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DETERMINANTS OF POSTPARTUM MODERN CONTRACEPTIVE USE AMONG WOMEN ATTENDING IMMUNIZATION CLINICS IN QUETTA, PAKISTAN: A CROSS-SECTIONAL STUDY

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Abstract

Background of Study: *the postpartum period is a crucial time for family planning treatments, many countries still have low rates of contraceptive use. This study assessed postpartum modern contraceptive utilization and related factors among women attending immunization clinics in Quetta, Pakistan.*

Methods: *A community-based cross-sectional study was conducted from February 10 January 2026-10 March 2026, among 400 postpartum women attending immunization clinics in Quetta. A structured questionnaire collected data on sociodemographic characteristics, reproductive history, maternal health service utilization, knowledge of contraceptive methods, and current modern contraceptive use. SPSS version 24 was used to analyse the data. Chi-square tests were used in bivariate analysis to look at relationships, and multivariable logistic regression identified factors independently associated with postpartum modern-day contraceptive use.*

Results: *The Prevalence of postpartum modern contraceptive use was 59.5% (95% CI: 54.5-64.5%). The most popular method of birth control was injectable contraceptives (44.8%), followed by oral pills (26.8%) and implants (23.2%). Main reasons for non-use included phobia of side effects (26.5%), Fear of breast milk changes (24.1%), partner opposition (21.6%), and wanting another child soon (19.1%). Factors independently associated with utilization included formal education (AOR=2.059), four or more ANC visits (AOR=2.615), PNC attendance (AOR=3.119), previous family planning use (AOR=3.880), family planning counseling (AOR=6.175), menses resumption (AOR=3.384), sexual activity resumption (AOR=9.021), and having four or more living children (AOR=3.048).*

Conclusion: *Postpartum modern contraceptive utilization in Quetta was suboptimal, with two out of five women not using contraceptives during the first year after delivery. Strengthening family planning counseling during antenatal and postnatal care, integrating family planning into immunization services, engaging male partners, addressing misconceptions about side effects and breastfeeding, and promoting girls' education are recommended strategies to increase postpartum contraceptive use.*

Introduction

Individuals and couples can choose the number of children they want and the intervals between pregnancies by using family planning (Bongaarts et al., 2012). Given that women often have many interactions with healthcare professionals during

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the postpartum period due to prenatal care, birth, postnatal care, and immunization services, this is a crucial window for family planning programs (Gaffield et al., 2014). The adoption of family planning techniques during the first 12 months after childbirth to avoid unwanted pregnancies and closely spaced deliveries is known as postpartum family planning (World Health Organization, 2013). Short interpregnancy intervals, defined as pregnancies occurring within 24 months of a preceding birth, are associated with numerous adverse maternal and child health consequences, such as elevated risks of maternal death and morbidity, preterm birth, low birth weight, neonatal mortality, infant mortality, and childhood undernutrition (Conde-Agudelo et al., 2012; DaVanzo et al., 2007; Kozuki & Walker, 2013; Rutstein, 2005). Worldwide, an estimated 80 million unplanned births occur yearly due to inadequate family planning uptake during the postpartum period (Tolefac et al., 2017). Evidence suggests that contraceptive usage might reduce roughly 3.2 million under-five mortality and 109,000 maternal deaths yearly (Cleland et al., 2012). The WHO advises a minimum interpregnancy gap of 24 months following a live delivery to lower the risk of critical maternal, perinatal, and newborn outcomes (World Health Organization, 2013).

Postpartum women are among the groups with the greatest unmet need for family planning despite these strong advantages (Rossier et al., 2015). Postpartum family planning usage is influenced by a number of variables at the individual, home, and health system levels. Maternal education has continuously been shown to be a key predictor, with educated women using contraceptives at greater rates than their uneducated counterparts (Gejo et al., 2019; Tafa & Worku, 2021; Wakuma et al., 2020). Since women who get family planning education during pregnancy tend to employ contraceptive methods after giving birth, antenatal care and counselling during antenatal care clinic visits are also highly correlated with postpartum contraceptive use (Gejo et al., 2019; Tafa & Worku, 2021; Wakuma et al., 2020). Similarly, postnatal care clinic visits provide crucial opportunities for family planning services and counselling (Dona et al., 2018; Teka et al., 2018).

