






RELATIONSHIP BETWEEN KNOWLEDGE AND INTEREST IN USING MENSTRUAL CUPS IN WOMEN OF REPRODUCTIVE AGE

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Abstract

Background: Menstrual cups have many advantages compared to other menstrual products but have not been widely used and are less desirable due to limited knowledge. In Indonesia, the majority of women use disposable sanitary napkins as menstrual products because they can be easily found even though the use of sanitary napkins can have a negative impact on health and the environment. The objective of this research is to analyze the relationship between knowledge and interest in using menstrual cup among women of reproductive age. **Method:** This study was an observational analytic study with a cross sectional approach. The sampling technique used sequential sampling. The sample size studied was 100 women of reproductive age in the service area of Mulyorejo Health Center, Surabaya, Indonesia who met the inclusion criteria. The research instrument used a questionnaire containing a list of questions related to knowledge and interest in using menstrual cups. Data were analyzed using the chi square test. **Results:** The results of this study showed that out of 100 respondents, 52 respondents (52%) had poor knowledge, 31 respondents (31%) had sufficient knowledge and 17 respondents (17%) had good knowledge. A total of 69 respondents (69%) were not interested in using menstrual cups. The results of the chi square test analysis showed a p value of 0.086 ($p > 0.05$). **Conclusion:** There is no significant relationship between knowledge and interest in using menstrual cup.

Keywords: Interest of use, Knowledge, Menstrual Cups, Menstrual Hygiene, Women of reproductive age

INTRODUCTION

Menstrual cups are not widely used and less desirable due to limited knowledge (Rani and Swaminathan, 2023). A study showed that women who have not used menstrual cups still have insufficient knowledge about menstrual cups (Ola, 2022). Lack of knowledge is the main reason why respondents hesitate to switch to menstrual cups from other menstrual products (Lekshmi et al., 2022). Research around the use of menstrual cups is still very few and far between, this sustainable menstrual product has not been widely discussed or studied (Minor et al., 2020) especially in developing countries (Kamira and Rizkalla, 2023). Talking



about menstruation is still considered a sensitive and taboo topic in Indonesia. Due to this condition, Indonesian women's knowledge about menstruation including menstrual products is still lacking (Sato et al., 2021).

The menstrual product that the majority of women in Indonesia use is disposable sanitary napkins, this is because sanitary napkins can be easily found. However, the use of sanitary napkins has a negative impact on health and the environment (Pande and Anjani, 2022). In line with Sustainable Development Goals (SDGs) number 3 of healthy and prosperous life, number 6 of clean water and proper sanitation, and number 12 of responsible consumption and production (Bappenas, 2022), women can switch to menstrual cups to overcome the health and environmental problems caused by disposable sanitary napkins (UNICEF, 2022). Data from the National Socio-Economic Survey (SUSENAS) shows that the total female population of Indonesia is around 135.24 million with the number of women in Surabaya City is 1,496,970 (Badan Pusat Statistik, 2021).

Menstrual cup is a bell-shaped product with a stem that is inserted into the vagina to collect menstrual blood inside. Menstrual cups have many advantages compared to other menstrual products, including being environmentally friendly, minimal risk to health, can be used longer, economical, safe, comfortable, odorless, and compatible (Van Eijk et al., 2019). Knowledge is crucial in shaping women's interest and desire to use menstrual cups. Adequate knowledge can reduce fears, correct misconceptions, and foster positive attitudes towards menstrual cup use (Lekshmi et al., 2022). Based on the description above, the purpose of this study is to analyze the relationship between knowledge and interest in using menstrual cups in women of reproductive age.

METHOD

This study was an observational analytic study using a cross-sectional approach. The population consisted of all women of reproductive age in the service area of Mulyorejo Health Center, Surabaya, Indonesia, who met the inclusion criteria. The sampling technique applied was sequential sampling, resulting in a total of 100 women of reproductive age who were willing to participate as respondents. The study was conducted from November to December 2023. The independent variable was the knowledge of women of reproductive age about menstrual cups, while the dependent variable was their interest in using menstrual cups. The knowledge assessment results were classified into three levels: good (76–100%), moderate or sufficient (56–75%), and poor (<55%). Primary data were collected using a

questionnaire containing items related to knowledge and interest in menstrual cups. The data were then analyzed using the SPSS application with a chi-square test. The analysis included both univariate and bivariate analyses. This study was approved and ethically declared feasible by the Health Research Ethics Committee of Universitas Airlangga with letter number 287/EC/KEPK/FKUA/2023. Informed consent was obtained from all participants prior to their inclusion in the study.

