Provider perspectives in implementing the Postpartum Intrauterine Device Initiative in Sri Lanka: a qualitative study

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ABSTRACT

Background Integration of maternal care and family planning services has the potential to reduce unintended pregnancies and closely spaced births, leading to reductions in maternal mortality and morbidity. However, few models exist detailing how to implement/integrate such services. This study explored the implementation of the Postpartum Intrauterine Device (PPIUD) Initiative in Sri Lanka, which trained healthcare providers on how to counsel women about contraception during routine antenatal care and insert PPIUD immediately following delivery.

Methods We applied a qualitative design to ascertain the perspectives of maternal health service providers who participated in the PPIUD Initiative. We conducted 12 in-depth interviews with providers. We used thematic analysis to analyse the data and the results were interpreted within the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework.

Results Findings indicated that providers were willing to adopt the intervention and reiterated the importance of postpartum family planning. However, the intervention was not consistently implemented as intended, including provider bias in counselling and lack of attention to women's preferences. Organisational barriers to implementation included time constraints and inadequate training. Providers suggested that a range of paramedical staff be trained in counselling and PPIUD insertion to mitigate barriers and to facilitate scaling up the intervention.

Conclusions To improve and scale up the PPIUD Initiative, training efforts should be expanded to primary and secondary care facilities and implementation strategies better utilised (eg, on-the-job training). The training can be strengthened by improving providers' knowledge of all types of methods and interpersonal communication skills, and emphasising the importance of unbiased, evidence-based contraceptive counselling techniques.

Key messages

- Maternal health care providers were willing to adopt the Postpartum Intrauterine Device Initiative but faced challenges, such as inadequate training, that made implementation difficult.
- Adoption and maintenance could be improved by expanding the intervention to other cadres of health workers and to other types of facilities.
- Implementation could be improved by incorporating training on evidence-based contraceptive counselling techniques and providing on-the-job training to health care providers.

INTRODUCTION

In low- and middle-income countries (LMICs), many new mothers desire to avoid another pregnancy, but few use postpartum family planning (PPFP).[1] PPFP can be coupled with other health services to safely space births.[2 3] The provision of highly effective PPFP, such as the postpartum intrauterine device (PPIUD), is safe for use by the majority of postpartum women.[4] However, PPIUDs are largely underutilised in many LMICs.[5]

In Sri Lanka, 53.9% of married women and 40.6% of all reproductive-age women were estimated to have used modern contraception in 2019.[6] However, in the region of South Asia, fewer than 30%

of postpartum women use modern contraception by 12 months post-delivery.[7] Rates of contraceptive use among postpartum women in Sri Lanka, while unknown, are likely to be similar to that of the region and much smaller than in non-postpartum women. In 2017, following the relative success of the International Federation of Gynecology and Obstetrics' (FIGO) PPIUD Initiative at increasing acceptance of PPIUDs, the Sri Lanka Ministry of Health, Nutrition and Indigenous Medicine pledged to provide PPIUDs, and other PPFP methods, in all hospitals in the country.[8]

In this study, we aimed to identify the barriers and facilitators to implementation of the PPIUD Initiative and determine implementation success. We used the Reach, Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) framework to explore what factors influenced implementation outcomes.[9 10] RE-AIM has been used for over 20 years in the field of public health to evaluate public health interventions.[9 10] In the context of family planning interventions, RE-AIM has been applied to evaluate the integration of HIV prevention services into family planning clinics[11] and to understand the perspectives of young adults about the barriers to uptake of family planning services.[12] We selected RE-AIM because of its broad application and because it allowed us to identify barriers and facilitators at the individual and organisational levels. In this article, we focus on the dimensions of Adoption, Implementation, Maintenance (AIM), as Reach and Effectiveness have been evaluated previously.[13] Adoption is related to the willingness of intervention agents to implement the intervention; implementation is the extent to which the intervention was delivered as intended; and maintenance reflects the sustainability and institutionalisation of the intervention.[10] The AIM components are important aspects to consider in programme implementation, but are often overlooked. If an intervention is demanding, costly or requires high levels of skilled expertise, it is not likely that stakeholders will be willing to adopt it. Further, understanding these barriers before scale-up of an intervention allows for interventions to be adapted and barriers mitigated beforehand. Understanding how the PPIUD intervention was delivered is also important for contextualising findings.

