

Determinants of modern contraceptive discontinuation among inclined users: A Cross-Sectional study in Rawalpindi city

Chaudhary Talha Tariq¹, Sabika Nisar², Waffa Khan³, Raja Osama Sabbir⁴, Sana Bilal⁵, Maria Jabeen⁵

^{1,2,3,4}Student of 4th Year MBBS, Rawalpindi Medical University

⁵Associate Professor, Community Medicine, Rawalpindi Medical University

⁶APMO, Community Medicine, Rawalpindi Medical University

Author's Contribution

^{1,2,3,4,5,6} Conception of study

^{1,2,3,4} Experimentation/Study Conduction

^{1,2} Analysis/Interpretation/Discussion

¹ Manuscript Writing

^{1,5,6} Critical Review

¹Facilitation and Material analysis

Corresponding Author

Chaudhary Talha Tariq,

4th Year MBBS Student,

Rawalpindi Medical University,

Rawalpindi

Email: chtalhatariq786@outlook.com

Article Processing

Received: 07/01/2025

Accepted: 25/01/2025

Cite this Article: Tariq CT, Nisar S, Khan W, Osama RO, Bilal S, Jabeen M. Determinants of modern contraceptive discontinuation among inclined users: A cross-sectional study in Rawalpindi city. Students' Supplement. J Rawalpindi Med Coll. 2024;28(S2):112-122.

Conflict of Interest: Nil

Funding Source: Nil

Access Online:



Abstract

Introduction: Contraception is the intentional prevention of conception through various devices, sexual practices, chemicals, or surgical procedures. Discontinuing contraceptives without wanting to conceive can lead to adverse health outcomes. Stopping contraceptives poses challenges to public health efforts in family planning and reproductive health. Understanding the factors behind this issue is vital for creating effective interventions and improving adherence to contraceptive methods. Research in Pakistan indicates that women often avoid birth control due to cultural or religious beliefs, family or partner opposition, health concerns, or fear of side effects.

Objectives: To identify determinants associated with discontinuation of contraceptives in inclined users in Rawalpindi city.

Materials and Methods: This three-month Cross-sectional study in Rawalpindi was specifically focused on married women. 324 participants who agreed to participate fulfilled the inclusion criteria using an interview-based questionnaire form.

Results: Of the 324 women in Rawalpindi who responded, 32.19% had discontinued oral contraceptive pills, 30.31% had discontinued Barrier Method, 25% had discontinued IUDs, 8.44% had discontinued injectable contraceptives, and 4.06% had discontinued transdermal patches after using each method for at least 6 months. Menstrual abnormalities was the chief reason for discontinuation for Oral Contraceptive Pills. The chief reasons for barrier method was slippage and breakage, for Intra Uterine Contraceptive Devices was pelvic pain, for injectables was site reactions and for transdermal patches was skin discoloration.

Conclusion: The results of this study show that the most common contraceptive method to be discontinued is oral contraceptive pills and the chief reason for discontinuation is menstrual abnormalities. Tailored counseling is vital to address these concerns effectively, and comprehensive reproductive health programs are recommended to promote equitable contraceptive use.

Keywords: Contraceptives, oral contraceptive pills, intrauterine contraceptive devices, condoms, birth

Introduction

Contraception is defined as the intentional prevention of conception through the use of various devices, sexual practices, chemicals, drugs, or surgical procedures when desired.¹ An effective contraception allows a physical relationship without fear of an unwanted pregnancy and ensures freedom to have children. Contraceptives are useful tools to aid in safeguarding the population and our resources.² In this time of economic shortage especially for a developing country like Pakistan proper use of contraceptives is deemed to prevent unplanned children and excess burden on families. Despite its significance, the discontinuation of contraceptives among inclined users remains a pressing issue.³ Discontinuation of contraceptives without the desire to become pregnant can result in adverse health outcomes for the mother. In Pakistan in 2015–2019, there were a total of 9,720,000 pregnancies annually. Of these, 3,690,000 pregnancies were unintended and 2,240,000 ended in abortion. According to UN Women Org, in Pakistan, 154 women died for every 100,000 live births—a high maternal mortality rate shaped by socio-economic status, barriers to healthcare access in rural areas, and limited decision-making power, especially among young women. These figures are enough to make us understand the strain unintended pregnancies have on increasing the population of Pakistan.

