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ORIGINAL STUDY

Bridging the Gap: Awareness of Healthy Menstrual Practices Among Married and Single Women in Baghdad Teaching Hospital: A Cross-Sectional Study

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Abstract

Background: Menstruation is a natural biological process that significantly impacts women's physical and emotional well-being. Despite its universality, misconceptions and unhealthy practices surrounding menstruation persist, particularly in low- and middle-income countries (LMICs). This study aimed to assess the knowledge and practices of married and single women regarding healthy menstrual habits in Baghdad, Iraq.

Methods: A cross-sectional study was conducted from December 20, 2022, to February 25, 2023, involving 100 women divided into two groups: 50 single females from the College of Health and Medical Techniques and 50 married employees from Baghdad Teaching Hospital. Data were collected through structured interviews and self-reported questionnaires. Descriptive statistics and frequency analyses were performed using SPSS version 24.

Results: The majority of participants (52%) were aged 25–34 years, and 50% held a bachelor's degree. Most women (92%) reported drinking natural juices during menstruation, and 55% cited their mothers as the primary source of menstrual information. However, 79% did not exercise during menstruation, and 76% consumed sweets, indicating room for improved health education. High awareness was observed regarding showering during menstruation (86%) and delaying strenuous work (58%).

Conclusion: While women in Baghdad demonstrated moderate knowledge of healthy menstrual practices, gaps remain in areas such as exercise and dietary habits. Targeted health education programs, particularly for younger women, are recommended to address these gaps and promote better menstrual health.

Keywords: Menstrual health, Knowledge, Practices, Women, Baghdad

1. Introduction

Menstruation is a natural physiological process that signifies reproductive health in women. Despite its universality, menstruation remains a topic shrouded in cultural taboos, misinformation, and inadequate education, particularly in low- and middle-income countries (LMICs) (Sumpter & Torondel, 2013). In many societies, menstruation is still wrapped in stigma, shame, and exclusion, which often leads to poor menstrual hygiene and serious health issues (Hennegan *et al.*, 2016). In Iraq, where cultural and religious norms heavily shape how women approach their health, understanding how menstruation is perceived and managed is crucial for creating effective public health programs. In the world, menstrual health is finally getting the attention it deserves as a corner stone of gender equality and women's empowerment. The United Nations Sustainable Development Goals (SDGs) even highlight the need to address menstrual health as part of achieving universal health coverage and gender equity (UN Women, 2016). Nonetheless menstrual health is still unnoticed in many (LMICs) countries including Iraq. There're no enough researches, and the programs or organizations to take care of women during their periods is almost nonexistent (Sommer *et al.*, 2015).

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Naturally, women period which happens every 28 days, involves the detaching of the uterine lining which comes with hormonal fluctuations that can have cramps, bloating, and mood swings as mentioned by Fraser *et al.* (2011). While it's a natural body process, many women don't have access to accurate information about it. This leads to harmful mythologies and practices, like what found by Van Eijk *et al.* (2016); Haque *et al.* (2014) that menstruation makes women "impure" or they shouldn't exercise or take shower during their periods. Serious consequences can happen from these misconceptions, which can step from higher risks of infections to poor mental health and a lower quality of life (Phillips-Howard *et al.*, 2016).

As cultural and religious standards play a huge role in Iraq, in how women view and handle menstruation. Many traditions label menstruating women as "impure," preventing the women from doing activities like cooking or participating in religious ceremonies (UNFPA, 2018). Shame and embarrassment feelings often making it even harder for women to get the needed information and support (El-Gilany et al., 2018). Schools and communities on top of that, rarely provide suitable menstrual health instruction, leaving many girls unexperienced about how to deal with their monthly periods (Mason *et al.*, 2013).

As it's a common knowledge Menstrual health education is absolutely critical for women. Studies show that healthy practices can be adopted by women when they have accurate information, like using sanitary products, maintaining hygiene, and looking for medical care when needed (Tegegne & Sisay, 2014). But in many LMICs, including Iraq, this kind of education is either difficult or non-exist, especially in non-urban areas (Sommer *et al.*, 2015). This gap continues to be harmful misconceptions alive and limits women's chances for education, work, and communal partaking (Hennegan *et al.*, 2016).

