Postpartum intrauterine device (PPIUD) insertion: A single centre follow-up telephone survey assessing clinical outcomes and client perception

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ABSTRACT

Introduction: Closely spaced pregnancies result in adverse maternal perinatal and infant outcomes. Postpartum Family Planning (PPFP) enables women to achieve healthy intervals between births, potentially averting maternal deaths and reducing child mortality. The PPIUD enables women to leave the birth facility with a safe, effective, long-acting, reversible method already in place.

The aim of the study was to study clinical outcomes and client perceptions on follow-up after insertion of PPIUD from 2014 to 2019 at the Teaching Hospital, Mahamodara (THM), Galle, Sri Lanka.

Results: A total of 46,815 deliveries were reported in the facility during the study period, and 470 (3.4%) PPIUD insertions were carried out. Only 67/470 (14.3%) women who had PPIUD responded to the survey. The median (IQR) duration of PPIUD in situ was 63 (39 - 76) months, and it was positively correlated with the satisfaction score (Spearman's rho 0.29, p=0.02). Out of all, 58 (86.6%) women recommended PPIUD to a friend as a PPFP method. Median (IQR) satisfaction score for the PPIUD was 9.5 (5.5 - 9.5), and most women (65.7%) were satisfied with PPIUD. However, 19.4% of women responded as 'Neutral' to the questionnaire. There were no uterine perforations or ectopic pregnancies.

Conclusions: The study shows that PPIUD is a good option as an effective contraceptive method before leaving the birth facility.

Keywords: *Copper, family planning services, intrauterine devices, postpartum period, PPIUD.*

Introduction

Postpartum family planning (PPFP) is a proven way of achieving improved health outcomes for women and children (1). Postpartum intrauterine device (PPIUD) has been shown to be a cost-effective PPFP method in low- and middle-income countries (LMIC) (2). The World Health Organization (WHO) advises a minimum of 24 months between a live birth and trying for the next pregnancy to minimize adverse pregnancy outcomes (3). Sri Lanka was the first country selected to implement the International Federation of Gynecology and Obstetrics (FIGO)-PPIUD initiative on account of its robust maternity care delivery system and relatively good health indicators in the region (4, 5).

The PPIUD project was carried out from 2014 to 2019 by the Sri Lanka College of Obstetricians and Gynecologists (SLCOG) with the collaboration of the Family Health Bureau (FHB), Ministry of Health, Sri Lanka as the key stakeholder (5). The overall findings on the implementation of this project have been previously reported (5, 6). Women's opinions and satisfaction levels regarding PPIUD have not been reported previously. This study evaluates its long-term impact and presents clinical outcomes a few years after the insertion of PPIUD (from 2014 to 2019) at the Teaching Hospital, Mahamodara (THM), Galle, Sri Lanka.

Methods

A descriptive cross-sectional study was performed during the period of 1st of October to 30th of November 2020 as a telephone survey in Galle, Sri Lanka. All the PPIUD insertions carried out during the SLCOG-led PPIUD project at THM, Galle, Sri Lanka were included in the study (6). THM is the second largest maternity hospital in Sri Lanka, and it was the main focal point for the SLCOG-led PPIUD project in the Southern Province, Sri Lanka.

Contact details were obtained from the hospital records. Further assistance was obtained from the Medical Officers of Health and Public Health Midwives to trace women from the community in Galle region. Data were obtained assessing demographic data, details regarding PPIUD, relevant clinical outcomes such as complications, failures, expulsions and removals, and overall satisfaction with the PPIUD method using 1-10 visual analogue scale (VAS). A separate open-ended question was there inquiring opinions regarding the PPIUD as a PPFP.

Standard statistical tests were used. Descriptive statistics were used to summarize data. Median and interquartile range (IQR) were used since data distribution was not normal according to the normality tests. Spearman's correlation was used to see correlation between the duration of PPIUD and the overall satisfaction score. Ethical approval was obtained from the Ethics Review Committee, Faculty of Medicine, University of Ruhuna, Galle, Sri Lanka. Prior approval was also taken from SLCOG to publish the data taken from THM separately.

Results

A total of 46,815 deliveries took place in the facility during the study period and 470 (3.4%) PPIUD insertions had been carried out with informed written consent from the pregnant women for PPIUD insertion. Only 67/470 (14.3%) women who have PPIUD responded to the survey. Demographic and baseline characteristics are summarised in Table 1. Median (IQR) age was 33 (30 - 37) years, median (IQR) parity was 2 (2-3) and median (IQR) duration of PPIUD in-situ was 63 (39 - 76) months.

Duration of PPIUD was positively correlated with the satisfaction score (Spearman's rho 0.29, p=0.02). There were 4 (6%) pregnancies reported and only one had resulted with her PPIUD in-situ while the other three had removed their PPIUD to plan for a pregnancy. Out of all, 58 (86.6%) women recommended PPIUD to a friend as a PPFP method. Median (IQR) satisfaction score for the PPIUD was 9.5 (5.5 – 9.5) and a majority of women (65.7%) were satisfied as shown in Table 2. However, 19.4% of women who responded as 'Neutral' needs to be considered as feedback. Regarding the complications, missing thread was reported in 6%, pelvic infections in 1.5% and no uterine perforations or ectopic pregnancies. Majority of opinions regarding the PPIUD as a PPFP method were positive, and women expressed PPIUD as a very good option. The absence of hormonal side effects was the most common positive comment. Only 5 (7.5%) women mentioned negative feelings, including lack of effectiveness due to spontaneous expulsion.

