

## MENSTRUAL KNOWLEDGE AND HYGIENE PRACTICES AMONG FEMALE NURSING STUDENTS: A CROSS-SECTIONAL STUDY IN A TERTIARY CARE FACILITY

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### Abstract

**Background:** Menstruation is a critical aspect of female health, yet it remains a taboo topic in many societies, leading to widespread misinformation and poor hygiene practices. This study evaluates the menstrual behaviours, knowledge, and hygiene practices of female nursing students, who are future healthcare providers, to understand their readiness to educate others on this subject. **Materials and Methods:** A cross-sectional survey was conducted from July to September 2022 at MKCG Medical College and Hospital, Berhampur. Female B.Sc. nursing students (n=215) were assessed using a structured questionnaire covering sociodemographic details, menstrual knowledge, and hygiene practices. Data were analyzed using R software, with qualitative data presented as frequencies and percentages and quantitative data as mean  $\pm$  standard deviation. **Result:** The mean age of participants was  $19.59 \pm 1.11$  years. A significant majority (82.79%) experienced menarche between 12 and 15 years. Awareness of menstrual hygiene before menarche was lacking in 21.81% of students. Most participants (80.93%) acknowledged menstruation as a normal phenomenon, and 87.91% correctly identified the uterus as the source of menstrual blood. Sanitary pad usage was high (97.21%), and 80.93% changed pads more than three times daily. The mean knowledge score was 53.14, indicating good knowledge, with most students adhering to positive hygiene practices. **Conclusion:** The nursing students demonstrated substantial knowledge and good menstrual hygiene practices. However, misconceptions still exist, necessitating targeted educational interventions. Healthcare workers and school authorities should enhance menstrual education to improve practices among adolescents.

## INTRODUCTION

The menstrual cycle is a unique aspect of female sexual development, marked by the regular discharge of blood and the shedding of the uterine lining. This natural process generally starts around two years after the onset of secondary sexual characteristics.<sup>[1]</sup> During this time, young girls prepare for a hygienic and safe menstruation experience. However, many enter puberty without adequate preparation, mainly due to a lack of proper information.<sup>[2]</sup> Menstruation remains a socially taboo subject, limiting girls' access to accurate information. The information they do receive, often from friends, family, and religious

groups, is frequently biased and filled with misconceptions. For example, some Ethiopian communities view menstruation as a lifelong condition, a sign of illness, a divine punishment, or a curse.<sup>[3,4]</sup> In a study conducted in India, 70% of girls had never heard about menstruation before experiencing menarche.<sup>[5]</sup> Menstrual taboos impose various restrictions on girls, often making the experience uncomfortable. Cultural and societal influences continue to perpetuate a lack of knowledge on the subject, adversely affecting adolescent girls' daily lives, academic performance, and social interactions.<sup>[6]</sup>

The way menstruating girls perceive menstruation influences their hygiene practices. Poor menstrual hygiene has been associated with reproductive and urinary tract infections, cervical cancer, school absenteeism, decreased academic performance, and reduced well-being.<sup>[7]</sup> Reports suggest that 40–45% of adolescent schoolgirls are unaware of the risks associated with menstruation and engage in unsafe hygiene practices.<sup>[2]</sup> This has significant clinical implications for healthcare systems aiming to promote proper menstrual hygiene. Large-scale initiatives with policy implications are needed to increase girls' awareness of menstruation and in still safe hygiene habits from adolescence.

Nurses occupy a crucial position in the healthcare hierarchy, serving as a bridge between patients and the medical community, even in remote and underdeveloped areas of India. They have the potential to educate women at the local level about menstruation. This underscores the importance of assessing nursing students' menstrual behaviours and understanding. While many studies have explored adolescent girls' knowledge and practices related to menstruation, fewer have focused on nursing students. This study aimed to evaluate the menstrual behaviours and knowledge of female nursing students in a tertiary care facility.

## MATERIALS AND METHODS

This cross-sectional survey, based on a structured questionnaire, was conducted at the OPD of MKCG Medical College and Hospital in Berhampur from July to September 2022. Female B.Sc. nursing students from the first to fourth year who consented to participate were included, while those unwilling were excluded. A convenience non-probability sampling method was employed.

Data collection was done using an interviewer-administered questionnaire divided into four sections. The first section gathered sociodemographic details and sources of menstrual information (e.g., mothers, relatives, teachers, Anganwadi workers, and media). The second section collected data on participants' obstetric and gynaecological characteristics. The third section focused on their knowledge and perceptions of

menstruation, and the fourth captured their hygiene practices during menstruation.

