended to improve the capacity of factory-based clinic staff through strengthened trainings and engagement of nurses to enhance resources for expanded services, including as Peer Health Educators. The intervention also aimed to strengthen factory-based clinics' provision of contraceptives including condoms, oral pills, and injectables, as well as feminine hygiene commodities (e.g. sanitary pads). For women who required more complex services, including services related to safe motherhood such as ANC, delivery and PNC, the intervention worked to strengthen referral mechanisms to higher-level facilities, including government hospitals or private providers.

The expected outcomes of the HERhealth intervention in Bangladesh factories were i) increased knowledge among workers of STIs, HIV/AIDS, FP, maternal health, antenatal care (ANC), postnatal care (PNC), feminine hygiene, and nutrition and ii) increased utilization of health products and services, particularly through factory-based clinics. The Evidence Project/Population Council conducted an implementation science study to evaluate the effectiveness of the HERhealth intervention for increasing knowledge and service uptake among female workers and HERhealth's impact on business outcomes from factory management's perspective (i.e. less absenteeism and employee turnover). The study hypothesis was that better health knowledge and practices would improve the workers' health status, resulting in less absenteeism and an accompanying business return for the factory.

Methodology

Objectives

The key objectives of this study were as follows:

1. To evaluate the effectiveness of the HERhealth model for i) improving women's health knowledge and their access to and use of health products and services, and ii) improving business outcomes for the factories implementing HERhealth;
2. To assess the workplace setting's effectiveness for delivering sexual and reproductive health and rights (SRHR) knowledge and access programs, and to validate the appropriateness of the HERhealth methodology for achieving meaningful progress in SRHR objectives;
3. To identify conceptual and implementation gaps in the HERhealth intervention and inform measures and systems for program improvement.

Study Design

This study employed a quasi-experimental evaluation design, enabling use of Propensity Score Matching and Difference-in-Differences analysis to estimate the HERhealth intervention's impact on beneficiaries' health knowledge, service utilization, FP, and wellbeing outcomes. The evaluation study had three main components: first, a pre- and post-intervention study of female factory workers in intervention and comparison factories to test whether HERhealth's interventions have an impact on female garment workers' knowledge of SRHR issues, their uptake of FP and RH services, and ultimately on their health and wellbeing. The second component was a qualitative study focusing on service providers and factory management to gather their perspectives on the implementation and impact of the HERhealth intervention on workers' health and factory productivity. Interviews were also conducted with several respondents from implementing partners. The third component was a self-administered retention assessment given every two months to the Peer Health Educators (PHEs) in post-intervention factories (where the intervention was completed prior to the start of this study) and intervention factories to assess knowledge accuracy and retention of information on a range of topics.

Location

The study was conducted in 10 factories in Dhaka, Gazipur, and Narayanganj districts over a period of 38 months, including an 18-month intervention period. The breakdown of factories is as follows:

- 4 intervention factories (two large and two medium-sized), where HERhealth was implemented between 2015 and 2016.
- 2 post-intervention factories (one large and one medium-sized), where HERhealth activities were completed (and BSR involvement had ended) before 2015 and the start of the study.
- 4 comparison factories (two large and two medium-sized), where HERhealth would not be implemented before the completion of the evaluation.

The post-intervention and intervention factories were selected by BSR. The Population Council selected the comparison factories, based on selected parameters (worker size, types of products manufactured, and age range of workers recruited, for example). The inclusion of the comparison and post-intervention factories



allowed for a more rigorous evaluation than a pre- and post-test evaluation of the intervention factories alone would permit. The post-intervention factories were included to provide some insight into the sustainability of change, after the end of the implementation of the intervention and BSR's active engagement.

Study Population

Systematic random sampling was used to draw a sample of female factory workers of reproductive age (18-49 years old) from each of the selected factories. Respondents were interviewed on a range of SRH, maternal and child health, FP, and other health knowledge, access, and utilization issues. The total sample for the baseline survey was 2,165 and for the end line survey was 1,953. The sample sizes were calculated to meet the criteria of 80 percent power, 10 percent minimum detectable effect, and 1.0 as design factors (since random selection was used).

Program Evaluation

The evaluation study design comprised three main components:

1. **Pre- and post-intervention study, with comparison factories:** The primary method for testing the study hypotheses and for evaluating HERhealth's impact on female garment workers' health and wellbeing was a quantitative quasi-experimental evaluation, with baseline and end line surveys conducted in all three types of factories (intervention, post-intervention, and comparison).

The baseline quantitative survey was conducted between 23 May and 22 September 2015, with a total of 2,165 female workers, ages 18-49, interviewed. The end line quantitative survey was conducted between 24 January and 15 March 2017, with a total of 1,953 female workers, ages 18-49, interviewed. Each interview lasted for approximately 30 minutes.

2. **Qualitative in-depth interviews with health service providers and factory management:** In-depth interviews (IDIs) were conducted with health service providers and with factory management to explore opportunities and challenges in the implementation of the HERhealth model, and to assess opportunities for management and providers to support the improvement of the health of female factory workers. Qualitative tools were designed to explore the attitudes and perceptions of providers and management towards the provision of benefits through the HERhealth model at factories and to assess perceived health and business-related benefits of better worker health. Interviews also explored ways to increase the efficiency and effectiveness of the implementation of the HERhealth intervention. Since the IDIs focused on health care providers' and managers' direct experience with and attitudes towards the intervention, they were conducted in the four intervention and two post-intervention factories only. IDIs were conducted between March and May 2016. Each interview lasted for approximately 45 minutes.

Additionally, several IDIs were conducted with implementing partners between May and June 2017. These interviews provided insights from implementing partners about the effectiveness of the intervention.

3. **Retention assessment tests of Peer Health Educators:** Every two months, PHEs in the post-intervention and intervention factories were given a self-administered retention assessment tool developed by the Evidence Project/Population Council. These assessments were designed to assess the PHEs' knowledge accuracy and retention of information on a range of topics including FP, HIV/AIDS and STIs, menstrual hygiene, maternal health, and nutrition. The retention assessment tests were conducted every two months from December 2015 to January 2017, for a total of five assessments. On average, each worker took 15 minutes to fill out the assessment tool.

Method of Analysis

Difference-in-Differences (DID) model

This study was designed as a repeated cross-section impact evaluation study of health knowledge and FP/RH healthcare utilization outcomes among female factory workers in post-intervention, intervention, and comparison factories. The quasi-experimental design allows a Difference-in-Differences estimation, using post-sampling Propensity Score Matching where appropriate to ensure balance between samples.

The rationale for using this design is the “natural experiment” approach. In this design, measures of interest were collected for the three groups (post-intervention, intervention, and comparison) at two time periods, in repeated cross-sections of participating companies' factories. As the intervention was not randomly assigned, Propensity Score Matching was employed after collection of baseline and end line data to maintain equality and balance in samples. The combination of two estimation methods provides a more robust evaluation design.

From the post-intervention, intervention, and control samples, when estimating impact, we looked at pair-wise comparisons between post-intervention and control, intervention and control, and finally post-intervention and intervention.

The DID estimate measures the intervention's impact by taking the difference between changes in outcomes for intervention factory workers and any changes over time in control sites with no intervention. Changes in control factories cannot be attributed to the intervention and must be differenced from the change observed in intervention sites, to estimate a more accurate measure of impact. This figure is therefore a more robust estimate of actual impact than studies that measure only mean differences in outcomes in intervention areas without controls.

This estimation can be performed between baseline and end line, to measure impacts between phases. The estimate of the Difference-in-Differences estimator between baseline and end line will estimate the impact of the full intervention in treatment facilities compared to control facilities, providing an even more robust assessment of HERhealth's impact, particularly because the treatment group is not exposed to treatment in the baseline.



Results

This evaluation was designed to generate evidence on the HERhealth intervention's impact that will be relevant to policymakers and factory owners in Bangladesh and other countries who currently work with such programs or are considering initiating comparable programs.

Demographics

This section shows findings for several demographic, work and employment, and lifestyle-related topics, for the full samples at both time points. **Table 1** shows the demographic profile of the respondents (female workers) who participated in the baseline and end line surveys, by their respective factory type.

For basic demographic indicators like age, religion and education, the study did not find any significant difference between baseline and end line. However, at end line the sample showed significantly more married, more financially fortunate, and fewer migrant workers than the baseline sample.



TABLE 1. CHARACTERISTICS OF FEMALE FACTORY WORKERS (PERCENT)

Background Characteristics	Post-intervention factories		Intervention factories		Control factories		All factories	
	Baseline	End line	Baseline	End line	Baseline	End line	Baseline	End line
Age group (Years)								
18–19	10.5	10.5	10.7	10.7	20.4	20.0	14.5	14.4
20–24	42.7	46.0	38.8	38.8	37.8	35.7	39.2	39.0
25–29	24.8	27.0	32.9	29.0	21.4	21.7	26.7	25.7
30–34	10.2	9.0	11.4	14.2	10.4	10.6	10.8	11.7
35 +	11.8	7.5	6.1	7.3	10.0	12.1	8.8	9.3
Average age (Years)	25.4	24.7	25.0	25.3	24.5	25.1	24.9	25.1
[s.e.]	[6.02]	[5.40]	[5.00]	[5.12]	[5.96]	[6.63]	[5.61]	[5.83]
Range of age (Years)	(18, 48)	(18, 49)	(18, 46)	(18, 43)	(18, 47)	(18, 49)	(18, 48)	(18, 49)
Religion								
Muslim	97.7	98.7	97.2	97.9	97.2	94.1	97.3	96.6
Other	2.3	1.3	2.8	2.1	2.3	5.9	2.7	3.4
Education								
None	13.6	8.0	9.5	9.5	15.3	14.9	12.6	11.4
Primary, incomplete	13.2	13.4	16.4	15.7	14.9	20.0	15.2	16.9
Primary, complete	18.4	18.0	20.0	20.7	21.0	17.6	20.0	18.9
Secondary, incomplete	38.4	44.2	37.5	39.4	39.8	33.0	38.6	37.8
Secondary or higher	16.4	16.5	16.6	14.7	9.1	14.5	13.6	15.0
Marital status*								
Never married	16.4	14.1	15.9	17.8	30.8	23.3	21.9	19.3
Currently married	73.9	78.9	75.1	74.3	61.4	68.7	69.4	73.0
Divorced/Widowed/ Separated/Deserted	9.8	7.0	9.0	7.9	7.8	8.0	8.7	7.7
Wealth Quintile*								
Poorest	22.3	19.5	16.3	15.7	27.5	23.4	21.9	19.6
Second	17.3	16.2	14.5	18.4	23.5	23.7	18.7	20.1
Middle	20.5	22.6	18.5	20.2	23.9	19.9	21.0	20.5
Fourth	22.0	22.9	20.7	24.9	14.3	18.2	18.4	21.8
Wealthiest	18.0	18.8	30.0	20.8	10.8	14.8	20.0	18.0
Migration status**								
Migrated within 5 years	75.0	62.0	54.8	55.7	72.8	67.0	66.1	61.5
Others	25.0	38.0	45.2	44.3	27.2	33.0	33.9	38.5
N	440	389	866	779	859	785	2,165	1,953

* $p < 0.05$, ** $p < 0.001$, *** $p < 0.0001$ (Between baseline and end line)

Work and Employment

The average service length among workers was the same at both surveys (4.09 years). Workers reported that they commute for about 20 minutes per day. Distribution of the positions these workers hold didn't vary much between these two surveys (see **Table 2**). One-third of these workers occupy basic positions (60 percent were Operators and 24 percent were Helpers).

Table 2 also shows the monthly earnings and savings reported by workers at both time points. The survey team was unable to collect income information from workers in the post-intervention factories at baseline, but permission was provided by factory authorities to collect this information at end line. Compared to baseline, the monthly salary, overtime payment, and savings each showed small increases at end line. On average, female workers in these factories earned more than 6,500 BDT (Bangladeshi Taka)¹ per month at end line, with an additional 2,200 BDT if they worked overtime (compared to 6,300 BDT and 2,400 BDT at baseline). The surveys collected information from workers at all factories about their saving patterns. On average, workers saved more than 2,500 BDT each month at baseline, which increased to about 3,000 BDT at end line.