Variables that increase awareness of reproductive risks and encourage the use of contraceptives among women include the resumption of menses and sex after childbirth (Abraha et al., 2017; Coomson & Manu, 2019; Nibret Mhiretie et al., 2020). As stated by Gebremedhin et al. (2018), Tafa & Worku (2021), and Wakuma et al. (2020), postpartum use is significantly predicted by previous use of contemporary contraceptives prior to the pregnancy, which means that women with previous experience cope better with barriers associated with knowledge, accessibility, and side effects. Critical factors that affect the use of contraception include counselling by health professionals and knowledge about contemporary contraceptives (Nibret Mhiretie et al., 2020; Wakuma et al., 2020). In patriarchal societies where male partners have considerable power over reproductive decisions, consent and communication between partners about family planning are particularly important (Gebeyehu et al., 2020; Nakkazi et al., 2025; Rutaremwa et al., 2015). Yet, despite continued efforts to improve reproductive health services, the family planning indicators in Pakistan remain below satisfactory. In Pakistan, 34% of married women of reproductive age use contraception, while 26% use modern methods (National Institute of Population Studies & ICF, 2019).

The total fertility rate is 3.6 children per woman, and 17% of women lack access to family planning (National Institute of Population Studies & ICF, 2019). However, the amount of information available, especially in relation to the use of contemporary postpartum contraceptives in Pakistan, is inadequate. Postpartum contraceptive use has been associated with discussion about birth spacing, quality of health service provision, and attendance at prenatal care in a study carried out in Sindh, Pakistan (Tappis et al., 2015). Religious beliefs, lack of knowledge, husband refusal, fear of adverse outcomes, and lack of access to services are all barriers to the use of postpartum family planning in Pakistan (Mustafa et al., 2015). The provincial capital of Balochistan, Quetta, is characterized by a diversity of ethnic

Frontier in Medical & Health Research

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groups, different levels of socio-economic development, and substantial challenges in terms of access to healthcare (Khan & Khan, 2012). To develop context-specific interventions, it is essential to understand the prevalence and predictors of postpartum contemporary contraceptive use in such circumstances. Considering the fact that women usually visit these clinics together with their infants within the first year of birth, immunization programs present an underexploited opportunity for engaging postpartum women with family planning services. The aim of this study is to explore postpartum contemporary contraception use and related factors among women visiting immunization clinics in Quetta, Pakistan. The findings will provide information to support program and policy interventions aimed at improving maternal and infant health in Balochistan and similar contexts.

Methodology

Study Design

From February 10 to May 10, 2026, a community-based cross-sectional research was used to evaluate postpartum modern contraception use and related characteristics among postpartum women in Quetta, Pakistan. According to Lemeshow et al. (1990), this method is suitable for determining characteristics linked to contraceptive usage and calculating prevalence at a single moment in time.

Study Setting

The study was carried out in Pakistan's Balochistan province capital, Quetta. With a population of about 1.5 million, Quetta is home to a variety of ethnic groupings, including Pashtun, Baloch, Hazara, Punjabi, Sindhi, and Urdu-speaking minorities, according to the 2023 Pakistan Bureau of Statistics census. Government hospitals, commercial hospitals, family welfare centers, basic health units, and rural health clinics are examples of healthcare infrastructure. Geographical obstacles, security issues, financial limitations, and cultural norms that restrict women's movement make it difficult for them to access services despite the facilities that are accessible. Balochistan's maternal and child health metrics fall short of the national average due to high maternal mortality, poor contraceptive prevalence, and low use of professional maternal health care (National Institute of Population Studies & ICF, 2019).

Study Population

All postpartum women in Quetta who were of reproductive age (15–49 years) and had given birth during the preceding 12 months made up the source population. The study population consisted of postpartum women attending Expanded Programme on Immunization clinics in selected health facilities during the study period. Inclusion criteria were women aged 15-49 years, had given birth within the previous 12 months, attending immunization clinic with their child, resided in the study area for at least six months, and provided informed consent. Exclusion criteria included women who were pregnant at data collection, critically ill or unable to communicate, had undergone hysterectomy, attending immunization clinic for a child not their own, or did not provide consent.

