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KNOWLEDGE AND ATTITUDE REGARDING MENSTRUAL CUP AMONG MEDICAL STUDENTS AT MEDICAL COLLEGE, CHITWAN, NEPAL

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ABSTRCT

Background: Menstrual cup is reusable cup shaped device made of latex and silicone (biodegradable materials), which is placed inside vagina that collects menstrual flows in lieu of absorbents pads. Since they are reusable and potentially last up to 10 years, they reduce solid waste and are environmental friendly. This study aims to assess the knowledge and attitude regarding menstrual cup among the medical students at medical college, Chitwan, Nepal. **Methods:** A cross- sectional study was adopted and 105 medical students at Chitwan Medical College. Non-probability, using total enumerative sampling technique. Data were collected from 2nd January 2023 to 3rd February 2023 by using self administered structured questionnaire. Ethical approval was obtained from Chitwan Medical College Institutional Review Board (CMC-IRC). Obtained data were analyzed using descriptive and inferential statistics. Association between the variables were measured by using chi-square test. **Results:** The study revealed that more than half (55.2%) of respondents had good knowledge, 34.3% of respondents had average knowledge and 10.5% of respondents had poor knowledge regarding menstrual cup whereas most (93.3%) respondents had positive attitude and 6.7% of respondents had neutral attitude towards menstrual cup. Among 105 respondents only 9.5% were using menstrual cup for menstrual hygiene management. Level of knowledge regarding menstrual cup was statistically significant with previous experience of using menstrual cup ((*p=0.002).* **Conclusion:** More than half of medical students have good knowledge and majority of respondents had positive attitude regarding menstrual cup but it's usage is still limited. There is a gap between willingness to use and the actual use of menstrual cup. So, there is a need to raise awareness programs by academic area regarding menstrual cup to promote its usability.

KEYWORDS: A*ttitude, K*n*owledge, Medical Students, Menstrual Cup, Menstrual Hygiene Management.*

INTRODUCTION

Menstrual hygiene is vital to the empowerment and well-being of women and girls worldwide. It is about more than just access to sanitary pads and appropriate toilets, though those are important. It deals with the special health care needs and requirements of women during monthly menstruation. This area of special concern includes choice of the best period protection or feminine hygiene products how often and when to change the feminine hygiene products and bathing care.[1]

Menstrual Cups are very convenient to use if used correctly. Menstrual cup can be folded into C-fold shaped and insert folded cup into vagina tilting it back to your spine, it will adjust accordingly. Removal is easy as it can be pressed at its base by two fingers on both sides that breaks the suction and taken out from vagina. Menstrual cup can hold approximately 15 to 40ml of blood depending on size of cup. 80% of women were aware about menstrual cup. The study revealed that 48.3% have average knowledge, 45.8% had poor knowledge and only 5.8% good knowledge about menstrual cup whereas 65% participants said if menstrual cup is available they are willing to use it.[2]

Acceptability and Feasibility of using vaginal menstrual cups among school girls in rural Nepal. Not missing a single class in school due to problem related to menstrual hygiene management was described as a major benefit. The students found menstrual cup is easy and convenient and describe economical and environmental advantage of using cup. They were concerned to size, shape and texture of menstrual cup and that it may 'get stuck' in vagina while relatives were said to be concerned about the use of menstrual cup leading to reduced fertility. Awareness among reproductive women" revealed that

nearly 82% women were aware of menstrual cup whereas about 65.75% of study group had good knowledge about menstrual cup. Around 43.67% of them were willing to accept menstrual cup as a menstrual hygiene management but only 2.67% actually have used menstrual cup. Though people are aware adequate knowledge is still poor and there is a huge gap between willingness to use and actual use.[3]