METHODS

Parent study and intervention description

FIGO introduced an intervention, the PPIUD Initiative, that trained providers on PPFP counselling during routine antenatal care and insertion of the copper PPIUD. Hormonal intrauterine devices (IUDs) are not available in Sri Lanka. Sri Lanka was the first of six countries to implement the Initiative in 2013 in collaboration with the Sri Lanka College of Obstetricians and Gynaecologists (SLCOG) and with support from the Sri Lanka Ministry of Health, Nutrition and Indigenous Medicine (SLMOH). The Initiative was rolled out in 18 hospitals in two phases. Phase I involved implementation in six of the largest maternity and teaching hospitals in Colombo, selected based on their high annual obstetric caseload and service provider capacity. During phase II, which began in 2015, the intervention was rolled out to an additional 12 hospitals that were smaller both in terms of annual obstetric caseload and resource capacity. In total, 915 medical officers (ie, medical physicians who were affiliated with the gynaecology/obstetrics wards of the study hospitals) were trained on the provision of counselling and PPIUD insertion. An additional 5370 providers who were field staff (ie, public health midwives, nurses and other staff) were trained on the provision of counselling services only.[14] The training on contraceptive counselling was mandatory for field staff; however, only medical officers could insert PPIUDs as per the SLCOG recommendations.

We undertook an independent impact evaluation of the PPIUD Initiative to evaluate the causal effect on the uptake and subsequent continued use of PPIUDs. Six hospitals were selected from the phase II study hospitals, four of which were in Sinhala-majority regions and two in Tamil-majority. A full description of the impact evaluation design is described elsewhere.[15] In sum, FIGO collaborated with the SLCOG and the national government to select six hospitals that were tertiary care facilities and had high volumes of obstetric caseloads (>6000 per year). The intervention targeted large, tertiary hospitals primarily for assessing the feasibility of introducing and institutionalising counselling and PPIUD services as routine maternal healthcare. The six facilities were located in six districts (out of 25 districts) across Sri Lanka, and all facilities were classified as district general hospitals. In total, 101 providers participated in the intervention in these six study hospitals. Ethical approval as exempt was granted by the Institutional Review Board at Harvard University, as only de-identified data were provided to Harvard University for analysis. The study received approval from the Ethics Review Committee at the Faculty of Medicine, University of Colombo, Sri Lanka.

The Initiative consisted of training all providers on PPFP counselling and qualified providers (ie, medical officers) on PPIUD insertions. Qualified providers were medical officers holding a Bachelor of Medicine and Bachelor of Surgery (MBBS) degree from a state or foreign university; however, only a small percentage of providers had MBBS degrees from foreign universities. Training was done by a team of SLCOG representatives who organised a 1-day session with hospital staff. Sessions lasted 5 hours, and consisted of 3 hours of training on counselling and 2 hours of training on PPIUD insertion using Mama-U models that represent a uterus after birth. Mama-U models are manufactured by Laerdal Medical and used to support the training of PPIUD and uterine balloon tamponade insertions and

other postpartum uterus interventions. The training also included a demonstration on how to insert the PPIUD after a caesarean delivery. Additionally, a 3-hour session was held for facility-affiliated paramedical and field staff. Providers were certified for PPIUD insertions if they were able to successfully complete 10 insertions using the models. Live clinical insertions were not a part of the training.

Providers were expected to counsel all pregnant women about all available contraceptive options during routine antenatal care. Providers were to provide women with information, education and communication (IEC) materials, including leaflets and brochures. Women who were counselled on PPIUD and interested in using the method were able to provide advance consent for insertion and their medical charts were marked with their stated decision. Women were consented again at the time of admission and immediately before insertion.