Sample Size Determination

The single population proportion formula (Hajian-Tilaki, 2011) was used to calculate the sample size: $n = (Z\alpha/2)^2 \times P(1-P) / d^2$, where $Z\alpha/2 = 1.96$ (95% confidence level), $P = 50\%$ (assumed prevalence of postpartum modern contraceptive utilisation because no prior study was available in the study setting), and $d = 5\%$ (margin of error). The result was 384.16. 404 postpartum women made up the final sample size after accounting for a 5% non-response rate.

Sampling Procedure

A method of multistage sampling was used. Four health facilities offering EPI services were purposively selected from different parts of Quetta representing diverse catchment areas: one tertiary care hospital, one secondary care hospital, and two primary health facilities. Each facility received a proportionate share of the entire sample size based on the average monthly attendance of postpartum mothers. From each facility, eligible women were recruited using systematic random sampling. Each facility's sampling interval was determined by

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

dividing the projected number of eligible women who attended throughout the research period by the sample size allotted. After a lottery was used to choose the first participant, all the eligible women were contacted. If a selected woman declined or was not eligible, the next eligible woman was approached. Up to three revisit attempts were made if a participant was not available during the initial visit.

Data Collection Instruments and Techniques

From similar studies (Abraha et al., 2017; Coomson & Manu, 2019; Gebremedhin et al., 2018; Gejo et al., 2019; Nakkazi et al., 2025; Nibret Mhiretie et al., 2020; Tafa & Worku, 2021; Tegegn et al., 2017), a structured, pretested questionnaire was created and modified to fit the local context. Sociodemographic traits, reproductive and maternal health history, postpartum family planning knowledge, current use of modern contraceptives, and determinants and obstacles made up the five sections of the questionnaire.

Six skilled female health extension workers who had undergone two days of training on research objectives, questionnaire content, interview procedures, ethical issues, and data quality assurance gathered the data. Data collection was overseen by three BSc midwives. Interviews were place in private settings within health facilities, lasting around 20 to 25 minutes, once potential participants were discovered during immunisation clinic registration and informed consent was obtained. Supervisors visited the field every day, checked that completed surveys were complete, and gave prompt feedback.

Data Quality Assurance

The survey was designed in English, translated by multilingual specialists into Urdu and regional tongues, and then back-translated to guarantee accuracy. Twenty women, or 5% of the sample size, underwent pretesting at a medical institution in a nearby region. The knowledge questionnaire's internal consistency was deemed good with a Cronbach's Alpha coefficient of 0.744. To reduce entry mistakes, data were double-entered into EpiData version 4.2, and range and consistency checks were performed.

Study Variables

Postpartum modern contraceptive use, which was evaluated as a binary outcome (yes/no) based on self-reported current usage, was the dependent variable. It was defined as the use of any modern contraceptive method throughout the 12-month period after delivery. Modern contraceptive methods included oral contraceptive pills, injectable contraceptives, contraceptive implants, intrauterine contraceptive devices, male/female condoms, and female sterilization (Hubacher & Trussell, 2015). Independent variables included sociodemographic factors (age, ethnicity, marital status, educational attainment, occupation, religion), reproductive and maternal health factors (number of living children, parity, birth interval, place of delivery, assistance during delivery, ANC attendance and number of visits, PNC attendance, exclusive breastfeeding status, menses return, resumption of sexual relations, pregnancy planning status), knowledge factors (awareness of pregnancy before menses return, heard of modern contraceptive methods, knowledge of specific contraceptive methods, knowledge score categorized as good or poor based on mean score), and sociocultural factors (discussion of family planning with husband, husband's approval, counseling during ANC, PNC, and immunization visits).

Operational Definitions

Sterilisation, intrauterine devices, implants, oral contraceptives, condoms, injectables, and emergency contraceptive tablets were all considered modern forms of birth control (Hubacher & Trussell, 2015). According to Tesfaye et al. (2017), the postpartum phase is the period from birth to one year. According to Abraham et al. (2017), postpartum modern contraceptive use was defined as a woman who reported using any form of modern contraceptive technique either alone or in conjunction with her spouse from the time of data collection until the last 12 months following childbirth. A series of seven questions was used to assess postpartum

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

contraceptive knowledge, which was then categorised as good or poor based on the mean knowledge score as a cutoff point (Tafa & Worku, 2021). The use of any ANC services offered by qualified medical professionals was referred to as antenatal care follow-up (Abebe et al., 2019). Attendance at any medical facility visit within 42 days following birth was considered postnatal care follow-up. Based on self-reported beginning, postpartum sexual activity was divided into two categories: less than six weeks and six weeks or more (Demie et al., 2018).