According to WHO, contraceptive methods are classified as modern and old. Modern methods include oral contraceptives, barrier methods, intrauterine devices, injectables, patches, and implants. As of 2022, globally, an estimated 65%

of married or in-union women use some form of contraception, and 58.7% use modern methods.⁵ The old methods included the withdrawal method, calendar method, and lactational amenorrhea method (LAM), to name a few. They can be chosen based on a person's comfort, protection and cost.⁶ Discontinuation of contraceptives presents a hurdle to public health efforts focused on family planning and reproductive health. Gaining insight into the factors contributing to this challenge is crucial for developing impactful interventions and enhancing adherence rates to contraceptive methods³.

A study in Netherlands suggests that stopping oral contraceptive pills (OCPs) can mean either quitting them altogether or switching to a different method. OCPs are associated with risks such as increased stroke severity, higher breast cancer risk, and side effects including weight gain, cognitive impairment, mood swings, and irregular bleeding.⁷ Specifically in Pakistan researches conducted suggests that women often don't use birth control because of cultural or religious reasons, opposition from family or partners, health worries, or fear of side effects.⁸ Past research highlights side effects, especially with pills and injectables, as a major reason. According to the Pakistan Demographic and Health Survey (PDHS 2012–2013), 54% of women have used modern contraceptive methods, while the current usage is at 35%. This suggests a downward trend in the use of contraceptives.¹¹ By pinpointing the factors influencing discontinuation, policymakers and healthcare

providers can promote fair access to contraceptives and improve counseling services. Ultimately, this research aids in enhancing reproductive health outcomes by guiding evidence-based approaches to lowering contraceptive discontinuation rates among those initially inclined to use them in our community.

Materials and Methods

This study was designed as a descriptive cross-sectional study, set within the district of Rawalpindi, and lasted approximately three months from March to July 2024 following approval from the Ethical Review Board. The study population comprises married women within reproductive age from various sections of Rawalpindi, aiming to include a sample size of 324 participants. This number is calculated using the EPI calculator, ensuring a 95% confidence interval and a 5% margin of error. The sampling technique employed is non-random convenience sampling. Participants were selected based on their availability and consent. Consent was obtained through a consent form attached to the questionnaire. Data was collected using a structured questionnaire developed by researchers, which served as the primary data

collection tool.

The inclusion criteria for the study were as follows: Married women in reproductive age (18-64 years), Pregnant females. The exclusion criteria are: Married females not using any contraceptives due to any relevant medical condition.

Results

A total of 319 individuals participated, with a predominant representation from the age group of 26-35 years (52.8%), followed by 36-44 years (31.6%) and 18-25 years (15.6%). Educational attainment varied, with 37.8% of participants holding a graduation degree or higher, while 6.6% were not educated at all. Monthly income was predominantly within the Rs 30,000 to Rs 100,000 range, with 25.3% earning Rs 30-50 thousand and 27.2% earning Rs 50-100 thousand. The majority of respondents resided in urban areas (81.3%), and the ethnic composition revealed a significant representation of Punjabis (75.2%), followed by Pashtoons (12.9%) and other minority groups. This demographic information provides essential context for understanding the varied perspectives and experiences related to contraceptive use and discontinuation within this population (Table I).

Table I- Patients Demographics

		Count (N)	N %
Age of participants	18-25	50	15.6%
	26-35	169	52.8%
	36-44	101	31.6%
Level of Education	Uneducated	21	6.6%
	Primary	74	23.1%

	Secondary	55	17.2%
	Intermediate	49	15.3%
	Graduation or above	121	37.8%
Monthly Income	Less than Rs 30 thousand	59	18.4%
	Rs 30-50 thousand	81	25.3%
	Rs 50-100 thousand	87	27.2%
	Rs 100-200 thousand	60	18.8%
	More than Rs 200 thousand	33	10.3%
Place of residence	Urban	260	81.3%
	Rural	60	18.8%
Ethnicity	Punjabi	240	75.2%
	Pashtoon	41	12.9%
	Afghani	5	1.6%
	Sindhi	11	3.4%
	Balochi	2	0.6%
	Balochi	2	0.6%
	Kashmiri	18	5.6%
	Siraiki	1	0.3%
	Hindustani	1	0.3%

