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Family planning in factory settings: A mixed-method evaluation of a peer-led intervention

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FAMILY PLANNING IN FACTORY SETTINGS: A MIXED-METHOD EVALUATION OF A PEER- LED INTERVENTION

HIGHLIGHTS

- Well-trained and motivated factory workers could serve as a credible source of information about family planning and reproductive health for their peers.
- Exposure to more than one family planning awareness raising component is associated with better knowledge and behaviour outcomes.
- On-site provision of family planning counseling by the factory nurse could help in countering fears and misconceptions and increase FP uptake.

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BACKGROUND & RATIONALE

Egypt's rapidly growing population poses a challenge to economic growth and other aspects of the country's sustainable development. Although Egypt's Family Health Survey (2021) ⁽¹⁾ showed a total fertility rate of 2.85 births per woman, the country's population continues to increase by an average of 2.1 million people every year.⁽²⁾ According to the Panel Survey of Young People in Egypt (2014) the ideal number of children among never-married youth aged 15–29 is 2.9 while among married youth in the same age range it reaches 3.1.⁽³⁾ Misconceptions and concerns about potential side effects of contraceptives are, also, major barriers to adopting healthy reproductive behaviors among young people in Egypt.⁽⁴⁾

In Egypt, the manufacturing sector represented 28% of total employment in 2020 ⁽⁵⁾ with a total of 3.6 million workers ⁽⁶⁾, many of whom are women of childbearing age. Like other Egyptians, female and male workers in the manufacturing sector possess misconceptions about family planning and reproductive health (FP/RH) and have unmet needs for family planning.⁽⁴⁾

Between 2017 and 2019, the Population Council implemented an intervention for integrating FP into workers' health programs in eight factories in Port Said governorate through the USAID funded Evidence Project. The intervention relied on peer education along with social media and information, education and communication (IEC) materials. Peer education is an approach

in which peers offer and discuss factual information on life matters including health-related information in an informal group setting ⁽⁷⁾ to influence people's knowledge, attitudes, beliefs, or behaviors. An assessment of the above intervention showed great acceptability by factory workers and managers and potential for addressing workers' unmet need for FP information. ⁽⁸⁾

Starting in 2020, the USAID-funded "Strengthening Egypt's Family Planning Program" (SEFPP), led by John Snow Inc. (JSI) implemented a multi-component awareness raising intervention in factory settings in Cairo and Upper Egypt governorates building on the above peer education model. The intervention aimed at raising factory workers' awareness of FP/RH and addressing their unmet needs for FP. SEFPP is implemented by JSI in collaboration with the Population Council. In partnership with the Egyptian Government, SEFPP works to revitalize and increase demand for FP/RH services. SEFPP is committed to supporting improved voluntary FP/RH services for all segments of society ⁽⁹⁾ and has lately extended its activities to increase uptake of contraceptives in 21 governorates in Egypt.

This research brief presents results of a mixed-methods evaluation of SEFPP's peer education program. It also provides lessons learned and recommendations for designing peer-led interventions to increase awareness of and demand for FP services in workplace settings.

INTERVENTION

The intervention factories specialize in manufacturing garments and textiles, tobacco, plastics and food products. At the time of the study, they employed 3,425 workers, of whom 79% were female. The number of workers ranged from 150 to 1,700 per intervention factory.

A total of 24 male and 37 female peer educators (PEs) were recruited from seven intervention factories, mainly from the administrative staff or production supervisors. Additional criteria for selecting PEs included age (<35 years), interest in participation, popularity among their

co-workers, good interpersonal and communication skills, and adequate computer skills. The intervention in each factory included the following components:

PEER LEARNING SESSIONS

Peer educators participated in a three-day training* which included sessions for building their leadership, motivational and communication skills as well as basic FP information. The latter was delivered by obstetricians or gynecologists affiliated with the Health Directorate at the Ministry of Health and Population (MOHP) and covered information on the importance of FP at family and community levels, roles and responsibilities of husbands in their families, indications and side effects of different methods of contraception as well as misconceptions and myths related to FP. An additional one-day refresher training was conducted every month to update the FP/RH information/knowledge of PEs based on questions raised by their co-workers. In each factory, trained PEs conducted weekly peer learning sessions for 25-50 factory workers, usually during break time in lunchrooms or factory halls. These sessions involved sharing FP messages with factory workers using IEC materials.

