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Acceptance of Post-Partum Intrauterine Contraceptive Device During Cesarean Section

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ABSTRACT

The world population is increasing, and approximately 115 million women have unmet needs for family planning. Institutional deliveries are increasing. Institutional deliveries and cesarean sections provide an excellent opportunity to provide women with a long-term, safe, effective and reversible method of contraception in the form of Post-Partum Intrauterine Contraceptive Device (PPIUCD). **Objective:** To assess the acceptability of PPIUCD as a method of family planning. **Methods:** A descriptive cross-sectional study was conducted on patients undergoing elective or emergency cesarean sections (C-section) in the Department of Obstetrics and Gynaecology, Social Security Teaching Hospital, Multan Road, Lahore. 116 women were counselled, and in those who opted for it, an IUCD was placed inside the uterus after delivery of the placenta during C-section. This study set 95% confidence (Z=1.96) expected prevalence p from prior literature/pilot, and a conventional margin of error d=0.05 (typical range 0.03–0.05). Where applicable, the study applied finite population correction, then inflated for design effect (if clustered) and 10% nonresponse. **Results:** Total acceptance rate was 38.79%. The majority of the patients belonged to the age group 19 to 30 years, and the mean age was 30.42 ± 5.28 years. Parity was >2 in 56.9% patients, while in 43.1% parity was ≤2. 24.14% clients were uneducated, and 76.72% belonged to a poor socio-economic group. **Conclusions:** PPIUCD as inserted during cesarean section is an effective, acceptable and safe method of contraception, with the rate of acceptance of 38.79 %. Previous cesarean history and proper counselling enhance acceptance.

INTRODUCTION

The world population is 8.2 billion. China and India are at the top with approximately 1.43 billion each, Pakistan is on No. 5 with a population of 250 million, according to world population meter. Pakistan's population is equivalent to 3% of the total world's population, out of which 35% are residents of urban areas [1]. The average life expectancy in Pakistan is around 67 years; a very high rate of infant mortality is noted, which is estimated to be around 55.8 deaths per 1,000 live births [2]. The population size in the urban areas is high, with 35% of the urban residents residing in urban centers, and this poses unique difficulties to family planning and reproductive health care services. This renders the immediate deployment of effective contraceptive measures all the more imminent, especially taking into consideration the steep numbers of unwanted pregnancies associated with socio-economic issues like illiteracy and poverty [3]. Traditionally, contraception after birth is advised to start in six weeks after birth; though there has been a growing case to start the use of long contraceptives like the Postpartum Intrauterine Contraceptive Device (PPIUCD) immediately after childbirth, especially during cesarean section. The PPIUCD has been identified to be safe, highly effective, cost-efficient and breastfeeding compatible, thus strongly recommended to women during the postpartum phase [4, 5]. It is reported that short-term insertion immediately after

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cesarean birth is not only a form of prevention of unintended pregnancy but is also more effective in terms of the provision of long-term contraceptives to postcelestic women [6]. Moreover, studies indicate that tolerance of PPIUCDs in cesarean sections is known to correlate with high retention rates and satisfaction of users [7, 8]. Although the use of PPIUCD insertion is beneficial, there has been a downright lack in acceptance; hence the need to explore the areas that play an important role in the outcome of whether women will accept or not [9]. The counselling and education of healthcare providers are very important factors that determine whether a woman will use PPIUCDs during postpartum visits. Evidence suggests that engaged attention and interactive counselling play a huge role in increasing the acceptance of PPIUCDs among women [10, 11]. Additionally, socio-economic factors like level of education and prior usage of contraceptives also play a critical role in DFP by women since it has been observed that the more learning a woman acquires, the greater is the acceptance rate of the PPIUCD [12]. Along with personal and socio-economic factors, there are certain issues specifically connected with cesarean sections that do not favor the introduction of PPIUCDs. The significant aspect of the surgery of a cesarean section may be observed with mothers showing more willingness and interest in the employment of contraceptive techniques since this is the time when they can be introduced to effective family planning techniques right after delivery [13]. It is noteworthy that a significant number of women do not know about the safety and effectiveness of PPIUCDs during breastfeeding, and the problem of a misguiding culture, which does not allow women to make informed decisions regarding the choice of contraceptive, is also widespread [14]. Therefore, a fundamental training of healthcare providers on counselling strategies and the elaboration of the education outreach are the key measures to increase PPIUCD acceptance rates [15, 16].