This study looked for how married and single women understand and manage their health in menstrual part in Baghdad. Through focusing on this specific social background, the study aims to assess what influences menstrual health behaviors in Iraq. The findings might help in shaping targeted interferences to make women's well-being improved in Baghdad and other communities.

The researcher stated that, this study has three main goals: (1) to figure out how much Baghdad's women married and single know about healthy menstrual practices; (2) to identify what is the source of information they have come from and how it affects their habits; and (3) to discover the reasons behind gaps in knowledge and unhealthy practices. By asking these questions, the researcher hopes to provide a richer picture of menstrual health in Iraq and guide the development of culturally sensitive programs to promote better menstrual health practices hopefully.

2. Materials and methods

2.1. Study design

This was a cross-sectional study conducted over two months (December 20, 2022, to February 25, 2023) in Baghdad, Iraq. The study population included 100 women divided into two groups: 50 single females from the College of Health and Medical Techniques and 50 married employees from Baghdad Teaching Hospital.

2.2. Sampling strategy

Participants were selected using a stratified random sampling method to ensure representation across age groups and marital status. The sample size was determined based on feasibility and the availability of participants during the study period.

2.3. Data collection

Data were collected through structured interviews and a self-reported questionnaire adapted from previous studies. The questionnaire included 14 items assessing knowledge, sources of information, and practices related to menstruation. The questionnaire was pretested with a small group of participants to ensure clarity and reliability.

2.4. Statistical analysis

Data were analyzed using SPSS version 24. Descriptive statistics, including frequencies and percentages, were used to summarize the data. To categorize participants' knowledge and practices, we used a combined scoring approach based on their responses to the 14-question survey. Each question had a "correct" answer linked to positive menstrual health behaviors (for example, agreeing to shower during menstruation or rejecting the idea that exercise should be avoided). Correct answers earned 1 point, while incorrect or uncertain responses received 0 points. These points were added up for each participant to create a total score. We then grouped participants into three categories:

- **High knowledge/practice:** Scores in the top 25% of all responses.
- **Medium knowledge/practice:** Scores between the 25th and 75th percentiles.
- **Low knowledge/practice:** Scores below the 25th percentile.

Table 1. Distribution of studied sample according to demographic characteristics.

Demographic characteristics	Frequency	Percent
Age group		
less than 24	23	23%
25-34	52	52%
35-44	16	16%
more than 45	9	9%
Educational level		
Primary	10	10.%
Secondary	11	11%
High school	26	26%
bachelor	50	50%
master	3	3%
Occupation		
student	22	22%
graduate	23	23%
Employed	23	23%
Housewife	32	32%

This way of grouping scores is similar to methods used in other public health studies in developing countries, like the work by Tegegne & Sisay (2014), which also uses percentiles to define levels of menstrual health awareness.

3. Results

The majority of participants (52%) were aged 25–34, representing a key target group for menstrual health education. Half of the participants held a bachelor's degree, indicating a relatively high level of education. However, 26% had only a high school education, and 10% had primary education, highlighting the need for inclusive interventions. Housewives constituted the largest group (32%), followed by students (22%) and employed women (23%). This diversity underscores the need for tailored interventions to address the unique challenges faced by different groups (Table 1).

Source of Information: Mothers were the primary source of menstrual information for 55% of participants, followed by the internet (31%). Dietary Habits: 92% reported drinking natural juices, while 76% consumed sweets during menstruation. Exercise: Only 21% exercised during menstruation, with 79% avoiding physical activity. Hygiene: 86% reported showering during menstruation, indicating good hygiene practices (Table 2).

Interestingly, married women in our study showed slightly better knowledge scores (averaging 8.2 out of 14) compared to unmarried women (7.8/14). However, their practical habits lagged behind, with married women scoring lower in menstrual practices (6.5 vs. 6.1/14). This might be linked to cultural expectations in Baghdad that discourage physical activity after marriage, as seen in the low rate of exercise during menstruation (21% overall).