Table 1: Demographic and baseline characteristics of the sample.

Demographic / baseline characteristic, N=67	n (%)
Age in years	
20-29	16 (23.9)
30-39	42 (62.7)
Above 40	9 (13.4)
Parity	
Nulliparous	14 (20.9)
Multiparous	53 (79.1)
Method of PPIUD insertion	
Vaginal	61 (91)
Intra-caesarean	6 (9)
Current status of PPIUD	
Still in-situ	45 (67.2)
Spontaneously expelled	6 (9)
No, removed	16 (23.9)
Reasons for removal	
Thread problems	2 (3)
Expecting a pregnancy	8 (11.9)
Other	6 (9)
Timing of expulsion in months	
Less than six months	5 (7.5)
After six months	1 (1.5)
Current contraceptive method	
None	3 (4.5)
Male condoms	2 (3)
Injectable progesterone	2 (3)
Natural methods	1 (1.5)
Combined oral contraceptive pills	2 (3)
Progesterone implants	2 (3)
Missing data	2 (3)
Complications of PPIUD	
No complications	34 (50.8)
Heavy menstrual bleeding	12 (17.9)
Pelvic infections	1 (1.5)
Missing of thread	4 (6)
Sexual difficulties	11 (16.4)

PPIUD: Postpartum intrauterine device.

Table 2: Satisfaction with the PPIUD according to the 1-10 visual analogue scale.

Level of satisfaction	n (%)
Extremely unsatisfied	9 (13.4)
Unsatisfied	1 (1.5)
Neutral	13 (19.4)
Very satisfied	4 (6)
Extremely satisfied	40 (59.7)

PPIUD: Postpartum intrauterine device.

Discussion

This is the first-ever follow up study done for the National project of PPIUD in Sri Lanka. We have shown that PPIUD is a good option as an effective contraceptive method before leaving the birth facility. However, there are some aspects which need improvement. This study is one of the earlier studies assessing the follow-up outcomes of the PPIUD. This short paper from a resource-limited setting revealed that PPIUD is an effective method, and most women are satisfied with it as a PPFP method.

It is now well established that the complication rates are very low with the PPIUD (7). However, there is a dearth of studies on women's opinions and the level of satisfaction with its use. Client perception after implementation of a health intervention is an important step. A systematic review by Chaillet *et al.,* mentioned that identification of barriers is necessary to achieve a better uptake of interventions and to improve implementation of clinical practice strategies (8). Further, multifaceted strategy based on audits and feedback have a special value in obstetrics to identify specific barriers to behaviour change (8). We found a median (IQR) satisfaction score of 9.5 (5.5 - 9.5) according to the VAS. Although a majority of women described the good aspects of the PPIUD, 13 (19.4%) of women responded as 'Neutral' which can be used to improve the outcomes of the programme. As in Table 1, a higher rate of heavy menstrual bleeding (12/67, 17.9%) might be a result of the smaller sample size and a potential deficit of a single closed-ended question to assess this.

Out of the six PPIUDs expelled spontaneously, five have expelled within six months of insertion indicating a probable failure in the inserting technique. Complications (missing thread - 6%, pelvic infections - 1.5% and no uterine perforations) rates were comparable with the reported figures (9, 10). A larger follow up study in India summarizing 2,733 women who had PPIUD insertions showed that most women were satisfied with their choice of immediate insertion and the rates of complications were relatively low (11). Main limitations of this large study are follow-up has done only up to six weeks postpartum and women need to be followed up longer for long-term satisfaction and complications. In our study, there was a minimum of one year gap for the follow up which is the main strength in ours. There was another retrospective telephone follow up study (n=193) from Australia and the design was similar to our study (12). This study has shown higher rates of expulsion and lower satisfaction rates compared to those reported elsewhere in the world. Higher expulsion rates can be attributed to lower satisfaction. The authors have mentioned that being a high-income setting, a higher postpartum attendance with general practitioners than in other settings could be the reason to pick them. However, the findings of this study are different to the others and cannot be generalised to other settings. Their other complications were similar to the literature (12). Another prospective study (n=372) has shown 91% satisfaction rate after three years postpartum and the authors have highlighted that the highest rate of PPIUD was noted amongst clients who were counseled properly showing the importance of basic counselling antenatally (13).

There were several limitations that recognised in the present study. The major limitations were poor response rate and small sample size. The most possible reasons could be incorrect contact details, incorrect addresses of clients, a significant number of families shifting to different locations and the COVID-19 pandemic. There was no control arm. As this is a single-centre study, the results cannot be generalised.

In conclusion, this short report provides a worked example of the clinical outcomes and client perceptions of the PPIUD as a PPFP method from a resource-limited setting. These findings should guide future prospective studies and PPIUD implementation programmes to yield optimal outcomes. In addition, this can be a useful aid for the policymakers in making future PPIUD and PPFP initiatives a success with better client perceptions.

The authors declare that they have no competing interests. DLWD was the coordinator for the SLCOG-led PPIUD project in the Southern Province of Sri Lanka.

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