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Effectiveness of Contraceptive Counseling in Perinatal Period

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ABSTRACT

Background: Contraceptive counseling during the perinatal period plays a crucial role in reducing unintended pregnancies, particularly in women with higher parity. However, the efficacy of contraceptive counseling remains under investigation, with varying success across different demographic groups. **Objective:** To determine the efficacy of contraceptive counseling in perinatal period at AIMS hospital Azad Jammu and Kashmir. **Study Design:** Descriptive study. **Duration and Place of Study:** The study was conducted from May 2024 to May 2025 at the Department of Obstetrics and Gynaecology, AIMS Hospital, Muzaffarabad, AJK. **Methodology:** A total of 196 women aged 20–40 years, married, with a parity of ≥4, and in the perinatal period were included in the study. Participants were counseled on one of the following contraceptive methods: male condoms, emergency contraceptive pills, oral contraceptive pills, injectable contraceptives, or IUCD. After 12 months, the efficacy, defined as no unintended pregnancies, was evaluated. **Results:** The mean age of participants was 31.2 ± 4.6 years, with a mean parity of 5.6 ± 1.1. Among participants, 67.9% reported contraceptive counseling efficacy, while 32.1% did not. Stratified analysis revealed that efficacy was significantly associated with the perinatal period, socioeconomic status, parents' education, residential status, and contraceptive method type. Postpartum women and those from higher socioeconomic classes had higher efficacy. IUCD users reported 100% efficacy, while injectable contraceptive users had an efficacy of 91.7%. **Conclusion:** Contraceptive counseling during the perinatal period is effective in preventing unintended pregnancies, with efficacy varying across different demographic factors and contraceptive methods.

INTRODUCTION

Contraceptive counseling throughout the perinatal period is one important strategy for assured maternal and child health in a period when these women are in frequent contact with healthcare services.[1] The period encompasses pregnancy, childbirth, and the immediate period after childbirth; therefore, it's considered an opportune time to discuss and plan future pregnancies.[2] Several studies have documented that women who receive structured and personalized counseling about contraception at this period have a high likelihood of adopting highly effective contraception methods and, by consequence, reducing the risks from an unintended pregnancy, including severe maternal and neonatal outcomes.[3]

One of the major strengths of perinatal counseling is the tailored advice on various aspects, keeping in view the unique physiological and emotional changes women undergo during and after pregnancy.[4] Health care providers support the women to choose the appropriate methods based on personal preference, and evidence-based guidelines.[5] Studies in several reports identified that when women receive counseling regarding the safety and effectiveness along with the potential side effects of a variety of methods they feel confident about making a correct choice leading to a satisfying use of a selected method.[6] Moreover, perinatal counseling on contraception might have a long-lasting impact on reproductive health.[7] As a result, women counseled appropriately during this period will be able to realize better spacing between births and, consequently, the accompanying benefits of decreased risk of preterm birth, low birth weight, and maternal complications.[8] Early postpartum counseling will also ensure that those at high risk of unplanned pregnancies, many of them because of inaccessibility to health services or socio-economic pressures, receive the necessary guidance toward appropriate family planning.[9] Despite its gains, Perinatal contraceptive counseling still faces challenges to successful implementation.[10] Miscellaneous barriers range from cultural taboo to a lack of trained healthcare providers.[10] This will also mean not enough time for routine antenatal or post-wards visits to fix these issues, while the targeted training program should go into integrating routine care requiring community awareness programs about the magnitude of the challenge.[11] Health systems will empower women to make the best choices for them about when to get pregnant again and contribute to a healthy family and communities

by strengthening contraceptive counseling for perinatal.[12] Research conducted by Zivich PN and colleagues revealed that contraceptive counseling during the perinatal phase demonstrated an effectiveness rate of 48%.[13]

The need for this study arises from the critical importance of effective contraceptive counseling during the perinatal period to reduce unintended pregnancies and improve maternal and child health outcomes. Despite its recognized benefits, there is limited data on the impact of counseling interventions in this specific timeframe, particularly in addressing individual needs and ensuring informed decision-making. This study aims to bridge that gap by evaluating the effectiveness of such counseling, providing evidence to enhance family planning strategies and optimize healthcare practices.