IEC MATERIALS

IEC materials (e.g., booklets, flyers and posters) designed in colloquial Arabic were shared with factory workers to reinforce peer learning and provide straightforward and evidence-based FP/RH information. The posters were displayed in strategic locations within the factories to draw the attention of the working staff.

ONE-TO-ONE DISCUSSIONS

PEs had one-to-one discussions with factory workers who had questions or concerns regarding FP and found such topics too sensitive to discuss in group settings.

MOBILE CLINIC

To expand access to FP, starting May 2022, a mobile clinic visited each factory periodically to offer FP services to factory workers. The clinic is operated by the MOHP and offers FP services free of charge.

REFERRALS

Additionally, each factory received referral cards which PEs used to refer female workers with FP needs to the mobile clinic or nearby primary healthcare centers affiliated with the MOHP.

Evaluation Methodology

EVALUATION DESIGN

Between July and August 2022, the Egyptian Center for Public Opinion Research (Baseera) and the Population Council undertook an evaluation of the above peer-led awareness raising program. The evaluation used mixed methods (quantitative and qualitative) to examine the effects of the intervention on the FP/RH-related knowledge, attitudes, and practices (KAP) among factory workers as well as perceptions of workers, PEs, factory managers and MOHP officials on the effectiveness of the intervention.

For the quantitative component, a quasi-experimental evaluation design was adopted to assess FP-related KAP among male and female workers in seven intervention and three comparison factories following completion of the intervention. Intervention factories were in the governorates of Cairo, Sohag, Assiut, Beni-Suef, Fayoum, Minya and Qena while the comparison factories were located in Sohag, Beni-Suef, and Fayoum. No baseline data was collected from any of the study factories.

*Training duration was reduced to two days in factories which recently joined the program

DATA COLLECTION PROCEDURES

A total of 538 intervention factory workers and 150 comparison factory workers participated in face-to-face interviews. The research team had initially planned to reach 839 and 420 workers in the intervention and comparison factories respectively; however, this target could not be achieved due to resistance from factory management to interviewing workers outside the lunch break. It is also noteworthy that random selection of workers for the quantitative assessment was not possible as factory management was concerned about work disruptions; and hence prioritized participants without a heavy workload at the time of data collection.

The qualitative component included in-depth interviews with 24 female and 15 male workers, 8 female and 7 male trained PEs, and 10 factory managers from intervention sites. In addition, 7 FP officials working in the corresponding

health directorates were interviewed. The interview guides included questions on participants' perceptions of benefits of peer learning sessions and perceived effects of the intervention on workers' FP-related KAPs. Participants were also asked if they found factory settings as a suitable venue for FP awareness raising and what additional steps need to be taken to improve the outcomes of this peer-led intervention.

DATA ANALYSIS

Descriptive statistics and bivariate analysis were conducted to examine differences between individual responses in the intervention group compared to the comparison group on KAP indicators. Chi square tests were used to measure statistical significance of variables associations. Analysis of quantitative data used Stata SE version 16. For qualitative data analysis, all interviews were transcribed verbatim, and manual thematic analysis was conducted for all transcripts.



KEY FINDINGS

FACTORY WORKERS' CHARACTERISTICS

The sample for the quantitative component of the evaluation was predominantly female

(72%), married or engaged (64%), lived in rural areas (60%) and were mostly aged 25-34 or 35-49 years old (35.5 and 35.1%, respectively). Around 70% had at least completed secondary school/vocational education and less than half

did not have living children (45%). Noticeably, there were differences in gender distribution across the two study groups: females accounted for 80% of participants in intervention factories compared to 42% in comparison factories. Also, a higher percentage of respondents in intervention factories compared to comparison factories lived in rural areas (62% versus 52% respectively).