Study design and data collection

This qualitative investigation was nested within the impact evaluation. To understand the implementation of the programme in study hospitals, we conducted in-depth interviews with 12 providers who were trained on PPIUD insertion and/or counselling between February 2016 and December 2018 in private locations in the six study hospitals. Providers were purposively selected based on study hospital and the length of time that they had been providing family planning services, meaning that we attempted to select both early-career (<5 years) and mid/late-career (≥5 years) providers at each hospital. However, in the case of Polonnaruwa, Monaragala and Chilaw, only providers who had been providing family planning services for less than 5 years were available for interviews. In these cases, we selected one provider with less than 1 year's experience and one provider with more than 1 year's experience. Consistent with qualitative research design, the sampling strategy was employed to achieve an in-depth understanding about the implementation of the PPIUD intervention,[16 17] rather than to minimise bias in selection, ensure generalisability of results and control for confounders.[16] The sample size was determined based on study aims and theoretical saturation in themes.[17] After two interviews were conducted in each hospital, the research team determined that no new information or themes were emerging from interviews and that saturation had been achieved.

We developed a semi-structured interview guide using formative evidence from the quantitative baseline data and preliminary results from an analysis of the intervention in phase I hospitals. The interview guide was designed to assess four primary themes of interest: (1) providers' knowledge and experiences with providing contraceptive services; (2) providers' PPIUD training experiences; (3) the extent to which the implementation was successful; and (4) providers' perspectives on scale-up and diffusion of PPIUD services. The guide was developed in English and translated into Sinhala and Tamil by independent professional translators

Table 1 Definitions and examples of key themes, postpartum intrauterine device impact evaluation, Sri Lanka, 2016–2018

Themes	Definitions	Verbatim quotes
Adoption	Willingness of maternal healthcare providers to implement the PPIUD Initiative	▶ Quote 1: "[Now], *I am very competent in inserting the postpartum IUD, and I am very competent in counselling women about PPIUD. Before* [the training], *I don't have much knowledge on PPIUD. Now, I have sufficient know-how on PPIUD.*" [Participant 7] ▶ Quote 2: "*Patients are not very educated on the postpartum period because everybody is concerned with the antenatal period and the intranatal period…, and mothers usually get pregnant. They don't know about contraceptive methods. They will go home and get pregnant very soon, and it will lead to abortions, preterm labour, … and all the things. That is why we have to be more concerned about the postpartum period.*" [Participant 10]
Implementation	Extent to which the components of the PPIUD Initiative were delivered as intended, including the training, counselling and PPIUD insertions	▶ Quote 3: "*…We only provide information about the advantages and disadvantages* [of methods], *on an individual basis; and sometimes we say, 'This is better for you'*". [Participant 1] ▶ Quote 4: "*If their level of education is high, we can tell them about more advantages and disadvantages* [of methods], *and they will also ask questions and we can clarify all their concerns. If a patient is a teenager or adolescent, we suggest that they go for IUDs rather than oral contraception. If the parity is high, we usually advise them to go for tubal ligation.*" [Participant 9] ▶ Quote 5: "*We enrol* [mothers] *into counselling, but our antenatal clinics are busy. So, we are not doing counselling one hundred percent. Usually we are spending only about 10–15 minutes with one patient. In between* [antenatal care], *we are giving contraception advice.*" [Participant 1] ▶ Quote 6: "*They are always saying, 'Without asking my husband, I can't do anything'.* [They say it] *like that.*" [Participant 4]
Maintenance	Sustainability and institutionalisation of the PPIUD Initiative in study hospitals and scale-up to other hospitals in Sri Lanka	▶ Quote 7: "*We have to go further up by counselling patients before they get admitted for delivery. They need time to think…, and they need to have some idea about all of the contraceptive methods. And there should be a resource that they can gather information if they are having problems. They have to have direct contacts or someone to ask.*" [Participant 3] ▶ Quote 8: "*There is no bleeding when using a model. It is not a living person. In the real environment, this is there. After delivery, mothers are in pain and there is bleeding. There is a big difference between the two. We have to adjust according to the situation, although the procedure is the same.*" [Participant 6]

IUD, intrauterine device; PPIUD, postpartum intrauterine device.

