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KNOWLEDGE ABOUT MENSTRUATION AND RELATED PROBLEMS ADOLESCENT GIRLS

Original Research

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ABSTRACT

Background: To assess the level of knowledge about menstruation and related challenges among undergraduate nursing students at Lahore School of Nursing, The University of Lahore.

Methods: A descriptive cross-sectional study was conducted from September to December 2024 among fourth-year BSN students. A total of 55 participants were selected using a convenience sampling technique. Data were collected through a structured, validated questionnaire assessing both knowledge and attitudes related to menstruation. Each correct response in the knowledge section was awarded one point, with scores categorized as poor (<6), average (6–8), or good (>8) out of 10. Data analysis was performed using SPSS version 25.0, applying descriptive statistics to summarize findings.

Results: Among the 55 female participants, 43.5% (n=24) demonstrated good knowledge, 45.5% (n=25) had average knowledge, and 10.9% (n=6) had poor knowledge regarding menstruation and related concerns. The majority (94.5%) correctly identified the average length of menstrual bleeding, while 63.6% accurately recognized the term “menarche.” Additionally, 69.1% of students considered themselves knowledgeable about menstruation, reflecting both awareness and perceived understanding.

Conclusion: The findings indicate a generally moderate to high level of knowledge among nursing students, yet highlight specific gaps in awareness that warrant further educational reinforcement. Strengthening menstrual health education within nursing curricula can contribute to improved awareness and advocacy for adolescent menstrual hygiene.

Keywords: Adolescent Health, Female Nursing Students, Menarche, Menstrual Health, Menstrual Hygiene, Reproductive Education, Students' Knowledge.

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INTRODUCTION

Menstruation, a hallmark of female reproductive health, is a cyclical physiological process marked by the shedding of the uterine lining, typically occurring every 28 days and lasting between 3 to 7 days. The onset of menstruation, or menarche, generally takes place between the ages of 11 and 15, while menopause, signifying the cessation of menstrual cycles, usually occurs between the ages of 45 and 55 (1,2). On average, women lose between 20 to 80 milliliters of blood during each cycle (2). This cyclical phenomenon is regulated by complex hormonal interactions involving the hypothalamus, anterior pituitary, and ovaries. Specifically, the secretion of gonadotropin-releasing hormone (GnRH) by the hypothalamus prompts the anterior pituitary to release follicle-stimulating hormone (FSH) and luteinizing hormone (LH), which in turn stimulate the ovaries to produce estrogen and progesterone. These hormones orchestrate the menstrual cycle and overall reproductive function in females (3). Despite its biological universality, menstruation remains shrouded in misinformation and cultural stigma, particularly in developing regions. Many adolescent girls enter puberty without a clear understanding of the physiological changes they undergo, and menstruation is often treated as a taboo subject. In many cases, girls are too embarrassed to seek guidance, and mothers, due to their own lack of education or cultural restraints, may discourage open conversations about menstruation and related discomforts such as dysmenorrhea or irregular bleeding patterns (4). Menstrual abnormalities—such as amenorrhea, oligomenorrhea, and menorrhagia—can significantly impact adolescent well-being if left unaddressed, yet these conditions often go undiagnosed due to inadequate awareness (5).

Puberty, the transitional phase from childhood to adulthood, is a crucial developmental milestone characterized by the emergence of secondary sexual characteristics and profound physical and psychological changes. In girls, puberty typically begins between the ages of 8 and 13 and is signaled by changes such as breast development, pubic hair growth, and ultimately, menarche (6). Studies highlight that the age of menarche and pubertal progression is influenced by various factors, including genetics, nutrition, and socioeconomic status (3,7). However, a significant gap persists in the dissemination of reliable information on puberty and menstruation, particularly in underserved communities. Globally, inadequate menstrual hygiene management (MHM) contributes to poor health outcomes and educational disruption. According to UNICEF, proper MHM encompasses access to clean water, soap, sanitary products, and the privacy required to change and dispose of menstrual materials safely. Yet many adolescent girls in low-income areas lack these basic resources (8). A study conducted in Ghana found that up to 40% of girls miss school during menstruation due to pain, lack of supplies, or fear of embarrassment (9). Similarly, in Pakistan, 49% of girls are unaware of menarche prior to their first period, and 44% lack access to menstrual hygiene products. Mothers remain the primary source of information for most girls, yet only 53% of them provide guidance, highlighting a critical gap in intergenerational knowledge transmission. Alarmingly, only 0.9% of girls rely on internet platforms for menstrual education, indicating limited digital outreach in menstrual health awareness (10).