The analysis of contraceptive methods used and subsequently discontinued by participants revealed diverse patterns of usage among inclined users. Among the 319 respondents, the most frequently discontinued method was oral contraceptive pills, accounting for 32.2% of participants. This was closely followed by the barrier method, with 30.3% of individuals reporting discontinuation. The intrauterine contraceptive device (IUCD) was utilized by 25.0%

of participants, while injectable contraceptives were used by 8.4%. Additionally, transdermal patches were the least commonly reported method, with only 4.1% of users discontinuing this option. These findings highlight the varied preferences and challenges faced by users of different contraceptive methods, underscoring the importance of understanding these dynamics in efforts to improve contraceptive continuation rates. (Figure 1)

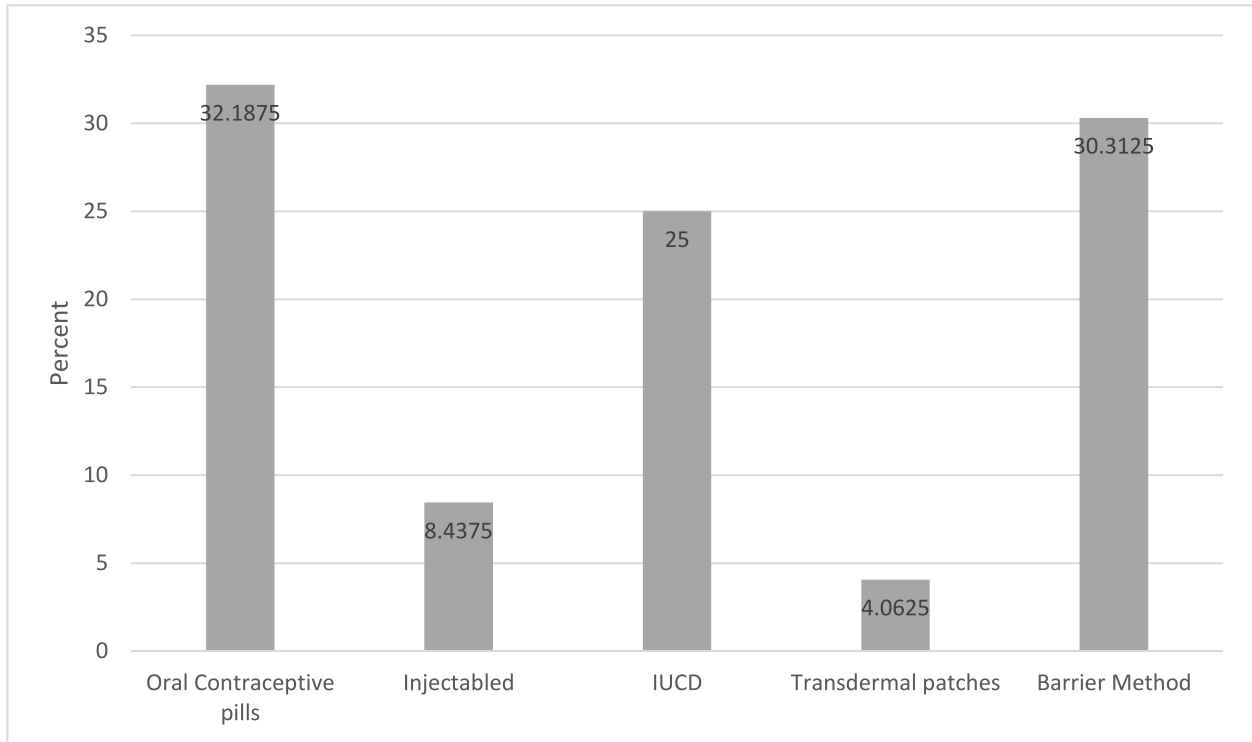


Figure 1 Types of contraceptive used and later discontinued

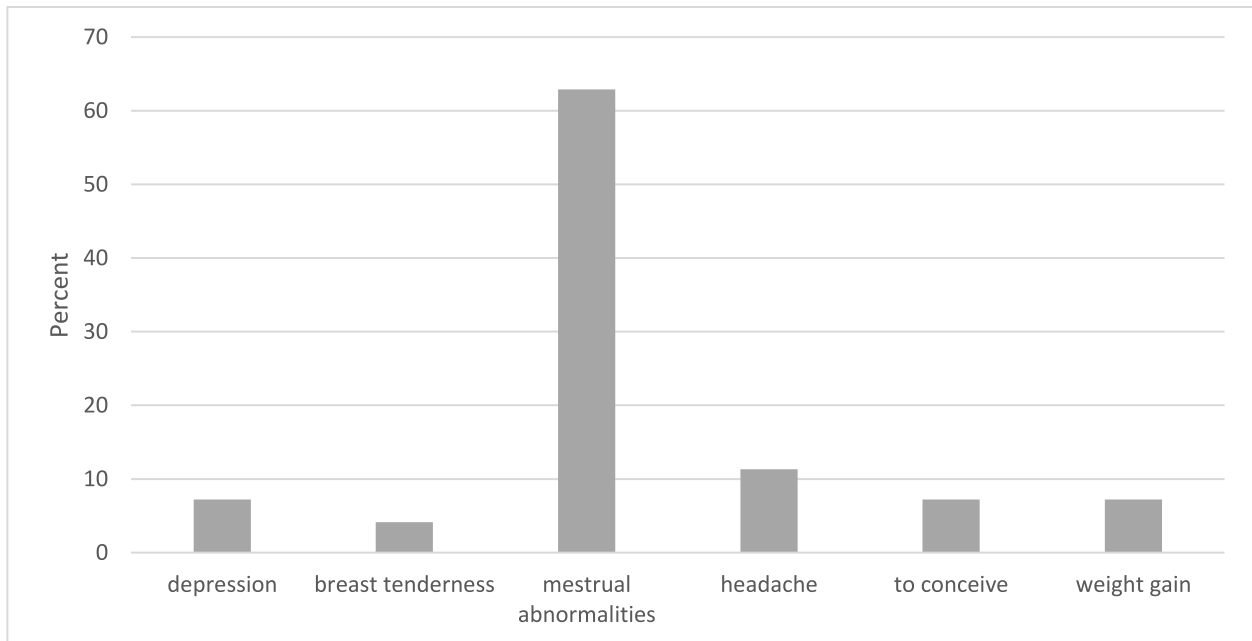


Figure 2 Reasons for discontinuation of oral contraceptive pills

In analyzing the reasons for discontinuation of oral contraceptive pills among participants, a total of 90 responses were recorded, excluding missing values. The most common reason cited was menstrual abnormalities, affecting 62.89% of users, which underscores significant concerns regarding the impact of this contraceptive method on menstrual health. Other reasons included headaches (11.34%), breast tenderness (4.12%), and a desire to conceive (7.22%), alongside weight gain, also reported by 7.22% of participants. These findings illustrate the varied side effects and personal considerations influencing the discontinuation of oral contraceptive pills, highlighting the importance of providing comprehensive counseling and support to address users' concerns and enhance overall satisfaction with contraceptive options (Figure 2).

