

Knowledge of Nursing Students on Usage of Menstrual Cup in Eastern States of India

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Abstract

Introduction: Menstruation is the shedding of endometrial layers, and the average blood loss through menstruation is about 50-80 ml. Being a normal physiological process of a woman, it requires basic hygiene with utmost care. Women use sanitary napkins and pads for maintaining menstrual hygiene, whereas the menstrual cup is a novel boon to both women (and the environment). It is inserted into the vagina and collects menstrual blood, which can then be easily discarded. Awareness of nursing students about this will have significant clinical and public health implications. Hence, the current research aimed at assessing the knowledge of nursing students in terms of scores regarding the use of menstrual cups to develop a self-instructional manual on self-insertion and removal of menstrual cups.

Methods: A descriptive study with a survey approach was used to assess the knowledge regarding the use of menstrual cups among nursing students in seven Nursing Institutes across four Eastern States of India (Jharkhand, Bihar, Odisha, West Bengal) selected through convenience sampling. The participants included were students of General Nursing Midwifery, Basic B.Sc. Nursing, Post Basic B.Sc. Nursing and M.Sc. Nursing. Samples were selected through random stratified sampling method, i.e., 25% from each course run by the selected Nursing Institutes. The course was taken as a stratum. The total sample size for the study was 335.

Result: Most of the students were in the age group of 17-25, and 88.4% were unmarried. Most (86.6%) stayed in the hostel and pursued a Basic B.Sc. Nursing Course. The data about knowledge on the use of menstrual cups revealed that the majority-236(70.4%)-of students scored between 11-20, where higher score indicates greater knowledge.

Conclusion: The study findings revealed that nursing students did not possess adequate knowledge regarding using menstrual cups; hence, educating them and spreading awareness among them is necessary.

Keywords

Menstruation, Menstrual Cup, Knowledge, Nursing Students, Eastern India

Introduction

Health is a vital aspect of the life of human beings, and they require attention towards maintenance of it.

Health is also an important indicator of the socio-economic well-being of a country, and to make it balanced, there is a need to achieve and maintain low maternal and infant mortality and morbidity rates. A balanced approach can only be obtained by retaining the health of a woman and the girls of a country.^{1,2}

Hence, for a woman, menstruation is a normal and physiological process that is sanitary and a sign of transparency; however, in many places, menstruation is taboo for most and considered an impurity. The stigma related to menstruation is quite

worrying; however, improvement in the unawareness and knowledge among the general population regarding this is rising gradually.³

Menstruation is the shedding of the stratum compactum and stratum spongiosum of endometrium along with some amount of blood. It is the regular discharge of blood and mucosal tissue from the inner lining of the uterus through the vagina. The menstrual cycle is characterized by the rise and fall of hormones.

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The average amount of blood loss during menstruation is about 50-60ml.^{2,3} The onset of menstruation occurs due to a decreasing concentration of progesterone because of degeneration of the corpus luteum. The first period, a point in time known as menarche, usually begins at the age of 12-15; however, menstruation starting as young as eight years would still be considered normal. The average age of the first period is generally later in the developing world and earlier in the developed world. The duration of the menstrual cycle, on average, is 28 days.^{1,4}

The preferred sanitary products women use during menstruation are reusable cloth pads, commercial sanitary pads, tampons, pads made from wool, reusable tampons, and menstrual cups. Sanitary pads and tampons are readily available at many stores and shops. They are expensive, non-reusable, and not environmentally friendly. Pads and tampons: Most are made of synthetic material like rayon or SAPs (Super Absorbent polymers).^{5,6,7} All of this means that there are some chemicals of concern that commonly show up in pads and tampons: Dioxins and furans have been linked to cancer, endocrine disruption, and reproductive toxicity. The effects it can have on the human body are much more severe than just superficial irritation and allergy. Dioxin is a chemical used to bleach the cotton and cellulose wood pulp to give it a white colour. The vaginal mucous membrane is extremely permeable and can absorb chemicals like dioxin directly into the bloodstream.^{7,8}