During a community posting in Ali Razabad, firsthand interactions with adolescent girls and their mothers revealed a deep-rooted silence and misinformation surrounding menstruation and puberty. Many girls demonstrated limited knowledge, often influenced by cultural taboos, and lacked the confidence or familial support to seek help. The absence of structured health education and open communication further compounded their struggles with understanding the changes associated with puberty. Given these challenges, the current study seeks to evaluate the level of knowledge among adolescent girls regarding menstruation and related concerns, and to identify the cultural or familial barriers that hinder open discussions. By addressing this gap, the study aims to support health education strategies that can empower young girls and inform policies tailored to menstrual and pubertal health in communities like Ali Razabad.

METHODS

The study employed a quantitative cross-sectional design to investigate knowledge levels and barriers related to menstruation and puberty among adolescent females. Conducted at the Lahore School of Nursing, the research spanned a four-month period from September to December 2024. The study population consisted of fourth-year Bachelor of Science in Nursing (BSN) students, aged between 20 and 30 years. A total sample size of 55 was derived using the standard formula $n = N / (1 + N(e^2))$ based on a population size of 64 and a 5% margin of error. Participants were selected through a non-probability convenience sampling method, based on their availability and willingness to participate. Inclusion criteria encompassed BSN fourth-year students who provided written informed consent and met the specified age range. Students in their first and second years, those unwilling to participate, or those uncomfortable

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sharing personal information were excluded to maintain ethical and emotional integrity throughout data collection (11). Data were gathered through a structured, pre-validated questionnaire comprising two sections: knowledge and attitude. The knowledge component included 10 multiple-choice questions, with each correct answer scored as one and incorrect answers as zero. Attitude was assessed using a 5-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5), capturing participants' perceptions and openness related to menstruation and puberty. Each participant completed the questionnaire within 10 to 15 minutes after being briefed about the study's objectives and purpose. Written informed consent was obtained before administering the tool.

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 25.0. Descriptive statistics were applied to summarize sociodemographic variables and knowledge and attitude scores. Inferential statistics were also considered for analyzing associations between knowledge levels and selected variables. Ethical approval for the study was granted by the Ethical Review Committee of the University of Lahore. Participants' rights, confidentiality, and anonymity were strictly maintained. The research ensured that no identifying personal information was collected, and participants were explicitly informed about their right to withdraw at any point without consequence.

RESULTS

A total of 55 fourth-year undergraduate nursing students participated in the study, all of whom were female. The age distribution showed that 12.7% (n=7) of participants were between 20 and 22 years old, 47.2% (n=26) were between 22 and 24 years, and 40.0% (n=22) were between 24 and 26 years. All participants were single. Regarding academic status, 40% (n=22) were enrolled in the sixth semester and 60% (n=33) in the eighth semester. In evaluating overall knowledge regarding menstruation and related issues, 43.5% (n=24) of participants demonstrated good knowledge (scoring >8 out of 10), 45.5% (n=25) had average knowledge (scoring 6–8), while 10.9% (n=6) showed poor knowledge (scoring <6). When assessing individual knowledge components, 74.5% (n=41) correctly identified the average age of puberty in girls, and 80% (n=44) acknowledged the role of the pituitary gland in hormone release initiating puberty. A total of 70.9% (n=39) reported experiencing menstrual pain, and 63.6% (n=35) correctly identified the first menstrual flow as menarche. Regarding self-awareness, 69.1% (n=38) considered themselves knowledgeable about menarche. An overwhelming majority, 96.4% (n=53), correctly understood the average time span between the onset of puberty and menstruation.

Awareness regarding menstrual bleeding duration was high, with 94.5% (n=52) providing correct responses. Knowledge about the average number of daily pad changes during menstruation was accurate in 80% (n=44) of cases. Similarly, 94.5% (n=52) acknowledged experiencing symptoms during menstruation. Notably, 100% (n=55) correctly answered the item related to painful menstruation. Although the study primarily emphasized knowledge scores, several items in the questionnaire indirectly highlighted attitudinal and behavioral dimensions related to menstruation, allowing for limited insight into barriers that may impede open discussions. Despite high factual awareness—such as 96.4% of participants correctly identifying the average duration between the onset of puberty and menstruation, and 100% acknowledging painful menstruation—only 69.1% believed they were knowledgeable about menarche, suggesting a lack of confidence or internalized stigma regarding their menstrual understanding. Additionally, 63.6% were able to correctly identify menarche as the term for the first menstrual flow, indicating that basic terminology is still under-recognized by a significant portion. These knowledge gaps may be compounded by underlying psychosocial barriers, as 29.1% of participants reported uncertainty or discomfort in acknowledging menstruation pain, which may reflect hesitancy to discuss menstrual issues even in an academic setting. This hesitancy, coupled with 30.9% of participants denying or being unsure of their knowledge about menstruation, reinforces the presence of cultural or communicational taboos. While the data point to relatively high overall knowledge, the internal inconsistencies between factual recall and self-perception indicate latent barriers to discussion—likely rooted in socio-cultural norms, embarrassment, or inadequate intergenerational dialogue. A more detailed exploration through attitude scales or qualitative responses would be essential for quantifying these barriers and aligning with the second study objective.