In examining the reasons for discontinuation of injectable contraceptives among participants, a total of 27 valid responses were recorded. The most frequently reported reason was site reactions, experienced by 33.3% of users. This was followed by menstrual abnormalities, cited by 25.9% of participants, indicating concerns about the impact of injectables on menstrual health. Other reasons included headaches (18.5%), abdominal tenderness (7.4%), and breast tenderness (7.4%), as well as a desire to conceive, which was also reported by 7.4% of users. These findings highlight the varied experiences and side effects associated with injectable contraceptives, suggesting a need for thorough counseling to address users' concerns and improve adherence to this method of contraception.

The analysis of reasons for discontinuation of intrauterine contraceptive devices (IUCD) among participants revealed a total of 80 valid responses. The most frequently reported reason was pelvic

pain, cited by 28.7% of users, highlighting significant discomfort as a barrier to continued use. Other notable reasons included menstrual irregularities (12.5%) and fear of perforation (16.3%). Additionally, 10.0% of participants reported infections and allergies as contributing factors to discontinuation. Concerns regarding expulsion were also noted by 7.5% of users, while the desire to conceive was cited by 15.0% of participants. These findings underscore the importance of addressing both physical side effects and personal motivations to enhance the experience and adherence of IUCD users, suggesting that targeted education and support could improve retention rates for this contraceptive method (Figure 3).