RESULT AND DISCUSSION

The research findings regarding respondents' characteristics are presented in the following table:

Table 1. Frequency Distribution of Respondents' Characteristics

Characteristic	n	%
Age		
≤ 26 years	48	48
> 26 years	52	52
Education		
Elementary School	4	4
Junior High School	12	12
Senior High School	65	65
Higher Education	19	19
Occupation		
Student	17	17
Housewife	45	45
Private Employee	28	28
Teacher	2	2
Unemployed	8	8
Age at Menarche		
8 – 12 years	49	49
> 12 years	51	51
Awareness of Menstrual Cup		
Yes	51	51
No	49	49
Menstrual Products Used		
Disposable Sanitary Pads	100	100
Others	0	0

Based on age characteristics, the average age of respondents was 26.72 years with an age range of 18-40 years. Most of the respondents, namely 65 respondents (65%), have the latest high school education. Based on occupation, almost half (45%) of the respondents were housewives. The average age of menarche of the respondents was 12.8 years with the earliest age of menarche being 8 years old and the latest being 16 years old. There was only a slight difference between the number of respondents who had heard about menstrual cups (51%) and

those who did not know at all (49%), but it was found that all respondents used disposable sanitary napkins.

Univariate Analysis

Table 2. Level of Knowledge About Menstrual Cups

Category	n	%
Good	17	17
Sufficient	31	31
Poor	52	52
Total	100	100

The data presented in Table 2 indicate that the majority of respondents in this study have a poor level of knowledge regarding menstrual cups, with 52 respondents (52%) falling into this category. The average score obtained was 57.60, with a minimum score of 11.1 and a maximum score of 88.8.

Table 3. Frequency Distribution of Knowledge About Menstrual Cups

Knowledge Aspect	Correct		Incorrect	
	n	%	n	%
Knowledge of menstrual cup safety	77	77	23	23
Knowledge of menstrual cup usage mechanism	45	45	55	55
Knowledge of menstrual cup usage duration	55	55	45	45
Knowledge of menstrual cup lifespan	33	33	67	67
Knowledge of menstrual cup material composition	90	90	10	10
Knowledge of menstrual cup sterilization method	16	16	84	84
Knowledge of menstrual cup capacity	73	73	27	27
Knowledge of menstrual cup size	37	37	63	63
Knowledge of the eco-friendliness of menstrual cups	93	93	7	7

As shown in Table 3, the highest percentage of incorrect answers was observed in the question regarding the sterilization method of menstrual cups, with 84% of respondents answering incorrectly. Conversely, the majority of respondents (93%) correctly answered that menstrual cups are more environmentally friendly.

Table 4. Frequency Distribution of Interest in Using Menstrual Cups

Category	n	%
Interested in using menstrual cups	31	31
Not Interested in using menstrual cups	69	69
Total	100	100

As presented in Table 4, the majority of respondents (69 respondents or 69%) expressed no interest in using menstrual cups.

Bivariate Analysis

Table 5. Cross-Tabulation Between Knowledge of Menstrual Cups and Interest in Using Menstrual Cups

Knowledge Level	Interested in Using				Total		<i>p value</i>
	Yes		No				
	n	%	n	%	n	%	
Good	7	41,2	10	58,8	17	17	0,086
Sufficient	13	41,9	18	58,1	31	31	
Poor	11	21,2	41	78,8	52	52	
Total	31	31	69	69	100	100	

Based on Table 5, the chi-square test analysis yielded a p-value of 0.086 ($p > 0.05$), indicating no significant association between knowledge and interest in using menstrual cups among women of reproductive age in the Mulyorejo Health Center working area. Among respondents with a good level of knowledge, only 7 respondents (41.2%) were interested in using menstrual cups, whereas 10 respondents (58.8%) were not interested. Similarly, among those with a sufficient level of knowledge, 13 respondents (41.9%) expressed interest, while 18 respondents (58.1%) were not interested. Furthermore, among respondents with a poor level of knowledge, only 11 respondents (21.2%) were interested, whereas 41 respondents (78.8%) were not interested.

