



Indications of Intrauterine Contraceptive Devices Insertion in Ayub Teaching Hospital Abbottabad

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ABSTRACT

Background: The intrauterine contraceptive device is one of the frequently used methods of contraception. This mode of contraception is long lasting and does not require adherence on a day-to-day basis. There are many socio-cultural and obstetric determinants that play an important role in the usage of this mode of contraception. **Objective:** To determine the indications of intrauterine contraceptive device insertion in women presenting to a tertiary care hospital. **Study Design:** Cross sectional study. **Duration and Place of Study:** This study was conducted from 15 January 2025 to 15 May 2025 in Department of Obstetrics and Gynaecology, Ayub Teaching Hospital. **Methodology:** Total 114 women aged 18–49 years undergoing intrauterine contraceptive device insertion were included. Indications including low family income, multiparity, less age of youngest child, history of abortion and long term pregnancy prevention were assessed. Data was analysed using statistical package for social sciences. Mean and standard deviation was calculated for quantitative variables while frequency and percentage for categorical variables. **Results:** Mean age was 34.61 ± 5.87 years. Majority were multipara 110 (96.5%). Most common indication was prevention of pregnancy for long time 87 (76.3%), followed by low family income 50 (43.9%), history of abortion 26 (22.8%) and less age of youngest child 22 (19.3%). Significant association was found between age and less age of youngest child ($p < 0.001$). **Conclusion:** Our study has concluded that multiparity and desire for long term contraception are main indications.

INTRODUCTION

The intrauterine contraceptive device is another form of contraception that is frequently used.¹ This is because they are easily installed in the uterus by trained personnel. They have the advantage of being inexpensive and convenient since the client need not take anything to prevent pregnancy each day.² They can be of different types but the copper-based one is most commonly used. It works by producing a local reaction on the lining of the womb hence preventing fertilization from taking place. It is very effective since it has a high efficacy rate and can last for a long time without causing any complications.³

Low-income families serve as an important indication for the use of IUCD where couples opt for a safe and cost-effective form of contraception that can last them for a longer period.⁴ The benefits offered by IUCD include the fact that there is no need for constant replenishment through frequent purchase of oral tablets or injections.⁵ Multiparous women often require IUCD because they have almost completed their family size and want to space out or limit future pregnancy.⁶ Similarly, if there is a young child in the family, the mother often prefers waiting until her child has been sufficiently cared for before giving birth

to another child.⁷

Abortion also marks a setting in which IUCDs could be used to avoid multiple instances of unwanted pregnancies and possible complications arising from them.⁸ Women who have had an abortion in their past should receive proper contraceptive advice and the use of IUCDs will serve the purpose well since its application is not user-dependent.⁹ In addition, persons looking forward to having pregnancy prevented on a long-term basis through non-permanent measures stand to gain from using IUCDs due to the fact that they provide long-acting contraceptive measures.¹⁰

Menstrual problems and unplanned conception remain significant issues amongst reproductive age females, and the use of IUCDs is influenced by a variety of social and obstetric factors. With regard to local conditions, information regarding the real reasons for IUCD placement is limited and insufficiently documented, especially at public hospitals. Clarification of such indications including poor family socioeconomic status, multiparity, short birth spacing, and past history of induced abortion will be helpful in improving counseling practices and family planning programs. This study is therefore needed to

identify the common indications of IUCD insertion in our population so that better strategies can be made to promote its appropriate use.

METHODOLOGY

This cross sectional study was conducted in the Department of Obstetrics and Gynaecology at Ayub Teaching Hospital from 15 January 2025 to 15 May 2025. Approval was obtained from the institutional ethical committee (Approval Code/Ref No: RC-EA-2024/233). The sample size was 114 patients which was calculated by using WHO sample size software with 95% confidence level, 7% margin of error and expected frequency of preventing pregnancy for long time as 17.6%.¹¹

Inclusion Criteria

Women aged 18–49 years, married, any parity and undergoing insertion of intrauterine contraceptive device were included.

Exclusion Criteria

Women having history of distorted uterine anatomy, pelvic inflammatory disease, Wilson's disease or sexually transmitted infection were excluded from study.

Written informed consent was taken from all patients before data collection, ensuring confidentiality and explaining that there was no risk involved in participation. Baseline demographic variables including age, parity, BMI, profession, socioeconomic status, education level and residential status were recorded.