Despite the proven safety and effectiveness of Post-Partum Intrauterine Contraceptive Devices (PPIUCD), their utilization during cesarean section remains suboptimal in many low- and middle-income countries, including Pakistan. Although institutional deliveries are increasing, opportunities for immediate postpartum contraception are often underutilized. Local data exploring acceptance rates and associated demographic and obstetric factors remain limited, particularly in public sector hospitals. This gap highlights the need to assess acceptance patterns to inform targeted counselling and policy interventions. This study aims to elucidate the acceptance rate of PPIUCDs during cesarean sections, contributing to enhanced family planning outcomes and improved maternal health in Pakistan.

METHODS

This was a descriptive cross-sectional study conducted during November 2019 to March 2020 in the Department of Obstetrics and Gynaecology, Social Security Teaching Hospital, Multan Road, Lahore. Ethical clearance was obtained from the ethical committee of the Social Security Teaching Hospital, Multan Road, Lahore (No.10/19). The study population was 116 full-term antenatal women attending labor room and undergoing elective or emergency cesarean section. $n=Z^2P(1-P)/d^2$ [17]. n=116, n = required sample size, Z = 95% confidence interval (1.96), P = prevalence (27.2%) [18] and d = margin of error (8.1%). Informed Consent was taken before counselling. Patients were counselled about PPIUCD on three occasions: 1. During the antenatal period, 2. At their admission to labor ward and 3. Before going to the operating theatre for elective or emergency cesarean section. All antenatal women admitted for delivery in our hospital were instructed for PPIUCD. Women in the reproductive age group, i.e. 18-44 years of age, Gestational age 36 to 40 weeks, undergoing elective or emergency cesarean section, after counselling, who opted for PPIUCD with no history of infections, Hb >8gm/dl and AMTSL universally provided after delivery of the baby were included in the study. While women having fever during labor, having active STD or high risk for STD, lower genital tract infection, ruptured membranes for >18 hours before cesarean section, uterine abnormalities e.g., Bicornuate uterus, septate uterus, fibroid uterus distorting uterine cavity, unresolved postpartum hemorrhage, uterine atony and patients who refused for PPIUCD were excluded from the study. Following delivery of the placenta uterine cavity was inspected for the presence of malformations. The IUCD was removed from the insertion sleeves. The uterus is stabilized by grasping it at the fundus. IUCD is held between the middle and index fingers. It was inserted inside the uterus through a uterine incision and released at the fundus of the uterus. The hand was removed slowly and carefully from the uterus, not to dislodge the IUCD. Enough care was taken not to include IUCD strings during uterine closure. The IUCD client card was filled out afterwards, showing the type of IUCD and the date of insertion. She was informed again of the side effects of the IUCD and about the normal postpartum period. Follow-up visit for IUCD planned, written on the card and informed to the patient. At the time of discharge, she was asked about any queries about IUCD and to report to the hospital at any time if she had: foul-smelling vaginal discharge, Severe lower abdominal pain, fever, chills or feeling of being unwell, Suspicion of pregnancy or Suspicion of IUCD expelled. The data were entered and analyzed using IBM SPSS version 26.0. The continuous variables are expressed as Mean ± SD,

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whereas the categorical variables are in the form of frequencies and percentages.

RESULTS

A total of 116 women were included in the study. The mean age of women was 30.42 ± 5.28 years. 80 (68.97%) women were 19 to 30 years of age, and 36 (31.03%) women were 31 to 40 years of age. 28 (24.14%) women were uneducated, 66 (56.90%) had primary to intermediate level of education, and 22 (18.97%) had bachelor's or higher level of education. Parity was ≤2 in 50 (43.10%) women and >2 in 65 (56.90%) women. Among all the women, 89 (76.72%) had low socioeconomic status, and 27 (23.28%) had middle socioeconomic status, Table 1.

Table 1: Baseline Details of All Patients

Characteristics	Frequency (%), Mean ± SD
Mean Age (Years)	30.42 ± 5.28
Age (Years)	
19 to 30	80 (68.97%)
31 to 40	36 (31.09%)
Education	
Uneducated	28 (24.14%)
Primary to Intermediate	66 (56.9%)
Bachelor's or Higher Level	22 (18.97%)
Parity	
≤2	50 (43.1%)
>2	66 (56.9%)
Socio-Economic Status	
Low	89 (76.72%)
Middle	27 (23.28%)

Among the study population, 33 (28.45%) patients had a history of one previous Cesarean section, 45 (38.79%) had previous two Cesarean sections, 17 (14.66%) had previous 3 Cesarean sections, and 21 (18.10%) had previous normal vaginal deliveries, Table 2.