Menstrual product choice and uptake among young women in Zimbabwe" Female participants aged 16–24 years old attending the community-based Sexual and reproductive health services were included in the study. Among 1732 eligible participants, 1414 (81.6%) took up the Menstrual Health and Hygiene intervention at first visit. Uptake differed by age group with 84.6% of younger women (16–19 years old) compared to 79.0% of older women (20–24 years old) taking up the intervention. There was higher uptake of reusable pads (88.0%) than menstrual cups (12.0%). Barriers to cup uptake included fears that the cup would compromise young women's virginity. Some feared that the "big" cup would be too difficult or painful to insert. Others thought the cups were stiff and hard and feared that the cup would stretch out their vagina making them undesirable for men to have sex with. The main factors that facilitated menstrual cup uptake included anecdotal evidence of menstrual pain relief and the prevention of leakage. Some participants choose the cup over the reusable pad as it could be cleaned and dried discreetly.[4]

A cluster randomised controlled feasibility study conducted in rural western Kenya on "Menstrual cups and sanitary pads to reduce school attribution and sexually transmitted and reproductive tract infections''. Total 751 girls were included in the study. Girls were given menstrual cup and sanitary pads to use in their periods. Result shows that prevalence of STIs at the end of study survey was 4.2% in cups user and 4.5% among pads users. Reproductive tract infections prevalence was 21.5% in cup users while 28.5% among pad users. Bacterial vaginosis was less prevalent in the cup users that is 2.9% while 20.3% on pad users. Study found 0% prevalence of toxic shock syndrome on menstrual cup users while 2% pad users were affected by toxic shock syndrome.[5]

A cross-sectional survey on 'Menstrual health and hygiene- Study of Knowledge Attitude and Practice of Obgyns on usage of menstrual cups' was conducted among 163 obstetricians and gynaecologist in india where 93% of health care providers think that menstrual cups are more environmental friendly than sanitary pads. About 57% of health care providers actually advised young girls on the usage of menstrual cups, where 59% think that menstrual cups are way forward for moving pads to cups, but only 35% of doctors have proactively presented the option of menstrual cups and advice young girls on how to use it.[6]

MATERIAL AND METHODS

Study design, period and setting

Descriptive cross-sectional study design was conducted among the bachelor level of medical student of Chitwan Medical College. This Chitwan Medical College is 750 bedded private hospital located in the central Nepal providing free Safe Motherhood Program and with different medical stream. Data were collected from 2nd January 2023 to 3rd February 2023.

Study population and eligibility criteria

The study was conducted among 105 Bachelor level students from BSc Nursing 1st 2nd and 3rd year, Bachelor of Public Health 1st and 2nd year and Bachelor of Medical Laboratory Techsnology 1st, 2nd, 3rd and 4th year at Chitwan Medical College, Nepal. Only female students and willing to participate were included in the study whereas not willing to participate in the study were excluded from the study.

Sample size determination and sampling technique

All the female students from Bachelor of Science in Nursing (BSc. Nsg) 1st 2nd and 3rd, Bachelor in Public Health(BPH) 1st and 2nd year and Bachelor in Medical Laboratory Technology (BMLT) 1st, 2nd 3rd and 4th year who meet the inclusive criteria were included in the study.

BSc nursing 1st year: 12
BSc nursing 2nd year: 28
BSc nursing 3rd year: 37
BMLT 1ST year: 1
BMLT 2nd year: 3
BMLT 3rd year: 4
BMLT 4th year: 4
BPH 1st year: 3
BPH 2nd year: 13

Total students: 105 students. Therefore sample size = 105

Non- probability, Total enumerative sampling technique was used to select the desired study sample for the study because it is the best method of non-probability sampling bias. Student who met the inclusion criteria and attended in the OPD during study periods were taken as study sample.

Data collection tools and measurement

Data was collected by the researcher after getting approval from concerning authorities of Chitwan Medical College. Prior to data collection, researcher introduced herself, explained about the purpose of study to respondents and was assured for the confidentiality of the information given to them. Data was collected by using self administered questionnaire by researcher. each respondents was given 25-30minutes for filling the questionnaire, all the collected data was reviewed and checked daily for its completeness, accuracy and consistency Students was kept under observation while filling up the questionnaire to reduce result

contamination. Informed consent was taken from each respondent prior to data collection.