Data Processing and Analysis

After being coded, the data was imported into EpiData version 4.2 and exported to SPSS version 24. Data were cleaned and examined for coding mistakes, outliers, and completeness. Frequencies, percentages, averages, standard deviations, and 95% confidence intervals were among the descriptive statistics that were computed. Chi-square tests were used in bivariate analysis to look for relationships between postpartum contemporary contraception use and each independent variable. In multivariable logistic regression, variables having a p-value of less than 0.25 were taken into consideration (Hosmer et al., 2013). Binary logistic regression was used to identify factors independently associated with postpartum modern contraceptive utilization using a forward stepwise approach. Adjusted odds ratios with 95% confidence intervals were calculated, and variables with $p < 0.05$ were considered statistically significant. The Hosmer-Lemeshow test ($p > 0.05$ indicates good fit) assessed goodness-of-fit.

Ethical Considerations

The Institutional Review Board granted ethical approval. Official permission was obtained from district administrative authorities and each participating health facility. Each prospective participant received an explanation of the study's goals, methods, risks, advantages, and confidentiality precautions in the language of their choice. Participants were informed that participation was voluntary and they could withdraw at any time without penalty. Informed consent was obtained from all participants aged 18 years and above; for participants under 18 years, parental/guardian consent was obtained in addition to participant assent. All data were anonymized with participants identified only by study ID numbers. Data were stored securely in password-protected computers and locked file cabinets. Interviews were conducted in private settings. At the end of the interview, participants received brief health education on postpartum family planning. Participants interested in family planning services were referred to the health facility's family planning unit.

Results

Response Rate and Participant Characteristics

A total of 423 postpartum women were approached, with complete interviews obtained from 400, yielding a response rate of 94.6%. The mean age was 27.46 years (SD = 5.88), ranging from 15 to 43 years. The majority were in the 25-34 years age group (50.8%) and from rural areas (65.5%, n=263). 86.0% of participants had no formal education, and the majority (92.5%, n=370) were married. 51.9% of the sample were housewives, 69.6% of spouses had no formal education, and the most frequent employment was farming (49.1%).

Reproductive and Maternal Health Characteristics

69.7% of women completed four or more ANC visits, while the majority (94.3%) attended at least one. 74.4% of ANC participants got family planning counselling. 99.0% of women gave birth in medical facilities, and 96.6% of them went to PNC, where 50.1% of them received family planning counselling. 53.8% of women reported using family planning in the past. 78.4% of participants had resumed sexual activity, with 95.4% starting at or after six weeks postpartum, and 66.5% had begun menstruation.

Knowledge and Contraceptive Utilization

At least one contemporary technique of contraception was known to the majority (92.5%). With a mean knowledge score of 2.97 (SD = 1.213), injectable (60.7%) and oral tablets (50.0%) were the most widely used techniques. Merely 26.0%

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

of respondents showed good expertise (knowing three or more procedures).

The prevalence of postpartum modern contraceptive utilization was 59.5% (n=238, 95% CI: 54.5-64.5%). Among users, injectable contraceptives were most common (44.8%), followed by oral pills (26.8%) and implants (23.2%). The main reasons for non-use among 162 women were fear of side effects (26.5%), fear of change in breast milk (24.1%), partner opposition (21.6%), wanting another child soon (19.1%), and perceived low risk due to amenorrhea (14.8%) or breastfeeding (11.1%).

Factors Associated with Postpartum Contraceptive Utilization

Bivariate analysis revealed that formal education, four or more ANC visits, PNC attendance, previous family planning use, family planning counseling at ANC or PNC, menses resumption, sexual activity resumption, urban residence, and having four or more living children were significantly associated with PPFP use ($p < 0.05$). Good knowledge was not significant ($p = 0.508$).