TABLE 2. EMPLOYMENT CHARACTERISTICS OF FEMALE FACTORY WORKERS (PERCENT)

Characteristics	Post-intervention factories		Intervention factories		Control factories		All factories	
	Baseline	End line	Baseline	End line	Baseline	End line	Baseline	End line
Years worked in the garment industry	3.5	4.0	5.2	4.7	3.3	3.5	4.1	4.1
Average commute (Minute)	15.4	14.7	21.1	19.7	18.6	17.2	18.9	17.7
Position								
Helper	24.8	15.4	18.1	20.4	30.0	31.6	24.2	23.9
Operator	55.2	71.0	59.2	65.0	59.5	48.5	58.5	59.5
Poly worker	0.9	0.3	2.5	0.9	0.2	1.0	1.3	0.8
Folding worker	7.3	6.2	4.4	1.9	1.7	3.4	3.9	3.4
Iron worker	-	-	1.0	1.0	1.2	0.5	0.9	0.6
QC/QI	10.7	6.7	12.4	9.4	4.7	11.1	9.0	9.5
Supervisor	-	-	0.3	-	-	0.1	0.1	0.1
Other	1.1	0.5	2.0	1.4	2.7	3.7	2.1	2.2
Monthly earnings and savings (BDT)								
Salary	N/A	6,898	6,609	6,726	6,070	6,266	6,328	6,574
Overtime payment	N/A	2,044	3,028	2,421	1,651	2,288	2,409	2,273
Savings	2,743	2,878	2,693	3,066	2,432	3,229	2,623	3,072
N	440	389	866	779	859	785	2,165	1,953

¹ 1 US Dollar = 82.09 Bangladeshi Taka (as of 25th September 2017)

Lifestyle

At baseline, exposure to mass media varied by factory type, with workers from intervention factories reporting more exposure to mass media than workers from other factories. Across all factories, exposure to newspapers and radio was lower than exposure to TV: less than 10 percent of workers at control or post-intervention factories, and only a slightly higher percentage of workers at intervention factories, read the newspaper or listened to the radio at least once a month, while almost 85 percent of all workers watched television at least once a month. Almost two years later, at end line, these proportions of media exposure remained similar, though workers from intervention factories who reported less exposure to newspapers and radio but higher exposure to TV than at baseline, while workers from post-intervention factories reported more exposure to TV than at baseline. However, no significant difference was observed at end line in exposure to mass media by factory type.

TABLE 3. MEDIA EXPOSURE CHARACTERISTICS OF FEMALE FACTORY WORKERS (PERCENT)

Characteristics	Post-intervention factories		Intervention factories		Control factories		All factories	
	Baseline	End line	Baseline	End line	Baseline	End line	Baseline	End line
Read newspaper	7.0	4.6	13.3	4.2	2.6	3.2	7.8	3.9
Listen to radio	3.2	2.3	13.6	1.8	3.1	1.0	7.3	1.5
Watch TV	78.0	88.4	87.9	90.5	85.2	81.7	84.8	86.5
N	440	389	866	779	859	785	2,165	1,953

At both time points, workers were asked “How often did you eat three ‘square meals’ (full stomach meals) a day?” Fewer workers from the intervention factories reported daily intake of three square meals than workers from post-intervention and control factories at baseline. However, at end line, more workers from intervention factories (99 percent) reported daily intake of three square meals than workers from post-intervention (97 percent) and control factories (97 percent), though the differences were very small (see **Table 4**).

TABLE 4. FOOD INTAKE AND NUTRITION STATUS OF FEMALE FACTORY WORKERS (PERCENT)

Characteristics	Post-intervention factories		Intervention factories		Control factories		All factories	
	Baseline	End line	Baseline	End line	Baseline	End line	Baseline	End line
Ate three meals every day	97.5	96.9	85.5	98.9	94.4	96.5	91.4	97.5
Never skipped entire meal due to lack of food	98.2	99.4	92.7	98.5	94.9	97.7	94.7	98.4
N	440	389	866	779	859	785	2,165	1,953

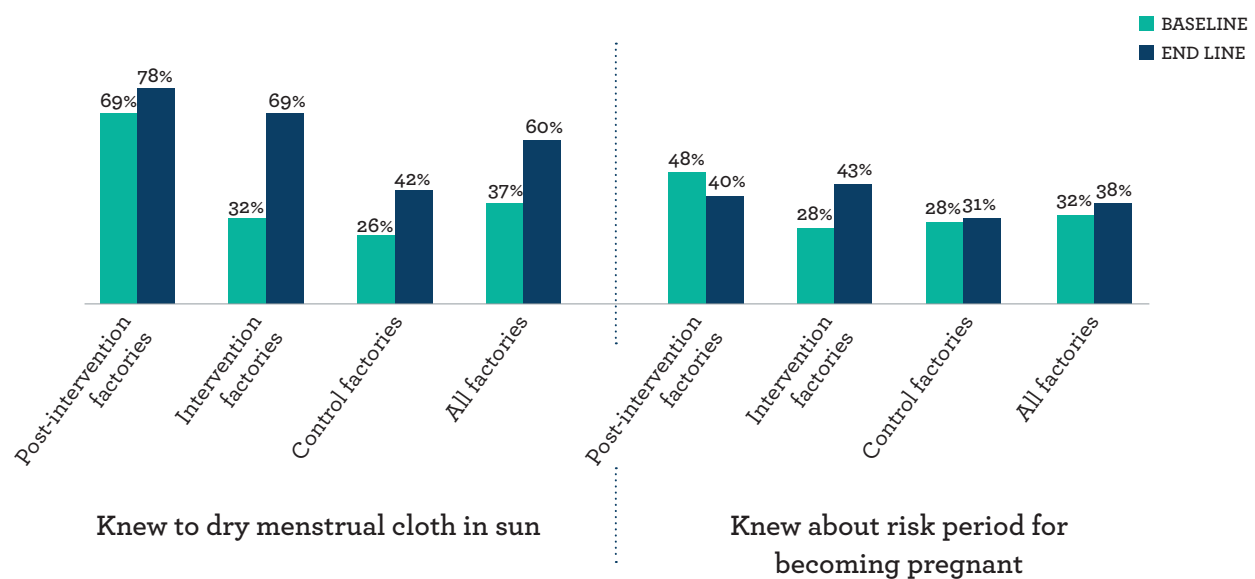
Table 4 also shows that, at end line, approximately 98 percent of the workers from all factories reported that they had never skipped an entire meal due to lack of food, which is higher than the baseline proportion (95 percent). The average Body Mass Index (BMI) score of these female workers was 22.8 at end line, which was significantly higher than the baseline BMI of 22.4. This change differed by factory type: workers from post-intervention (baseline 22.0 vs end line 23.0) and control (baseline 21.8 vs end line 22.3) factories had significantly higher BMI scores at end line than their baseline values (data not shown). On the other hand, workers from intervention factories reported higher BMI scores at baseline (23.2) compared to other two types factories reported, but at end line the average BMI scores (23.4) did not rise significantly.

Sexual and Reproductive Health Knowledge

General Sexual and Reproductive Health Knowledge

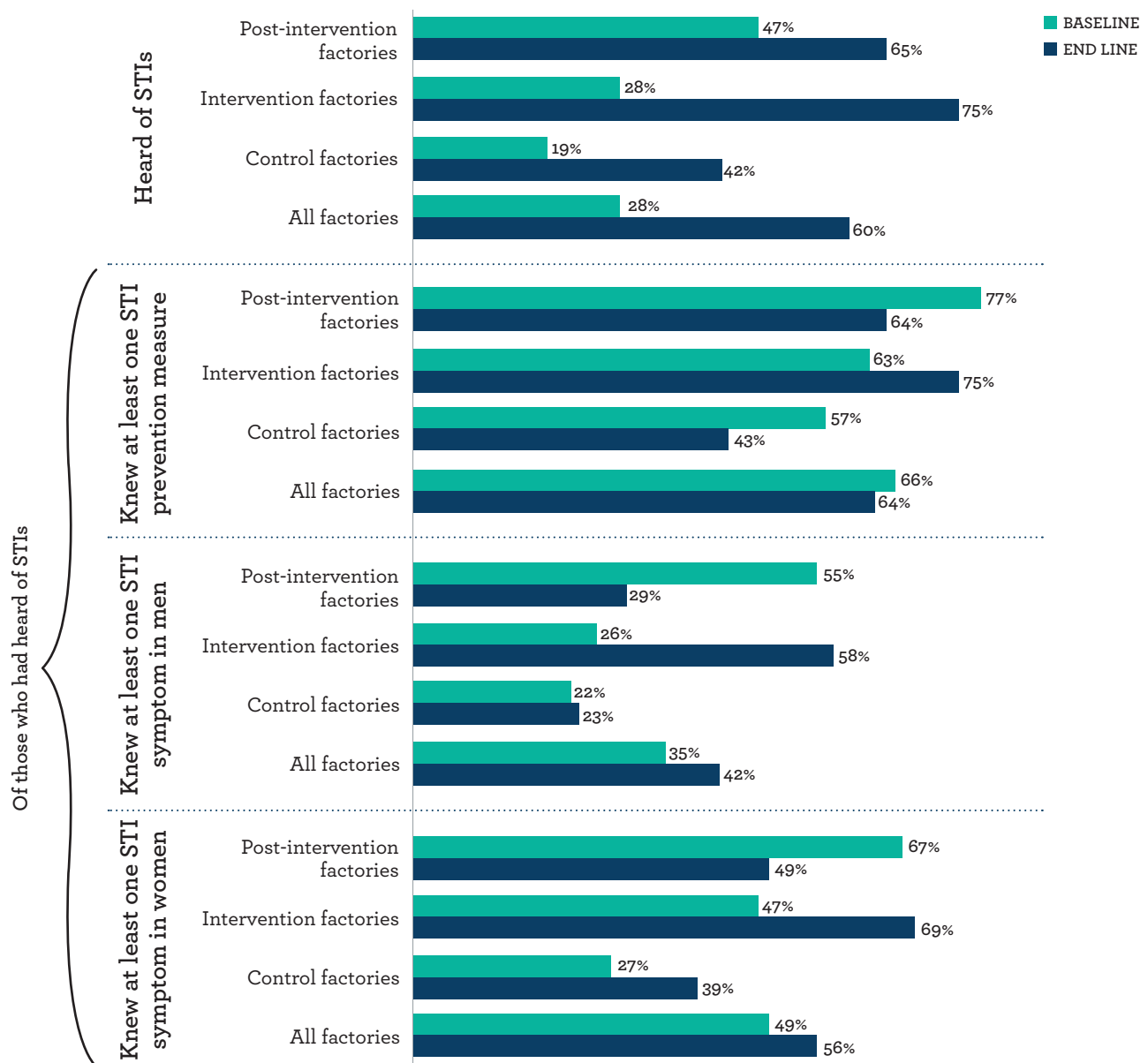
Notable increases in SRH-related knowledge indicators (i.e. the risk period for pregnancy, safe sexual practices, menstrual hygiene, and SRH service delivery points) were observed between baseline and end line across all categories of factories. As shown in **Figure 1**, workers in intervention factories reported the greatest change in knowledge regarding drying menstrual cloth in the sun (37 percentage points, from 32 percent to 69 percent) and the pregnancy risk-related knowledge (15 percentage points, from 28 percent to 43 percent). These changes observed among intervention factories were larger in magnitude than changes observed among control factories as well as post-intervention factories between baseline and end line. Although the changes observed in post-intervention factories (where HERhealth interventions had already been completed) were smaller than at other factories (or negative in the case of pregnancy risk-related knowledge), the levels of knowledge for both indicators were higher at baseline for the post-intervention factories than the other categories of factories. The high levels of knowledge observed in post-intervention factories at baseline suggest that the influence of HERhealth may be sustained or increased even after the completion of the intervention. More importantly, the observed differences indicating that the change in SRH-related knowledge in the intervention factories is greater than the changes at control factories suggest that this positive outcome may be attributable to the HERhealth intervention (for drying menstrual cloth, p value is 0.034; for pregnancy risk-related knowledge, p value is 0.020).