Menstrual cup is a new technology alternative to sanitary pads and tampons. They are like cups made of medical-grade silicon rubber, making the cup easy to fold and insert in the vagina to collect menstrual blood.^{9,10} Cups can hold more blood than other methods, leading many women to use them as an eco-friendly alternative to tampons. They can be worn for up to 6-12 hours, depending upon the amount of menstrual flow, so they require less frequent removal and to be emptied. They are reusable and environmentally friendly. It is a sustainable, practical, and cost-effective alternative that can be worn in the presence of an intra-uterine Device (IUD). They pose no or less harm to the environment, which can be easily handled.¹¹

Sanitary pads and napkins are the most common practices, but they require hygienic practices; otherwise, they may pose the highest risk of reproductive tract infections and generate more complications for women and girls. Hence, the menstrual cup is a safer and environment-friendly alternative to deal with menstruation among women. Awareness of nursing students about this will have tremendous clinical and public health implications. Despite the significance of this topic, very scanty literature is available in this area. Therefore, the researcher aimed to assess 1) the

knowledge regarding the use of menstrual cups among nursing students in Nursing Institutes of four Eastern States of India and 2) to develop a self-instructional module on self-insertion and removal of menstrual cups.

Material and Methods

A descriptive research design has been selected for the study. As the study aimed to assess the knowledge regarding the use of menstrual cups among nursing students in Nursing Institutes of four Eastern States of India, two institutes in each state (Jharkhand, Bihar, Odisha, West Bengal) were selected by convenient sampling. The study was approved by the Institutional Ethical Committee, College of Nursing, Tata Main Hospital. The study participants were students of General Nursing Midwifery, Basic B.Sc. Nursing, Post Basic B.Sc. Nursing and M.Sc. Nursing from selected Nursing Institute of Eastern India. The selection of students was done through stratified random sampling (course of study as strata), with twenty-five percent from each course run by the selected institutes who met the inclusion criteria of the study. The total sample was 335, which was a cumulative figure of randomly selected students from each course run at the selected institutes.

Ethical clearance was also obtained from the head of institutes, and informed consent was taken from the participants.

The research tool was developed by researchers, and content validity was established through subject experts' agreement. All items having 100 percent agreement were included in the final tool. The tool was finally converted into a Google form for self-administration by research participants.

The student's knowledge was assessed through a structured questionnaire regarding the use of the menstrual cup in terms of scores. The total score was 30, which is categorized into the range between 0-10, 11- 20, and 21-30, where a higher score indicates higher knowledge in this study.

Analysis of data was performed through IBM SPSS version 28.0.0.0. Descriptive statistics and inferential statistics were generated for all socio-demographic and clinical variables, presenting the frequency and percentage in tabulated form, as well as tables, graphs, and figures, and the knowledge scores were obtained in terms of frequency and percentage distribution.¹²

Result

Majority of the students were aged between 17-25 (91%) and more than half of them were 296 (88.4%) unmarried. Most (51.9%) of them live in rural area, total 290 (86.6%) stay in hostel and most (43.3%) of them

having family income of above Rs.10,000-Rs. 20,000. Most (54.9%) of the students were pursuing Basic B.Sc. Nursing and the educational qualification of their mother was (36.1%) Matriculation. Maximum number of (33.4%) the respondents were from Odisha and most (90.1%) of them were studying in private institute.

Result showed that 60 students scored between 1-10(17.9%); 236 students scored between 11-20(70.4%) and 39 students scored between 21-30(11.6%) where total number of students were 335.

Description of the sample characteristics

The total sample for the study were 335 female nursing students.

According to the age, 175 (52.2%) belongs in the age group of 17-20 years, while 123 (36.7%) belongs to the age group of 21-24. Most of the sample were unmarried that is 296 (88.4%). Higher numbers of residents'

residence is rural (51.9%), most of them lives in hostel that is 290 (86.6%) and most of them having above Rs.10,000-Rs.20,000 of family income (43.3%). There was higher representation (184) of the students are pursuing Basic B.Sc. Nursing (54.9%) and the educational qualification of their mothers is mostly matriculation (36.1%). Most (112) of the respondents are from Odisha (33.4%) and most of them studying in private institute (90.1%). Majority of the female members in their family have not used menstrual cup (92.2%).