Multivariable logistic regression identified eight independent predictors (Table 5). The Hosmer-Lemeshow test indicated good fit ($p = 0.278$), and the model correctly classified 78.3% of cases. Family planning counseling at ANC or PNC was the strongest predictor (AOR = 6.175, 95% CI: 3.217-11.853, $p < 0.001$), followed by sexual activity resumption (AOR = 9.021, 95% CI: 4.754-17.118, $p < 0.001$). Other significant factors included previous family planning use (AOR = 3.880, 95% CI: 2.194-6.863, $p < 0.001$), menses resumption (AOR = 3.384, 95% CI: 1.917-5.972, $p < 0.001$), PNC attendance (AOR = 3.119, 95% CI: 1.804-5.395, $p < 0.001$), four or more living children (AOR = 3.048, 95% CI: 1.228-7.566, $p = 0.016$), ANC 4+ visits (AOR = 2.615, 95% CI: 1.484-4.606, $p = 0.001$), and formal education (AOR = 2.059, 95% CI: 1.210-3.505, $p = 0.008$). Knowledge and urban residence were not significant in the adjusted model.

Table 1: Sociodemographic and Reproductive Characteristics of Participants (n=400)

Characteristic	n	%
Age Group		
15-24 years	141	35.3
25-34 years	203	50.8
35-49 years	56	14.0
Residence		
Rural	263	65.5
Urban	137	34.5
Education		
No formal education	344	86.0
Formal education	56	14.0
Previous FP Use		
Yes	205	53.8
No	176	46.2
ANC 4+ Visits		
Yes	253	69.7
No	110	30.3
PNC Attendance		
Yes	372	96.6
No	13	3.4
FP Counseling at ANC/PNC		
Yes	197	49.3
No	157	39.3
Menses Resumed		

Frontier in Medical & Health Research

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Yes	256	66.5
No	129	33.5
Sexual Activity Resumed		
Yes	302	78.4
No	83	21.6
4+ Living Children		
Yes	43	10.8
No	357	89.2

Table 2: Knowledge of Contraceptive Methods (n=400)

Variable	n	%
Heard of any modern method	356	92.5
Methods Known		
Injectable	216	60.7
Oral pills	178	50.0
IUCD	149	41.9
Implant	141	39.6
Condom	74	20.8
Emergency pill	69	19.4
Sterilization	16	4.5
Knowledge Level		
Good (≥3 methods)	104	26.0
Poor (<3 methods)	296	74.0

Table 3: Postpartum Modern Contraceptive Utilization (n=400)

Variable	n	%
Current PPFP Use		
Yes	238	59.5
No	162	40.5
Method Used (n=238)		
Injectable	87	44.8
Oral pills	52	26.8
Implant	45	23.2
IUCD	7	3.6
Condom	3	1.5

Table 4: Reasons for Non-Use of Modern Contraceptives (n=162)

Reason	n	%
Fear of side effects	43	26.5
Fear of change in breast milk	39	24.1
Partner opposed	35	21.6
Want another child soon	31	19.1
Amenorrhea/perceived low risk	24	14.8
Breastfeeding/perceived low risk	18	11.1

Table 5: Multivariable Logistic Regression of Factors Associated with PPFP Use (n=400)

Variable	AOR	95% CI	p-value

Frontier in Medical & Health Research

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Formal education	2.059	1.210-3.505	0.008
ANC 4+ visits	2.615	1.484-4.606	0.001
PNC attendance	3.119	1.804-5.395	<0.001
Previous FP use	3.880	2.194-6.863	<0.001
FP counseling at ANC/PNC	6.175	3.217-11.853	<0.001
Menses resumed	3.384	1.917-5.972	<0.001
Sexual activity resumed	9.021	4.754-17.118	<0.001
4+ living children	3.048	1.228-7.566	0.016

Discussion

This study evaluated postpartum contemporary contraception use and related variables among women who visited immunization clinics in Quetta, Pakistan. The prevalence of postpartum modern contraceptive utilization was 59.5%, indicating that approximately three out of five postpartum women were using modern contraceptives during the first year after delivery. The prevalence found in this study is substantially higher than the national contraceptive prevalence rate in Pakistan (34%) and the modern contraceptive prevalence rate (26%) reported in the Pakistan Demographic and Health Survey 2017-18 (National Institute of Population Studies & ICF, 2019). It is also considerably higher than the estimate from a systematic review that reported postpartum contraceptive use in Pakistan as only 4% (Dev et al., 2019). This higher prevalence may be explained by the study population being women attending immunization clinics, who likely have greater healthcare-seeking behavior and access to health services compared to the general population. Immunization clinics also offer family planning counselling, which may increase the use of contraceptives.