REACH OF THE PEER-LED INTERVENTION WAS MODERATE ACROSS FACTORY SETTINGS

Among workers in intervention factories, nearly 70% of respondents were exposed to at least one intervention component: 18% were exposed to one component, 24.5% were exposed to 2 components, 17.1% were exposed to 3 components, and 9.1% were exposed to 4 elements. Receiving a flyer or booklet with FP information was the most reported exposure

(47.2%), closely followed by attending a peer learning session (44.6%) and seeing a poster on FP/RH (40%). Only 22.7% of respondents had a one-to-one discussion with a peer educator. It is noteworthy that 22% (33 of 150 participants) of respondents at comparison factories reported exposure to one or more intervention components, potentially due to staff transfers across factories.

Results of the qualitative component provided insights on barriers that may have undermined workers' exposure to the intervention. In several factories, a low PE to worker ratio emerged as a key shortfall. According to workers, some departments did not have trained PE. Furthermore, time constraints due to high workload and labor shortages posed a challenge to PEs who could only communicate messages to co-workers during lunch breaks.

“It would be much better if the number of peer educators was increased, we were only 6 peer educators and that was not enough as there are over 2000 female workers in the factory.”

(Female peer educator, Beni Suef)

“I am under the control of time which is very tight. As a manufacturing factory I have targets to achieve, accordingly if I sent a group of 20-30 workers to the session, this corresponds to one hour of production-lost-time... , if that was from one production line, then its productivity will be largely disrupted due to lost time.”

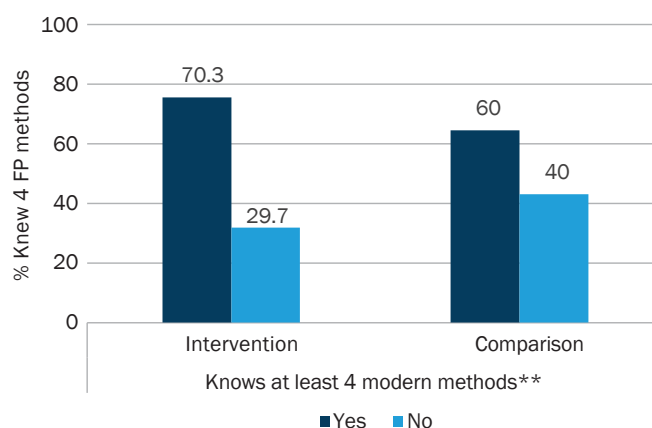
(Male factory manager, Fayoum)

INTERVENTION FACTORIES DEMONSTRATED BETTER FP RELATED KAP INDICATORS COMPARED TO COMPARISON FACTORIES

When factory workers were asked about FP methods they knew, 70.3% and 60.0% of respondents in the intervention and comparison

factories, respectively mentioned four modern contraceptives (p-value ≤ 0.01) (figure 1).

Figure 1: Knowledge about FP methods by factory type. (Intervention = 538, comparison =150)



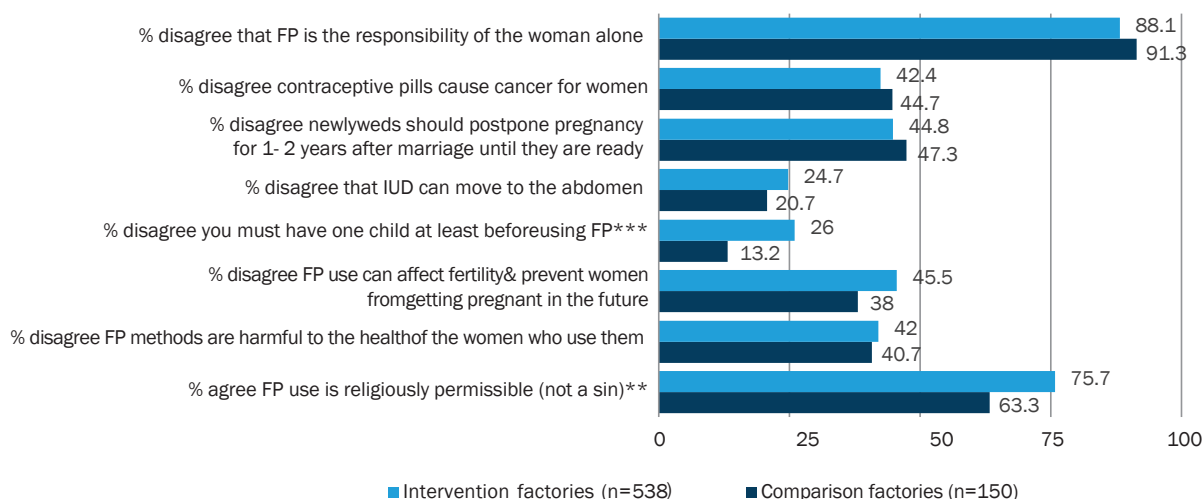
*** p-value≤0.00; **p-value≤0.01; *p-value≤0.05