Findings related to personal information on management of menstruation

This section described about the personal information of the samples including age of attaining menarche, menstrual product, bath during menstruation, first menstrual product used, frequency of changing and method of disposable are described in Table 1.

Table 1: Frequency & percentage distribution of the participants related to their management of menstruation N=335

S.No.	Variable	Frequency	Percentage (%)
1	Age of attaining menarche		
	○ 10-15	292	87.2%
	○ 16-20	43	12.8%
2	Menstrual product used		
	○ Reusable cloth pad	29	8.7%
	○ Disposable sanitary napkin	281	83.9%
	○ Tampons	3	0.9%
	○ Menstrual cup	22	6.6%
3	Bathing practice during menstruation		
	○ Once a day	194	57.9%
	○ Twice a day	92	27.5%
	○ Do not bath	8	2.4%
	○ Every time when sanitary product changed	41	12.2%
4	First menstrual product used		
	○ Cloth	73	21.8%
	○ Tampons	6	1.8%
	○ Sanitary Napkin	252	75.2%
	○ Menstrual cup	4	1.2%
5	Source of information about menstruation		
	○ Teacher	11	3.3%
	○ Family Member	273	81.5%
	○ Internet/Magazine	11	3.3%
	○ Friends	40	11.9%
6	Amount spent (in a month)		
	○ <Rs.50	87	26%
	○ Rs.50-Rs.150	179	53.4%
	○ Rs.150-Rs.250	63	18.8%
	○ No expenses	6	1.8%
7	Frequency of changing menstrual product in a day		
	○ 6-8 hourly	210	62.7%
	○ 2-4 hourly	93	27.8%
	○ 8-10 hourly	24	7.2%
	○ 12-14 hourly	8	2.4%
8	Method of disposal of menstrual product		
	○ Wrapping newspaper	262	78.2%
	○ Direct into dustbin	11	3.3%
	○ Wrapping into plastic bag	62	18.5%

Table 1 showed that majority of the samples were attained their menarche at age 17-25 that are 292 (87.2%), mostly preferred product during menstruation is disposable sanitary napkin that are 281(83.9%), frequency of taking bath by them is once a day during menstruation 194 (57.9%). The first menstrual product used by them were sanitary napkin 252 (75.2%), their main source of information about menstruation were family members 273(81.5%), most of them spent amount between Rs. 50-150(average) in a month 179 (53.4%) for menstrual product, frequency of changing menstrual product is 6-8 hourly 210 (62.7%), Mostly preferred method for disposal of menstrual product is by wrapping it into newspaper 262(78.2%).

Table 2: Knowledge score in frequency, percentage on use of menstrual cup N=335

Knowledge Score	Frequency (f)	Percentage (%)
1-10	60	17.9%
11-20	236	70.4%
21-30	39	11.6%

The data presented in Table 2 shows that majority of students scored between 11-20 that is 236(70.4%), 60 students scored between 1-10 that is 17.9% and 39 students scored between 21-30 that is 11.6% regarding use of menstrual cup.

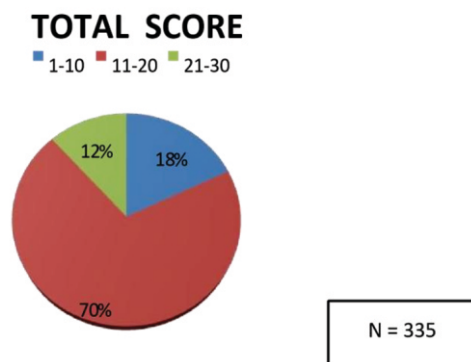


Figure 1: Knowledge on use of menstrual cup in terms of score

Discussion

Researchers conducted the present study with objectives to assess the knowledge of nursing students in terms of score regarding use of menstrual cup and to determine the association between selected socio demographic variables and knowledge regarding use of menstrual cup to develop a self- Instructional Manual (SIM) on use of menstrual cup.