The results are similar to research from Ethiopia, where postpartum modern contraceptive use varied from 54.7% in Addis Zemen (Nibret Mhiretie et al., 2020) to 48.4% in Gondar town (Abera et al., 2015). It is lower than research from Kenya (86.3%) (Jalang'o et al., 2017) and Ethiopia in Addis Ababa (71.8%) (Tafa & Worku, 2021), but higher than research from Uganda (28%) (Rutaremwa et al., 2015), Ghana (26.3%) (Coomson & Manu, 2019), and Nepal (32.8%) (Joshi et al., 2020). Variations in sociocultural norms, policy contexts, health system capability, and service accessibility are reflected in the variety. The method mix, with injectable contraceptives being the most commonly used (44.8%), followed by oral pills (26.8%) and implants (23.2%), is consistent with findings from other settings (Abera et al., 2015; Coomson & Manu, 2019; Jalang'o et al., 2017). The preference for short-acting hormonal methods may reflect provider bias, client preference for reversible methods, limited availability of LARC methods, or knowledge gaps about long-acting options (Ross et al., 2015). The comparatively high implant usage rate (23.2%) is positive and indicates that LARC techniques are becoming more widely available and well-liked. Nonetheless, the extremely low usage of condoms (1.5%) and IUCDs (3.6%) suggests that these techniques are still underutilized. The most frequent excuse for not using it was fear of adverse effects (26.5%), which was followed by partner resistance (21.6%), fear of changing breast milk (24.1%), desiring another child soon (19.1%), and perceived low risk because of amenorrhoea (14.8%) or nursing (11.1%). These results align with research conducted in different contexts (Coomson & Manu, 2019; Nakkazi et al., 2025; Zimmerman et al., 2021). Contraceptive introduction and continuation are significantly hampered by side effect concerns (Zimmerman et al., 2021), necessitating high-quality counselling that offers precise information about side effects and management techniques.

In environments where nursing is almost widespread, there is a prevalent concern that the use of contraceptives may impact the quantity or quality of breast milk (Conde-Agudelo et al., 2012; Dona et al., 2018). Counselling should highlight the safety of progestin-only methods for breastfeeding women. The importance of male partners in reproductive decision-making is highlighted by partner opposition (Gebeyehu et al.,

Frontier in Medical & Health Research

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2020; Nakkazi et al., 2025; Rutaremwa et al., 2015), necessitating the involvement of males through couple counselling and community-based education. The odds of postpartum contemporary contraception use were 2.06 times greater for women with formal education than for those without. There are many studies from Ethiopia (Gejo et al., 2019; Nibret Mhiretie et al., 2020; Tafa & Worku, 2021), Uganda (Rutaremwa et al., 2015), and Ghana (Coomson & Manu, 2019) which also support the above statement. More information, an increased understanding of the health benefits of child spacing, increased autonomy in decision making, and improved access to health services are some ways in which education might influence the use of contraceptives. Thus, it is clear that funding girls' education is essential to improve reproductive health outcomes.

Postpartum contemporary contraception use was 2.62 times more common among women who made four or more ANC visits compared to those who made fewer visits. This is similar to past evaluations which have found that postpartum contraception usage is highly predictable through ANC attendance (Wakuma et al., 2020). Opinions and intention to use postpartum contraception are influenced by the availability of family planning counseling during ANC visits. The dose-response association found in the present study in which women who make more ANC visits have more postpartum contraceptive use is similar to other studies (Gejo et al., 2019; Tafa & Worku, 2021). Postpartum modern contraceptive utilization was 3.12 times more common among women who attended PNC than among those who did not, as found in several studies from Ethiopia (Dona et al., 2018; Teka et al., 2018). PNC visits create opportunities for family planning counseling and provision of family planning services. Efforts can be made to increase PNC visits and incorporate family planning services in order to increase postpartum contraceptive adoption in Pakistan, where PNC attendance is rather low (National Institute of Population Studies & ICF, 2019).