There were few differences in FP-related attitudes among respondents who worked in intervention versus comparison factories (figure 2). More workers in intervention factories disagreed with the statement “*You must have at least one child before using family planning*” (26% versus 13% in comparison factories) while more workers in the intervention factories agreed with the statement “*FP use is religiously permissible*” (76% versus 63% respectively). In terms of uptake of FP services (by respondents or their spouses), the number of contraceptives users was relatively high among respondents in

both intervention (78%) and comparison (69%) factories with no significant difference between the two groups.

A statistically significant difference, however, was observed in the proportion of factory workers who consulted with a factory nurse about FP. Among workers from intervention sites, 12.6% spoke to a nurse compared to only 1.3% from the non-intervention factories (p-value=0.00). However, it is noteworthy that workers in the comparison facilities were predominantly male, and thus it is less likely they would have been willing to consult with a female FP nurse.

Figure 2: FP related attitudes by factory type (Intervention = 538, comparison =150)



*** p-value≤0.00; **p-value≤0.01; *p-value≤0.05

In-depth interviews with factory workers, PEs, and managers indicated that FP-related KAP improved as a result of the intervention. One female worker in Beni Suef reported a change in her childbearing intentions as a result of exposure to the intervention. A male factory manager in Cairo reported an increase in FP usage

among factory workers. Interviews also pointed to some shortcomings in the intervention that may have contributed to its limited impact on workers' KAP. Some PEs indicated that they were not always prepared to answer questions about FP/RH that they received from their peers.

“ I got pregnant 4 times to have a baby boy and two of my children passed away and now, I have two daughters. Though the idea of having a son used to cross my mind every now and then yet after listening to the information my peers shared, I realized that I should better take good care of myself and my health and focus on raising my daughters while I am still young rather than get pregnant again and have more children.”

(Female factory worker, Beni Suef)

“ The benefits of the project were great. I received a report from the primary healthcare unit indicating that, according to their registers, the number of contraceptive users who work at the factory has noticeably increased in the last three months.”

(Male factory manager, Cairo)

“ We should have received more refresher training as there were some questions raised by female workers which we could not answer .. and I had to ask the female doctor and bring answers back to workers.”