METHODOLOGY

This descriptive study was conducted from May 2024 to May 2025 at the Department of Obstetrics and Gynaecology, AIMS Hospital, Muzaffarabad, AJK. The study aimed to assess the efficacy of contraceptive counseling during the perinatal period. A total of 196 women were included, with the sample size determined using the WHO sample size calculator, assuming a 95% confidence level, a 7% margin of error, and an expected efficacy rate of 48%.[13]

A non-probability consecutive sampling technique was used to select participants. The inclusion criteria consisted of women aged 20 to 40 years, married, with a parity of ≥4, and in the perinatal period (from 22 completed weeks of gestation to 7 completed days after birth). Informed consent was obtained from participants before counseling. Women with cognitive disabilities or psychosis that impaired their ability to provide informed consent, those who did not speak the prominent local languages (Kashmiri or Urdu), or those planning to move away from the region within one year after delivery were excluded.

At the study's outset, baseline demographic data, including age, parity, educational level, residence status, and socioeconomic status, were recorded. Participants were then counseled on one of the following contraception method: male condoms, emergency contraceptive pills, oral contraceptive pills, injectable contraceptives, or IUCD. All women were followed up for 12 months, and after this period, a pregnancy test was administered. Efficacy, defined as no unintended pregnancies within one year, was assessed.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Frequencies and percentages were calculated for categorical variables and efficacy. Quantitative variables, such as age and parity, were expressed as mean ± standard deviation or median (interquartile range), with normality tested using the Shapiro-Wilk test. Efficacy data were stratified and post-stratification analysis was performed using the Chi-square test or Fisher's exact test, with a p-value ≤0.05 considered statistically significant.

RESULTS

The mean age of participants was 31.199±4.63 years, with a mean parity of 5.556±1.12. Among the age groups, 50.5% were aged 20–30 years and 49.5% were older than 30. Most participants were in the antepartum (39.3%), followed by intrapartum (33.2%) and postpartum (27.6%) periods. Socioeconomic distribution included poor (51%), middle (43.9%), and high (11%) classes. Educational levels showed that 51% of parents were uneducated, 31.6% had primary education, 6.1% secondary, and 11.2% higher education. Rural participants comprised 78.6%, while urban participants were 21.4%. Male condoms were the most used contraceptive method (30.6%), followed by emergency contraceptive pills (30.1%), oral contraceptive pills (20.9%), injectables (12.2%), and IUCDs (6.1%) as shown in Table-I.

Table I

Patient Demographics

Demographics		Mean ± SD / n (%)
Age (years)		31.199±4.63
Parity		5.556±1.12
Age group (years)	20-30	99 (50.5%)
	>30	97 (49.5%)
Perinatal Period	Antepartum	77 (39.3%)
	Intrapartum	65 (33.2%)
	Postpartum	54 (27.6%)
Family Socioeconomic Status	Poor	100 (51%)
	Middle	86 (43.9%)
	High	10 (11%)
Parents Education	Uneducated	100 (5.1%)
	Primary	62 (31.6%)
	Secondary	12 (6.1%)
	Higher	22 (11.2%)
Residential Status	Rural	154 (78.6%)
	Urban	42 (21.4%)
Type of Contraceptive Method	Male condoms	60 (30.6%)
	Emergency contraceptive pills	59 (30.1%)
	Oral contraceptive pills	41 (20.9%)
	Injectable contraceptive	24 (12.2%)
	IUCD	12 (6.1%)

Contraceptive counseling efficacy was achieved in 67.9% of participants, while 32.1% reported no efficacy as shown in Table-II.

Table II

Efficacy of contraceptive counseling

Efficacy	Frequency	%age
Yes	133	67.9%
No	63	32.1%
Total	196	100%

Stratified analyses revealed significant associations of efficacy with the perinatal period (p=0.014), socioeconomic status (p=0.014), parents' education (p=0.036), residential status (p=0.040), and contraceptive method type (p=0.000). Postpartum women and those from higher socioeconomic classes had higher efficacy. IUCD users reported 100% efficacy, while injectables followed with 91.7%. Education level and urban residential status also contributed positively as shown in Table-III and Graph-I

Table III

Association of efficacy with demographic factors

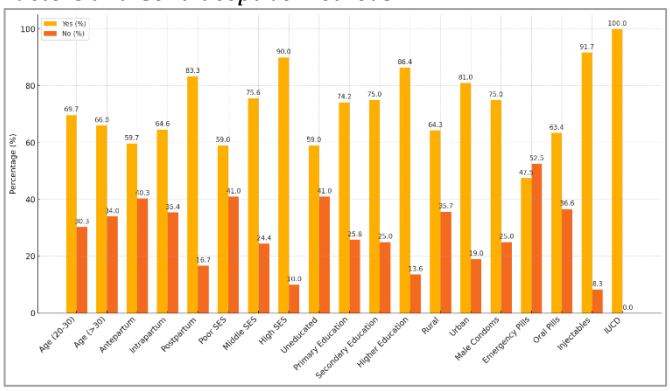
Demographic Factors		Efficacy		p-value
		Yes n(%)	No n(%)	
Age (years)	20-30	69 (69.7%)	30 (30.3%)	0.577
	>30	64 (66%)	33 (34%)	
Perinatal Period	Antepartum	46 (59.7%)	31 (40.3%)	0.014