The evaluation of reasons for discontinuation of transdermal patches among participants yielded a total of 13 valid responses. The most frequently reported reason for discontinuation was skin discoloration, affecting 38.5% of users, indicating significant cosmetic concerns. Additionally, menstrual irregularities and the desire to conceive were each cited by 23.1% of participants, suggesting that reproductive goals and changes in menstrual patterns are crucial considerations for users. Irritation was also noted by 15.4% of respondents as a contributing factor to their decision to discontinue use.

The analysis of reasons for discontinuation of barrier methods among participants resulted in a total of 97 valid responses. The most commonly cited reason was reduced sensation during intercourse, reported by 43.3% of users, highlighting the impact of physical experience on contraceptive preferences. Additionally, latex irritation was noted by 26.8% of participants, indicating discomfort associated with this method. Other reasons included slippage and breakage, affecting 15.5% of users, and the desire to conceive, reported by 14.4% of respondents. These

findings underscore the importance of addressing both physical sensations and practical concerns in the context of barrier methods, suggesting that enhanced education and alternative options could

help mitigate these issues and improve user satisfaction and adherence to contraceptive practices (Figure 4).

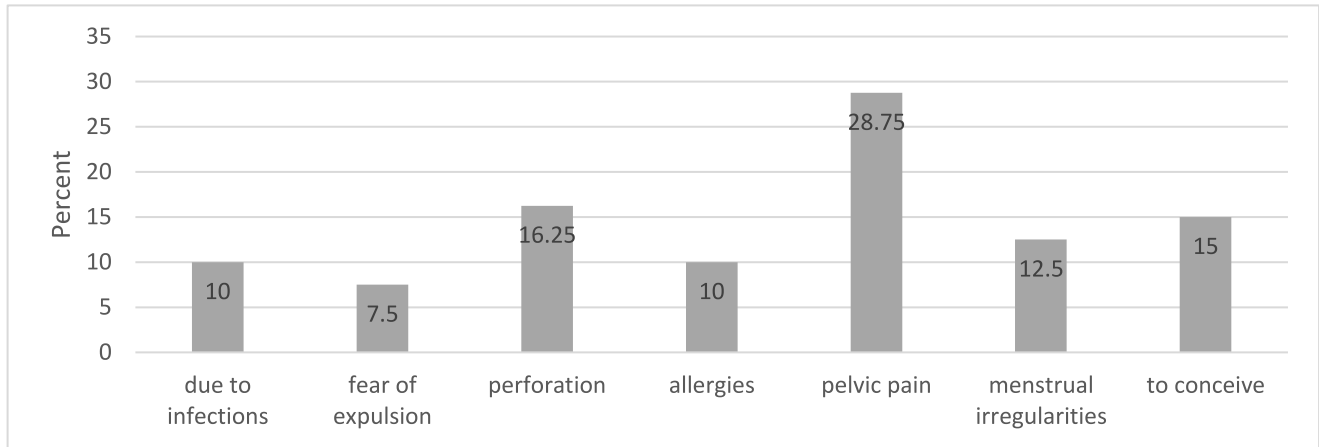


Figure 3 Reasons for discontinuation IUCD

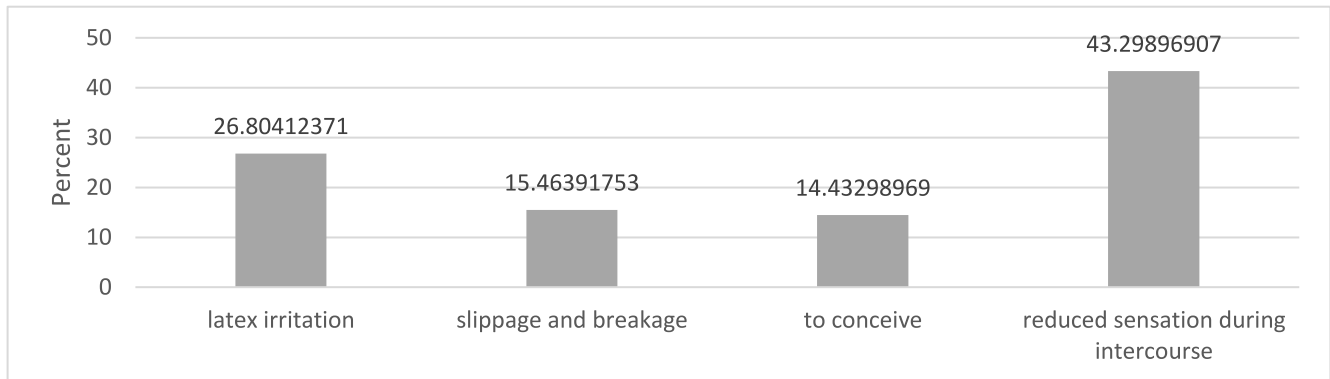


Figure 4 Reasons for discontinuation of barrier method

Discussion

With a sample size of 324 individuals, the age distribution was notably skewed towards younger adults, with the majority falling within the 26–35 years age range (52.8%). Studies from various settings, including Kenya and Nigeria, indicate that age significantly influences contraceptive use and discontinuation rates. In Kenya, research has shown that younger women, particularly those aged 18–25, often exhibit a lower prevalence of contraceptive use, possibly due to factors like lower sexual activity or lack of awareness¹². Conversely, as seen in Nigeria, the use of modern contraceptives generally increases with age, particularly among women aged 26–35 and 36–44. This pattern is attributed to a better understanding of reproductive health and a higher likelihood of having completed their desired family size. Older women tend to have more consistent access to healthcare information and services, which supports sustained contraceptive use^{13,14}.

Educational attainment in our research varied significantly, with 37.8% of participants possessing a graduation degree or higher. This suggests a relatively well-educated sample, although a small percentage (6.6%) were not educated at all. The impact of education on contraceptive use is well-documented across studies in various countries, including Kenya and Nigeria. Women with higher educational attainment are significantly more likely to use modern contraceptive methods. In Kenya, it has been observed that educated women often have better access to healthcare information and resources, enabling them to make informed decisions about family planning¹².