Table 2: Previous History of C-Sections

Previous History of C-section	Frequency (%)
1	33 (27.45%)
2	45 (38.79%)
3	17 (14.66%)
SVDs	21 (18.1%)

Among all the included patients, the acceptance rate of PPIUCD was 45 (38.79%), while 71 (61.21%) women refused to adopt the IUCD method for contraception due to different reasons, Figure 1.

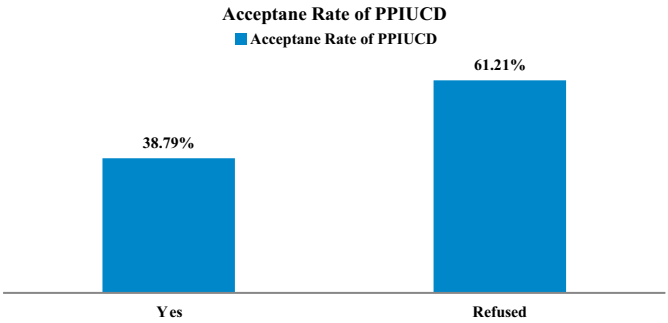

Figure 1: Acceptance Rate of PPIUCD

Among patients who accepted PPIUCD 10 (22.2%), patients had a history of previous one Cesarean section, 15 (33.3%) had previous two Cesarean sections, and 20 (44.4%) cases had previous three Cesarean sections, Table 3.

Table 3: Acceptance of PPIUCD in Women Who Have a Previous History of C-Sections

Characteristics	Frequency (%)
Previous History of C-Section	
1	10 (22.2%)
2	15 (33.3%)
3	20 (44.4%)

PPIUCD acceptance rate increased with the increasing number of previous Cesarean sections

DISCUSSION

The acceptance of PPIUCD among women undergoing C-sections is critical in maternal healthcare, chiefly given the observed acceptance rate of 38.79% in the current study. This percentage reveals a range of influencing factors, including parity, educational background, and previous delivery experiences. The demographic data of the participants show a mean age of 30.42 years, with the majority between the age group of 19 to 30 years, which is in line with previous research indicating that younger women tend to have a higher acceptance of long-acting reversible contraceptives [8]. It seems that educational level is also tied to acceptance; 24.14% of the group had no education, and 56.90% finished only primary to intermediate school. Therefore, giving more educational information and counselling may increase the rate of acceptances, based on studies demonstrating that education and counselling aid in using contraception postpartum [19, 20]. What is interesting is that those who had prior cesarean sections were more likely to accept PPIUCD. According to the data, the more cesareans someone had had, the higher the acceptance rate: a large fraction, 44.4%, of women who accepted had three or more prior cesareans, 33.3% had two and 22.2% had one. More experience with C-section deliveries seems to lead women to be happier with the procedure and what it means for their family planning after childbirth. This discovery is backed by results demonstrating that how postpartum contraception is

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presented can strongly affect women's acceptance and opinion [21]. Also, most individuals involved (76.72%) were ranked as low socio-economic status. Such a status might make gaining access to contraceptive services more difficult for them. Since financial problems and lack of access to healthcare can affect whether PPIUCD is accepted, this context is very important [22]. Making healthcare policies and support programs better may offer a way to raise the satisfaction of postpartum women and earn higher acceptance rates for them. Though a high acceptance rate of PPIUCD is positive for health services, the fact that many women did not use PPIUCD calls for increased efforts. Learning what leads women to refuse IUCD can improve how counselling and education are carried out, as studies have revealed that false beliefs about the safety and effectiveness of IUD are common [23]. This study was limited by its single-center, cross-sectional design and relatively small sample size, which may restrict the generalizability of findings. Long-term follow-up to assess continuation rates, expulsion, complications, and patient satisfaction was not conducted. Additionally, reasons for refusal were not explored in depth. Future multicenter studies with longitudinal follow-up and qualitative assessment of barriers to acceptance are recommended to strengthen evidence and guide effective postpartum family planning strategies.

CONCLUSIONS

It was concluded that PPIUCD is an acceptable and practical postpartum contraceptive method in the course of cesarean section. The socioeconomic status, education, and parity affect the acceptance. Increased awareness and targeted counselling can go a long way to increasing its acceptability, aiding improved family planning results.

Authors' Contribution

Conceptualization: GI
Methodology: GI
Formal analysis: GI
Writing and Drafting: ZH, SJ, AA, KUK, AH
Review and Editing: ZH, SJ, AA, KUK, AH, GI

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

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