Postpartum modern contraceptive utilization was 3.88 times more common among women who had used family planning before the current pregnancy compared to those who had not, similar to several studies from Ethiopia (Gebremedhin et al., 2018; Tafa & Worku, 2021) and Ghana (Coomson & Manu, 2019). Programmes should focus on ensuring continuity of contraception use and address reasons for discontinuation since previous use implies that the women are familiar with contraception methods, know the benefits, and have experience in accessing services. The biggest predictor was family planning counseling at ANC or PNC; women who received counseling were 6.18 times more likely to use contemporary contraceptives after giving birth. This is in line with systematic evaluations which have found counseling to be one of the strongest predictors of postpartum contraception use (Wakuma et al., 2020; Mehare et al., 2020). Through counseling, the women receive important information regarding contraception options, time of commencement, and side effects which enables informed decision-making and helps disprove misconceptions.

As per studies conducted in Ethiopia (Abraha et al., 2017; Abera et al., 2015; Nibret Mhiretie et al., 2020) and Ghana (Coomson & Manu, 2019), women who had resumed menstruation had 3.38 times more odds of using contemporary contraceptives after giving birth. Resumption of menstruation indicates that fertility is returning and raises awareness regarding the possibility of pregnancy and motivates the use of contraceptives. However, since ovulation can happen before the resumption of menstruation, it highlights the huge information gap as pregnancy can happen even when menstruation has not returned and thus, contraceptive should be used before any sexual intercourse as per health education. Women who resumed sexual activity had 9.02 times more odds of using contemporary contraceptives after giving birth and this was the best predictor. This is similar to several studies from Ethiopia (Gejo et al., 2019; Tafa & Worku, 2021; Abraha et al., 2017) and Ghana (Coomson & Manu, 2019). Women who have resumed sexual activity are at high risk of pregnancy and are motivated to use contraception methods. Thus, it highlights the need for offering family planning services to the women before they resume sexual

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activity, preferably during ANC, childbirth or early PNC visits.

Women who had four or more living children had 3.05 times more odds of postpartum modern contraceptive utilization compared to women with fewer children, as found in a study from Uganda (Rutaremwa et al., 2015). Women with more children may be satisfied with the number of children they have and thus, be more interested in using contraception to prevent future pregnancies. Knowledge and urban residence were not significant in the multivariate analysis. The lack of significance of knowledge can be attributed to the simplicity of the measure for knowledge. Non-significance of urban residence after controlling for other variables indicates that residence does not matter after controlling for the other variables.

Strengths and Limitations

Some of the strengths associated with this research study are: community-oriented design that helps to get a representative view of the use of postpartum contraception; a thorough questionnaire addressing a broad range of factors; and the 94.6% response rate reducing the risk of non-response bias. Some of the weaknesses are: cross-sectional design does not allow drawing conclusions about causation; self-reporting data prone to bias due to social desirability and recall; and sample selection based on clinics and therefore it is not representative of all postpartum women in the population.

Implications for Policy and Practice

The necessity to guarantee that all women get family planning information and counselling during ANC, delivery, and PNC visits is highlighted by the substantial correlation between counselling and the use of postpartum contraceptives. This necessitates assessing the quality of counselling and teaching healthcare professionals effective counselling strategies. Reaching postpartum women with family planning services is made possible by immunization clinics, but incorporating family planning into immunization programs necessitates educating immunization personnel and setting up referral channels. In patriarchal environments, it is crucial to involve male partners through couple counselling and community-based education. Improving access to LARC techniques through provider training and guaranteeing a steady supply, as well as dispelling myths through health education and counselling, are crucial. The significant correlation between postpartum contraceptive usage and maternal education highlights the need of funding girls' education for reproductive health.

Conclusion

In Quetta, 59.5% of postpartum women used contemporary contraception, with injectable methods being the most popular. worry of adverse effects, worry of a change in breast milk, resistance from partners, and the desire to have another child soon were the primary causes of non-use. Formal education, four or more ANC visits, PNC attendance, prior family planning usage, family planning counselling, resuming menstruation, resuming sexual activity, and having four or more live children were all factors that were independently linked to use.

To increase postpartum contraceptive use and improve maternal and child health outcomes in Pakistan, it is advised to strengthen family planning counselling during prenatal and postnatal care, integrate family planning services into immunization clinics, engage male partners, address misconceptions, and promote girls' education.

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