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Original Article

Awareness and Use of Emergency Contraceptive Pills Among Females Aged 18 To 45 Years Old at Maternal Child Health Care Centre, Mirpurkhas

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ABSTRACT

Background: Emergency contraceptive pills are an effective postcoital method for preventing unintended pregnancy, yet their utilization remains limited in many low-resource settings because of inadequate knowledge, misconceptions, affordability issues, and barriers to access. Objective: To assess awareness, attitudes, and use of emergency contraceptive pills among females aged 18 to 45 years attending the Maternal and Child Health Care Centre, Mirpurkhas. Methods: A descriptive cross-sectional study was conducted from November 2025 to January 2026 among 241 women selected through non-probability convenience sampling. Data were collected using a pretested structured questionnaire covering demographic variables and knowledge, attitude, and practice domains related to emergency contraceptive pills. Data were analyzed in SPSS version 27 using frequencies, percentages, means, and standard deviations. Results: The mean knowledge score was 5.2 ± 1.8 out of 10, the mean attitude score was 5.5 ± 1.7 out of 7, and the overall composite score was 10.7 ± 2.5 out of 17, indicating moderate awareness and moderately positive attitudes. Only 34.0% correctly knew that emergency contraceptive pills prevent pregnancy and 38.6% identified the correct timing of use. Although 58.5% considered the method safe and 53.1% would recommend it, only 47.7% had ever used it. Difficulty obtaining the pills was reported by 47.3%, while 51.0% perceived them as costly. Conclusion: Women in this setting demonstrated moderate awareness and generally favorable attitudes toward emergency contraceptive pills, but important knowledge gaps, misconceptions, and access barriers remain. Focused education, provider counseling, improved affordability, and better public-sector availability are needed to support correct and timely use. Keywords: emergency contraceptive pills, awareness, attitude, practice, women, accessibility, Pakistan.

INTRODUCTION

Emergency contraception constitutes an important component of reproductive health services because it offers women a time-sensitive opportunity to prevent unintended pregnancy after unprotected sexual intercourse, contraceptive failure, or incorrect use of a regular contraceptive method. Emergency contraceptive pills are generally recommended within 72 hours of unprotected intercourse, although some formulations retain effectiveness for up to 120 hours, making them a critical backup option in situations where primary pregnancy prevention has failed or was not used at all (1). Their public health

value is particularly significant in low- and middle-income settings, where unmet contraceptive needs, limited reproductive autonomy, and restricted access to timely counseling contribute to a persistent burden of unintended pregnancy and its downstream medical and social consequences (1,2).

Unintended pregnancy remains a major global reproductive health concern because it is closely linked to unsafe abortion, maternal morbidity, psychological stress, interrupted education, and adverse socioeconomic outcomes for women and families. Evidence indicates that a substantial proportion of pregnancies worldwide are unplanned, often as a result of non-use of contraception, inconsistent use, or method failure, underscoring the need for accessible and acceptable emergency contraceptive options (3,4). In settings where women have inadequate knowledge regarding fertility control or face barriers to reproductive health services, emergency contraception may serve not only as a second-line preventive intervention but also as an entry point for broader contraceptive counseling and safer reproductive decision-making (5,6). The availability of emergency contraception is especially relevant for women in socially constrained environments, where stigma, misinformation, and delayed help-seeking can narrow the already limited window for effective postcoital pregnancy prevention (7,8).

Despite the proven effectiveness and safety of emergency contraceptive pills, their utilization remains suboptimal in many developing regions because awareness is often fragmented and understanding of correct timing, mechanism of action, indications, side effects, and access pathways is incomplete. Prior studies from South Asia and other low-resource contexts have shown that although many women may have heard of emergency contraception, accurate knowledge about when and how to use it remains limited, and misconceptions frequently persist regarding infertility, menstrual harm, and moral or social acceptability (9,10). Additional barriers such as poverty, restricted female mobility, inadequate provider counseling, and sociocultural disapproval further reduce timely uptake, even when the method is nominally available (11,12). These constraints are particularly important in communities where reproductive health information is not openly discussed and where family or community gatekeeping influences women's access to health commodities and services.