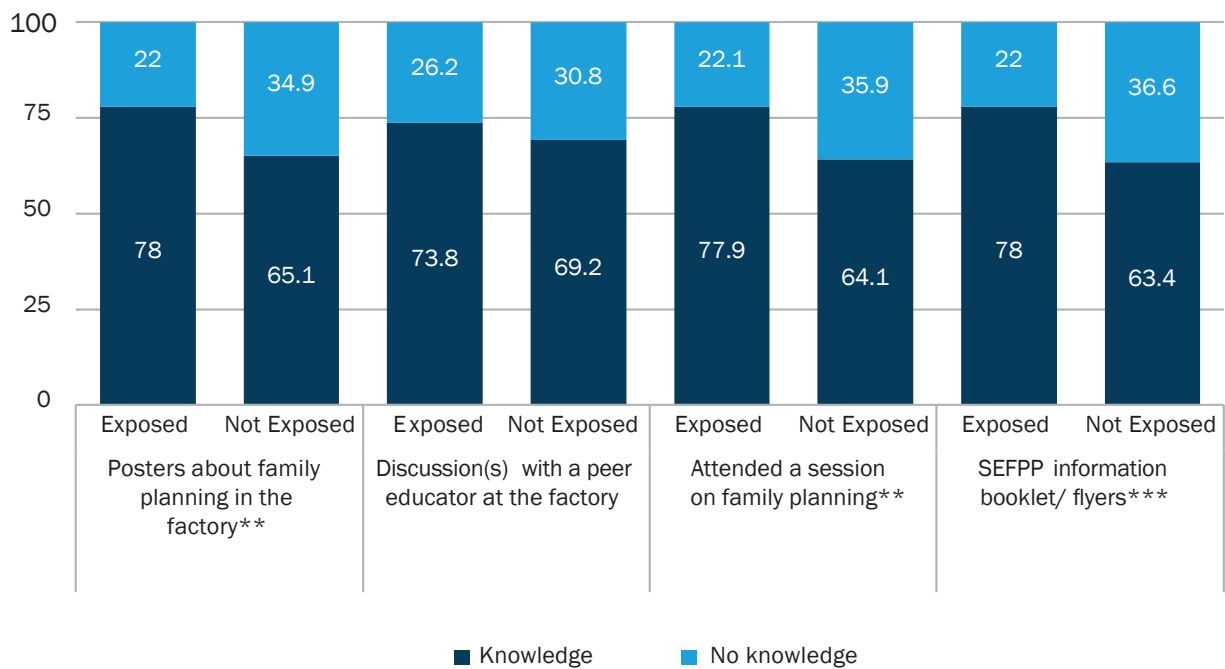
(Female peer educator, Qena)

EXPOSURE TO AN INTERVENTION COMPONENT WAS ASSOCIATED WITH IMPROVED FP OUTCOMES

In intervention factories, participants who reported exposure to posters, attended a peer learning session on FP, or received a SEFPP information booklet/flyer were more likely to

have knowledge of four modern family planning methods (Figure 3). However, exposure to one-to-one discussions with PEs was not associated with significant improvements in FP knowledge.

Figure 3: Effect of intervention components on knowledge of 4 modern FP methods (n=538)