	Intrapartum	42 (64.6%)	23 (35.4%)	
	Postpartum	45 (83.3%)	9 (16.7%)	
Family Socioeconomic Status	Poor	59 (59%)	41 (41%)	0.014*
	Middle	65 (75.6%)	21 (24.4%)	
	High	9 (90%)	1 (10%)	
Parents Education	Uneducated	59 (59%)	41 (41%)	0.036*
	Primary	46 (74.2%)	16 (25.8%)	
	Secondary	9 (75%)	3 (25%)	
	Higher	19 (86.4%)	3 (13.6%)	
Residential Status	Rural	99(64.3%)	55 (35.7%)	0.040
	Urban	34 (81%)	8 (19%)	
Type of Contraceptive Method	Male condoms	45 (75%)	15 (25%)	0.000*
	Emergency contraceptive pills	28 (47.5%)	31 (52.5%)	
	Oral contraceptive pills	26 (63.4%)	15 (36.6%)	
	Injectable contraceptive	22 (91.7%)	2 (8.3%)	
	IUCD	12 (100%)	0 (0%)	

*Fischer Exact Test

Graph I

Percentage Distribution of Efficacy Across Demographic Factors and Contraceptive Methods



Parity demonstrated a significant negative association (OR=0.56, 95% CI: 0.33-0.94, p=0.028), indicating that higher parity was associated with lower contraceptive efficacy. Socioeconomic status emerged as another significant factor, with middle-class participants showing significantly higher odds of contraceptive efficacy compared to those in the poor category (OR=3.32, 95% CI: 1.49-7.42, p=0.003). While age showed a trend toward positive association (OR=1.12, 95% CI: 0.99-1.26, p=0.080), it did not reach statistical significance. Education level and residential status showed no significant associations with contraceptive efficacy. The overall model was statistically significant (χ^2=35.91, df=11, p<0.001) with satisfactory goodness-of-fit (Hosmer-Lemeshow test: p=0.385) and explained 23.4% of the variance (Nagelkerke R^2=0.234) as shown in Table-IV.

Table IV

Factors Associated with Contraceptive Method Efficacy: Results of Logistic Regression Analysis

Characteristic	OR (95% CI)	P-value
Age	1.12 (0.99-1.26)	0.08
Parity	0.56 (0.33-0.94)	0.028
Education Level		0.912
Primary	0.92 (0.02-44.69)	0.966
Secondary	0.67 (0.06-7.46)	0.745
Higher	1.60 (0.19-13.08)	0.664
Residential Status		0.997
Urban	1.00 (0.15-6.93)	0.997
Socioeconomic Status		0.947
Middle	3.32 (1.49-7.42)	0.003
High	1.63 (0.65-4.09)	0.296
Model Statistics		
Overall model χ^2 (df)	35.91 (11)	<0.001
Hosmer-Lemeshow test χ^2 (df)	8.51 (8)	0.385

DISCUSSION

The results of this study indicate that the efficacy of contraceptive methods varies significantly with demographic factors and perinatal periods, as the study intended. The postpartum period had the highest efficacy at 83.3%; this could be because of the increased health-seeking behavior and counseling during routine postnatal care. Socioeconomic status showed a strong correlation with efficacy: middle and high-income groups reported far better outcomes probably due to access to better healthcare resources and informed decision-making. Scientifically, IUCDs and injectables had superior efficacy based on their mechanisms of long-acting action and lesser dependence on the user, as opposed to user-dependent methods like condoms or oral pills. On the other hand, higher parity was found to impact negatively on efficacy: OR = 0.56, p = 0.028, probably reflecting gaps in family planning education and accessibility within larger families. Urban participants had higher efficacy, 81%, compared to rural ones, 64.3%, probably due to better healthcare infrastructure and awareness. These findings emphasize the need to address socioeconomic and geographical disparities regarding contraceptive counseling and accessibility. This positive outcome of counseling on effective contraception has been observed both in Italian women and immigrant women, as counseling increases the odds for Italian women with an OR of 2.55 (95% CI: 2.06-3.14) and an exceptionally high OR among immigrant women of 4.01 (95% CI: 2.40-6.70). This reflects a far greater effect from counseling among immigrant women. Our study, which tested the effectiveness of postpartum contraceptive counseling, found a similar trend in that women who received counseling were more likely to use effective contraception. However, the magnitude of impact in our study was less compared to Lauria et al.'s study,[14] probably due to the difference in cultural settings and healthcare systems.