Existing literature suggests that awareness and practice of emergency contraception vary considerably according to educational attainment, residence, marital and cultural context, and prior exposure to health information. Research among adolescents, university students, community samples, and reproductive-age women has consistently demonstrated that knowledge does not necessarily translate into correct use, and positive attitudes do not always overcome structural barriers such as cost, embarrassment, or limited local availability (13–16). In Pakistan, the available evidence also indicates that barriers to access and incomplete knowledge continue to limit the practical use of emergency contraceptive pills, even among populations where general awareness appears moderate (17). However, much of the published work has been generated from urbanized centers or selected educational populations, and there remains limited context-specific evidence from service-utilizing women in district-level maternal and child healthcare settings, particularly in Sindh. This gap is important because women presenting to such facilities may represent a clinically relevant group for targeted counseling, community education, and public-sector reproductive health interventions.

Mirpurkhas is a socially and demographically diverse setting in which women's reproductive health decisions may be influenced by differences in residence, education, religion, affordability, and healthcare access. Yet, empirical evidence describing the level of awareness, prevailing attitudes, and practical use of emergency contraceptive pills among women attending maternal and child health services in this setting remains scarce. Without such data, it is difficult to design locally responsive educational programs, improve provider counseling strategies, or address preventable barriers related to access and affordability. The present study was therefore undertaken to assess awareness and use of emergency contraceptive pills among females aged 18 to 45 years attending the Maternal and Child Health Care Centre, Mirpurkhas, with particular emphasis on knowledge, attitudes, and use-related access challenges. It was hypothesized that although a reasonable proportion of women may have heard of emergency

contraceptive pills, substantial knowledge gaps and practical barriers to access would remain prevalent in this population (1,9,17).

MATERIALS AND METHODS

This study employed a descriptive cross-sectional design to assess awareness, attitudes, and use of emergency contraceptive pills among women of reproductive age attending a maternal and child healthcare facility. A cross-sectional approach was considered appropriate because the primary objective was to estimate the level and pattern of knowledge, attitudes, and practices at a defined point in time within a naturally occurring clinical population, without introducing any intervention or follow-up component. The study was conducted over a three-month period from November 2025 to January 2026 at the Maternal and Child Health Centre located in Mirpurkhas division, Sindh, Pakistan, a public-facing service environment that routinely caters to women seeking maternal and reproductive health support. This setting was selected because it provides direct access to women in the reproductive age group and offers a relevant context for evaluating awareness and real-world accessibility of emergency contraceptive services in a district-level care environment (18).

The study population comprised women aged 18 to 45 years who attended the study site during the data collection period and were eligible to provide information regarding awareness and use of emergency contraceptive pills. Women who were married, widowed, or divorced and fell within the specified age bracket were considered eligible for participation. Women who were unwilling to participate or who were outside the predefined age range were excluded from the study. Participant selection was carried out using a non-probability convenience sampling technique, whereby women meeting the eligibility criteria were approached consecutively during the study period and invited to participate. This approach was operationally feasible in the study setting and allowed efficient recruitment of service users within the available timeframe; however, procedural safeguards were applied during data collection to reduce interviewer-driven selection imbalance by approaching participants across routine service hours and by using consistent eligibility criteria for all respondents.

The sample size was set at 241 participants. This number was determined using an online sample size calculator based on a 95% confidence level and a 5% margin of error. Recruitment continued until the target sample was achieved. Prior to enrollment, eligible women were informed about the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Written or verbal informed consent was obtained according to site-appropriate ethical procedure before questionnaire administration. To reduce response coercion and improve data authenticity, participation was conducted in a respectful and private manner, and respondents were assured that refusal to participate would not affect the care or services they received at the facility.

Data were collected using an adopted, structured questionnaire aligned with the study objectives and administered at the point of contact during the study period. The instrument included items related to demographic characteristics and multiple domains of knowledge, attitude, and practice concerning emergency contraceptive pills, including awareness of pregnancy prevention, timing of use, indications, method types, perceived side effects, accessibility, prior use, source of prescription, and affordability. The questionnaire was pretested among women from the same setting before formal data collection to evaluate clarity, relevance, and comprehensibility. Content validity was assessed by an expert panel comprising nursing faculty, a gynecologist, and a research specialist, who reviewed the instrument for relevance, simplicity, comprehensiveness, and wording suitability. Revisions were incorporated following expert feedback. Internal consistency reliability was assessed using Cronbach's alpha, which yielded a value of 0.78, indicating acceptable reliability for use in the study population.