FIGURE 1. SEXUAL AND REPRODUCTIVE HEALTH KNOWLEDGE



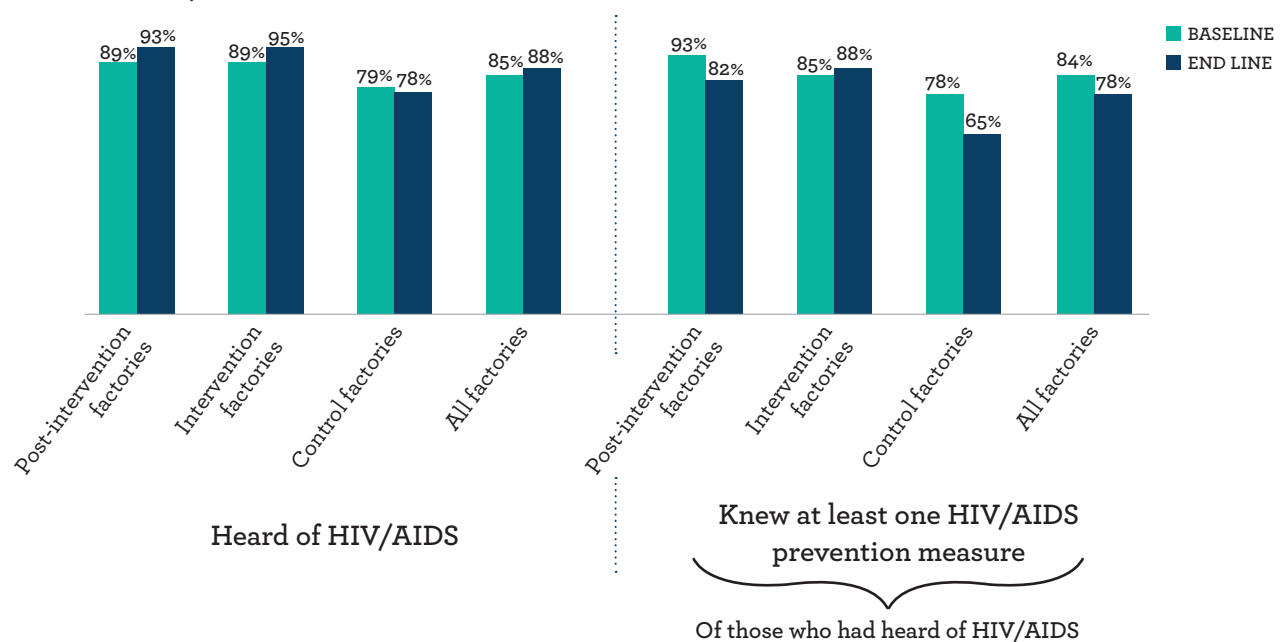
Questions about STIs, their transmission, preventive measures, and identifiable symptoms were asked at both baseline and end line. Workers from intervention factories reported higher levels of knowledge of STIs, including detection and prevention measures (see **Figure 2**), than both post-intervention and control factory workers at end line. Moreover, the STI awareness of workers from intervention factories increased from baseline (28 percent) to end line (75 percent), an increase (47 percentage points) that was found to be highly significant (p -value <0.001). On the other hand, workers from both post-intervention and control factories showed similar increases in awareness (18 percentage points and 23 percentage points, respectively) but highly significant (p -value <0.001) decreases in some STI-related knowledge indicators (STI prevention and detection) from baseline to end line. Hence, the observed differences indicating that the change in STI-related knowledge in the intervention factories is greater than the changes in control factories suggest that this positive outcome may be attributable to the HERhealth intervention (for STI awareness, p value is 0.056; for STI prevention, p value is 0.032; for STI male symptom, p value is 0.003; STI female symptom, p value is 0.134).

FIGURE 2. SEXUALLY TRANSMITTED INFECTION (STI) KNOWLEDGE



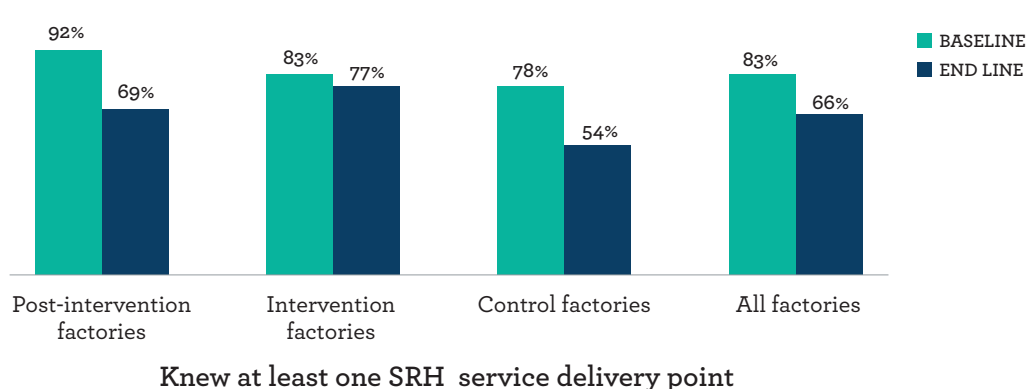
Workers from intervention factories reported greater awareness of HIV/AIDS (95 percent) and HIV/AIDS prevention measures (88 percent) than both post-intervention and control factory workers at end line. Workers from intervention factories also showed a significant increase (6 percentage points; from 89 percent to 95 percent) in HIV-related knowledge from baseline to end line. Awareness about HIV was already high at baseline among the workers from post-intervention factories and while awareness increased, the change (4 percentage points; from 89 percent to 93 percent) was not as great. There was a highly significant decrease, however, in awareness of HIV prevention measures among this group (11 percentage points; from 93 percent to 82 percent). Control factory workers also showed a highly significant decrease in awareness of HIV prevention measures from baseline (78 percent) to end line (65 percent). Compared to the changes among control factories, the positive changes observed in intervention factories suggest that this positive outcome may be attributable to the HERhealth intervention (for HIV/AIDS awareness, p value is 0.0271; for HIV/AIDS prevention, p value is 0.001).

FIGURE 3. HIV/AIDS AWARENESS AND KNOWLEDGE



The study found that knowledge regarding SRH service delivery points decreased over time across all factory types, with significant decreases observed among workers from post-intervention and control factories (see **Figure 4**). This indicates an area in which HERhealth can make improvements in the future.

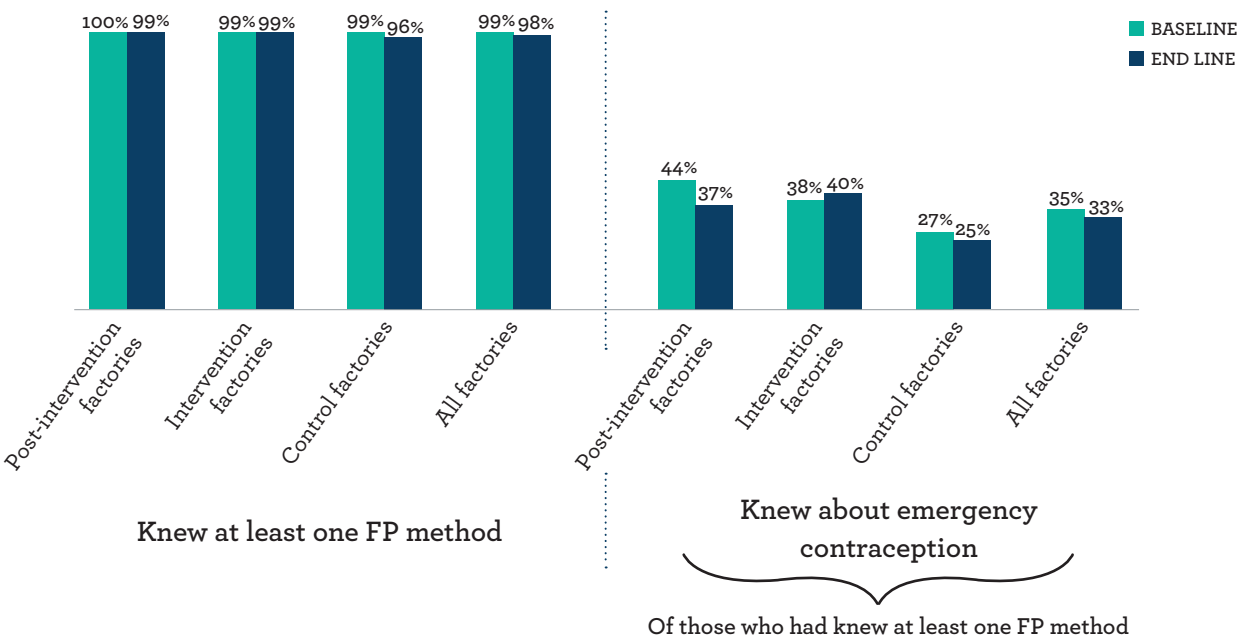
FIGURE 4. KNOWLEDGE OF SRH SERVICE DELIVERY POINTS



Family Planning Knowledge

Almost all workers, regardless of whether they had been exposed to HERhealth, were aware of at least one method of FP (99 percent). However, awareness of emergency contraception was very low across factories: among those who had heard of FP, only 25 percent of female workers from the control factories and approximately 40 percent of female workers from both post-intervention and intervention factories knew about emergency contraception. Awareness about emergency contraception had increased among workers from intervention factories at end line, but decreased among workers from post-intervention and control factories. The magnitudes of changes among these factories were too small for statistical comparison.

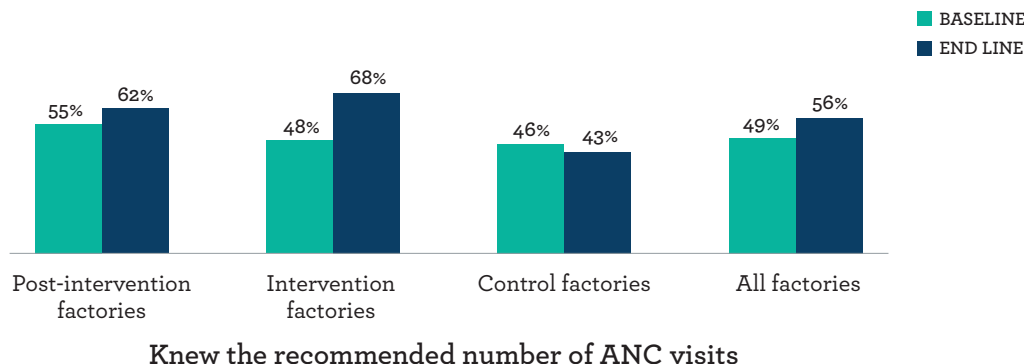
FIGURE 5. FAMILY PLANNING KNOWLEDGE



Pregnancy-related Knowledge

Female factory workers who had ever been pregnant were asked about their knowledge of selected pregnancy-related topics. Across all types of factories, one-half did not know the recommended number (four) of ANC visits during pregnancy, at either baseline or end line. The association between factory type and awareness about the recommended number of ANC visits was found to be significant at end line (though not at baseline). Workers in intervention factories reported the largest change in knowledge regarding at least 4 ANC visits during pregnancy period (18 percentage points; from 48 percent to 66 percent), while workers in control factories reported a decrease in knowledge for this indicator (3 percentage points; from 46 percent to 43 percent). The positive changes observed in intervention factories suggest that this outcome may be attributable to the HERhealth intervention (p value is 0.005).