Khan et al. [15] within their systematic review and meta-analysis also support that the counseling of family planning is associated with increasing the rates of uptake in postpartum contraception. Based on this evidence, women were 2.75 times, 95% CI: 2.11-3.58, more likely to use modern contraceptives at postpartum, which is supported in our study findings where there existed a significant positive association observed between counseling with contraceptive use. This finding has suggested that counseling is an important contributor to improved contraceptive use postpartum, regardless of geographic location, with the similarity in findings across different regions strengthening the argument for its global applicability.

Kaewkiattikun's study[16] suggests that, among adolescents, immediate postpartum counseling results in a much higher application rate for LARC than usual

counseling; adolescents in the immediate counseling group were 3.67 times more likely to use LARC compared with their counterparts, with an OR of 3.67 (95% CI: 2.10–6.41). This agrees with the findings of our study, although teenage pregnancies were not the specific focus of our study, in which postpartum counseling resulted in a higher uptake of long-acting methods. These differences in findings and those from Kaewkiattikun et al.[16] can be related, since this review focused on adolescent mothers who might then be more motivated to adopt a long-term contraception method after just counseling them in order to avoid repeated pregnancies, highly relevant in higher-risk populations where subsequent unintended pregnancy is more common.

Reyes-Lacalle et al. [17] evaluated the effectiveness of supplemental perinatal contraceptive counseling in Spain. They compared the intervention group, or IG, and the control group, or CG. The authors found that at 12 months postpartum, women from the IG used more effective contraception than women from the CG; the difference was statistically significant, with p=0.006, especially for Spanish women. This study is similar to ours in that the supplemental counseling resulted in higher utilization of effective contraception, but the effect in non-Spanish women was limited. These are demographically similar factors to those which contributed to the socioeconomic and educational background of our subjects in whose population, counseling was found to be especially effective. The difference in our study and that of Reyes-Lacalle et al. may be explained by the diverse demographic characteristics of our sample as compared to the more homogeneous Spanish sample of Reyes-Lacalle et al.

In a review by Nelson et al.[18] they realized that all interventions for contraception counseling and provision were associated with significant increases in contraception use, at 39%, just as in the case for postpartum women. It has also resulted in fewer unintended pregnancies based on counseling, something which strengthened the results presented by our review through which counseling, we argued, enhanced the chances of contraception use without a significantly high possibility of deteriorated health outcomes being an effect in these instances of our concern, women of children between birth and less than two years old. In this case, their findings on overall reduced unintended pregnancies support our hypothesis that postpartum contraceptive counseling increases not only contraceptive uptake but also results in improved maternal health outcomes; such a finding, then, of the global consistency of these results becomes quite significant.

The similar results across community-based and groups of adolescents represent a universal value of counseling, so to say-especially the postpartum period. Despite the fact that samples were from differently located and identically cultural and diverse demographic factors over the world, the consistency in findings emphasizes the role and method of counseling on the success path of contraceptive measures. Most of all, the strong role of education and socioeconomic status present in our study is supported by other research showing that counseling becomes much more effective if combined with the addressing of broader socioeconomic and cultural barriers facing women in accessing and using modern contraception. Probably one of the most serious drawbacks of our study is that it was conducted in a single center; thus, generalization of findings to other populations should be made with caution. Though adequate, the sample size used might be representative enough in comparison with that required in similar research for any major demographic variances found within more representative multicenter research; hence, it may impact the robustness of conclusions that will be formulated based on its analysis. In addition, not controlling external factors like cultural difference for contraception behavior might have an influence on outcomes. Larger, multi-center samples with a greater diversity of participants would certainly help in confirming these findings and expanding on them.

CONCLUSION

Our study has concluded that contraceptive counseling during the perinatal period is highly effective in increasing the use of contraceptives postpartum. The findings demonstrate that providing timely and comprehensive counseling, particularly in the immediate postpartum period, significantly enhances contraceptive uptake and reduces the likelihood of unintended pregnancies. These results emphasize the critical role of counseling in improving reproductive health outcomes and highlight the importance of integrating it into routine maternal care to optimize family planning practices.

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