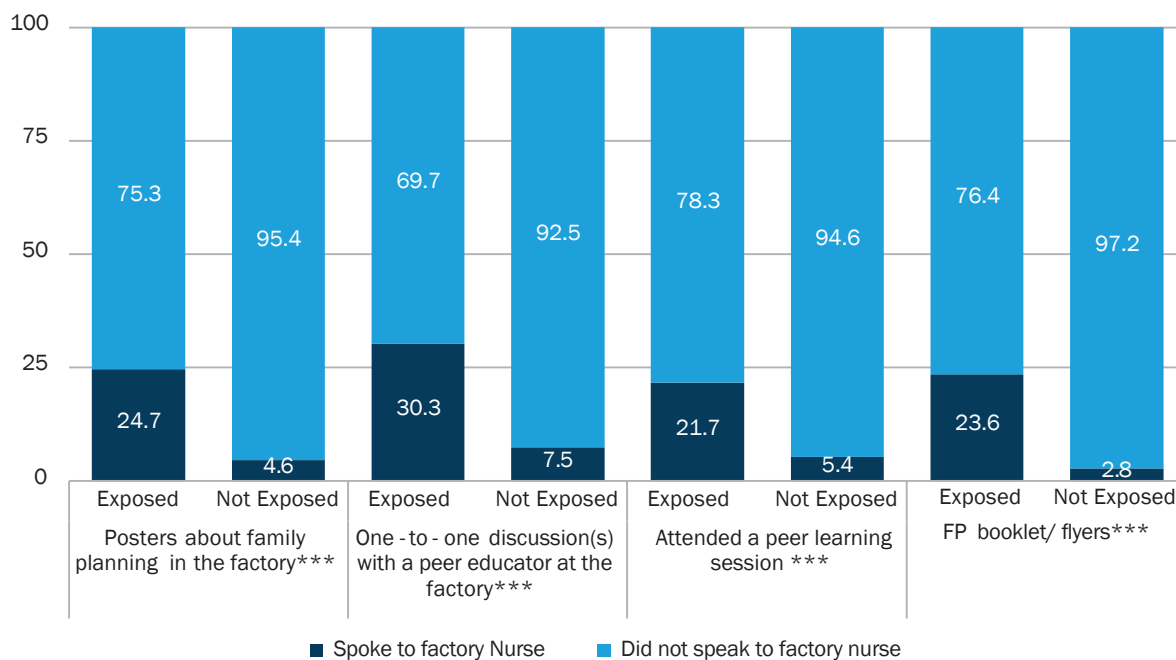


*** p-value≤0.00; **p-value≤0.01; *p-value≤0.05

Furthermore, respondents who reported that they attended a peer learning session in intervention factories were more likely to have favorable attitudes towards FP compared to those who did not attend any sessions. These attitudinal statements included agreement with “FP use is religiously permissible” and disagreement with “FP use can affect fertility and prevent women from getting pregnant”, and “contraceptive pills cause cancer for women”. Exposure to SEFPP information booklet/flyers or poster was associated with one favorable attitude while one-on-one discussion with a PE was not associated with any favorable attitudes.

Though use of any FP method was greater among those exposed to various components of the intervention, none of the associations were significant (data not shown). However, for all four components of the intervention, exposure increased the likelihood that the factory worker would seek advice from the factory nurse (Figure 4). For example, 23.6% of respondents who reported receiving IEC material on FP visited the factory nurse compared to 2.8% of those who did not receive it.

Figure 4. Effect of exposure to intervention components on factory workers likelihood to consult the factory nurse (n=538)



*** p-value≤0.00; **p-value≤0.01; *p-value≤0.05

EXPOSURE TO MORE INTERVENTION COMPONENTS WAS ASSOCIATED WITH BETTER FP-RELATED KAP OUTCOMES.

A dose response relationship was noted on some of the study outcomes. In the intervention factories, 80% of those receiving 3-4 components could name four modern FP methods compared to 68% and 60% of those who received one and none of the intervention components, respectively (p-value=0.001). Regarding attitudes, 49.7% of respondents who received 3-4 components disagreed with the statement; “Pills cause cancer” compared to 45.7% of those who received 1 component and 33.3% of those who were not exposed to any of the intervention elements (p-value=0.001). A strong dose-response association was also observed on assessing the effect of exposure to multiple

intervention components on seeking advice on FP from the factory nurse. While 32.6% of factory workers who received 3-4 components indicated visiting the factory nurse to receive FP counseling, 12.1% and 5.3% of those exposed to 2 and 1 component respectively reported speaking with the factory nurse about FP (p-value =0.00). Though use of any FP method was greater among those exposed to various components of the intervention, none of the associations were statistically significant (data not shown).

FACTORY WORKERS PERCEIVED MOST INTERVENTION COMPONENTS AS “USEFUL”

Overall, attitudes towards peer education were positive and among workers who reported receiving FP information in peer learning sessions 89.2% described the sessions as “useful”. Of

factory workers who used the mobile clinic (n=40) almost all (n=38) described the services received as good or excellent. However, it is im-

portant to note that only 29.2% of female workers in the intervention factories were aware of the availability of mobile FP clinic.

“ *I benefited a lot from the information I learned from peer educators. I use an IUD and was always skeptical about its side effects, however now I feel more reassured and believe it is the most effective FP method.”*

(Female worker, Qena)

PEER EDUCATORS SERVED AS CHANGE AGENTS BEYOND THE FACTORY SETTING

Despite variations in individual participant reach across factory settings, the intervention generated a “*ripple effect*” as PEs tended to spread FP/RH information and messages to friends, families, and other community members. In one intervention factory, PEs were encouraged by trainers from the health directorate to offer awareness sessions to community members outside their workplace through other venues such as mosques and social and cultural clubs. One female PE shared the infor-

mation she learned about FP/RH with female workers in a nearby factory where the peer-led intervention was not implemented. Many PEs were enthusiastic about disseminating health messages to their community and described volunteerism as a meaningful experience. The majority also asserted that they were willing to participate in similar volunteer and educational activities in the future to make a difference in their communities.