Data management and analysis

All the data was checked for completeness and adequacy of information provided by respondent and was entered to statistical package for social sciences (SPSS version 20) for analysis. The data was analyzed in terms of descriptive (frequency, percentage, mean, standard deviation) and inferential statistic (chi square and continuity correction test) according to the nature of data. The findings were presented and interpreted in tables accordingly.

RESULT

Out of 105 students the median age was 21 regarding education 77(73.4%) were from BSc Nursing, Concerning on ethnicity 75 (71.4%) were from Brahmin/Chhetri, Regarding desire to change currently using product on mensuration were only 37 (35.2%), concerning on sources of information received 82 (78.1%) have heard from mass media. Only 10 (9.5%) have experience used menstrual cup **(Table 1).**

Table 1: Respondents' Socio-demographic Characteristics (n = 105).

Variables	Frequency	Percentage
Age groups (in completed year)		
< 21years	48	45.7
≥21years	57	54.3
Median=21.00 ,IQR=(Q3-Q1)=(22-20=2) Min=18years, Max=26years		
Educational Programs		
BSc Nursing	77	73.4
BPH	16	15.2
BMLT	12	11.4
Ethnicity		
Brahmin/Chhetri	75	71.4
Janajati	27	25.7
Dalit	3	2.9
Desire to change currently using product on mensuration		
No	68	64.8
Yes	37	35.2
Source of information		
Mass media	82	78.1
Peer group	11	10.5
Health personnel	8	7.6
Family and relatives	4	3.8
Experience of using Menstrual cup		
No	95	90.5
Yes	10	9.5

Table 2: Shows the statement regarding the knowledge of menstrual cup (n= 105).

Statements regarding knowledge	Correct responses	
	Frequency	Percentage
Menstrual cup is made up of latex and silicone.	53	50.5
Menstrual cup works by collecting blood.	92	87.6
Emptying time of menstrual cup for normal blood flow is 6 to 12hours.	58	55.2
Approximately menstrual cup can collect 15 to 40ml of blood.	60	57.1
One menstrual cup is reusable for 6 to 10years.	30	28.6
Menstrual cup can be sterilized by boiling cup for 5 to 10 minutes before using it each month.	84	80.0
Choosing correct size of menstrual cup depends on height of cervix and amount of blood flow.	62	59.0
Menstrual cup can be stored in a clean and dry place after our periods.	84	80.0
Menstrual cup is placed inside vagina, few inches below cervix.	94	89.5
Appropriate technique to insert menstrual cup is folding a cup in c-shape and inserting it.	81	77.1
Incorrect insertion of menstrual cup may cause leakage of blood.	91	86.7
Menstrual cup can be taken out by pressing the base of cup with fingers, break the suction and remove it.	78	74.3
Advantage of menstrual cup is environmental friendly.	88	83.8
Disadvantage of menstrual cup is it cause pain and discomfort during first few cycle of use.	66	62.9
Intrauterine device inserted women cannot use menstrual cup.	84	80.0

Out of 105 medical students more than half (58) 55.2% had a good knowledge, (36) 34.3% had adequate knowledge whereas only (11) 10.5% had poor knowledge regarding menstrual cup **(Table 3).**

Table 3: Respondents' Level of Knowledge regarding Menstrual Cup.

Level of knowledge	Frequency	Percentage
Good knowledge (≥ 70%)	58	55.2
Average knowledge (50-70%)	36	34.3
Poor knowledge (< 50%)	11	10.5
Total	105	100

Median=11.0, Inter Quartile Range= (Q3-Q1)= (12-9), Minimum Score=1, Maximum Score=15

Table 4: Respondents' Attitude regarding Menstrual cup (n=105).