The overall knowledge score averaged 8.0 out of 14, suggesting most women have a basic understanding of menstrual health. Still, critical gaps persist. For instance, just 21% of participants exercised during their period, and 76% consumed sweets—practices that contradict recommendations for managing menstrual symptoms. These findings highlight the need to bridge the gap between awareness and actionable habits, especially in culturally sensitive contexts.

4. Discussion

This study provides valuable insights into the knowledge and practices of women in Baghdad regarding healthy menstrual habits. The findings reveal that while women demonstrate moderate awareness of healthy practices, significant gaps remain in areas such as exercise, dietary habits, and the use of painkillers during menstruation. These results are consistent with studies from other low- and middle-income countries (LMICs), which have also identified cultural, educational, and socioeconomic barriers to menstrual health (Holmes *et al.*, 2021).

4.1. Knowledge and practices

The categorization of menstrual health knowledge and practices into **high, medium, and low tiers** (Table 3) reveals notable differences between married and unmarried women in Baghdad. Married participants showed marginally higher average knowledge scores (8.2 out of 14) than unmarried women (7.8 out of 14), yet their self-reported practices lagged (6.5 vs. 6.1 out of 14). This discrepancy suggests a gap between understanding and action, potentially influenced by cultural expectations that prioritize rest over physical activity after marriage—a trend

Table 2. Distribution of studied sample according to general information about knowledge of menstruation.

General Information		Frequency	Percent
Do you drink natural drinks and juices?	Yes	92	92%
	No	8	8%
What is the source of information about the menstrual cycle?	Mother	55	55%
	Relatives	4	4%
	Friends	10	10%
	Internet	31	31%
Do you exercise during the menstrual cycle?	Yes	21	21%
	No	79	79%
Do you eat sweets during the menstrual cycle?	Yes	76	76%
	No	24	24%
Do you eat fruits during this period?	Yes	84	84%
	No	16	16%
Do you shower during your period?	Yes	86	86%
	No	14	14%
Do you think that what you are doing and doing is right during your period?	Yes	68	68%
	No	32	32.%
Do you not do a lot of difficult work during the period, or do you prefer to take a break and postpone the many strenuous work until the end of the period	Yes	58	58%
	No	42	42.%
Do you take painkillers during menstruation?	Yes	51	51%
	No	49	49%

Table 3. Classification of knowledge and practices by marital status.

Category	Married Women (n = 50)	Unmarried Women (n = 50)	Overall (n = 100)
Knowledge Score			
Mean (SD)	8.2 (2.1)	7.8 (1.9)	8.0 (2.0)
High (%)	32%	24%	28%
Medium (%)	54%	60%	57%
Weak (%)	14%	16%	15%
Practice Score			
Mean (SD)	6.5 (1.8)	6.1 (1.7)	6.3 (1.8)
High (%)	28%	22%	25%
Medium (%)	58%	62%	60%
Weak (%)	14%	16%	15%

Notes: Scores calculated from 14 items (1 point per correct answer). High: ≥75th percentile; Medium: 25th–75th percentile;

Weak: <25th percentile.

reflected in the low rate of exercise during menstruation (21%). The use of percentile-based thresholds (≥75th percentile for "high" knowledge/practice) mirrors methods from comparable studies in low- and middle-income countries (e.g., Tegegne & Sisay (2014)), which treat moderate knowledge as a starting point for interventions. However, the overall average knowledge score (8.0/14) highlights lingering misunderstandings, particularly around dietary habits, such as the 76% of women who consumed sweets during menstruation. These results emphasize the need for focused educational initiatives to help women—especially married individuals navigating sociocultural constraints—apply their knowledge to everyday practices. Moving forward, researchers should validate these percentile benchmarks using established tools like the Menstrual Health Literacy Scale to ensure consistency in cross-population comparisons.

Drinking natural juices during menstruation was reported by the majority of participants in this study (92%), which is a positive indicator of awareness regarding the importance of hydration and nutrition during this period. Our finding consistent with other studies from Nepal and India, where found women who used to take natural juices and fruits during menstruation had described fewer symptoms of tiredness and discomfort (Van Eijk *et al.*, 2016; Tegegne & Sisay, 2014). However, the high consumption of sweets (76%) among participants is concerning, where (Latif *et al.*, 2022) found that excessive sugar intake can worsen menstrual symptoms such as bloating and temper changes. This suggests that, there is a need for more targeted education on the types of foods that are beneficial or harmful during menstruation despite that women are aware of the importance of nutrition in general.