The primary outcome domains were knowledge, attitude, and practice related to emergency contraceptive pills. Knowledge variables included recognition of the preventive role of emergency contraceptive pills, awareness of correct timing of use, knowledge of indications, understanding of

available methods, awareness of dose interval, knowledge of side effects, and awareness of availability in government facilities. Attitude variables included perceived safety, beliefs regarding the influence of emergency contraceptive pills on condom use, willingness to recommend their use, views about their acceptability relative to abortion, embarrassment associated with purchase, perception of reproductive health value, and perceived need for awareness programs. Practice and access variables included previous use, prescription source, difficulty obtaining emergency contraceptive pills, and perception of cost. Composite scoring was performed by summing domain-specific item responses to generate a knowledge score, an attitude score, and an overall combined score. The knowledge domain contained 10 items with a possible score range of 0 to 10, the attitude domain contained 7 items with a possible score range of 0 to 7, and the overall score ranged from 0 to 17, with higher scores reflecting better knowledge and more positive attitudes.

Several steps were undertaken to improve data quality and limit bias. Use of a standardized questionnaire reduced variability in measurement across respondents. Pretesting improved item clarity and minimized ambiguity. Expert validation supported content appropriateness, while internal consistency testing strengthened instrument reliability. To reduce information bias, the questionnaire focused on straightforward, structured response options, and data collectors followed a consistent administration approach. Because the topic involved reproductive health and could be sensitive, privacy was maintained as much as possible during completion to reduce social desirability bias. Data were reviewed for completeness and consistency prior to entry. Coding and cleaning procedures were applied before statistical analysis to detect entry errors and implausible responses. Records with incomplete or inconsistent entries were checked against source forms where possible during the cleaning stage to preserve data integrity.

All data were entered and analyzed using the Statistical Package for the Social Sciences version 27. Descriptive statistics were used to summarize participant characteristics and responses. Categorical variables were presented as frequencies and percentages, whereas continuous or summary score variables were expressed as means and standard deviations. The results were organized in tabular form to improve clarity of interpretation. For reproducibility, all variables were coded consistently before analysis, and score calculations were performed according to predefined item groupings. Because the study was primarily descriptive in scope, the main analytical emphasis was placed on estimating the distribution of knowledge, attitudes, and practices within the study population. Ethical approval for the study was obtained from the relevant Institutional Review Board, and administrative permission was secured from the Maternal and Child Health Centre before commencement of data collection. Confidentiality and anonymity were maintained throughout the research process, and all collected information was used exclusively for academic and scientific purposes (19,20).

RESULTS

Table 1: Demographic Characteristics of Participants (n = 241)

Variable	Category	Frequency (n)	Percentage (%)
Age	18–25 years	24	10.0
	25–32 years	48	20.0
	33–39 years	60	25.0
	40–45 years	109	45.0
Religion	Muslim	108	44.8
	Hindu	84	34.9
	Catholic	24	10.0
	Protestant	25	10.4
Residence	Rural	101	41.9
	Urban	140	58.1
Education	Educated	151	62.7
	Uneducated	90	37.3

Table 2: Knowledge Regarding Emergency Contraceptive Pills

Variable	Correct Response (%)	Incorrect/Don't Know (%)
ECP prevents pregnancy	34.0	66.0
Correct timing (≤72 hrs)	38.6	61.4
Indication awareness	39.4	60.6
Method awareness	36.9	63.1
Correct interval knowledge	54.4	45.6
Side effect awareness	22.4 (highest specific)	77.6
Govt availability awareness	45.6	54.4
Misconception (STD protection)	56.4 (incorrect belief)	—

Table 3: Attitude Towards ECPs

Variable	Yes (%)	No (%)	Uncertain (%)
ECP is safe	58.5	34.0	7.5
Discourages condom use	46.9	51.0	2.1
Recommend ECP	53.1	46.9	—
Better than abortion	62.2	32.0	5.8
Embarrassment in purchase	52.3	36.5	11.2
Good for reproductive health	61.4	34.4	4.1
Need awareness programs	60.6	32.4	7.1