FIGURE 6. RECOMMENDED NUMBER OF ANC VISITS

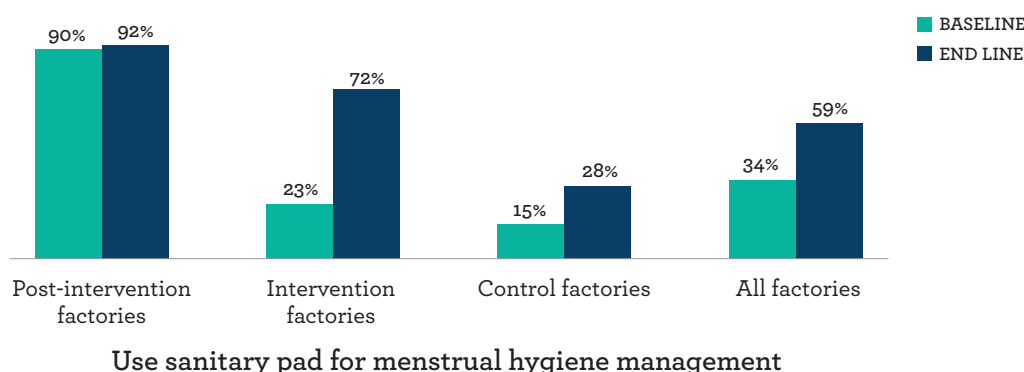


Sexual and Reproductive Health-related Practices

Selected Sexual and Reproductive Health Behavior

In general, women in Bangladesh prefer using cloths over sanitary pads to manage menstrual hygiene. A recent study reported that three out of four female garment workers used some kind of cloth (clean cloth/rag/unclean cloth) for menstrual hygiene management (SNV 2016). Findings from the baseline survey of this study were similar: among the garment workers interviewed, a greater proportion used cloths (64 percent) than sanitary pads (approximately 34 percent) [data not shown]. However, at end line, more workers used sanitary pads (59 percent) for menstrual hygiene management than cloths (38 percent). Among the workers at intervention factories, there was a steep and highly significant increase in the use of sanitary pads between baseline and end line (49 percentage points; from 23 percent to 72 percent). A high proportion of workers from post-intervention factories were using sanitary pads at baseline, and no significant increase was observed in this group at end line. These findings indicate that workers who had been exposed to the HERhealth intervention were more likely to use sanitary pads than workers from other factories. This is likely because those workers had more access to information on menstrual hygiene and to lower cost sanitary pads, through factory subsidies. However, a significant increase in use of sanitary pads was also found among workers of control factories (13 percentage points; from 15 percent to 28 percent), though this increase was of lesser magnitude than the increase at intervention factories. Based on DID analysis of intervention and control factories, this positive outcome may be attributable to the HERhealth intervention (p value is 0.053).

FIGURE 7. MENSTRUAL HYGIENE MANAGEMENT



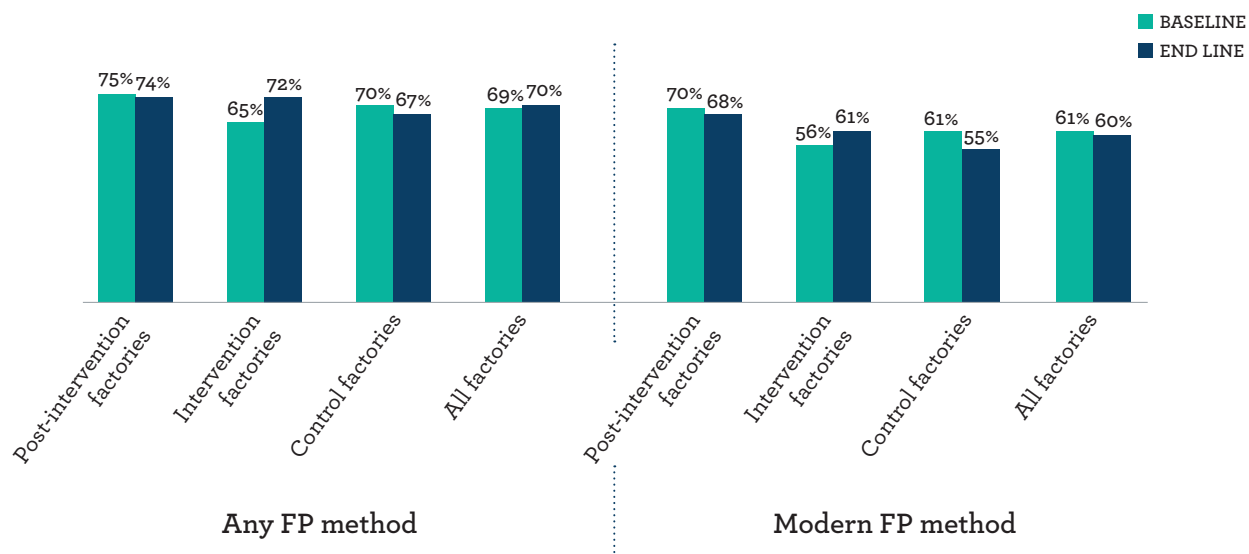
Across all factories at both time points, a negligible portion of garment workers reported that they had been tested for an STI and/or HIV/AIDS. At baseline, only 7 percent reported that they had experienced an STI in the last 12 months, which decreased to 6 percent at end line. Among the workers who had experienced an STI, 60 percent had sought help (data not shown). Due to the small sample sizes for these indicators, DID estimation was not performed.

Use of Family Planning Methods

Currently married workers were asked about their use of family planning. Across all factories, at end line, 70 percent reported that they used any sort of FP method and 60 percent reported that they used a modern method (oral pills, injectables, implants, intra-uterine contraceptive device, condoms, or sterilization), which was not significantly different from baseline values (any FP method 69 percent and any modern FP method 61 percent). Though these statistics are quite high compared to the national statistics (nationally, 62 percent of currently married women use any family planning method and 54 percent use a modern method; NIPORT et al. 2015), they are consistent with rates of family planning usage found in a baseline study conducted with a similar population in an urban slum in Dhaka (Rahman et al. 2012).

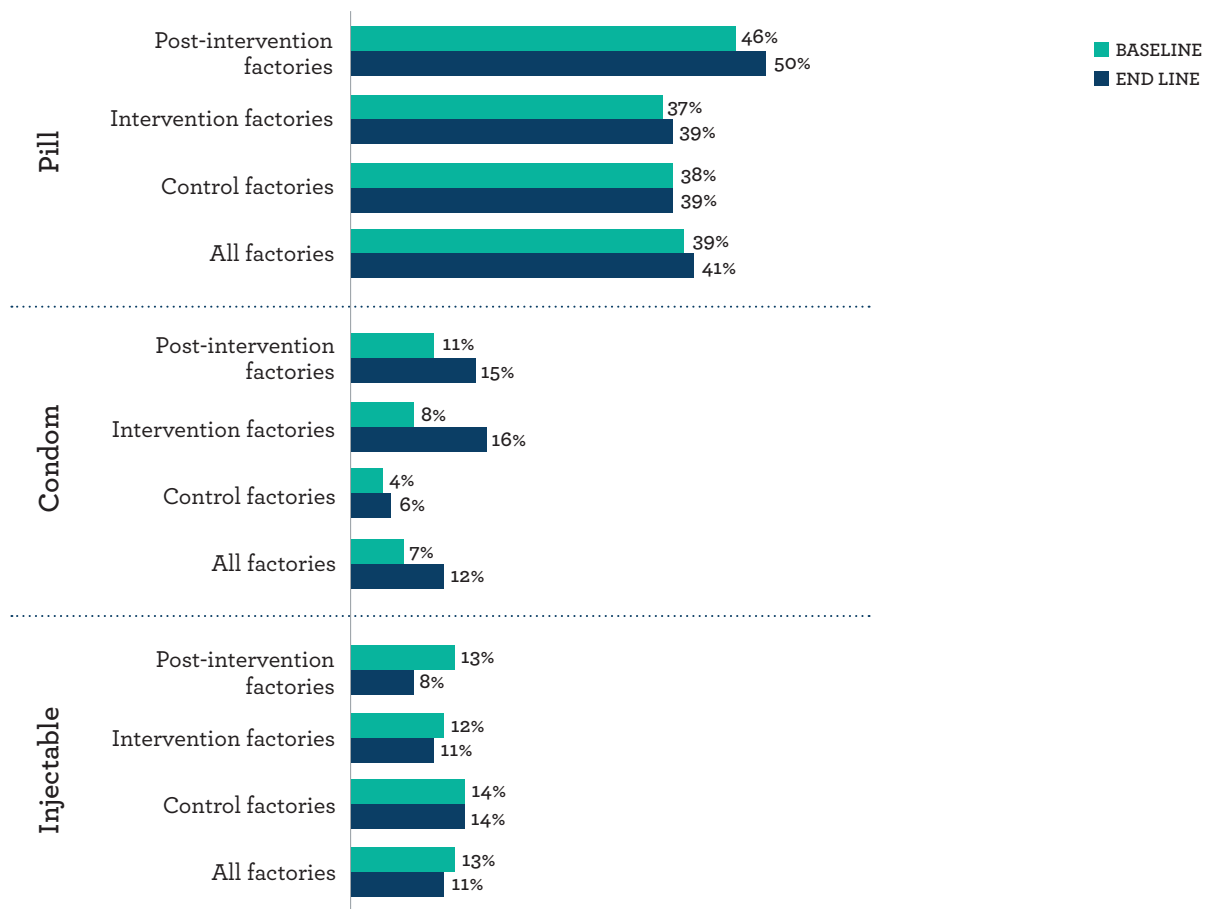
Between baseline and end line, use of any FP methods or any modern FP methods increased only among the workers in intervention factories (5 percentage points, from 65 percent to 72 percent for any FP method, and 5 percentage points; from 56 percent to 61 percent, for any modern FP method). A significant decrease among workers from control factories in use of any FP method (3 percentage points; from 70 percent to 67 percent) and any modern FP method (6 percentage points; from 61 percent to 55 percent) suggests that the positive outcomes observed at intervention factories may be attributable to the HERhealth intervention (for any FP method, p value is 0.041; for any modern FP method, p value is 0.025).

FIGURE 8. USE OF FAMILY PLANNING METHODS



As shown in **Figure 9**, pills were the most popular method (used by 41 percent of currently married female workers), followed by condoms (12 percent) and injectables (11 percent). Among workers from intervention factories only, condom use increased significantly between baseline and end line (8 percentage points; from 8 percent to 16 percent). However, DID estimates did not reveal any significant result indicating that this positive outcome is the sole contribution of HERhealth intervention, as compared to control factories.

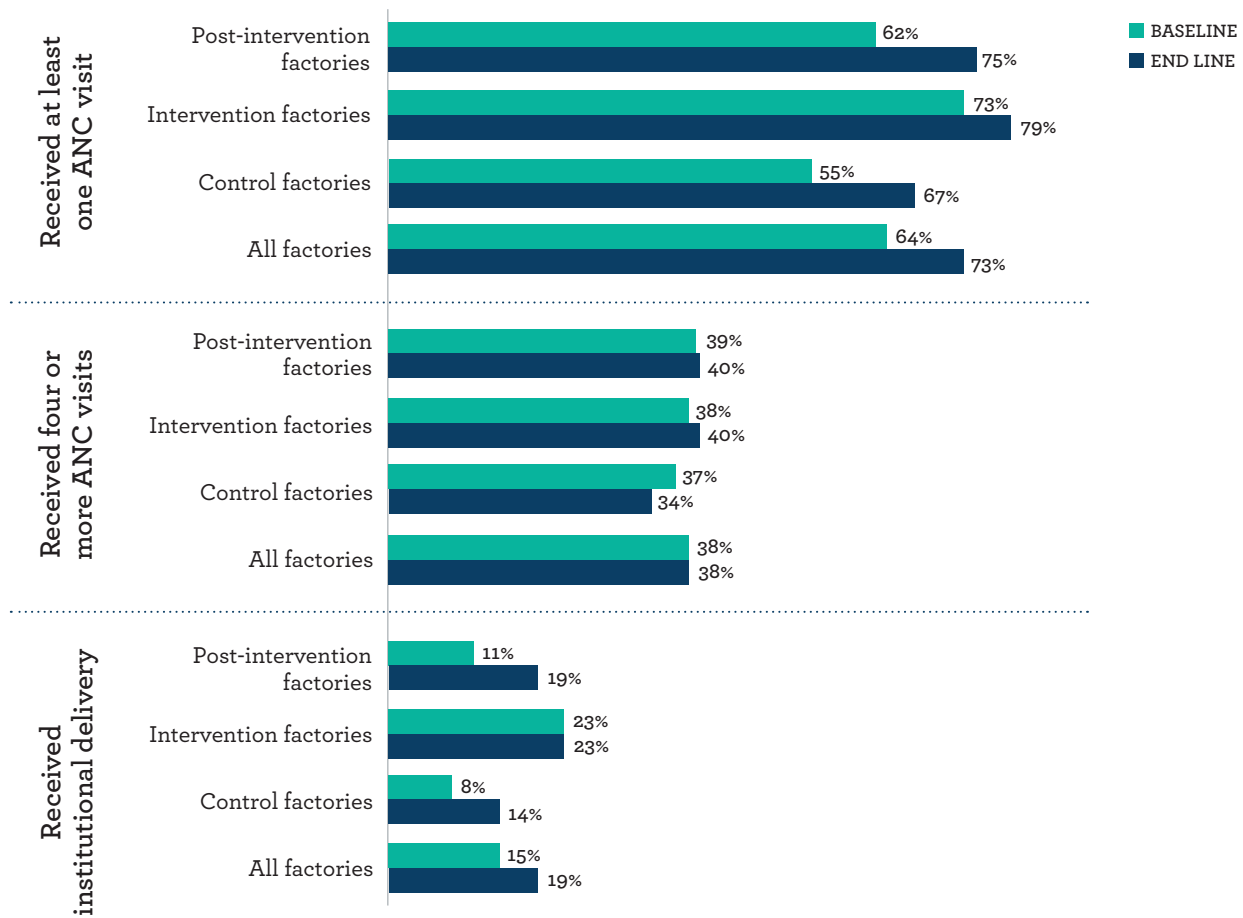
FIGURE 9. POPULAR FAMILY PLANNING METHODS