More than half (55%) of participants cited their mothers as the primary source of menstrual information which is consistent with studies from other low- and middle-income countries, which stated that mothers and female families are often the main role player of menstrual health education (Chandra-Mouli & Patel, 2020). However, this reliance on informal sources of information can prolong traditions and misapprehensions, mainly if mothers themselves have shortage in information about menstrual health (Alharbi *et al.*, 2018). For instance, the belief that exercise or physical activities should be avoided during menstruation, reported by 79% of participants, is a common misconception that can lead to reduced physical activity and poorer overall health (Shmerling, 2016). Which indicate a strong need for formal menstrual health education programs.

4.2. *Cultural and social influences*

A significant role played by cultural and social norms in shaping women's attitudes and behaviors toward menstruation. In Iraq, as in many other low- and middle-income countries, stigma and shame often associated with menstruation, leading to secrecy and a lack of open discussion about menstrual health (United Nations Population Fund). This cultural setting can make it difficult for women to look for information or support, particularly if they feel uncomfortable or embarrassed to discussing menstruation with healthcare providers or educators (Olson *et al.*, 2022). A positive indicator of good hygiene practices that 86% of participants reported showering during menstruation is, but it also reflects the cultural emphasis on cleanliness and purity during menstruation, which can sometimes lead to excessive or harmful practices, such as the use of harsh soaps or douches (Chen *et al.*, 2017).

More than half of participants (58%) who reported delaying energetic work until the end of their monthly period is another example of how cultural norms can influence menstrual health practices. Phillips-Howard *et al.* (2016), found that despite rest is important during menstruation, avoiding all physical activity can lead to reduced fitness and increased symptoms of fatigue and depression.

4.3. *Educational and socioeconomic factors*

An important determinants of menstrual health knowledge and practices is the educational attainment and socioeconomic status. In this study, a bachelor's degree holder is 50% of participants, and 92% reported drinking natural juices during menstruation, indicating a positive correlation between education and healthy practices. This is consistent with studies from other LMICs, where a good menstrual health outcome is associated with higher levels of education, including increased use of sanitary products and improved hygiene practices as found by Yang & Chen (2023). However, the fact that 76% of participants got sweets during period suggests that even women with degree may don't have good knowledge about the effect of diet on menstrual health.

In this study, 32% of participants were housewives, and 23% were employed, reflecting the diverse socioeconomic backgrounds of the sample. In spite of that housewives may have more time for self-care during menstruation to focus on, they may also aspect financial restrictions that limit their access to sanitary products or healthcare services as mentioned by Jaafar, Ismail, & Azzeri (2023). This may indicate the need to take action that address both educational and socioeconomic barriers to menstrual health, such as subsidized sanitary products, free healthcare services, and education programs awarded to community.

4.4. *Implications for public health*

This study found important implications for public health policy and practice in Iraq. First, there is a strong necessity for inclusive education programs that target women of all ages and socioeconomic backgrounds about menstrual health, and they should provide precise, evidence-based material about menstrual health, including the importance of a good diet, exercise, and sanitation, as well as the risks associated with morbid practices such as excessive sugary foods or the mismanagement of analgesics (Phillips-Howard *et al.*, 2016). Community organizations, Schools and healthcare facilities can play a part in delivering this kind of education, mainly in rural and underserved areas where access to data and facilities is inadequate (Sommer *et al.*, 2015).

Second, interventions also should aim to face negative cultural and social standards and encourage positive attitudes toward monthly period, and this can be achieved through campaigns for public awareness, media outreach, and activities that community engaged in which encourage open discussion about menstrual health and reduce stigma and shame (Hennegan *et al.*, 2016). For instance, community leaders and religious figures can help to legitimize the topic and encourage more women to seek information and support (Sadore, Kebede, & Birhanu, 2024). Finally, there is an essential need for further investigation to better understand the factors that influence women menstrual health knowledge and practices in Iraq and other LMICs in particular. Future research studies should explore the role of cultural, educational, and socioeconomic aspects in shaping menstrual health manners, as well as

the efficacy of different interferences in improving results. Sumpter & Torondel (2013) study suggested longitudinal studies are particularly needed to assess the long-term impact of menstrual health education programs on women's health and well-being.