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Table 1: Demographic Characteristics of the Study Participants (n=55)

Variable	Category	Frequency n=55	Percentage%
Gender	Female	55	100%
Age	20-22years	7	12.72%
	22-24years	26	47.2%
	24-26years	22	40%
Status	Single	55	100%
Education	6th semester	22	40%
	8th semester	33	60%

Table 2: Distribution of Knowledge Levels Regarding Menstruation Among Nursing Students (n=55)

Variable	Frequency	Percentage %
Poor knowledge will be < 60% (<6 out of 10)	6	10.9%
Average knowledge will be 60% to 80% (6 to 8 out of 10)	25	45.5%
Good knowledge in this study will be >80% (>8 out of 10)	24	43.5%
Total	55	100%

Table 3: Item-Wise Distribution of Correct and Incorrect Responses on Menstruation Knowledge Among Nursing Students (n=55)

Sr.no	Question	Frequency	Percentage
1	What is the average age of puberty in Girls?	Correct 41	74.5%
		Incorrect 14	25.5%
2	Pituitary gland is responsible for Releasing hormone that begins puberty?	Correct 44	80%
		Incorrect 11	20%
3	Do you have menstruation pain?	Correct 39	70.9%
		Incorrect 16	29.1%
4	The first menstrual flow is called?	Correct 35	63.6%
		Incorrect 20	36.4%
5	Do you think you are knowledgeable About menarche?	Correct 38	69.1%
		Incorrect 17	30.9%
6	How long is the average time period Between the onset of puberty and Menstruation?	Correct 53	96.4%
		Incorrect 2	3.6%
7	What is true about the average length of menstrual bleedings?	Correct 52	94.5%
		Incorrect 3	5.5%
8	What is the average number of Change of daily pads during Menstruation periods?	Correct 44	80%
		Incorrect 11	20%
9	Do you experience any symptoms during Menstrual period?	Correct 52	94.5%
		Incorrect 3	5.5%
10	Which is true about painful Menstruation?	Correct 55	100%
		Incorrect 0	00%