“ *I have friends working outside my workplace, whenever any of them visited me, I used to talk to her and pass on to her the new information I learned. I also did that with my sister who, in turn, passed the information to her friends at her workplace.”*

(Female peer educator, Assiut)

FEMALE WORKERS COULD BENEFIT FROM WORKPLACE-BASED FP SERVICE DELIVERY

In the qualitative interviews, female workers unanimously supported the value of receiving FP/RH services at factories given the long work-

ing hours and the financial losses associated with taking time off to visit the primary health-care unit. It was also reiterated that the avail-

ability of a female obstetrician/gynecologist at the factory or via mobile clinics was crucial to ensure effective communication about FP and

pregnancy spacing and to maximize opportunities for contraceptive use.

“ It would also be great if family planning methods were made available here as this would save a lot even if it were for a fee as in other settings... In order to do examination, I must take half day off, or leave early and not all supervisors approve that and whenever I have a day off, I have many tasks to do and errands to finish thus it is much better for us to have access to contraceptives here.”

(Female factory worker, Beni Suef)

DEEPLY ENTRENCHED SOCIAL AND RELIGIOUS MISCONCEPTIONS MADE IT DIFFICULT FOR SOME PEER EDUCATORS TO INFLUENCE ATTITUDES AND BEHAVIORS

Although exposure to the intervention was associated with more favorable FP-related attitudes overall, a large proportion of respondents continued to hold some negative attitudes about FP. For example, only 12% of respondents who were exposed to 3-4 components of the intervention disagreed with the statement “You must have at least one child before using FP” and only 29.1% disagreed with the statement, “IUD can move to the abdomen”.

According to the findings from the qualitative analysis, shame, stigma, and religious misconceptions about use of contraceptives posed formidable challenges to raising awareness on FP/RH, particularly in Upper Egypt. Myths and misconceptions about FP and perceived side effects of contraceptives were also barriers faced by PEs in discussing FP with their coworkers.

“ Here the level of education is not high, and the majority are from the countryside. While we can move freely and have a say in birth control, they are mainly concerned about getting married and having 5-6 children. Accordingly, they were difficult to convince as cultural norms largely influenced them, even the doctor kept going back and forth with them, but they were not interested, and their responses were demeaning.”

(Female peer educator, Assiut)

FACTORIES COULD BE A PROMISING VENUE FOR FAMILY PLANNING AWARENESS RAISING

Although some managers were concerned that awareness raising activities might disrupt work in the factories, interviewed factory staff described the factory setting as an appropriate setting for raising awareness of engaged and recently married people on the significance of FP and positive impacts of smaller families on

maternal, child, and familial health and well-being. Given the diverse manufacturing industry workforce in terms of age, gender, level of education, marital status, and cultural background, a factory-based intervention could help reach a large segment of young people.

“ *The factory is a very good place for FP awareness raising as many girls and women work here. Some girls might find it too embarrassing to discuss these topics with their mothers and some women might also feel shy to ask questions related to reproductive health thus it will be more comfortable to talk and learn more information here with each other.”*

(Female factory worker, Beni Suef)

Moreover, factory managers realized the importance of offering FP information and services to workers to help them make informed choices about contraception and childbearing. They conjectured that this in turn would result in reduced absenteeism and increased productivity.

A manager of a large garment factory in Beni Suef indicated that in recognition of its importance, FP-related information has been integrated into the training curriculum for new hires which offers basic information on occupational safety and health practices.