Strengths and limitations

As many other studies, this study has several assets, including its focus on a culturally specific populace and the use of a self-designed questionnaire to collect data. The inclusion criteria of both married and single women, as well as participants from different educational and occupational backgrounds, provides a good comprehensive outline of menstrual health familiarity and performs in Baghdad. On the other hand, the study has some limitations. The cross-sectional study design limits the capability to found causal relationships, and the reliance on self-reported data may present bias. Furthermore, the sample size of 100 participants may not be illustrative of the bigger population, chiefly in rural areas where access to education and healthcare services is more limited.

5. Conclusion

In the conclusion, the importance of education, cultural context, and socioeconomic factors in shaping menstrual health knowledge and practices among women in Baghdad was highlights in this study. A significant gap remains in areas such as dietary habits, exercise, and the use of painkillers despite women demonstrate moderate awareness of healthy practices. These gaps need Targeted interventions to address and promote better menstrual health outcomes, and this can be done by challenging harmful cultural norms, providing accurate information, and addressing socioeconomic barriers, public health programs can allow women to take control of their menstrual health and advance their overall well-being.

Disclosure and conflict of interest

No conflicts of interest as declared by the author.

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Ethical approval

This is an observational study. The Collage Research Ethics Committee has commend that no ethical approval is required.

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References

Alharbi, K., Alkharan, A., Abukhamseen, D., Altassan, M., Alzahrani, W., & Fayed, A. (2018). Knowledge, readiness, and myths about menstruation among students at the Princess Noura University. *Journal of Family Medicine and Primary Care*, 7(6), 1197. https://doi.org/10.4103/jfmpc.jfmpc_279_18.

Becoming a woman in Iraq; The challenges of menstruation. (n.d.). UNFPA. Retrieved January 31, 2025, https://iraq.unfpa.org/en/news/becoming-woman-iraq-challenges-menstruation.

Chandra-Mouli, V., & Patel, S. V. (2020). Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in Low- and Middle-Income countries. In *Springer eBooks* (pp. 609–636). https://doi.org/10.1007/978-981-15-0614-7_46.

Chen, Y., Bruning, E., Rubino, J., & Eder, S. E. (2017). Role of female intimate hygiene in vulvovaginal health: Global hygiene practices and product usage. *Women S Health*, 13(3), 58–67. https://doi.org/10.1177/1745505717731011.

El-Gilany, A., Badawi, K., & El-Fedawy, S. (2005). Menstrual hygiene among adolescent schoolgirls in Mansoura, Egypt. *Reproductive Health Matters*, 13(26), 147–152. https://doi.org/10.1016/s0968-8080(05)26191-8.

First menstruation is often accompanied by fear, shame, lack of information, women and girls in Arab states reveal. (n.d.). United Nations Population Fund. Retrieved February 1, 2025, from https://www.unfpa.org/news/first-menstruation-often-accompanied-fear-shame-lack-information-women-and-girls-arab-states.

Fraser, I., Critchley, H., Broder, M., & Munro, M. (2011). The FIGO recommendations on terminologies and definitions for normal and abnormal uterine bleeding. *Seminars in Reproductive Medicine*, 29(05), 383–390. https://doi.org/10.1055/s-0031-1287662.

Haque, S. E., Rahman, M., Itsuko, K., Mutahara, M., & Sakisaka, K. (2014). The effect of a school-based educational intervention on menstrual health: an intervention study among adolescent girls in Bangladesh. *BMJ Open*, 4(7), e004607. https://doi.org/10.1136/bmjopen-2013-004607.

Hennegan, J., Dolan, C., Wu, M., Scott, L., & Montgomery, P. (2016). Measuring the prevalence and impact of poor menstrual hygiene management: a quantitative survey of schoolgirls in rural Uganda. *BMJ Open*, 6(12), e012596. https://doi.org/10.1136/bmjopen-2016-012596.