Detailed history was taken from all patients and previous medical record was assessed for history of abortion. All subjects were counseled about intrauterine contraceptive devices. Reasons considered during interviews included financial status, multiparous nature of the subject, younger age of the youngest child, history of abortion, and prevention of pregnancy for an elongated period. Financial status was determined by the fact that the woman or the man/husband of the woman had an income below Rs. 30,000 per month. Multiparity referred to the woman being pregnant two or more times and giving birth to viable children within a period of 24 weeks, calculated from the last menstrual period. Younger age of the youngest child was considered if the age of the youngest child was below 2 years. History of abortion was taken into account if there was any previous experience of abortion. Prevention of pregnancy for a long period referred to the fact that there was no intention to have babies in the near future.

Data was analysed using IBM SPSS Statistics. Quantitative variables like age, parity and BMI was presented as mean \pm standard deviation. Categorical variables such as socioeconomic status, education level, residential status and all indication variables was presented as frequency and percentages. Stratification of indications was done with respect to age, socioeconomic status, education level and residential status. Post stratification chi square test or Fisher exact test was applied and p value ≤ 0.05 was considered statistically significant.

RESULTS

The mean age of patients was 34.61 ± 5.87 years, mean parity was 3.82 ± 1.54 , and mean BMI was 29.41 ± 3.07 kg/m². Majority of women were from middle socioeconomic class 50 (43.9%), followed by poor 34 (29.8%) and rich 30 (26.3%). Regarding education, primary level was most common 45 (39.5%), then secondary 25 (21.9%), while uneducated and higher both were 22 (19.3%) each. Most patients belonged to urban area 69 (60.5%) while rural were 45 (39.5%) (Table 1)

Table 1
Patient Demographics

Demographics		Mean \pm SD / n (%)
Age (years)		34.61 \pm 5.87
Parity		3.82 \pm 1.54
BMI (kg/m ²)		29.41 \pm 3.07
Socioeconomic Status	Poor n (%)	34 (29.8%)
	Middle n (%)	50 (43.9%)
	Rich n (%)	30 (26.3%)
Education	Uneducated n (%)	22 (19.3%)
	Primary n (%)	45 (39.5%)
	Secondary n (%)	25 (21.9%)
	Higher n (%)	22 (19.3%)
Residence	Rural n (%)	45 (39.5%)
	Urban n (%)	69 (60.5%)

For indications of IUCD insertion, low family income was present in 50 (43.9%) patients, while majority were multipara 110 (96.5%). Less age of youngest child was seen in 22 (19.3%), history of abortion in 26 (22.8%), and most common reason was prevention of pregnancy for long time in 87 (76.3%) patients (Table 2)

Table 2
Frequency of Indications of Intrauterine Contraceptive Devices Insertion

Indications		Frequency	% age
Low family income	Yes	50	43.90%
	No	64	56.10%
Multipara	Yes	110	96.50%
	No	4	3.50%
Less age of youngest child	Yes	22	19.30%
	No	92	80.70%
History of abortion	Yes	26	22.80%
	No	88	77.20%
Prevent pregnancy for a long time	Yes	87	76.30%
	No	27	23.70%
Total		114	100%

In stratified analysis, significant association was observed between age and less age of youngest child ($p < 0.001$). Education showed significant association with low family income ($p < 0.001$), multiparity ($p < 0.001$), and prevention for long time ($p = 0.027$). Residence was significantly associated with low family income ($p < 0.001$). Socioeconomic status also showed significant association with low family income ($p < 0.001$) (Table 3)

Table 3
Association of Indications with Demographic Factors

Variable	Category	Low family income n(%)	Multipara n(%)	Less age of youngest child n(%)	History of abortion n(%)	Prevent pregnancy for a long time n(%)	p-value
Age (years)	≤35	24 (39.3%)	57 (93.4%)	22 (36.1%)	15 (24.6%)	46 (75.4%)	0.297 / 0.122 / <0.001* /
	>35	26 (49.1%)	53 (100.0%)	0 (0.0%)	11 (20.8%)	41 (77.4%)	0.626 / 0.807
Education	Uneducated	18 (81.8%)	22 (100.0%)	6 (27.3%)	5 (22.7%)	19 (86.4%)	<0.001* / <0.001* / 0.454 / 0.557 / 0.027*
	Primary	24 (53.3%)	43 (95.6%)	10 (22.2%)	13 (28.9%)	30 (66.7%)	
	Secondary	6 (24.0%)	24 (96.0%)	4 (16.0%)	5 (20.0%)	17 (68.0%)	
	Higher	2 (9.1%)	21 (95.5%)	2 (9.1%)	3 (13.6%)	21 (95.5%)	
Residence	Rural	37 (82.2%)	44 (97.8%)	11 (24.4%)	12 (26.7%)	36 (80.0%)	<0.001* / 0.918 / 0.261 / 0.428 / 0.455
	Urban	13 (18.8%)	66 (95.7%)	11 (15.9%)	14 (20.3%)	51 (73.9%)	
SES	Poor	34 (100.0%)	33 (97.1%)	6 (17.6%)	11 (32.4%)	28 (82.4%)	<0.001* / 0.687 / 0.540 / 0.214 / 0.548
	Middle	10 (20.0%)	49 (98.0%)	12 (24.0%)	8 (16.0%)	36 (72.0%)	
	Rich	6 (20.0%)	28 (93.3%)	4 (13.3%)	7 (23.3%)	23 (76.7%)	