Table 4: Composite Scores

Domain	Mean ± SD	Range
Knowledge Score	5.2 ± 1.8	0–10
Attitude Score	5.5 ± 1.7	0–7
Overall KAP Score	10.7 ± 2.5	0–17

Table 5: Practice and Accessibility

Variable	Yes (%)	No (%)
Ever used ECP	47.7	52.3
Difficulty obtaining ECP	47.3	52.7
Perceived high cost	51.0	49.0
Source of ECP	Percentage (%)	
Healthcare provider	40.7	
MCH center	40.2	
Pharmacist	19.1	

A total of 241 women participated in the study, with the largest proportion aged 40–45 years (45.0%), followed by 33–39 years (25.0%). Urban residents constituted 58.1% of the sample, while 62.7% were educated. Knowledge regarding emergency contraceptive pills was variable, with only 34.0% correctly identifying that ECPs prevent pregnancy, and 38.6% aware of the correct timing of use within 72 hours. Notably, 66.0% demonstrated either incorrect knowledge or uncertainty regarding the mechanism of pregnancy prevention. Misconceptions were evident, with 56.4% incorrectly believing that ECPs provide protection against sexually transmitted diseases.

Attitudinal responses were comparatively more favorable, as 58.5% considered ECPs safe, and 62.2% perceived them as a better alternative to abortion. However, sociocultural barriers remained evident, with 52.3% reporting embarrassment in purchasing ECPs. The overall mean knowledge score was 5.2 ± 1.8, while the attitude score was slightly higher at 5.5 ± 1.7, resulting in a composite KAP score of 10.7 ± 2.5, indicating moderate awareness and positive perception.

In terms of practice, 47.7% of participants had previously used ECPs, while 47.3% reported difficulty in accessing them. Cost was identified as a barrier by 51.0% of respondents. The primary sources of ECPs were healthcare providers (40.7%) and maternal health centers (40.2%), with pharmacists accounting for only 19.1% of access points.

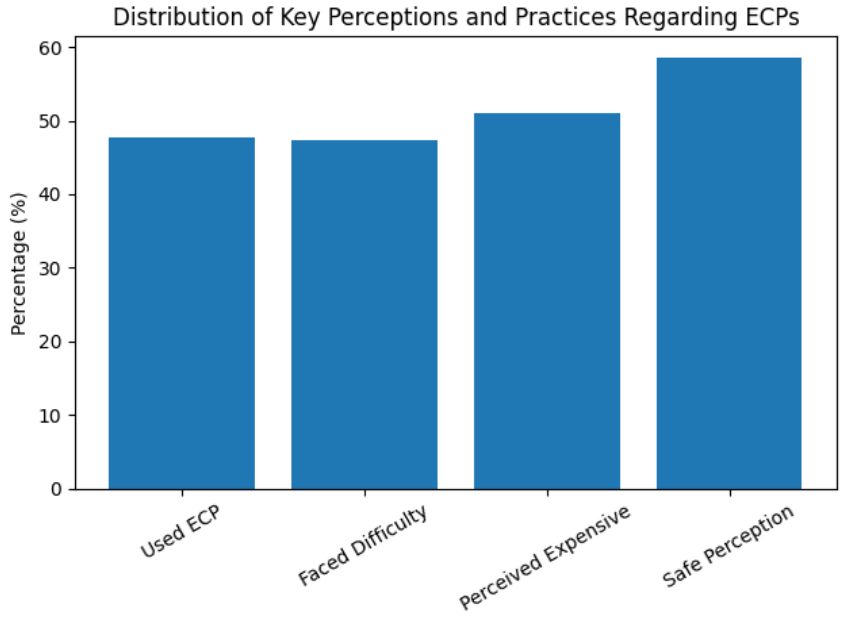

Figure 1 Distribution of Key Perceptions and Practices Regarding ECPs

The distribution of key indicators demonstrates a notable divergence between perception and actual utilization of emergency contraceptive pills. While perceived safety reached 58.5%, actual usage remained lower at 47.7%, reflecting a gap of approximately 10.8 percentage points between acceptance and practice. Similarly, accessibility barriers were substantial, with 47.3% reporting difficulty obtaining ECPs, closely aligning with usage rates and suggesting structural constraints as a limiting factor. Cost perception was slightly higher at 51.0%, indicating financial barriers as a dominant deterrent. The clustering of values between 47% and 58% across all indicators highlights a plateau effect, where moderate awareness does not translate into optimal utilization, suggesting the presence of interacting sociocultural and systemic barriers influencing reproductive health behavior.