A significant majority of respondents in

our research resided in urban areas (81.3%), highlighting a potential urban-rural divide in access to healthcare services and information. The disparity in contraceptive use between urban and rural areas is notable, particularly in regions like Nigeria and Kenya. Urban residents generally have better access to healthcare facilities and services, including family planning resources, which facilitates continued contraceptive use. However, rural women face several challenges, such as limited healthcare infrastructure, cultural barriers, and lower levels of education, which contribute to higher discontinuation rates. For instance, in rural Nigeria, the lack of healthcare facilities and family planning services is a significant barrier to contraceptive use^{12, 15}. This urban-rural divide underscores the need for targeted interventions to improve access to contraceptive services in rural areas.

The results of this study on the determinants of modern contraceptive discontinuation among inclined users in Rawalpindi City provide essential insights into the various challenges encountered by users of different contraceptive methods. A total of 324 participants shared their experiences with discontinuation, illuminating the complex motivations behind their decisions.

Among the contraceptive methods examined, oral contraceptive pills were the most frequently discontinued, with a discontinuation rate of 32.2%. The leading cause for this discontinuation was menstrual abnormalities, which affected 67.8% of users. This observation is consistent with previous studies that underscore irregular bleeding patterns as a significant concern for many women utilizing hormonal contraceptives,

including research conducted in Pakistan and India^{9,10}. Other common reasons for discontinuation included headaches and weight gain, both of which are well-documented side effects that can deter women from continuing oral contraceptive use in a Tanzanian research¹¹. Moreover, a notable portion of participants chose not to specify their reasons for stopping, indicating a potential gap in communication and education about the possible side effects of contraceptive methods, which could enhance user satisfaction and adherence.

For injectable contraceptives, 27 participants reported discontinuation, primarily due to injection site reactions (33.3%) and menstrual abnormalities (25.9%). This finding corroborates earlier research from West Bengal, which identified side effects such as injection site discomfort and menstrual irregularities as significant factors affecting the continuation of this method.¹⁶ The considerable number of missing responses suggests that users may feel uncomfortable discussing certain side effects, emphasizing the necessity for healthcare providers to cultivate a supportive atmosphere where users feel at ease sharing their experiences.