Participants' knowledge of menstruation was assessed using 20 Likert scale questions adapted from various studies.<sup>[3,4]</sup> Each question was scored from 0 to 3 (0 for strongly disagree, 1 for disagree, 2 for agree, and 3 for strongly agree). Negatively worded statements were reverse scored. A score of 30 or above indicated good knowledge. Menstrual hygiene practices were evaluated with ten questions, with responses indicating good or poor practice scored as "1" or "0," respectively. The overall hygiene practice score ranged from 0 to 10, with scores above 5 indicating good practices.

The data collection process involved three senior female residents and one supervisor (an assistant professor) from the same department. Each participant underwent a 45-minute interview session. Data analysis was performed using R software. Qualitative data were presented as frequencies and percentages, while quantitative data were expressed as mean  $\pm$  standard deviation (SD).

## RESULTS

A total of 215 female nursing students participated in the study, with a mean ( $\pm$  SD) age of 19.59 ( $\pm$  1.11) years. Most of the participants' parents had education levels of diploma or higher, with 48.84% of mothers and 67.91% of fathers in this category. Before menarche, 21.81% of the participants were not aware of hygiene practices associated with menstruation [Table 1].

The mean age at menarche among participants was 14.01 $\pm$ 1.42 years. The majority (82.79%) experienced menarche between the ages of 12 and 15 years, while 8.37% experienced it before 12 years and 8.84% after 15 years. Regular menstrual cycles over the past six months were reported by 77.21% of the participants, while 22.79% experienced irregular cycles. A family history of dysmenorrhea was noted in 24.65% of participants. The duration of menstrual flow varied, with 66.05% reporting a flow of 3 to 5 days, 13.49% less than 3 days, and 20.47% more than 5 days. Pain during menstruation was reported by 51.63% of the participants [Table 2].

**Table 1: Sociodemographic profile of the study subjects (n=215).**

Variables	Categories	Frequency	Percentage
Age	18–22 years	215	100.00
Living with	Parents	24	11.16
	Peers	169	78.60
	Alone	7	3.26
	Others	15	6.98
Residency	Town	90	41.86
	Rural	125	58.14
Birth order	First	120	55.81
	In between	33	15.35
	Last	62	28.84
Maternal Education	Unable to read and write	3	1.40
	Able to read and write	11	5.12
	Primary	22	10.23
	Secondary	74	34.42

	Diploma and above	105	48.84
Paternal Education	Unable to read and write	3	1.40
	Able to read and write	9	4.19
	Primary	10	4.65
	Secondary	47	21.86
	Diploma and above	146	67.91
Family structure	Nuclear	172	80.00
	Extended	43	20.00

**Table 2: Obstetric and gynaecological related factors (n=215)**

Variables	Categories	Frequency	Percentage
Age of menarche	<12 years	18	8.37
	12–15 years	178	82.79
	>15 years	19	8.84
Regularity of menses over the last six menstrual cycles	Irregular	49	22.79
	Regular	166	77.21
Family history of dysmenorrhea	Yes	53	24.65
	No	162	75.35
Duration of menses flow	<3 days	29	13.49
	3–5 days	142	66.05
	>5 days	44	20.47
Pain during menstruation	Yes	111	51.63
	No	104	48.37

**Table 3: Knowledge of the participants regarding menstruation (n=215)**

Questions	Strongly disagree (0)	Disagree (1)	Agree (2)	Strongly agree (3)
Menstruation is a normal phenomenon	0	0	41	174
Menstruation is unique to females	7	4	56	148
Menstruation is a lifelong process	112	93	10	0
Menstruation comes with pain and ill health	128	41	18	28
Menstruation stops after initiation of sex	139	51	21	4
Menstruation is a sign of conception	98	33	59	25
Menstrual blood has a foul smell	8	61	142	4
Menstruation is a pathological condition	115	60	36	4
Source of menstrual bleeding is the uterus	26	0	0	189
Menstrual bleeding is hormonal	0	0	0	215

**Table 4: Menstrual hygienic practice of the participants (n=215)**

Questions	Frequency	Percentage
Always use absorbent materials during menstrual flow	154	71.63
Always use commercially made sanitary pads	209	97.21
Change pads or clothes more than 3 times a day	174	80.93
Wear clean clothes washed with soap and water	170	79.07
Dry sanitary clothes with sunlight	88	40.93
Frequently clean external genitalia during menstruation	157	73.02
Dispose of pads by wrapping them in paper	164	76.28
Wash and bathe daily with soap during menstruation	151	70.23
Constantly clean external genitalia with water and soap	145	67.44
Dispose of sanitary pads in the dustbin	164	76.28

The participants' knowledge regarding menstruation is shown in [Table 3]. A vast majority (80.93%) strongly agreed that menstruation is a normal phenomenon, while only a few had misconceptions, such as considering menstruation a lifelong process or associating it with pain and ill health. The understanding of menstrual blood origin was mostly correct, with 87.91% recognizing the uterus as the source. All participants correctly identified hormonal causes for menstrual bleeding.