Table 2 Selected background characteristics of respondents, postpartum intrauterine device impact evaluation, Sri Lanka, 2016–2018

Participant number	Hospital	Sex	Age (years)	Position	Years in current position	Years providing family planning services
1	Nawalapitiya	Male	36	SHO	7	7
2	Nawalapitiya	Male	30	SHO	2	2
3	Nuwara Eliya	Male	31	SHO	3	3
4	Nuwara Eliya	Male	34	SHO	5	5
5	Polonnaruwa	Male	33	SHO	4	4
6	Polonnaruwa	Female	28	RHO	>1	>1
7	Monaragala	Female	30	MO	1.5	>1
8	Monaragala	Male	31	MO	2.5	3
9	Chilaw	Male	27	MO	>1	>1
10	Chilaw	Female	32	SHO	>1	2
11	Kalutara	Male	37	SHO	8	8
12	Kalutara	Female	31	SHO	3	3

Senior house officers (SHOs) are providers who conduct gynaecological and obstetric services (including deliveries, antenatal care, postnatal care, gynaecology services and family planning) under the supervision of senior providers. Medical officers (MOs) are providers who are completing their medical internships. Resident house officers (RHOs) are in the post-intern period but awaiting permanent appointments. MOs and RHOs share similar responsibilities, including providing the first contact with patients, identifying complications and informing SHOs, labour management, labour care, assisting obstetrician gynaecologists, and instrumental deliveries.
MO, medical officer; RHO, resident house officer; SHO, senior house officer.

(one fluent in Sinhala and one fluent in Tamil). The research team reviewed the translations and internally tested the guide for accuracy.

Four trained interviewers conducted interviews in private locations in study hospitals. Before each interview, interviewers read an informed consent script aloud and asked respondents to provide written informed consent. Respondents were able to have their questions answered about the study before the interview began. No identifying information was collected from participants, and all interviews were audio-recorded with permission. To facilitate the multilingual respondent pool, interviewers were matched to respondents who spoke the same language, including either English, Sinhala or Tamil.

Following completion of the interviews, all interviews that were conducted in English were directly transcribed into English, while the other interviews were transcribed into Sinhala or Tamil and then translated into English. Transcriptions were conducted by independent professional translators and were reviewed by the research team for accuracy. On average, interviews lasted approximately 45–60 minutes.

Data analysis

The transcribed data were analysed using the constant comparative method in ATLAS.ti (Version 8.0). A multistage analytical strategy was utilised, whereby two members of the research team developed a codebook using a mix of inductive and deductive coding. Specifically, the researchers read several transcripts, and in vivo and open codes were applied to all of the text. Next, a final codebook was developed by reviewing the codes and formulating definitions. Two research team members applied the final codes to all transcripts and met frequently to discuss coding strategy and emergent themes. After coding was completed, one member of the research team ran queries and code frequencies to identify major themes. The team reached agreement on final themes and defined the themes, using direct quotations from the transcripts as evidence.

The main themes are presented within the context of the RE-AIM framework. Table 1 outlines key themes, including definitions and examples of verbatim quotes. We note overlap of topics across all themes. For example, the provider training is discussed in both the Adoption and Implementation main themes, but different aspects of the training are addressed within each theme (eg, willing to participate in the training versus extent to which the training was implemented and received as intended).

Patient and public involvement

No patients were involved.

RESULTS

Background characteristics

Eight providers were male, while four providers were female (table 2). Participants were aged between 27 and 37 years. Providers had been providing family planning services for an average of 3 years (ranging from 1 to 8 years).

Adoption

Overall, providers were supportive of the Initiative and recognised the benefits of immediate contraceptive options for vulnerable populations. Regarding the training, many providers commented on its usefulness

and believed that the content learned improved their medical practice. Junior providers commented on how the training helped them learn about newly available contraceptive options for their patients (table 1, quote 1).