Holmes, K., Curry, C., Sherry, N., Ferfolja, T., Parry, K., Smith, C., Hyman, M., & Armour, M. (2021). Adolescent menstrual health literacy in low, middle and high-income countries: A narrative review. *International Journal of Environmental Research and Public Health*, 18(5), 2260. https://doi.org/10.3390/ijerph18052260.

Jaafar, H., Ismail, S. Y., & Azzeri, A. (2023). Period poverty: a neglected public health issue. *Korean Journal of Family Medicine*, 44(4), 183–188. https://doi.org/10.4082/kjfm.22.0206.

Latif, S., Naz, S., Ashraf, S., & Jafri, S. A. (2022). Junk food consumption in relation to menstrual abnormalities among adolescent girls: A comparative cross sectional study. *Pakistan Journal of Medical Sciences*, 38(8). https://doi.org/10.12669/pjms.38.8.6177.

Mason, L., Nyothach, E., Alexander, K., Odhiambo, F. O., Eleveld, A., Vulule, J., Rheingans, R., Laserson, K. F., Mohammed, A., & Phillips-Howard, P. A. (2013). 'We keep it secret so no one should know' – A qualitative study to explore young schoolgirls attitudes and experiences with menstruation in rural western Kenya. *PLoS ONE*, 8(11), e79132. https://doi.org/10.1371/journal.pone.0079132.

Olson, M. M., Alhelou, N., Kavattur, P. S., Rountree, L., & Winkler, I. T. (2022). The persistent power of stigma: A critical review of policy initiatives to break the menstrual silence and advance menstrual literacy. *PLOS Global Public Health*, 2(7), e0000070. https://doi.org/10.1371/journal.pgph.0000070.

Phillips-Howard, P. A., Caruso, B., Torondel, B., Zulaika, G., Sahin, M., & Sommer, M. (2016). Menstrual hygiene management among adolescent schoolgirls in low- and middle-income countries: research priorities. *Global Health Action*, 9(1), 33032. https://doi.org/10.3402/gha.v9.33032.

Sadore, A. A., Kebede, Y., & Birhanu, Z. (2024). Effectiveness of engaging religious leaders in maternal health education for improving maternal health service utilization in Ethiopia: cluster randomized controlled trial. *Frontiers in Public Health*, 12. https://doi.org/10.3389/fpubh.2024.1399472.

Shmerling, R. H. MD. (2016, October 5). Staying active at "that time of the month." Harvard Health. Retrieved February 1, 2025, from https://www.health.harvard.edu/blog/staying-active-at-that-time-of-the-month-2016100510408.

Sommer, M., Hirsch, J. S., Nathanson, C., & Parker, R. G. (2015). Comfortably, safely, and without shame: Defining menstrual hygiene management as a public health issue. *American Journal of Public Health*, 105(7), 1302–1311. https://doi.org/10.2105/ajph.2014.302525.

Sumpter, C., & Torondel, B. (2013). A Systematic review of the health and social effects of menstrual hygiene management. *PLoS ONE*, 8(4), e62004. https://doi.org/10.1371/journal.pone.0062004.

Tegegne, T. K., & Sisay, M. M. (2014). Menstrual hygiene management and school absenteeism among female adolescent students in Northeast Ethiopia. *BMC Public Health*, 14(1). https://doi.org/10.1186/1471-2458-14-1118.

UN Women. (2016). Menstrual hygiene management and the sustainable development goals. Retrieved from https://www.unwomen.org.

Van Eijk, A. M., Sivakami, M., Thakkar, M. B., Bauman, A., Laserson, K. F., Coates, S., & Phillips-Howard, P. A. (2016). Menstrual hygiene management among adolescent girls in India: a systematic review and meta-analysis. *BMJ Open*, 6(3), e010290. https://doi.org/10.1136/bmjopen-2015-010290.

Yang, Y., & Chen, D. (2023). Effectiveness of a menstrual health education program on psychological well-being and behavioral change among adolescent girls in rural Uganda. *Journal of Public Health in Africa*, 14(3), 7. https://doi.org/10.4081/jphia.2023.1971.