Service Seeking During Pregnancy

Respondents who had ever been pregnant were asked about their service-seeking behaviors during pregnancy. Across all factories, 73 percent reported at end line that they had received antenatal care (ANC), a significant difference from baseline (64 percent). The increase in ANC uptake was found to be highly significant among workers from post-intervention (13 percentage points; from 62 percent to 75 percent) and control factories (12 percentage points; from 55 percent to 67 percent), and significant among workers from intervention factories (6 percentage points; from 73 percent to 79 percent). A smaller percentage had attended four or more ANC visits (38 percent at end line), and no significant difference was observed between baseline and end line among the workers at different factories. However, alarmingly, just one out of five (19 percent) ever-pregnant garment workers had delivered in a hospital or clinic; the proportion was particularly low among workers at control factories, where just 14 percent reported that they had delivered in an institutional setting. DID estimates did not reveal any significant result that can provide evidence that this positive outcome is the sole contribution of HERhealth intervention, as compared to control factories.

FIGURE 10. SERVICES RECEIVED DURING PREGNANCY



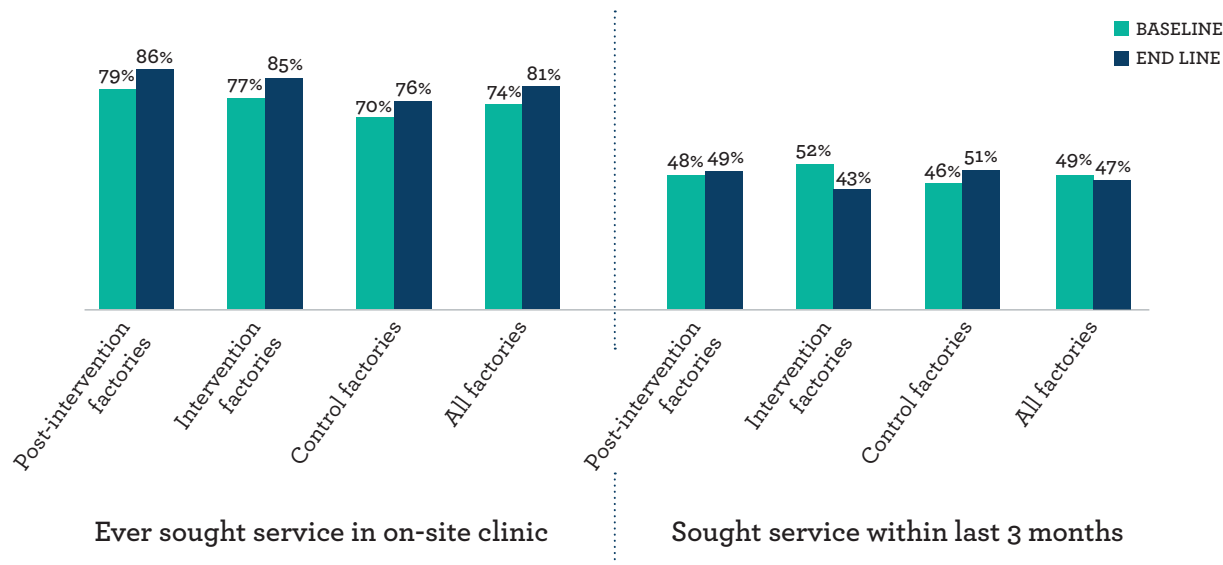
Experience with and Perceptions of On-site Clinics

Respondents were asked about their experiences with and perceptions towards the on-site health facility at their factory. Almost all workers (98 percent) across factories were familiar with the on-site health facility. The few workers who were not familiar with the on-site facility were mostly new employees in the factory. Among those who knew about the on-site health facility, nearly all knew that the facility offered general health services (92 percent), with fewer workers aware that the facility offered antenatal care (15 percent) and other primary health services (14 percent; data not shown).

At end line, almost four out of five workers (81 percent) reported that they had sought services from on-site health facilities at some point in their professional career. Those who had sought services had visited an average of one to two times, and about half (47 percent) had visited the health facility within the three months preceding the survey. In general, nine out of ten (89 percent) female workers reported that their absenteeism was reduced as a result of health care access within the factory premises.

They were also asked their view on the clinic's working hours: nearly all thought the hours were very convenient (65 percent) or convenient (33 percent). Three out of four (74 percent) said that the quality of the on-site health clinic they had visited was better than outside clinics. Almost all (97 percent) of the workers who sought services at an on-site clinic reported that the service providers had been friendly. However, only 65 percent reported that service providers gave a detailed explanation of their problem.

FIGURE 11. SERVICES SOUGHT AT ON-SITE CLINIC



Experience with and Perceptions of the HERhealth Intervention

Workers from the post-intervention and intervention factories were asked questions about their experiences with and perceptions of the HERhealth intervention. Among these workers, one-tenth (12 percent) reported that they were PHEs.

Among workers who were not PHEs, most (88 percent, $n=1023$) at both post-intervention & intervention factories reported that they had one to two instances of health-related discussion and/or advice from a PHE in the three months preceding the end line survey. When asked about satisfaction with the discussion and/or advice they received, 72 percent of intervention factory workers reported being highly satisfied and 28 percent reported being satisfied. At post-intervention factories, these proportions were 56 percent and 44 percent, respectively. A highly significant association was observed ($p\text{-value} < 0.001$) between factory type and satisfaction with PHE discussions and/or advice. Also, a significant association was observed between factory type and satisfaction towards overall HERhealth activities in their factories ($p\text{-value} < 0.01$).

The PHE respondents had, on an average, provided two health-related discussions and/or advice to their peers in the three months preceding the end line survey. The PHEs were also asked about their satisfaction with the discussion and/or advice they provided: 87 percent reported being highly satisfied, and the remaining 13 percent reported being satisfied. Among PHEs at post-intervention factories, 79 percent reported being highly satisfied with HERhealth activities in their factory. At intervention factories, 89 percent of PHEs reported being highly satisfied with HERhealth activities.

When asked for their recommendations to boost the retention of learning from HERhealth activities, around 40 percent of both PHEs and general workers from post-intervention and intervention factories suggested extended training on these health-related issues.

Program Effectiveness

Peer Health Educator Group Session

The PHE model in HERhealth was designed so that a representative group of workers can share the learning from the training sessions with their peer network. The total number of PHEs in the four intervention and two post-intervention factories was around 400, all of whom were female. However, this number varied in the training sessions because of worker absence and migration to other factories. These PHEs were provided six rounds of training, with each round lasting three hours, on the following topics:

Training Module	Topics for intervention factories	Topics for post-intervention factories*
1	Our health is important; Personal hygiene; Waterborne diseases	Health and hygiene
2	Eating healthy; My body & menstruation	Reproductive health
3	Maternal health & family planning	Maternal health and vaccination
4	Preventing STIs, HIV and AIDS	Food and nutrition
5	Serious illness – Malaria and Dengue fever; Reproductive cancers	Occupational health and safety
6	Occupational health and safety	STI and HIV/AIDS

**Note that the training modules were modified slightly between implementation at the factories received the intervention prior to the study and implementation at the factories that received the intervention as part of the current study.*

After every training session, there was a one-hour follow up session the next month. Meanwhile, PHEs were encouraged to discuss the key messages with their fellow female workers. There was one difference in the training topics covered at intervention and post-intervention factories: “Serious illness – Malaria and Dengue fever; Reproductive cancers” was not covered at the post-intervention factories. Hence, this study did not conduct the PHEs retention assessment for module 05, to ensure a comparable base of evaluation for all types of factories.

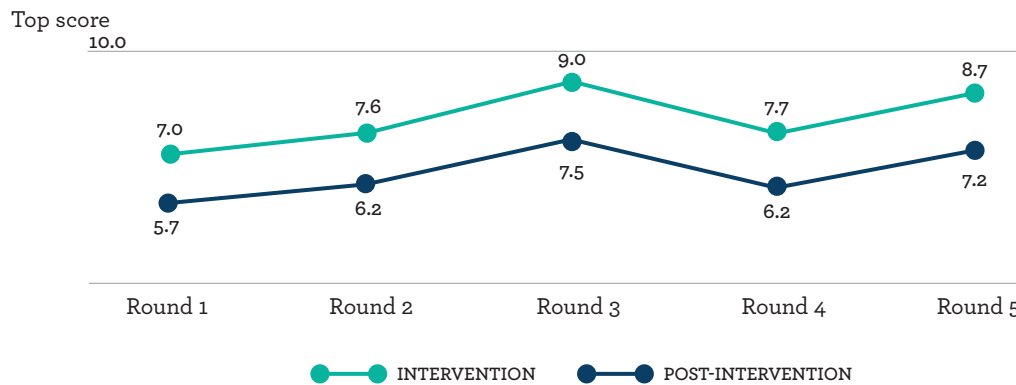
Retention Assessment Test of Peer Health Educators

Periodic retention assessment tests of PHEs were undertaken in the intervention and post-intervention factories. Each assessment included an average of 10 basic questions drawn from a question bank developed by the Evidence Project/Population Council and BSR, based on the HERhealth curricula. A weighted score on a 0 to 10 scale was used to measure workers’ retention of knowledge. Finally, individual scores were averaged to generate factory group-wise scores for comparison purpose. Due to absenteeism and employee turnover, the number of PHEs varied across the five rounds of assessment tests, with the number of PHEs varying within +/-5 percent (data not shown). The final composite database of all five rounds of assessment includes data from 354 female PHEs from intervention factories and 259 female PHEs from post-intervention factories.

PHEs were expected to achieve the highest score (10) for knowledge retention performance at the end of each peer training session. However, the periodic assessment results showed variable performances over time. **Figure 12** depicts the trend of knowledge retention among PHEs overall (that is, those who attended at least one group peer session through HERhealth). Among the five rounds of assessment, the workers performed

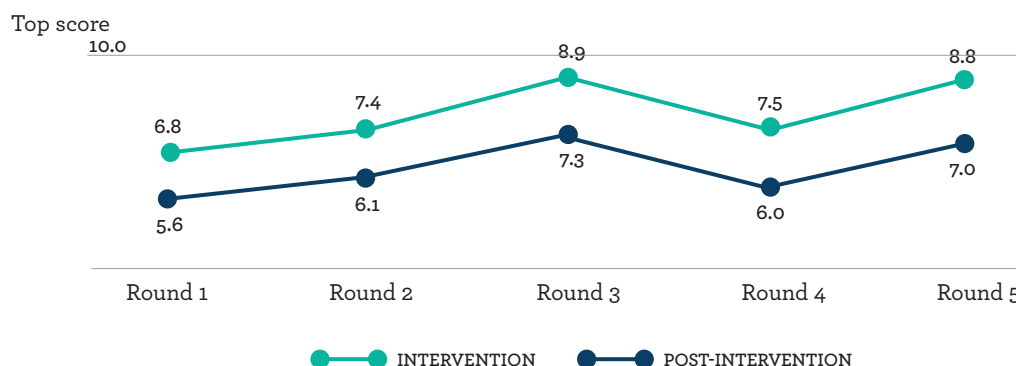
highest on the round three topics (Preventing STIs and HIV/AIDS) and round six (Occupational Safety and Health). In all the assessment rounds, PHEs at intervention factories showed significantly better retention performance than those at post-intervention factories.