Statements regarding Attitude	SA No (%)	A No (%)	N No (%)	D No (%)	SD No (%0)
Menstrual cup is a safe device to use.	21(20.0)	58(55.2)	24(22.9)	1(1.0)	1(1.0)
Menstrual cup will help to decrease solid waste burden.	44(41.9)	49(46.7)	10(9.5)	2(1.9)	….
Menstrual cup are cost-effective.	28(26.7)	44(41.9)	26(24.8)	7(6.7)	….
Sanitary pads are better than Menstrual cup.*****	12(11.4)	28(26.7)	44(41.9)	18(17.1)	3(2.9)
Menstrual cup can collect more blood than sanitary pads and tampons.	26(24.8)	48(45.7)	28(26.7)	2(1.9)	1(1.0)
I believe blood from menstrual cup will flow back to uterus when cup get full.*****	4(3.8)	10(9.5)	19(18.1)	39(37.1)	33(31.4)
I believe virgin girl can use menstrual cup.	41(39.0)	38(36.2)	12(11.4)	10(9.5)	4(3.8)
I believe menstrual cup is not associated with reducing fertility.	38(36.2)	43(41.0)	17(16.2)	5(4.8)	2(1.9)
I believe menstrual cup can be use as contraceptive device.*****	...	…..	13(12.4)	28(26.7)	64(61.0)
I think it will be difficult to peep and poop while using menstrual cup.*****	7(6.7)	38(36.2)	19(18.1)	26(24.8)	15(14.3)
I think using menstrual cup will worsen the period cramps.*****	2(1.9)	12(11.4)	28(26.7)	37(35.2)	26(24.8)
I think menstrual cup need to be removed every time I go to washroom.*****	5(4.8)	26(24.8)	17(16.2)	39(37.1)	18(17.1)
I think using menstrual cup can cause deformity of reproductive part.*	3(2.9)	13(12.4)	22(21.0)	40(38.1)	27(25.7)
I have fear that menstrual cup will lost inside vagina when it is inserted.*	4(3.8)	23(21.9)	20(19.0)	26(24.8)	32(30.5)
I am willing to use menstrual cup for menstrual hygiene management.	33(31.4)	31(29.5)	27(25.7)	9(8.6)	5(4.8)

*SA= Strongly Agree; A=Agree; N=Neutral; D=Disagree; SD=Strongly Disagree, *****(Negative statements)*

In this study out of 105 medical students almost all (98) 93.3% have positive attitude regarding menstrual cup while only 7 (6.7%) have neutral attitude and there is no any negative attitude of medical students regarding menstrual cup **(Table 5).**

Table 5: Respondents' Level of Attitude regarding Menstrual Cup.

Level of Attitude	Frequency	Percentage
Positive Attitude (≥ 60%)	98	93.3
Neutral Attitude (30-60%)	7	6.7
Total	105	100.0

Median= 56.00, Inter Quartile range=(Q3-Q1)=(61-51) Minimum score=36 Maximum Score=7

This study shows that there is significant association between level of knowledge regarding menstrual cup and previous experience of using menstrual cup **where *(p=0.002)***. There is no significant association between level of knowledge and other selected variables such as age *(p=0.629)*, ethnic group *(p=0.117)*, educational programs *(p=1.000*) and marital status *(p=0.728*). **Table 6.**

Association between Respondents' Level of Knowledge regarding Menstrual Cup and Selected variables (n = 105).

Variables	Level of Good No (%)	Knowledge Average to Poor No (%)	X^2 value	p value
Age				
< 21years	27(56.2)	21(43.8)	0.337	0.848
≥ 21years	31(51.4)	26(45.6)		
Educational Programs				
Nursing	43(55.8)	34(44.2)	0.043	1.000
Others	15(53.6)	13(46.4)		
Ethnic Group				
Brahmin/Chhetri	44(60.3)	29(39.7)	2.457	0.117
Others	14(43.8)	18(56.2)		
Marital status				
Married	6(66.7)	3(33.3)		0.728£
Unmarried	53(54.2)	43(45.8)		
Previous experience of using menstrual cup				
Yes	10(100.0)	0(0.0)		
No	48(50.5)	47(49.5)	8.956	**0.002**

£= Fisher's exact test, significance (p=<0.05)

DISCUSSION

This study aims to assess the knowledge and attitude regarding menstrual cup among the medical students at medical college, Chitwan, Nepal. Concerning the socio-demographic characteristics the respondents were from age between 18 to 26 years and the median age of respondents was 21 with the interquartile range of 2. More than half 54.3% of respondents were from age group 21-26years. Almost all (91.4%) of respondents were unmarried and (71.4%) of respondents were Brahmin/Chhetri. Nearly three fourth (73.4%) of respondents belongs to nursing program.