Most providers supported continued training efforts and displayed willingness to train newly rotated-in providers on counselling and PPIUD insertion. However, training on contraceptive counselling, as compared with PPIUD insertion, was perceived as less useful and not emphasised as strongly in respondents' narratives. While the Initiative, as a whole, was perceived to be acceptable (table 1, quote 2), many providers felt that the intervention was not appropriate for the service setting. Since most providers were primarily engaged in labour management and delivery, they reported that it was difficult for them to be concerned with PPFP counselling. Many felt that counselling should be conducted in satellite clinics and small health centres by preventive sector field staff (eg, public health midwives and nurses at antenatal care centres).

Implementation

Overall, the intervention was implemented inconsistently. Providers indicated that they applied many of the skills and lessons from the training into their practice. For example, providers discussed how they considered various demographic factors (eg, age and parity) when discussing contraceptive options with the clients (table 2, quote 3). Yet, at the same time, many providers also displayed biases in their counselling and pushed back on counselling all women. For example, some providers mentioned that they only tell selected women with high education about the benefits and risks of all methods (table 2, quote 4). There was a lack of attention paid to women's preferences and fertility desires; few providers mentioned women's preferences as a factor they prioritise in counselling. Further, while providers showed concern about counselling for vulnerable groups, such as unmarried women and adolescents, a couple of providers mentioned that they would not provide certain methods (including PPIUD) to these groups of women.

With regards to barriers to counselling, providers mentioned time constraints, lack of comprehensive information about methods, and lack of integration of men. First, providers mentioned they often lacked the time necessary to fully counsel women on all available and appropriate methods (table 2, quote 5). Providers reported that they tried to streamline counselling by providing handouts first, then provided additional information if requested. While this process alleviated providers' duties, many mentioned that their impressions were that their clients were not interested in contraception, since they did not ask about methods. Second, two providers reported that they did not receive training and education about all contraceptive methods. This lack of knowledge/skills made some hesitant to recommend any method but the PPIUD. Lastly, providers reported that it was often women's male partners who ultimately made family planning decisions. However, providers were not trained to counsel men. Thus, providers reported that this created issues when women were reluctant to provide advance consent to PPIUD insertion (table 2, quote 6).

Maintenance

All providers reported that they felt prepared to train others on counselling and insertions, and many providers had already begun training others. However, some providers were concerned about their ability to train others with busy schedules. Providers identified several different aspects of the training and counselling that could be improved to achieve successful scale-up. First, some providers noted that training sessions were hurried and felt that more time should have been allocated to specific topics. They highlighted that the training was the crux of the intervention and thus should be given the attention needed to master counselling and PPIUD insertion. Many providers felt that more field staff could be trained in counselling, so that women would be knowledgeable about methods prior to contact with themselves. They felt that this would reduce the time burdens associated with counselling and allow patients time to think about and discuss their contraceptive options with their families (table 2, quote 7).

Some providers noted that they did not get a chance to insert PPIUDs after the training, largely due to lack of interest by their patients. Some providers also noted that they or other providers were not supervised throughout practice insertion sessions, and thus did not receive feedback about insertion technique and placement. These providers suggested that two training programmes be held (ie, one for counselling and one for PPIUD insertion) so that they could receive detailed training on PPIUD insertion.

Many providers suggested that the training should incorporate live clinical insertions with women. Providers noted that actual insertions posed uniquely different challenges than those performed on the mannequin. Some providers experienced unique situations (eg, PPIUD insertion after caesarean section, expulsion, failed placements) for which they felt they were ill prepared (table 2, quote 8).