*Fischer Exact Test

DISCUSSION

The objective of this research is to determine the indicators for IUCD and its correlation with maternal factors. According to the results, the most significant indicator found was the presence of multiparity among the respondents (n = 110, 96.5%). The above finding reveals the fact that with increased parity, there is an increased need for long-term contraception. This is because of completion of desired family size and the willingness to refrain from having any more children. Another significant indicator identified in this study was the desire for long-term pregnancy prevention (n = 87, 76.3%) by using a contraceptive method that is both reliable and reversible. Another interesting indicator found was that of low income level, where 43.9% of the respondents had low household incomes. A total of 22.8% respondents had a history of abortion.

The present findings show majority women were multipara 110 (96.5%) and main indication was prevention of pregnancy for long time 87 (76.3%), which is in agreement with Manaswini K *et al.*¹² where higher parity and socioeconomic factors influence IUCD acceptance, suggesting that women with completed family size prefer long acting reversible methods due to effectiveness and convenience. Similar trend also seen by Nazeer S *et al.*¹³ where gravidity and education had significant association with IUCD use, supporting that reproductive experience increase acceptance and need for spacing or limiting births.

Low family income was found in 50 (43.9%), which is comparable with findings of Manaswini K *et al.*¹² showing socioeconomic status as important determinant, as IUCD is cost-effective and suitable for low-resource settings. However, Khan M *et al.*¹⁴ reported no significant association with socioeconomic status, difference may be due to variation in counselling practices and smaller sample size, which can affect decision making behaviour. History of abortion was present in 26 (22.8%), which is partially similar to Karaçor T *et al.*¹⁵ where IUCD-related pregnancy outcomes and abortion risks were highlighted, indicating that previous adverse reproductive events increase likelihood of choosing reliable contraception to avoid recurrence. Biological reason may be increased awareness and fear of complications after abortion. Education showed significant association with indications, especially low income and multiparity, which is consistent

with Nazeer S *et al.*¹³ where education had strong impact (p=0.000), indicating that low education level lead to poor knowledge and higher fertility rates, thus increasing IUCD uptake for limiting births. In contrast, Schwartz B *et al.*¹⁶ showed good continuation even in young educated population, difference may be due to better counselling and healthcare access in developed settings.

Age-related finding showed significant association with less age of youngest child, reflecting closely spaced pregnancies in younger women, which aligns with Ansari A *et al.*¹⁷ where reproductive characteristics like parity influence IUCD acceptance, as younger women often require spacing methods. Physiologically, shorter birth interval increase maternal depletion, so contraception is more needed.

Rural residence and poor socioeconomic status showed significant association with low family income, which is in line with general trend reported by multiple studies including Manaswini K *et al.*¹² indicating that limited resources and healthcare access influence contraceptive choice. This pattern differ slightly from Khan M *et al.*¹⁴ possibly due to improved counselling in their setting reducing socioeconomic disparities in decision making.

It is noteworthy that this particular study has been carried out in one center only, hence limiting its applicability to a wider range of populations. Another limitation of this study is the fact that there were very few subjects, which would have reduced the statistical power of this study. Again, this was a study that was conducted over a short period of time, therefore making it difficult to determine whether there were any long-term effects.

CONCLUSION

The study shows that IUCD insertion is mainly driven by multiparity and the need for prolonged contraception. Social and educational factors are other important determinants of IUCD use. Age and spacing between births are additional predictors of IUCD use. Generally, the IUCD can be considered an appropriate and effective method of family planning among this community.

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