DISCUSSION

The present study demonstrated that women aged 18 to 45 years attending the Maternal and Child Health Centre in Mirpurkhas had an overall moderate level of knowledge and a moderately positive attitude toward emergency contraceptive pills, yet this awareness did not translate into consistently accurate understanding or widespread use. The mean knowledge score of 5.2 ± 1.8 out of 10 and the mean attitude score of 5.5 ± 1.7 out of 7 indicate that participants were not uniformly uninformed; rather, they possessed fragmented knowledge accompanied by relatively favorable perceptions. This pattern is important because it suggests that the principal challenge in this population is not complete unfamiliarity with emergency contraception, but incomplete and inconsistent understanding of its indication, timing, and practical role in pregnancy prevention. In reproductive health settings, such partial awareness can be as problematic as total lack of knowledge, because women may overestimate what they know and still use the method incorrectly or fail to access it within the effective time window.

A particularly important finding was that only 34.0% of respondents correctly identified that emergency contraceptive pills prevent pregnancy, while 34.9% did not know this, and 31.1% responded incorrectly. Similarly, only 38.6% recognized the correct timing of use within 72 hours, whereas 34.9% believed the pills should be used before intercourse and 26.6% did not know the appropriate timing. These findings indicate a substantial deficiency in functional knowledge, especially concerning the two most clinically relevant components of emergency contraception: purpose and timing. This is consistent with prior literature showing that women may have heard of emergency contraceptive pills without understanding their mechanism or correct postcoital use. Studies from developing and transitional contexts have likewise shown that superficial familiarity often coexists with misinformation, limiting effective

utilization even where the method is nominally available (14,15). The persistence of such knowledge gaps in the current study is particularly concerning because timely use is central to efficacy, and misunderstanding of timing can render awareness practically ineffective.

The results also highlighted the presence of major misconceptions. More than half of respondents, 56.4%, incorrectly believed that emergency contraceptive pills protect against sexually transmitted diseases. This is not a minor misunderstanding; it reflects a clinically significant error that may influence sexual decision-making and risk perception. Emergency contraceptive pills do not provide any protection against sexually transmitted infections, and confusion between pregnancy prevention and infection prevention may reduce reliance on barrier methods such as condoms. Although 51.0% of respondents disagreed with the idea that emergency contraceptive pills discourage condom use, the coexistence of this favorable attitude with an incorrect belief regarding STD protection points to a complex knowledge-attitude mismatch. Similar concerns have been noted in previous studies, where favorable opinions about emergency contraception did not necessarily correspond with scientifically accurate understanding of its limitations and appropriate use (16,17). This reinforces the need for counseling that explicitly differentiates emergency contraception from barrier protection and routine contraceptive methods.

Despite knowledge limitations, the attitudinal profile of participants was comparatively encouraging. More than half of the respondents considered emergency contraceptive pills safe (58.5%), recommended their use (53.1%), viewed them as better than abortion (62.2%), and believed they were beneficial for reproductive health (61.4%). In addition, 60.6% expressed the need for awareness programs. These findings suggest a receptive environment for educational intervention, because resistance to emergency contraception does not appear to be uniformly entrenched. Instead, the data indicate that many women may be willing to accept, recommend, and support emergency contraception once accurate information becomes available. Comparable studies among reproductive-age women and healthcare-linked populations have also found that attitudes tend to be more favorable than actual knowledge, and that positive attitudes may provide a strong platform for targeted awareness campaigns and provider-led counseling (16,18). From a public health perspective, this is encouraging, because improving practice in such populations may be more feasible than in settings where both knowledge and attitudes are predominantly negative.