DISCUSSION

Many of the barriers we identified to implementation were not novel (eg, time constraints) and some were considered prior to implementation.[14] Yet, participants' narratives indicated that not all barriers had been mitigated, which ultimately presented challenges to adoption, implementation and maintenance. In a similar study about the Initiative in Nepal, barriers to adoption and maintenance were largely due to

health system failures, rather than providers' personal beliefs.[18] Indeed, many LMICs share similar barriers to implementation of evidence-informed maternal health interventions, such as material and financial resource constraints, human resource shortages and policy issues (eg, lack of clear policy on responsibilities).[19] Similarly, we found that providers supported the intervention but nonetheless did not consistently implement the intervention as intended, largely due to system-level barriers. Inconsistencies (eg, not counselling all women, counselling only about PPIUD, selectivity bias in counselling) seemed to be due to time constraints and a lack of clarity about the importance of providing comprehensive, high-quality information about all available contraceptive options to all pregnant women.

While providers faced health system barriers to adoption, a root cause of inconsistent implementation and adoption was the way in which the training was conducted (ie, in a group-based setting with no live clinical practice). A study comparing training approaches for the Initiative in Nepal found that providers performed better with an 'on-the-job' approach, rather than a 'group-based' approach.[20] The group-based training was similar to the training approach for Sri Lanka. In contrast, the on-the-job training occurred in actual hospital settings where providers were trained during their daily responsibilities.[20] A systematic review of in-service training designs for healthcare workers found that passive approaches, such as basic transfers of knowledge (eg, lectures and readings), do little to engage learners or to improve communication and critical thinking skills.[21] In contrast, approaches that engage providers in mental processing, such as self-directed learning, repetitive exposure, and situational learning, more effectively built skills and reinforced important messages.[21] It may be that a blended approach is more appropriate for the context of Sri Lanka, rather than a singular, group-based learning design. In future scale-up of the Initiative, implementers should consider training approaches that are more effective in promoting adoption.

The statistical generalisability of study findings are limited by the study design, as this was a small, qualitative study with a purposive sample. Further, the perspectives of the study participants may not represent all providers who participated in the intervention. However, the results provide critical insights into providers' perspectives into the implementation of the PPIUD Initiative, which the SLMOH plans to scale up on a national level. The primary findings also resonate with a larger body of literature on organisational and structural barriers to integration of health services in LMICs, and study findings can be transferable to other, similar settings (in Sri Lanka and other LMICs) and other contexts (eg, integration of multiple health services). Additionally, many interviews were held at the study facilities which may have increased the risk of social desirability bias. However, interviewers took measures to assure that respondents' privacy were protected, such as holding interviews in locations that assured both visual and auditory privacy, and no identifying information was collected. Further, the presence of the interviewer could have also contributed to social desirability bias. Yet, participants spoke frankly about issues with the Initiative, suggesting that social desirability bias was minimised.

Our findings suggest that the Sri Lanka PPIUD Initiative could be improved in several ways, and the lessons learned can be applied more broadly to other programmes aiming to integrate health services. First, provider training could be improved by incorporating elements on interpersonal communication, a key skill for any health provider. Given that time constraints were a primary barrier to counselling, it is important that providers understand and master effective communication techniques. Further, the training should emphasise evidence-based contraceptive counselling techniques that provide women with information about all available and appropriate contraceptive options. The training should also communicate medically accurate information about all contraceptive options, such as contraindications, and work to address providers' inaccurate beliefs about particular contraceptive methods. Second, the PPIUD insertion training should incorporate live clinical insertions. In the PPIUD Initiative in Tanzania, the training incorporated a 'train-the-trainer' model whereby 'master trainers' who completed the training were then expected to cascade training to other staff.[22] The Sri Lanka Initiative should incorporate strategies such as these that have been proven to improve implementation and provider buy-in. Further, other cadres of health workers could be trained on PPIUD insertion to improve access to services.

Despite a renewed interested in postpartum contraception and concerted efforts to improve access to services,[23] unmet need for contraception among postpartum women remains high.[1] Assessments of the reach and effectiveness of family planning programmes are often prioritised over understanding their adoption, implementation and maintenance, which ultimately influences how and to whom interventions are delivered. To improve and integrate PPFP programmes into routine maternal care services, more attention should be given to evaluating implementation efforts, as we have done in the present study. PPFP programmes, such as the PPIUD Initiative, should be created to be client-centred and incorporate elements of reproductive justice, especially when training providers with pre-existing biases.

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