In present study, majority of the students were aged between 17-25, unmarried, lived-in rural area, stayed in hostel, had a family income of above Rs.10,000-Rs. 20,000, undergraduates. The existing literature shows that that majority of female were in age group of 16-30 years, undergraduates, and higher population of

unmarried girls.

It has been noted that in India, most of the girls and women used sanitary pads or napkins or cloth due to lack of popularity of menstrual cup among them.⁸

This finding is in line with another study from India which showed most of the participants were not aware of menstrual cup or its usage¹³

For instance, same study among 400 medical students from Medical College, India revealed that 28 (7%) of them discontinued with the questionnaire stating that they were not aware of what a menstrual cup¹⁴ and 262(70.4%) students were for usage of menstrual cup in virgins.¹⁴

In the present study, majority of population scored between 11-20 on knowledge score which revealed that menstrual cup is known to them but not its proper usage. The supporting data for present study revealed that 82% of population had good knowledge in Karnataka, India.

Similar study of two group non-randomised cross-sectional study to assess the impact of educating and creating awareness among women on Menstrual Cups (M-Cups) as a healthy, safe, easy-to- use and affordable menstrual hygiene product with the support of medical professionals in Kerala found that women (20.7%) started using the M-Cup. This finding underscores the need of raising awareness level of the general population through Information Education Communication (IEC) regarding usage of menstrual cup through educational media or development of any booklet or self-instructional module.¹⁵

In another study conducted in Karnataka, where it was found that 82% of participants were having awareness regarding menstrual cups but the usage percentage was low, 2.6%;similar result was obtained in the current study (students were having knowledge regarding it but don't know its usage). The former study reported the reasons for such underutilization maybe due to fear of using menstrual cup, current method is more satisfying, their beliefs regarding method of collecting menstrual blood.¹⁶

Likewise, several studies concluded that there are many reasons why females less or not use menstrual cup, such as it may get stuck into the vagina, may get easily infected, it may leak during their working period, less acceptance as a method.

Concerning the usefulness of awareness program on the promotion of m-cap, one study from Kerala made it evident that when the participants attended the awareness sessions, their fear about use of m-cap was lesser. It also observed that there was a higher acceptance of menstrual cup among the age group of 25 to 45 years.¹⁷ Hence, awareness regarding menstrual cup, which is culturally new technology,

among participants is essential; this will improve its acceptance among them.

In a descriptive survey conducted among 40 students at a College of Nursing in Kerala revealed that the knowledge level regarding menstrual cup, 3(7.5%) of student nurses had excellent knowledge, 19(47.5%) of student nurses had adequate knowledge, 16(40%) of student nurses had moderately adequate knowledge and 2(5%) of student nurses had inadequate knowledge based on a self-reported questionnaire. But no significant association was found with knowledge score and any of the selected socio-demographic variable like age, year of course, type of family, area of residence, educational status of mother, occupation of mother, age at menarche, currently used sanitary protection, prior information regarding menstrual cup and source of information.¹⁸ This study has similar findings as of the present study.

The major limitation of the current study is that we do not calculate a sample size that would otherwise has been adequately powered for the current study.

Conclusion

Menstrual hygiene is an important asset of a country for upgrading the standards of health of women and awareness program is the key to achieve those standards. Menstrual cup is a novel technology to manage and maintain menstrual flow/hygiene among the females. It is a new method which may replace the traditional methods of menstrual sanitation. Information on other options such as menstrual cup which is not only sustainable but more hygienic can lead to increased use of menstrual cup. Therefore, it is important to spread awareness to the women regarding the menstrual cups since it is not fully known to them, including its usage and potential effectiveness. Hence, there is need to educate the girls and women regarding hygienic practices and intertwined with empowerment and social development. Menstrual cup can be sustainable alternative to the sanitary napkin considering it has a negative impact on environment and at the same time financially viable considering its durability. Greater research in this topic, particularly those looking into the qualitative nuances of using/not using M_CAP by the females.

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