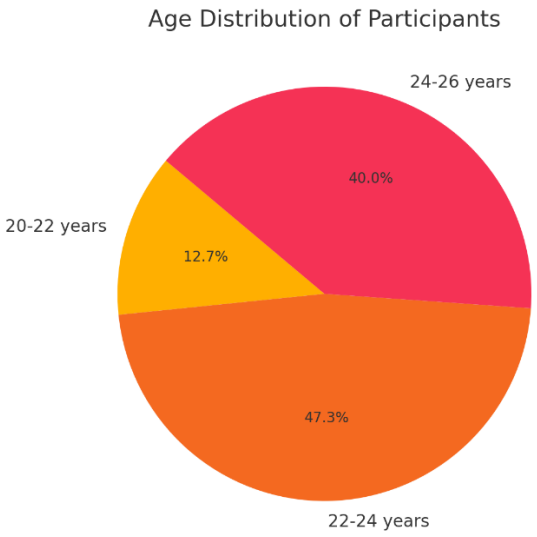

Figure 1 Age Distribution of Participants

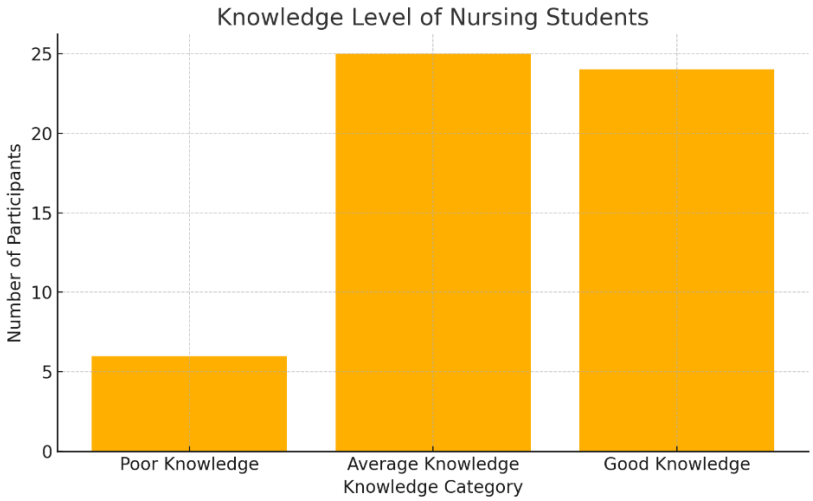

Figure 2 Knowledge Level of Nursing Students

DISCUSSION

The findings of this descriptive cross-sectional study revealed a generally satisfactory level of knowledge regarding menstruation and related issues among undergraduate nursing students. Out of the 55 participants, 43.5% demonstrated good knowledge, while 45.5% had average knowledge and only 10.9% fell into the poor knowledge category. These results reflect a moderate to high level of awareness among academically engaged individuals, especially those from a nursing background who are expected to have foundational knowledge in reproductive health. However, discrepancies in specific areas, such as the terminology of menarche and confidence in self-reported knowledge, suggest that gaps persist despite academic exposure. When these findings are compared with broader population-based research within Pakistan, the contrast is stark (12). Nationally, approximately 49% of adolescent girls remain unaware of menarche prior to experiencing their first menstrual period, and a substantial proportion lack access to menstrual hygiene products. Mothers serve as the predominant source of information, followed by teachers, yet digital platforms contribute minimally to menstrual education, representing only 0.9% of information sources (13,14). The disparity between the nursing cohort and the general adolescent population underscores the critical role of formal education in shaping awareness. Moreover, the current study's relatively high knowledge levels, though encouraging, may not be generalizable to less-educated or non-healthcare populations (15).

The implications of this study are multifaceted. First, it supports the integration of comprehensive reproductive health education in nursing curricula as an effective tool for equipping future healthcare professionals. These students not only gain personal understanding but also acquire the skills to disseminate accurate menstrual health information in their professional roles (16,17). However, the study also highlights the influence of cultural norms on self-perception and communication. A notable proportion of participants hesitated to acknowledge menstruation-related pain or assess their own knowledge confidently, suggesting lingering discomfort in discussing reproductive topics even within educated groups. This insight points to the need for educational strategies that go beyond factual teaching and incorporate communication training to normalize menstrual discussions (18,19). Among the strengths of this study is its focus on a specific, well-defined academic cohort, allowing for precise measurement of knowledge levels within a healthcare-related discipline. The use of a structured questionnaire provided standardized responses and enabled quantifiable analysis. However, several limitations warrant consideration. The use of convenience sampling introduces selection bias and limits external validity. The sample was drawn from a single institution, further restricting the generalizability of the findings. Additionally, while the study effectively assessed knowledge levels, it did not sufficiently explore attitudinal and cultural barriers, which were part of the stated objectives. These barriers, though inferable from certain knowledge items, were not directly analyzed through thematic or categorical data, reducing the depth of understanding on this dimension.

Future studies should consider incorporating mixed-methods approaches to capture both quantitative knowledge scores and qualitative insights into social and cultural determinants. Expanding the sample across multiple institutions and including students from diverse academic disciplines could enhance generalizability. Moreover, integrating psychometric scales to evaluate attitudes and communication

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barriers could yield richer insights into the underlying reasons for menstrual health misinformation and stigma (20). Overall, the study contributes valuable preliminary evidence on menstrual knowledge among nursing students in a structured academic setting and emphasizes the importance of bridging the gap between formal education and societal attitudes for sustainable menstrual health literacy.

CONCLUSION

This study concluded that undergraduate nursing students demonstrated a generally satisfactory level of knowledge regarding menstruation and related issues during adolescence. The findings highlight the positive impact of formal health education in enhancing awareness among future healthcare professionals. However, the presence of knowledge gaps in specific areas underscores the need for more comprehensive and interactive educational strategies that not only provide factual information but also address cultural stigmas and encourage open dialogue. These insights carry important implications for curriculum development and community outreach programs aimed at empowering adolescents with accurate reproductive health knowledge and fostering a more supportive environment for menstrual health literacy.

Author Contribution

Author	Contribution
Shahzana Aslam*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Shabana Aslam	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Aqsa Abbas	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Aiman Latif	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published

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