The present study reported that (86.5%) usage of sanitary pad which was supported by the study conducted in India[2] which showed 96.7% usage of sanitary pads. This study reported that the higher percentage of usage of menstrual cup in comparision to study conducted in Karnataka, India[3] which was only 2.6% usage of menstrual cup. The usage of sanitary pads is higher in both study, it might be due to popularity of sanitary pads incomparision to menstrual cup in both countries. Study in Banglore, India[7] reported that the social media as a powerful source of information. Similarly present study findings also showed that (78.1%) of respondents got information about menstrual cup from mass media. It might be due to more usage of social media in both countries.

The present study reported higher percentage of respondents' had good knowledge where more than half (55.2%) of respondents had good knowledge, (34.3%) of respondents had average knowledge and only (10.5%) of respondents had poor knowledge regarding menstrual cup. In contrast to this study conducted India.[2] reported that only (5.8%) had good knowledge, (48.3%) average knowledge and (45.8%) had poor knowledge. The reason for difference in the study might be that the present study was conducted on medical students while previous study was conducted on reproductive women in rural tertiary hospital.

The present study reported the higher percentage of good knowledge (55.2%) and (34.3%) of average knowledge. The findings of study was similar with the study conducted among women in Karnataka, India [3] reported that (65.7%) of respondents who had good knowledge regarding menstrual cup. Similarity in findings might be because that in previous study more than two third (66.67%) of participants were a medical students.

This present study showed that half (50.5%) of respondents knew menstrual cup is made of latex and silicone, majority (87.6%) knew its exact mechanism of action, more than half 55.2% knew its emptying time, majority (80%) knew its sterilization technique, while in the study conducted in India[2] showed only (36.7%) knew that what menstrual cup is made of, similar to this study almost (94.2%) answered it works by collecting blood, only (35.8%) knew its emptying time, while more than half (53.3%) gave wrong answer as it can be sterilized only by washing.

This present study conducted among 105 participants showed that three fourth (75%) of respondents reported menstrual cup as a safe device to use, (60%) of respondents said they have willingness to use menstrual cup where only (4.8%) of respondents said they are not willing to use. The findings was similar with the study conducted in India[2] where (62.5%) of respondents had reported menstrual cup as a safe device to use while (65%) of respondents said they have willingness to use menstrual cup and only (6.7%) of respondents disagree to use menstrual cup.

The previous study conducted among medical students,[8] reported a similar findings about menstrual cup where (60.2%) said yes for its usage. In the same way majority

(70.4%) said that it can be used in virgins. Both study showed the similar acceptance rate. The findings might be similar as both study was conducted among medical students.

The present study reported higher percentage of positive attitude which was (93.3%). However (13%) of respondents think that menstrual cup should not be use by virgin girls and about (7%) think using menstrual cup may reduce fertility. The findings was similar with another qualitative study conducted in Sindupalchowk, Nepal among school going adolescents girls[9] showed that most of participants perceived menstrual cup positively but still some girls have reported concerns regarding fertility & losing virginity. The result from both study represents that still some of girls had wrong notion regarding menstrual cup. The reason for similar findings might be due to virginity being a great matter of concern and also a negative socio-cultural influences in some of girls as both study was conducted in Nepal.

Regarding association between independent variables and level of knowledge the current study showed statistically significant with the previous experience of using menstrual cup***(p=0.002).***

CONCLUSION

The findings of the study concluded that more than half of health science students have good knowledge regarding menstrual cup and almost all of them have positive attitude. The previous experience of using menstrual cup tends to influence the level of knowledge on menstrual cup. There is still some respondents who had poor knowledge and also a negative attitude and there is a huge gap between willingness to use and actual use menstrual cup that leads to lower usability of menstrual cup our country. So, there is a need of conducting various educational programs regarding menstrual cup.

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