Among participants who discontinued intrauterine contraceptive devices (IUCDs), pelvic pain (28.7%) and menstrual irregularities (12.5%) were cited as major reasons. These results are in line with existing literature, which highlights pain and abnormal bleeding as common complaints related to IUCD use in various contexts, including a systematic review conducted in multiple countries¹⁷.

Transdermal patches were discontinued by 13 users, with skin discoloration (38.5%) being the primary reason. This indicates that cosmetic concerns can be a pivotal factor in contraceptive adherence, a topic often neglected in clinical discussions. Menstrual irregularities and the desire to conceive were also significant, reflecting users' reproductive aspirations.¹⁸ Continuous support to address both cosmetic and physical side effects is crucial for improving user satisfaction with this method.

Lastly, barrier methods experienced a discontinuation rate of 30.3%, with reduced sensation during intercourse being the predominant reason (43.3%). This finding echoes previous research indicating that sensory experiences significantly influence contraceptive choices, particularly in studies from the United States and the United Kingdom.^{19,20} Concerns about latex irritation and issues related to slippage or breakage also played important roles in discontinuation, highlighting the need for education on proper usage techniques and the availability of alternative materials, such as polyurethane condoms, which may be less irritating for some users.

In summary, the discontinuation of contraceptive methods appears to stem from a combination of side effects, individual reproductive goals, and overall user experience. Enhancing education and support for users can help to address these challenges, ultimately improving contraceptive adherence. Future research should focus on developing targeted interventions that mitigate side effects and improve the overall contraceptive experience, particularly in diverse cultural settings.

Conclusion

In conclusion, this study highlights the complex factors contributing to the discontinuation of various contraceptive methods among inclined users in Rawalpindi City. Key reasons for discontinuation include menstrual abnormalities, side effects, and personal reproductive goals, which vary significantly across different contraceptive methods. These findings emphasize the importance of tailored counseling and education to address user concerns and improve satisfaction with contraceptive options. Addressing the side effects and challenges identified in this study can enhance contraceptive adherence and ultimately contribute to better reproductive health outcomes. Future research should focus on exploring these issues in diverse populations and developing targeted interventions to support users in making informed choices about their contraceptive methods.

References

1. Al-Ghashri F, Al-Harhi H, Al Shukri M, Al Shidhani A. Discontinuation of hormonal contraception in Oman: prevalence and reasons. *East Mediterr Health J*. 2021 Oct 27;27(10):993-1000. doi: 10.26719/emhj.21.031. PMID: 34766325.
2. Britton LE, Alspaugh A, Greene MZ, McLemore MR. CE: An Evidence-Based Update on Contraception. *Am J Nurs*. 2020 Feb;120(2):22-33. doi: 10.1097/01.NAJ.0000654304.29632.a7. PMID: 31977414; PMCID: PMC7533104.
3. Thobani R, Jessani S, Azam I, Reza S, Sami N, Rozi S, et al. Factors associated with the discontinuation of modern methods of contraception in the low income areas of Sukh Initiative Karachi: A community-based case control study. *PLoS ONE*. 2019 Jun 1;14(7).
4. Safari W, Urassa M, Mtenga B, Changalucha J, Beard J, Church K, et al. Contraceptive use and discontinuation among women in rural North-West Tanzania. *Contraception and Reproductive Medicine*. 2019 Dec;4(1).
5. United Nations Population Division: www.population.un.org/dataportal/home (<https://population.un.org/dataportal/home>). Accessed May 17, 2023).
6. Gupta DR, Prabhakar B, Wairkar S. Non-oral routes, novel formulations and devices of contraceptives: An update. *Journal of Controlled Release*. 2022 May 1;345:798–810.
7. Otte RS, Thissen VTM, Mulder BC. (Dis)continuation of the oral contraceptive pill: A focus group approach in the Netherlands. *Heliyon*. 2023 Sep 1;9(9).
8. Kurutas S, Sato R, Huber-Krum S, Baykal SS, Rohr J, Karadon D, Kaur N, Okcuoğlu BA, Esmer Y, Canning D, Shah I. Contraceptive discontinuation and switching in urban Istanbul region in Turkey. *Int J Gynaecol Obstet*. 2021 Jul;154(1):133-141. Doi: 10.1002/ijgo.13577. Epub 2021 Feb 6. PMID: 33404087.
9. Shah AM, Lee K, Mir JN. Exploring readiness for birth control in improving women health status: Factors influencing the adoption of modern contraceptives methods for family planning practices. *International Journal of Environmental Research and Public Health*. 2021 Nov 1;18(22).
10. Novick AM, Johnson RL, Lazowitz A, Belyavskaya A, Berkowitz L, Norton A, Sammel MD, Epperson CN. Discontinuation of hormonal contraception due to changes in mood and decreases in sexual desire: the role of adverse childhood experiences. *Eur J Contracept Reprod Health Care*. 2022 Jun;27(3):212-220. Doi: 10.1080/13625187.2022.2030702. Epub 2022 Feb 8. PMID: 35133231; PMCID: PMC9133050.
11. Sato R, Elewonibi B, Msuya S, Manongi R, Canning D, Shah I. Why do women discontinue contraception and what are the post-discontinuation outcomes? Evidence from the Arusha Region, Tanzania. *Sexual and Reproductive Health Matters*. 2020 Jan 1;28(1)
12. Teunissen TAM, Lagro-Janssen ALM, Sturkenboom D, Akkermans RP, Uijen AA. Discontinuation of long-acting reversible contraception: a retrospective Dutch study in general practice. *Eur J Contracept Reprod Health Care*. 2025 Feb;30(1):33-38. Doi: 10.1080/13625187.2024.2415361. Epub 2024 Oct 18. PMID: 39422646.