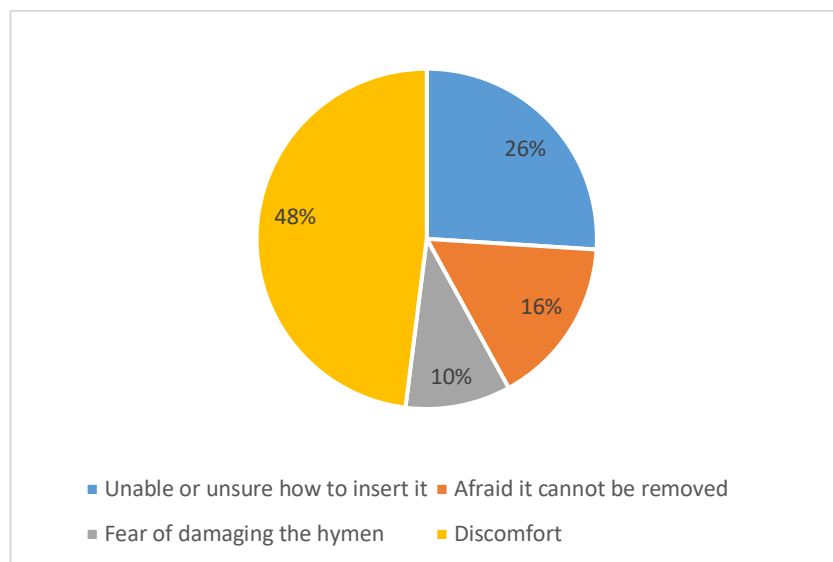


Figure 1. Reasons for Respondents' Lack of Interest in Using Menstrual Cups

Among the 69 respondents who were not interested in using menstrual cups, the majority (48%) reported discomfort as their primary reason for lack of interest.

Discussion

Respondent's Characteristics

The analysis of respondent characteristics based on age shows that 52 respondents (52%) were above the average age of 26 years, while 48 respondents (48%) were 26 years old or younger. A previous study found that younger women tend to have a higher level of knowledge about menstrual cups (Sudevan Devan et al., 2022). In terms of education, two-thirds (65%) of respondents had completed senior high school as their highest level of education. Education plays a significant role in shaping an individual's knowledge (Darsini, Fahrurrozi, and Cahyono, 2019). Women develop different strategies for menstrual management, with education being one of the key factors influencing their choices (Gharacheh et al., 2021). Regarding employment status, the respondents included housewives (45%), private-sector employees (28%), students (17%), and the least represented category was teachers (2%). Another study found that students had the highest level of knowledge about menstrual cups, followed by office workers, who demonstrated better knowledge than housewives (Aishwarya and Tharani, 2019). The average age of menarche among respondents was 12.8 years, which is similar to findings from a previous study involving 79,026 Indonesian women aged 10–59 years, where the average age at menarche was 12.96 years (Sudikno and Sandjaja, 2020). Nearly half of the respondents (49%) had never heard of menstrual cups, which contrasts with a study by Abraham et al. (2023) involving 187 female university students, where 96.3% of participants reported being aware of menstrual cups (Abraham et al., 2023). Despite 51% of respondents in this study having knowledge about menstrual cups, none of them had ever used one, and all respondents (100%) reported using disposable sanitary pads. This finding is consistent with previous research indicating that the majority of Indonesian women use sanitary pads as their primary menstrual product (Saputri, 2021).

Respondents' Knowledge and Interest in Using Menstrual Cups

A total of 52% of respondents in this study had insufficient knowledge. Other studies state that knowledge about menstrual cups is still lacking so that more effective health education about menstrual products is needed (Van Eijk et al., 2019). The minimum value obtained by respondents was 11.1, indicating that there were respondents who only correctly answered one questionnaire question and the

maximum value obtained was 88.8, indicating that none of the total respondents answered all questionnaire questions correctly.

The question regarding menstrual cup sterilization was answered correctly by 16% of respondents. The way to sterilize menstrual cups is by boiling them in water once a month (Pokhrel et al., 2021). The majority of respondents, 93%, answered correctly that menstrual cups are more environmentally friendly than other menstrual products. Other studies also found that the majority of respondents (85.96% (Lekshmi et al., 2022) and 88.3% (Rani and Swaminathan, 2023)) agreed that menstrual cups are environmentally friendly.

Regarding respondents' interest, the results of the analysis showed a considerable gap between the number of respondents who were interested (31%) and not interested (69%) in using menstrual cups. A well-provided education session is the most important factor that can help change a woman's interest in using a menstrual cup (Varghese, Hemachandran and Parvathy, 2023).