However, the study also revealed notable sociocultural and structural barriers that likely interfere with effective use. More than half of the respondents, 52.3%, reported embarrassment in purchasing emergency contraceptive pills, nearly half, 47.3%, experienced difficulty obtaining them, and 51.0% perceived them as expensive. These findings show that even when women hold relatively positive views, actual access remains constrained by stigma, logistics, and affordability. The utilization rate of 47.7% must therefore be interpreted in the context of these barriers. This proportion is neither negligible nor satisfactory; it reflects a moderate degree of use under conditions where access appears inconsistent and social discomfort remains substantial. Evidence from Pakistan and neighboring settings similarly indicates that cost, embarrassment, insufficient provider guidance, and limited local availability are recurring barriers to practical uptake of emergency contraception, particularly among women navigating conservative social environments or resource-limited facilities (14,19,20). The present findings therefore support the view that awareness programs alone may be insufficient unless they are paired with service-level improvements, cost reduction, and stigma-sensitive counseling.

The source pattern for emergency contraceptive access further supports the importance of formal healthcare contact. In this study, 40.7% obtained emergency contraceptive pills through healthcare providers and 40.2% through the Maternal and Child Health Centre, whereas only 19.1% accessed them through pharmacists. This suggests that institutional or clinician-mediated channels are central to emergency contraceptive access in the study population. Such a pattern may reflect limited autonomy in over-the-counter purchasing, stronger trust in provider advice, or lower awareness of alternative access

points. It also implies that health facilities represent a strategic intervention point for counseling, myth correction, and timely provision. If provider contact is already a dominant route of access, strengthening counseling quality at maternal and child health centres may yield a disproportionately high benefit. This is especially relevant in district-level public facilities, where even brief, structured contraceptive counseling could address common misconceptions regarding timing, mechanism, side effects, and non-protection against sexually transmitted infections.

The demographic profile of the sample also offers interpretive context. The majority of participants were aged 40 to 45 years, most were urban residents, and nearly two-thirds were educated. Yet, despite this relatively advantaged profile in terms of urban residence and education, substantial knowledge deficiencies persisted. This suggests that exposure to formal education or urban living does not automatically ensure accurate reproductive health literacy. It is possible that the educational content available to these women has been insufficiently specific, culturally constrained, or disconnected from practical contraceptive decision-making. In addition, because the study relied on a service-based convenience sample, the observed knowledge pattern may represent women already connected to healthcare more than the broader community; if so, true community-level awareness may be even lower. This possibility strengthens, rather than weakens, the case for broader public health intervention.

The findings of this study should also be considered in light of its methodological characteristics. As a descriptive cross-sectional study, it provides a useful snapshot of knowledge, attitudes, and practices but cannot establish temporal or causal relationships between awareness, access barriers, and use. The use of convenience sampling limits generalizability beyond the study setting, and the reliance on self-reported responses introduces the possibility of recall bias and social desirability bias, especially given the sensitive nature of contraception. At the same time, the study offers valuable context-specific evidence from an underrepresented district-level maternal health setting and uses a structured, pretested questionnaire with acceptable reliability. These strengths support the utility of the findings for local service planning, even if broader population inference should be made with caution.

Overall, the study adds to the evidence showing that moderate awareness of emergency contraceptive pills may coexist with inaccurate understanding, misconceptions, embarrassment, and access barriers. The most meaningful implication is that reproductive health interventions in this population should move beyond generic awareness messaging and instead focus on functional literacy: what emergency contraceptive pills are, when they should be used, what they do and do not prevent, where they can be obtained, and how affordability and stigma can be addressed through public-sector systems. Integrating this information into maternal and child health counselling, community outreach, and women-centered public health education may improve timely use and reduce unintended pregnancy risk in similar low-resource settings (14–20).

CONCLUSION

Women attending the Maternal and Child Health Centre in Mirpurkhas demonstrated moderate overall awareness and generally positive attitudes toward emergency contraceptive pills, but important deficiencies persisted in accurate knowledge of their purpose, timing, and limitations, alongside substantial barriers related to embarrassment, accessibility, and perceived cost. Although nearly half of the participants had used emergency contraceptive pills and many viewed them as safe and beneficial, the persistence of misinformation and structural obstacles indicates that favorable attitudes alone are insufficient to ensure appropriate use. Strengthened provider counseling, targeted community education, improved affordability, and consistent availability through public health facilities are necessary to enhance correct utilization and support better reproductive health outcomes in this population.

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