13. Cahill EP, Kaur S. Advances in contraception research and development. *Curr Opin Obstet Gynecol.* 2020 Dec;32(6):393-398. Doi: 10.1097/GCO.0000000000000666. PMID: 32969852.
14. Ontiri S, Mutea L, Naanyu V, Kabue M, Biesma R, Stekelenburg J. A qualitative exploration of contraceptive use and discontinuation among women with an unmet need for modern contraception in Kenya. *Reprod Health.* 2021 Feb 9;18(1):33. Doi: 10.1186/s12978-021-01094-y. PMID: 33563304; PMCID: PMC7871615.
15. Nguyen N, Nguyen L, Nguyen H, Gallo MF. Correlates of use of withdrawal for contraception among women in Vietnam. *BMC Womens Health.* 2020 Apr 29;20(1):87. Doi: 10.1186/s12905-020-00957-z. PMID: 32349745; PMCID: PMC7191771.
16. Bairagya A, Basu G, Mondal R, Roy SK. Prevalence and reasons behind use of injectable contraceptive among the women of reproductive age group: A cross-sectional survey in rural areas of Nadia District, West Bengal. *J Family Med Prim Care.* 2021 Jul;10(7):2566-2571
17. Rosa Bolling K, Wahdan Y, Warnock N, Lott J, Schoendorf J, Pisa F, Gomez-Espinosa E, Kistler K, Maiese B. Utilisation, effectiveness, and safety of immediate postpartum intrauterine device insertion: a systematic literature review. *BMJ Sex Reprod Health.* 2023 Apr;49(2):e1.
18. Gebeyehu NA, Tegegne KD, Biset G, Sewuyew DA, Alemu BW, Yitayew AM. Discontinuation of long acting reversible contraceptive use and its determinants among women in Ethiopia: Systematic review and meta-analysis. *Front Public Health.* 2022 Dec 6;10:979231. Doi: 10.3389/fpubh.2022.979231. PMID: 36561863; PMCID: PMC9763286.
19. Jain A, Tobey E. New Client-Centered Discontinuation Measures Using the Demographic and Health Survey Calendar Data. *Stud Fam Plann.* 2022 Dec;53(4):681-693. Doi: 10.1111/sifp.12212. Epub 2022 Sep 22. PMID: 36134449.
20. Caruso S, Palermo G, Caruso G, Rapisarda AMC. How Does Contraceptive Use Affect Women's Sexuality? A Novel Look at Sexual Acceptability. *J Clin Med.* 2022 Feb 3;11(3):810