FIGURE 12. AVERAGE KNOWLEDGE RETENTION PERFORMANCE SCORE OF ALL PHEs, BY FACTORY TYPE



The knowledge retention performance scores were also calculated just for the PHEs who were involved with HERhealth from the beginning and who attended all the group sessions. The trend in this group (**Figure 13**) follows a similar pattern to that of all PHEs. However, the differences between intervention and post-intervention factories are smaller than the differences observed in the analysis with data from all PHEs.

FIGURE 13. AVERAGE KNOWLEDGE RETENTION PERFORMANCE SCORE OF MATCHED PHEs, BY FACTORY TYPE



Effective Linkage Between Factories and Menstrual Product Suppliers

Another important aspect of the HERhealth intervention has been the establishment of an effective link between factories and menstrual products suppliers. BSR found that, following the second training, on “My body & menstruation,” which teaches what should and should not be done during menstruation, workers often became interested in using sanitary napkins as a measure to improve their health. These workers told the trainers about the difficulties, including harassment, they faced when purchasing sanitary napkins from a source other

than the factory pharmacy, and said that it would be very helpful to be able to buy napkins from somewhere inside the factory. The trainers then shared this information with the factory management and encouraged the managers to provide napkins inside the factory at a low cost. Factory managers responded positively when they realized that if workers use sanitary napkins, the cost of cleaning the toilets would go down, since they would no longer be clogged with menstrual cloths, and worker productivity would go up, since sanitary napkins can help workers avoid some reproductive tract infections (RTIs).

To support this need, Change Associates Ltd. created a liaison between factory management and menstrual products suppliers who supply sanitary napkins for RMG workers at a low rate, such as Grameen, Babylon, Square, and ACI Limited. After collecting samples and price quotes from different suppliers, factory management selects the product they feel is best suited for their factory and signs an MoU with the specific supplier. Then the supplier provides the required number of napkins to the factory on a monthly basis. Though this arrangement, napkins are provided at a subsidized rate by the supplier; some factories provide an additional subsidy on this product so that workers can buy at a more affordable rate, while other factories do not provide an additional subsidy as they think their workers can afford the napkins at the supplier-provided rate.

This arrangement is the reason rates of sanitary napkin use are so high in HERhealth factories. This effective link between factories and menstrual products suppliers has ensured the availability and affordability of sanitary napkins to thousands of female workers in different factories.

Stakeholders' Views

Factory Management

Of the 36 factory management staff interviewed at intervention and post-intervention factories (six in each factory), sixteen were under the age of 40 and the remaining twenty were 40 years old or older. All the managers were involved with HERhealth implementation, and most were engaged from the inception of HERhealth in their respective factories.

1. Workers' Health, Living Conditions & Migrant Status

Most of the factory managers reported that the most common problems the workers face are health-related. Managers said that workers who inform management about their health problem usually get sick leave if the sickness is genuine. Most of the time, sick workers are suffering from a waterborne disease and/or malnutrition, as they often don't eat enough nutritious food. Managers felt that many of the workers' health-related problems were due to their lack of knowledge, since most workers' educational background is low. Other problems workers face, according to managers, included changing jobs and joining a new factory, as it takes some time to adjust to new machines and environments, and getting time off, which workers sometimes need to solve family problems. However, managers' responses emphasized workers' health-related problems. For example:

"...almost all the problems are health related. It is not a specific disease. Combining all they are not conscious about their health. They don't feel importance in case of health related problems. They are not conscious about the activities for the betterment of their health. They don't share this with anybody even with doctors. It would improve if they discuss with anybody directly."

– Production manager, Intervention factory, Gazipur

Managers said that most of the workers live in areas nearby the factories and that their living places are safe, as the managers had not received reports on any incidents. Workers usually move in groups when they go to the factory and to their homes, which ensures their safety on the road. It was also noted that house owners ensure the safety of unmarried girls, who often live in large groups. For example:

"...near about 80 percent workers live around the factory. Their living places are more or less safe but congested. But there are some places of open environment. Female workers do not face any difficulties while moving from house to factory or factory to house as we have a tight security system from factory to main road. Besides, they always move group-wise."

- Administrative manager, Intervention factory, Gazipur

Most of the workers were migrants from different districts, with very few who were originally from the area. Where workers had migrated from varied by factory: in some, the majority of the workers were from north Bengal, whereas in other factories a majority were from south Bengal and the Mymensingh region. Managers reported that a factory might attract workers from particular areas because of poor socio-economic conditions in the workers' place of origin, good communication opportunities from their place of origin to the factory, and the home district of higher officials of the factory, among other factors.

2. Health Conditions in Factories

All the factories were found to have a regular weekly holiday, usually Friday. Workers are paid their monthly salary within the first seven working days of the next month. The basic salary of a helper is 5,300 BDT, which

can rise to 10,000 BDT per month, including overtime. Workers spend a large amount of the salary on family expenses and most save some money in a bank or cooperative. Factory managers also noted that they encourage workers to save money for the future.

According to the managers, they maintain good working conditions in the factory and take immediate steps if they feel there is a need to be addressed or if workers urge it. This includes maintaining proper sunlight, separate toilets and other requirements set by Bangladesh labor law. Maintaining a good working environment helps them to deal with the buyers confidently. As one manager explained,

“...water supply, toilet facilities etc. are totally sufficient in our factory. Water supplied here is tested from science laboratory and it satisfies the standards of World Health Organization. We have deep water pumps more than 500 feet inside the soil. We have separate toilet facility for 25 persons or less. There are also separate dining spaces both for male and female, canteen, rest rooms, prayer rooms etc.”

- Assistant manager (Human Resources & Compliance), Post-intervention factory, Gazipur

3. Absenteeism, Turnover and Business Outcomes

Factory managers said they did not think that workers get sick much and said that absenteeism due to sickness is moderate (on average once or twice a month). Factory managers assumed that the declines they have observed in the absenteeism rates are because of better working environments, the HERhealth intervention, and on-site factory clinics. All the factories reported keeping records of workers' absences and stated that they do not cut the worker's salary for being absent unless a worker is absent without informing factory management or without a genuine sickness. Most of the factory managers said that they had observed that among the workers, males are absent more than females.

However, the turnover rate of workers reported at factories in this study, which was around five percent, was a matter of greater concern for the factory managers. Turnover is often seasonal and occurs most frequently during the Eid holiday. Managers described their efforts to identify the causes of turnover by discussing with workers and trying to solve their problems. They are not always able to prevent turnover, however – for example, if a husband and wife work in the same factory and the husband goes to another factory, then his wife also moves there. Or, if a newly-opened factory near the existing factory offers a competitive salary, some workers may go to that new factory.

All the factory managers felt that there were some positive health-related and business-related advantages of implementing HERhealth in their respective factories. They appreciated HERhealth, as they understood that productivity increases automatically if workers can remain healthy, with a good working environment, and they felt that HERhealth provided the opportunity to improve health conditions in their factories.

“...health related advantage of HERhealth is that female workers have become aware about their personal hygiene, nutrition etc. and their behavior regarding service uptake has been increased. Business related advantage is that if a worker is physically healthy then the quality of our work will be improved. And the opposite things happens if a worker is unhealthy.”

– Work study in charge, Intervention factory, Gazipur.

Factory managers' responses showed that they felt that HERhealth had an important impact on reducing absenteeism and increasing productivity. For example,

“...we have observed huge effect of HERhealth on absenteeism and productivity. The absenteeism rate has been decreased. Previously they got sick frequently and became absent in work. Then introducing HERhealth in the factory, we have noticed that after getting health knowledge and receiving health care service they are doing their work properly. My production rate, quality of production all are good now.”

– Assistant manager (Human Resources & Compliance), Post-intervention factory, Gazipur

4. Health Benefits

Factory managers stated that they are very concerned about health benefits for their workers. They noted that there are doctors, nurses, and medical assistants at the on-site factory clinics who provide health services to the workers, and that factories also provide training, through welfare officers, on sexual health, cleanliness, and other issues to workers, as needed. All the factory managers were aware of minimized work load for pregnant workers (for example, they should not be required to do overtime and should get privilege in using lifts) and of requirements for prenatal and postnatal leave.

“...from the beginning our factory is very conscious about workers health. Our working environment is good here. We refined our wastage. We used filtered water. We provided warm clothes in the winter season and in summer season we provided lemonade etc. All employees, are covered by this policy.”

– General Manager (Human Resources, Admin & Compliance), Intervention factory, Narayanganj

5. On-site Clinic Facility

Factory managers reported that the on-site factory clinic is open every work day during factory operating hours. Free treatment, including primary medicines and sanitary napkins at a subsidized rate, is provided to workers, although none of the factories provided contraceptives at the on-site clinic. Major reasons that managers reported workers sought care in the clinic included headache, fever, abdominal pain, and diarrhea; workers are referred to an outside hospital if they present with a complex illness or disease.

“...Mainly here for our WG4 building we have a separate clinic and for our full factory there is the main hospital at the main office. Our clinic opens for everyday office time. If our factory opens on off days then our clinic also opens in off days. We have four doctors and four to five nurses. If anything happens in the factory then every cost is born by the factory. But if anything happens outside of factory then we give something to them as complimentary.”

– General Manager (Human Resources, Admin & Compliance), Intervention factory, Narayanganj

In IDIs, factory management were supportive of their workers taking service from factory clinic, as they understand when a worker is sick, it is not possible to deliver effective service and ultimately it is harmful for quality production.

6. Effectiveness of HERhealth Model

Factory managers said that they have found the peer health educator model of HERhealth very effective. As one manager said,

“...peer health educator model is good. Interesting thing is that those who became peer health educator they have learnt it and they have a group of 15 to 20 female workers with whom they sit on a place and teach other workers how to wash hand, what food to eat to get proper nutrition, how to maintain cleanliness in toilet etc.”

– Work study in charge, Intervention factory, Gazipur

They were also confident about getting expected outcomes from HERhealth, as they thought that production flow will increase if all workers are health-conscious and present at work regularly. Senior management of these factories were well aware about HERhealth, and they didn't report any cost to the factory associated with HERhealth.

A few factory managers thought that, since HERhealth is only for women, it would be great if something similar for male workers could be introduced. If a husband also understands SRH, HIV, and STI issues, then it can be easier for his spouse to follow these instructions.

Health Service Providers

To capture the perceptions of health service providers regarding HERhealth in their factories, a total of 18 health service providers were interviewed from intervention and post-intervention factories (on average, three in each factories). Among this sample, five were doctors (three female, two male), seven were female nurses, and six were female medical assistants. The nurses and medical assistants were all 35 years old or younger. Almost all of them were engaged from the inception of HERhealth in their respective factories. Findings from these interviews are summarized below.

1. Health Conditions

Almost all healthcare provider respondents stated that factory management was actively involved with them in ensuring the health status of workers for the sake of their productivity. Seasonal flu, cough, fever, and headache, were named as common health conditions for which the female workers sought help at the clinics. Female workers preferred sharing their problems with female nurses rather than male doctors. Female doctors mentioned that fungal infection, vaginal itching, and vaginal discharge were common health complaints among female workers, before HERhealth was implemented. As a part of HERhealth, the management at participating factories began providing sanitary napkins to workers at a subsidized price, which health care providers said had reduced the prevalence of these complaints. Often, workers sought treatments for injuries, most of which resulted from being hit by ceiling fans in the low-ceilinged rooms of the commercial colony residences in which workers usually live. In some places, because of unclean water supply, workers suffered from waterborne diseases. All the providers interviewed felt that awareness among the workers about STIs, RTIs, FP methods, HIV/AIDS, and other SRH issues were better after the HERhealth intervention than before.

2. On-site Clinic Facility

All providers confirmed the existence of an on-site clinic facility on their factory's premises. At these on-site clinic facilities, the health staff generally included at least one medical doctor and two female nurses. However, based upon the employee size of the factory, the on-site clinic's staff size varied. Lower-level staff worked every day, on a rotating basis, to provide health care support to factories that run more than one shift. Factory health facilities were equipped with common medicines for general health-related problems, including cough, fever, and headache, and supplies to treat minor injuries. Workers visited facilities for general medical checkups and basic medicines, which were provided free of cost. Except for two of the intervention factories, providers from all factories stated that sanitary napkins were available for female workers at a lower, subsidized price. Almost all the providers said there was at least one established referral link between his/her factory and a nearby large hospital, where workers could be referred in the case of severe illness and/or injuries. Echoing the responses from managers, providers said that factory clinics were not equipped to provide family planning products. Standard register books were used to record information on workers who sought services; these books were not separated by men and women workers. All providers unequivocally stated that higher management at their factories were involved in ensuring the smooth operation of the on-site clinic and that production-level management had positive attitudes towards workers seeking health care services.