“ *Newly hired workers routinely receive some lectures as soon as they get appointed. Family planning and reproductive health-related information has been integrated into the lectures of this training course”.*

(Male factory manager, Beni Suef)

CONCLUSION AND RECOMMENDATIONS

Exposure to this multi-component PE intervention appears to have had some positive impact on factory workers' FP/RH knowledge, attitudes, and certain behaviors. While exposure to any of the three awareness raising components (Peer learning sessions, FP posters or flyers) was associated with improved FP knowledge, attending a peer learning session was associated with the greatest impact on workers' attitudes. Also, exposure to more than one awareness raising component was associated with better knowledge and attitudes. However, increased uptake of FP methods by factory workers remains a challenge. Deeply entrenched beliefs and misconceptions about FP may have contributed to the reduced uptake.

It is noteworthy that, limitations in the study design and data collection procedures undermine our ability to draw firm conclusions regarding effectiveness of the intervention or its components. First, factories were not randomly assigned to the intervention nor were study participants randomly selected for participation in the interviews. Second, the study samples from the intervention and comparison factories were not comparable regarding gender composition and geographic residence. Moreover, in absence of baseline data we cannot ascertain that the intervention and comparison group participants had similar levels of FP-related KAPs prior to exposure to the intervention. Finally, the small sample size of participants in the comparison factories has limited the power of the sample and hence its ability to detect differences between intervention and comparison factories.

Based on the above findings and conclusions, we offer the following suggestions for future programs that aim to introduce FP/RH information and services within factory settings:

1. **Factories should invest in creating a cadre of trained peer educators** who would serve as a credible source of FP/RH information for their co-workers.
2. Peer learning sessions may be helpful in creating a positive attitude towards family planning, however, they should be **properly planned in coordination with factory managers and line supervisors in order to minimize work disruptions.**
3. **Utilize mutually reinforcing awareness raising components to increase demand for FP in factory settings.** Factory managers should consider additional components such as FP flyers or posters to reinforce messages offered during peer learning sessions or one-to-one discussions between peer educators and their co-workers.
4. **Engage the clinic nurse in FP counseling of factory workers.** Changing deeply entrenched beliefs and misconceptions about FP may require two-way communication between workers and a trained health care provider. The factory nurse could play that role if she receives adequate training in FP counseling.
5. **Increased demand for FP among factory workers should be supported by on-site provision of affordable and high-quality FP services.** The MOHP-operated FP mobile clinic is one good option, as they can provide on-site FP services free of charge. However, the services offered by the mobile clinic and hours of operation need to be made known to factory workers ahead of time. The factory nurse could play a key

- role in advertising hours and scheduling appointments for workers.
6. **Increase the number of trained peer educators in each factory.** To expand the reach of the intervention, the number of trained PEs should be proportionate to the total number of workers. In the above-mentioned peer-led intervention implemented by the Population Council in Port Said governorate, a ratio of one peer educator for 50-60 workers was found to be appropriate.⁽¹⁰⁾
 7. **Refresher training for peer educators is essential.** Factories should invest in updating PEs' knowledge about family planning through refresher training. The factory nurse could play a role in strengthening capacities of peer educators.
 8. **Design interventions that extend to factory worker communities.** As the decision to use FP often involves other family members including husbands and mothers-in-law, it is important that PEs reach the larger community with FP messages. This could be done through flyers, social media channels, or group sessions.
 9. **Engage factory management to ensure buy-in and sustainability of FP awareness raising activities.** Establishing a health committee in each factory to take part in the design, implementation and monitoring of awareness raising activities is also an important component of sustainability. Factory managers also need to understand the potential return on investment from investing in FP awareness-raising activities for factory workers.
 10. **Employ more innovative and rigorous techniques to evaluate peer-led education programs in factory settings.** Measuring workers' FP knowledge, attitudes and practices at baseline and endline (i.e., before and after implementation of an intervention) is essential to ascertain its effectiveness. To minimize work disruptions as a result of the interviews researchers may consider conducting interviews outside work hours, and in that case compensate workers for staying after work hours. Self-administered questionnaires may be also considered, although using this type of questionnaire may be a challenge for workers with limited reading capacity.

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