The menstrual hygienic practices are detailed in [Table 4]. Most participants consistently used absorbent materials and commercially made sanitary pads. The practice of changing pads or clothes more than three times a day was followed by 80.93%, and 79.07% wore clean clothes washed with soap and water. A smaller percentage (40.93%) dried sanitary clothes in sunlight. Daily washing and bathing with

soap during menstruation were common, with 70.23% adherence. Additionally, 76.28% disposed of sanitary pads in the dustbin.

## DISCUSSION

Menstruation, though a natural physiological process for women in their reproductive years, is often surrounded by various taboos and myths, some of which are linked to paranormal beliefs.<sup>[4]</sup> These societal beliefs contribute to many adolescent girls not receiving adequate education on menstruation and proper hygiene practices.<sup>[3]</sup> Our study focused on female nursing students due to their crucial role in reproductive health care and their potential future role as mothers.

In our study, the average age of menarche was 14.01 ± 1.42 years, aligning with findings from studies by

Balasubramanian and Shanbhag et al.<sup>[3,8]</sup> Regular menstrual cycles were reported by 79.22% of participants, comparable to the 73% in Kshirsagar et al.'s study.<sup>[9]</sup> However, this is slightly higher than the 66% regularity reported in Shanbhag et al.'s research.<sup>[3]</sup> Regarding parental education, 33.14% of mothers had completed high school, and 48.31% had higher education (diploma and above), contrasting with Shanbhag et al.'s findings where a significant proportion of mothers were illiterate.<sup>[3]</sup> Awareness about menstruation was high, with over three-quarters of the participants understanding menstruation before menarche, similar to the 76.1% reported by Nnennaya et al.<sup>[10]</sup>

The majority of participants in our study (55.49%) cited their mothers as their primary source of information about menstruation, consistent with Bhavya's study findings.<sup>[11]</sup> Similarly, Prajapati and Patel found that 48.9% of their respondents learned about menstruation from their mothers.<sup>[12]</sup> However, studies in Egypt and Ghana revealed a greater reliance on peers and teachers as sources of menstrual information.<sup>[13,14]</sup> This may reflect cultural differences in literacy levels and parental comfort with discussing menstruation.<sup>[14]</sup> In our study, 90.11% of participants were aware that menstrual bleeding originates from the uterus, which is comparable to Bhavya's study,<sup>[11]</sup> but significantly higher than the 17% reported by Prajapati and Patel.<sup>[12]</sup>

Sanitary pad usage was prevalent, with 95.52% of our participants using them, a higher proportion compared to Prajapati and Patel's study and Shanbhag et al., where the rates were much lower.<sup>[3,12]</sup> This discrepancy may be due to the higher level of menstrual hygiene knowledge among nursing students. Our study also found that 79.99% of participants changed their absorbents more than three times a day, a practice more common than reported in studies from Ile-Ife and Sokoto, Nigeria.<sup>[15,16]</sup>

Regarding disposal of used sanitary products, 97.88% of participants used dustbins, a higher rate than observed in other studies.<sup>[9]</sup> Different disposal methods, such as burning or using latrines, were noted in other regions.<sup>[10]</sup> The majority of participants (93.66%) also maintained daily bathing with soap during menstruation, in contrast to practices observed in Nepal and other regions of Nigeria.<sup>[15,17]</sup>

Overall, the mean knowledge score among participants was 53.14, indicating good knowledge, unlike Nahar et al.'s findings, where many respondents had moderate to poor knowledge.<sup>[18]</sup> Hygiene practices were also generally positive, with high adherence to good hygiene behaviors, similar to findings from studies in Ethiopia.<sup>[19]</sup>

## CONCLUSION

While the study participants demonstrated commendable knowledge and practices regarding

menstruation, misconceptions like associating menstruation with disease or conception, and linking it to pain and poor health, were noted. The health sector, including Anganwadi and healthcare workers, along with school authorities and media, can play a crucial role in enhancing menstrual hygiene education among female adolescents.

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