3. Service Provision and Barriers to Service Provision

Information on service provision barriers were reported only by providers at one large intervention factory and one medium post-intervention factory; providers at the other factories did not feel that barriers exist. Barriers reported by these providers related to workers' behaviors to service seeking and inadequate knowledge.

"The main problem is the crowd after ending of a shift. All come together to take treatment & make long queue. Approximately 30-40 thousand workers are from a single shift.² Among them several are senior in age. They demand to be served early."

– Doctor, Intervention factory, Narayanganj

"They (The workers) frequently face problems because they don't maintain the guidelines provided by us. For example- they are provided antibiotic for seven days. But after three days they stop taking this because he/she is already normal. Consequently after a month the same problem occurs and they come to us."

– Doctor, Post-intervention factory, Gazipur

Providers from all the factories reported that they were confident in their competence level. However, a few of the higher-level staff of these clinics felt that regular trainings for lower-level staff, every two to three years, were necessary.

4. Quality of Care

These providers said that they make their best effort to ensure quality health care services for the workers. The involvement and regular monitoring of top level factory management required the health service providers to provide regular, proper, and respectful service to the workers. The respondents stated that privacy of female workers who sought services was strictly maintained, and some of the clinics had separate rooms for private consultation. All providers reported that their clinics were refilled with new supplies of medicines and equipment in the case of stock outs. Some of the providers recommended providing sanitary napkins free of cost to female workers, and some providers suggested offering family planning at low or no cost.

"You may help them regarding cleanliness. Actually they are very unconscious of this thing. I think if the condom, pill, sanitary napkin, etc., are offered to them without cost they will be easily habituated with them."

– Doctor, Intervention factory, Narayanganj

"Almost always the workers suffer from financial crisis. So it is sometimes impossible for them to buy sanitary pad during menstrual cycle. It would be better for them if they would be provided sanitary pads with free of cost. Thus they would be aware and habituated with using them."

– Doctor, Post-intervention factory, Gazipur

Implementing Partners

The study also interviewed implementing partners (BSR and Change Associates) to collect their views towards HERhealth. A total of four key persons were interviewed, three of whom were female. Implementers' shared their views on factors such as project implementation, achievement of objectives, effectiveness, sustainability, and challenges.

² This factory is part of a compound with over 10 other factories, which share a central, hospital-type facility that serves the workers, higher-level staff, some family members and children.

1. Workers' Mobility & Living Conditions

Almost all the implementing partner respondents talked about workers' difficulties in commuting, which were especially common for workers on night shift duty. Although workers travel to their residences in groups, sometimes the group doesn't stay together and a worker may find herself alone on the road, which makes them vulnerable to things like eve teasing (when young men direct unwelcome comments towards single women) and mental or physical violence. For example,

"I have seen rickshaw pullers who pulled rickshaws over them. It happened when they returned home from the factory. If they don't go together they have to face this in the night...If anyone moves alone singing a song, she has to face teasing or throwing something to her. If the eve teaser can walk close to her, he tries to pull her scarf or say something unpleasant."

– Representative from Change Associates

According to the implementing partner respondents, workers face difficulties in their living places as well, because five persons or more share one room and use one bathroom, which becomes unhygienic and increases the risk of spreading RTIs. They usually have to cook in unhealthy conditions, following a large queue to get their chance to cook. Hence, most of the time workers avoid breakfast, as they don't get enough time to cook and don't have an easy opportunity to drink boiled water. As one respondent said,

"They live in a congested place with many families where they feel the hottest weather in the summer or the coldest weather in the winter. There is no space to dry their clothes. Especially when female workers go through menstruation and use napkins they can't have enough space to dry their sanitary products."

– Representative from Change Associates

These respondents also noted that female workers who live with their husbands often experience physical violence and that most of the time their husbands take away their earnings and they cannot spend their salary according to their wishes and needs. Other problems respondents described that these workers experience in their working and personal life included poor health knowledge, non-communicable diseases, poor access to health care, mental stress, and poor financial knowledge.

"In Bangladesh, the female workers face a number of problems in their daily life. Illiteracy, poor understanding of health issues, less access to health care facilities, etc. make them physically vulnerable. On the other hand, possessing poor financial knowledge regarding planning, spending and savings make them economically vulnerable. Among married female workers intimate partner violence as well as abuse make them both physically and mentally vulnerable..."

– Representative from BSR

2. Health Conditions

Implementing partner respondents, who all had experience in big, medium, and small factories, observed mixed health conditions in the factories where HERhealth has been implemented. Respondents' reports included observations of a few factories with a standard working environment and positive attitude among management as well as a few factories where respondents observed an environment which is not friendly to workers. Sometimes, due to excessive work load and lack of knowledge, workers fail to use personal protective equipment (PPE), which makes them vulnerable to workplace injuries. Respondents said they usually talk with factory management if the basic hygiene, cleanliness, and safety of workers is not ensured, and usually find some improvement at follow up. For example,

“There are some factories where the working conditions are very good and there are no questions about it. However, we have found some factories where the working conditions are not healthy as the workplace is near to the toilet and bad smells continuously come from the toilet to the workplace. There is no soap in the toilet and hygiene is not maintained properly. Sometimes products are kept stacked on the floor, hence the floor becomes damp and dirty; workers cannot even walk normally.”

– Representative from Change Associates

3. Business Outcomes

Implementing partner respondents argued that the prime focus of the HERhealth program was the health benefit of workers. They noted that, through the HERhealth program, female workers were made more aware of personal hygiene and, as a result, most use sanitary napkins, soap, and sandals. As demand for sanitary napkins has increased, factories responded positively by ensuring the supply of napkins in the factory clinic. Respondents from implementing partners also said that workers have become more aware and know the consequences of dirtiness of their work place, and try to maintain cleanliness. They are now knowledgeable about food nutrition, and as a result of this there has been a huge change in their eating habits as workers are eating more regular meals as well as choosing more nutritious foods. The use of PPE has increased, which has reduced the rate of workplace accidents.

Respondents clearly felt that healthy workers bring benefits to the factories: healthy workers ensure healthy business. In particular, the availability of sanitary products and medicines in factory clinics, and the cleanliness of the workplace overall has improved, which reduces not only worker absenteeism but also the turnover rate. These factors are important for a factory’s business performance. As one respondent put it,

“Less absenteeism of the workers gives more business benefit to the factories. If 5 or 6 workers remain absent in one line of the factory, it plays a vital role on the production process which is affected negatively. When the workers are healthy by following the messages of nutrition, hygiene and occupational safety from HERhealth, they usually remain less absent which eventually gives benefit to the factory as far as production is concerned.”

– Representative from Change Associates

“If factories perform well in the HERhealth intervention, their suppliers get more direct orders. Also HERhealth makes factories more compliant. HERhealth intervention has been implemented in more than 100 factories in Bangladesh with only two or three factories dropping out – this proves that most of the stakeholders (owners, buyers, management personnel) support the HERhealth intervention. Under the HERhealth intervention a committee has been formed in every factory to observe the HERhealth intervention and most of them are happy. After two or three rounds of peer sessions, the management can observe the initial change in their workforce for example reduced absenteeism”

– Representative from BSR

4. Work Place Interventions and Effectiveness of HERhealth Model and Peer Health Educators

Implementing partner respondents said that they have found higher-level management to be supportive regarding implementation of the HERhealth program in their respective factories. They noted that some factory managers thought it was difficult to manage workers’ time in the production rush, and need to be persuaded through brands to allow time for the project, but most managers the respondents had worked with felt that this project transformed their workers into assets and that knowledge was transferred from PHEs to other workers. Respondents said that managers who understand this chain are more supportive of the project.

Respondents were optimistic about achieving expected results from the HERhealth intervention. They cautioned, however, that since the model is based on educating workers through PHEs, if PHEs are not given

enough time by factory management to disseminate their knowledge among coworkers, the project effectiveness may be lower. Health improvements occur when all workers have good health knowledge, which reduces the overall absenteeism and ensures the business benefit from this project.

According to the implementing partner respondents, the role of the factory clinic is important in reducing absenteeism and turnover of the workers in a factory. However, the quality and capacity of factory clinics are not consistent: in factory clinics where services are provided effectively to the workers on a regular basis, female workers especially benefit and their health problems decrease. If the factory clinic is not as functional, it cannot provide as effective care or as good results. As one respondent said,

“They (female workers) can receive medicines from the inside factory clinic instead of from an outside local pharmacy. As a result of this, both the illness and absenteeism rate decreases. When the worker thinks that she is taken care of properly by the clinic and that she might not avail this facility anywhere else, she usually does not shift from the factory.”

– Representative from Change Associates

They also argued that if the factories can use the resources and knowledge of PHEs properly, the model will be highly effective, since it was designed to cover all the female workers, and PHEs can share knowledge within a very short time.

5. Challenges in Implementation

Implementing partner respondents said that the main implementation problem has been getting factory management to allow time for the three-hour monthly training and one-hour follow-up training. Respondents said they have found the reason for this is the excessive production pressure in factories, and that middle or lower-level management may be less open to or understanding of the importance of such work place interventions. For example, often factory management will agree to allow the PHEs to attend training, but the production manager is less willing, as at the end of the day she or he is the one who must calculate total pieces of production. Additionally, there is frequent turnover of management, and each new manager must be persuaded to support the intervention. In the words of one respondent,

“It is difficult to convince the management to allow workers to make extra time for training out of their duty hours. Even if making time for monthly training is very difficult, we have to convince the workers to come on schedule. Missing a schedule increases cost and getting new schedule is very difficult.”

– Representative from Change Associates

Turnover of PHEs and change of PHEs by factory management for a training session was another challenge of this project identified by respondents from implementing partners. Some factories selected PHEs for training but changed them intentionally for the next training. If there is a lot of production pressure on one floor, they (the production managers) provide a different worker from another floor where production pressure is lower. The effectiveness of the peer health educator model depends on the PHEs completing all six trainings – changing the PHE limits the model’s effectiveness, as the newly-selected PHE does not know all the information from previous modules. Respondents also said that a few factory managers were not willing to encourage PHEs to share their knowledge with other workers. For example,

“The major obstacles arise if the factory management does not cooperate for knowledge sharing of PHEs to their peers. Often the management allows PHEs to receive training but they do not allow outreach by those PHEs. If the outreach is not done accurately, the benefit to business cannot occur.”

– Representative from Change Associates

Another problem identified by implementing partner respondents was a shortage of training rooms that allow female workers to sit and talk comfortably with privacy, and have enough space to use and display training materials.

Respondents said that they have used different techniques to overcome these challenges. They often try to motivate factory management by giving examples of other factories that are supportive of this project. Sometimes they try to arrange meetings with top-level management. If they cannot find solutions by working directly with the factory, then they seek help from buyers, which pushes the factory to solve the problem. For example,

“We face the challenges through motivation as there is no alternative to motivation. We ask buyers to create pressure regarding those issues. And sometimes this tactics works.”

– Team leader, female, Change Associates, Dhaka

Challenges and Solutions

Research in garment factories entails unique challenges. The challenges the team encountered fall into two categories: those related to conducting research and those related to the implementation of HERhealth. The solutions the team devised for addressing these challenges can serve as lessons for future studies of the garment sector in Bangladesh.

One of main challenges the study team faced was scheduling data collection at the post-intervention and intervention factories. Though the management personnel from post-intervention and intervention factories voiced their support for the study, actually scheduling the interviews and survey was problematic, due to frequent changes of factory personnel, pressure of production rush, and limited working hours during Ramadan (the month Muslims fast from dawn to dusk). Overcoming these challenges required constant engagement to get schedules from the factories.

Persuading the control factories to participate in the study was the most significant challenge. Since the HERhealth intervention was not planned to be implemented at control factories, they perceived no obvious benefit to participating in this study, only a loss of working hours for their workers, which translates into monetary losses. Arranging several courteous meetings with production managers, involving higher level managements (owners and/or Board of Directors) and brands were made by the team to overcome this barrier.

One challenge that was noticed over the entire study period was the frequent turnover of factory management. The study team learned that turnover in the garment sector is higher than other sectors in Bangladesh. As a result of this, the team often lost their contact person in a particular factory and had to negotiate with a new contact who was often not informed and thus not yet interested in the project. This required intensive effort to rebuild the connection through Change Associates, BSR, and brand engagement.

Discussions and Recommendations

The rigor of this evaluation and the strength of the evidence generated makes this study a critical contribution to research in the RMG sector in Bangladesh. The quasi-experimental evaluation design of this study and the inclusion of comparison factories and factories that had previously completed the intervention allowed for a more rigorous evaluation than a pre- and post-test evaluation of the intervention factories alone. Factories that had previously completed the intervention were included to provide insights about the sustainability of the HERhealth intervention.

Results from the pre- and post-intervention survey indicate that the HERhealth intervention had a positive impact on some aspects of sexual and reproductive health knowledge and behavior. In particular, workers in factories where the HERhealth intervention was implemented showed improved knowledge and behavior related to menstrual hygiene. This is likely related, in part, to the intervention's facilitation of relationships between factories and menstrual products suppliers, which made it possible for factories to offer reduced-cost sanitary pads to workers. Furthermore, a positive impact was observed on workers' knowledge of STIs and HIV/AIDS, knowledge of recommended antenatal care, and use of contraception.

Periodic knowledge retention tests revealed variable performances of the PHEs, depending on the topic. The assessments found that PHEs performed highest on the round three topics (Preventing STIs and HIV/AIDS) and round six topics (Occupational Safety and Health). In all five assessment rounds, PHEs at intervention factories showed significantly better retention performance than those at post-intervention factories, where the intervention had previously been implemented. This provides evidence of the need to maintain the knowledge and skills of PHEs and to continue regular HERhealth activities.

These findings are supported by factory managers' reports (in interviews) that they saw positive effects on workers' health-related knowledge, awareness, and behaviors, particularly related to hygiene and nutrition. Factory managers were generally supportive of the intervention and seemed to understand the value of healthy workers for improving business outcomes. They mentioned, in particular, decreased absenteeism as a result of improved worker health and were also generally appreciative of the positive impact of offering low-cost sanitary pads. Managers were supportive of the PHEs, although it should also be noted that implementing partners described challenges in persuading management to invest the time necessary to fully implement the PHE model.

The impact of the HERhealth intervention on FP knowledge was less clear, as levels of knowledge of FP among factory workers were very high at all factories at baseline. The study was also unable to determine the impact of the HERhealth intervention on service seeking during pregnancy, or testing and treatment for STIs and HIV/AIDS.

The intervention did not appear to have a positive impact on workers' knowledge of SRH service delivery points, which illustrates an area in which the intervention could be improved in the future.

The intervention was intended to strengthen provision of family planning services at factory-based clinics, in addition to other health services. However, none of the factory-based clinics offered FP services at baseline or at end line, pointing to another area for future investment and revision in the HERhealth intervention, as well as needed efforts from other stakeholders, in collaboration with HERhealth.

This study collected the opinions of factory management, health service providers, and implementing partners regarding workers' living conditions, working conditions, turnover, effectiveness of HERhealth model, on-site factory clinics, and challenges in HERhealth implementation, among other topics. Factory management felt that workers face health-related problems are largely due to workers' lack of health-related knowledge and awareness, and the fact that they often live in congested and dirty conditions.

Study findings show that factory managers are concerned with positive attitudes, as far as health benefits of the workers. Workers get primary medicines and sanitary napkins at a lower rate from the factory clinics, which are open during factory operating hours. It is an encouraging finding that managers seemed to understand that a sick worker cannot produce quality materials unless she is taken care of.

Results from this study show that the HERhealth model was appreciated by the top-level factory managers, as workers' health conditions, consciousness, and commitment was improved through the intervention. The intervention was also perceived to have a positive correlation with decreasing absenteeism and increasing productivity. Managers indicated that they thought the peer health educator model was effective, as it ensures that knowledge is shared with all the PHEs' coworkers, raising the consciousness of all factory workers.

Interview with health service providers revealed that female workers mostly suffer from STI and RTI related diseases such as fungal infection, itching in the vagina, and leucorrhea, along with seasonal flu, cough, and headache, among others. Workers also commonly experience workplace or household related injuries like needle injury, being hit in head, and so forth.

Results show generally good awareness of the availability of doctors and medical assistants at on-site factory clinics, though healthcare providers also reported problems with overcrowding when large numbers of workers arrive at the clinic at the end of a shift, which delays service delivery. Workers received free basic medicines from the clinics and were referred to tertiary health facilities, with costs covered, when they had a serious illness. Unfortunately, family planning products like oral pill, condom, injectable, and IUDs were not provided by any factory clinic.

The study examined the commitment of service providers in delivering services to workers and concluded that they are dedicated to the workers, even with limited medicine supplies and service hours, as there regular monitoring is done by the top-level factory management. Healthcare service providers reported ensuring the audio-visual privacy of patients and maintaining separate registers for male and female workers.

This study also elicited the views of key implementing partners, who gave a different perspective than factory managers. These respondents noted challenges to the mobility of the female workers, especially in the night shift as workers faced eve teasing and mental or physical violence in the road between work and home. Workers also live in unhealthy conditions, with many girls living in just one or two rooms, with limited opportunities to cook food and maintain hygienic washrooms. Besides, workers who live with their husbands often face domestic violence and limited control over their own lives.

Implementing partners informed the study team that they have found good working conditions in the large factories, whereas in the small factories, there is still room to improve in terms of ensuring basic hygiene, cleanliness and safety. Also, the use of PPEs in the factories should be emphasized more in order to overcome machine related injuries.

Discussions with partners also showed that through the HERhealth intervention, workers' awareness about their basic health needs and their health seeking behavior was changed. Factory management also responded positively about the importance of workers' health, and had learned that the HERhealth intervention could bring positive business outcomes, and that healthy workers can ensure healthy business.

Discussions with partners also indicated that top-level management had come to understand the importance of such interventions. However, in some factories, a few managers were found to be less supportive on that front. Partners reported that they have worked to negotiate the obstacles and are now confident about getting expected results from the HERhealth intervention, since workers at factories that have received the intervention have experience important health-related benefits. Partners also thought that by utilizing the resources of PHEs efficiently, factories can effectively realize the positive outcomes of PHE model.

This study also examined the challenges of the HERhealth intervention. Implementing partners described problems in getting regular monthly schedules from factory management for the three-hour training and one-hour follow-up sessions. Implementing partners sometimes had to rely on constant persuasion, motivation and engagement by the brands to get the schedules. Another obstacle was the frequent turnover of PHEs, including times when workers assigned to the PHE sessions were intentionally changed by the factory management. As a result, the number of PHEs who received all six training modules is comparatively low (though a few factories had a welfare officer teach the newly selected PHEs).

Findings from both the quantitative survey and qualitative interviews indicate that the HERhealth project, by educating female garment workers through a peer health educator model, is an effective model when fully implemented.

Study findings also point to several recommendations for improving the sustainability of this project:

- **Extending training content and duration:** A large number of the female factory workers who were exposed to the HERhealth program (both PHEs and general workers) recommended more trainings on health-related issues. Some also suggested reducing the duration of each training session but extending the span of the training period.
- **Engaging male workers:** Qualitative findings from IDIs with factory managers suggested the adoption of a similar program for male factory workers. The argument was that sensitizing male workers may result in changes in their spouse's knowledge and behavior also. Although the proportion of male workers in these factories varied from 35 to 70 percent, no SRHR-related interventions were found that focused on male workers.
- **Regular follow up:** Regular follow up by the implementing agency should be ensured at factories where the HERhealth intervention has been completed. There should be a liaison between the implementing agency and factory so that, after finishing the intervention, welfare officers at individual factories can forward the key messages from the six rounds of training to the PHEs and thus continue the process of educating all the female workers. If this sort of follow up is not ensured, workers will gradually forget what they learned through HERhealth, especially in the context of higher turnover.
- **Engaging factory management:** Among the two post-intervention factories (where the intervention was completed before the start of this study), the study also found that HERhealth had been scaled up by the management at one factory, but not at the other. Findings from qualitative interviews with implementing partners suggest that factory managers should be sensitized periodically to ensure the sustainability of this project.

References

- Ahmed, F. E. 2004. The Rise of the Bangladesh Garment Industry: Globalization, Women Workers, and Voice. NWSA Journal, Vol. 16, No. 2, pp 34-35 https://www.researchgate.net/publication/236711191_The_Rise_of_the_Bangladesh_Garment_Industry_Globalization_Women_Workers_and_Voice
- Ainul, S., M.I. Hossain, S. Amin and U. Rob. 2013. Financial Inclusion of Female Garment Workers. Dhaka: Population Council.
- Amin, S., I. Diamond, R.T. Naved, and M. Newby. 1998. Transitions to adulthood of female garment-factory workers in Bangladesh. Studies in Family Planning; 29(2): 185–200.
- Amin, S. 2006. The implications of trade liberalization for working women's marriage: Case studies from Bangladesh, Egypt and Vietnam. In C. Grown (ed.), Trading Health and Rights; London: Zed Press.
- Bangladesh Garments Manufacturers and Exporters Association (BGMEA). 2017. Trade Information. <http://www.bgmea.com.bd/home/pages/TradeInformation>
- Heath, R. and M. Mobarak. 2011. Supply and Demand Constraints on Educational Investment: Evidence from Garment Sector Jobs and the Female Stipend Program in Bangladesh. www.econ.yale.edu/conference/neudc11/papers/paper_363.pdf
- Hewett, P. and S. Amin. 2001. Assessing the impact of garment work on quality of life measures. In B. Sen (ed.) Growth of the Garment Industry in Bangladesh: Economic and Social Dimensions; Dhaka: Bangladesh Institute of Development Studies.
- Hookway, J and S. Narin. 2014. Cambodia Sets Minimum Wage below Union Demands. The Wall Street Journal. <http://www.wsj.com/articles/cambodia-sets-minimum-wage-below-union-demands-1415789944>
- Khondhker, B., A. Razzaque, and N. Ahmed. 2005. Exports, Employment and Working Conditions: Emerging Issues in the Post-MFA RMG Industry. Dhaka: ILO. https://www.researchgate.net/publication/255598313_Exports_Employment_and_Working_Conditions_Emerging_Issues_in_the_Post-MFA_RMG_Industry
- Kibria, N. 1995. Culture, social class and income control in the lives of women garment workers in Bangladesh. Gender and Society; 9(3): 289-309.
- Kibria, N. 1998. Becoming a garment worker: the mobilization of women into the garment factories of Bangladesh. United Nations Research Institute for Social Development (UNRISD) occasional Paper 9; Geneva: United Nations Research Institute for Social Development.
- Martin, M. 2013. Creating Sustainable Apparel Value Chains: A Primer on Industry Transformation. Impact Economy. http://www.impacteconomy.com/papers/IE_PRIMER_DECEMBER2013_EN.pdf
- Nanda, P. et al. 2013. Advancing Women, Changing Lives: An Evaluation of Gap Inc.'s P.A.C.E. Program. Washington, DC: International Center for Research on Women.
- Newby, M., S. Amin, I. Diamond and R.T. Naved. 1998. Survey experience among women in Bangladesh. American Behavioral Scientist; 42(2): 237-251.
- Quadir, S. 2014. Rising wages squeeze Bangladesh garment workers as factories await upgrades. Dhaka: Reuters. <http://www.reuters.com/article/us-bangladesh-garments-idUSBREA3C0N520140413>
- SNV Netherlands Development Organization. 2016. Baseline Study of Target Garment RMG Factories and their Workers, 2015: Final Report. Dhaka: SNV
- World Bank. 2017. In Bangladesh, Empowering and Employing Women in the Garments Sector. <http://www.worldbank.org/en/news/feature/2017/02/07/in-bangladesh-empowering-and-employing-women-in-the-garments-sector>

The Evidence Project

Population Council

4301 Connecticut Avenue, NW, Suite 280

Washington, DC 20008 USA

tel +1 202 237 9400

Population Council

House 12, Road 25/30

Gulshan 1, Dhaka 1212

tel +880 2 984 2276

evidenceproject.popcouncil.org