Relationship Between Knowledge and Interest in Using Menstrual Cups

According to Bloom cited in Darsini (2019), knowledge is the result of knowing, which is obtained after carrying out the sensing process on a particular object (Darsini, Fahrurrozi and Cahyono, 2019). The results of the chi square test analysis between knowledge and interest in using menstrual cups resulted in a p value of 0.086 ($p > 0.05$), it can be stated that there is no significant relationship between knowledge and interest in using menstrual cups in women of reproductive age in the Mulyorejo Health Center working area. Respondents with a good level of knowledge who felt interested in using menstrual cups were 7 respondents (41.2%) while respondents with good knowledge and felt no interest in using them were more, namely 10 respondents (58.8%). At the level of sufficient knowledge and interested there were 13 respondents (41.9%) while not interested 18 respondents (58.1%), at the level of less knowledge but interested there were 11 respondents (21.2%) and 41 respondents (78.8%) were not interested. Although the statistical test results show that there is no significant relationship between knowledge and interest in using menstrual cups, it can be seen that there is a tendency for the lack of knowledge to increase the number of respondents who are not interested.

There are several previous studies that are in line with the results of this study. Research on 65 respondents found that respondents who had good knowledge and were interested were 13.8% while not interested were 41.5% with a p value of 0.301 so that there was no relationship between knowledge and interest in using menstrual cups (Shelby and Puspitasari, 2022). The results of research by Widya et al. (2022) on 88 respondents showed 48 respondents had good knowledge with 33 respondents (68.8%) interested and 15 respondents (31.3%) were not interested and the p value of the Mann-Whitney test was 0.120 (Widya, Usman and Widowati, 2022). From a total of 97 respondents, it was found that the majority of respondents (74.2%) had a good level of knowledge about menstrual cups but none of them used them. Someone who knows the menstrual cup is not always interested in using it (Putri et al., 2021). Then a study on 350 women found that two-thirds of the respondents (73.7%) had a good level of knowledge and the rest (26.3%) with a poor level of knowledge and only 15.1% had tried using a menstrual cup (Sudevan Devan et al., 2022).

Some other studies found contradictory results to this study. Some studies stated that menstrual cups have not been widely used due to lack of knowledge and promotion. Whereas menstrual cups have many advantages over other menstrual products (Rani and Swaminathan, 2023). Similarly, Lekshmi et al. (2022) on a total of 372 women aged above 15 years which showed that menstrual cups have been around for a long time, but their use is not very common in India, due to lack of knowledge which is the main reason why respondents are hesitant to switch to menstrual cups from other menstrual products, as well as the widespread use of sanitary pads. More than three-quarters of respondents (78%) were not interested in using menstrual cups in the future and it was found that detailed knowledge about menstrual cups was lacking even though the majority (96.3%) of respondents had heard of menstrual cups (Abraham et al., 2023).

Knowledge and acceptance of menstrual cups is still low. Therefore, to increase acceptance and correct existing misconceptions about menstrual cups, there is a need to increase awareness and knowledge (Abraham et al., 2023). None of the respondents in this study used menstrual cups. The same thing was obtained in a study on 372 undergraduate medical students showed that all respondents used



disposable pads because of their popularity and promotion (Eti, Shreya M and Sailakshmi, 2019). The results of research through interviews in all participants agreed that sanitary napkins have a negative impact and menstrual cups are appropriate to replace disposable pads (Angesti, 2020).

There are several factors that can influence differences in knowledge levels. Putri et al. (2021) mentioned that knowledge can be influenced by the information a person gets from various sources, education, age and occupation (Putri et al., 2021). There is a statistically significant relationship between young age, educational status, socioeconomic status and marital status of women of reproductive age with knowledge about menstrual cup (Sudevan Devan et al., 2022).

This study also contains other reasons for respondents not interested in using menstrual cups, which include feeling uncomfortable (48%), not being able or not knowing how to insert a menstrual cup (26%), fear of not being able to remove it (16%) and fear that menstrual cups can damage the hymen (10%). Most respondents who were not interested (48%) felt that menstrual cups were uncomfortable to use. This may be due to the way it is used, which is inserted into the vagina, which is also considered extreme for many people (Ola, 2022). Lekshmi's study (2022) found that 14.47% of respondents found menstrual cups uncomfortable (Lekshmi et al., 2022).

On the other hand, some studies found that more respondents were interested in using menstrual cups than those who were not interested, but only if menstrual cups were provided. As in a study on women of reproductive age at Sri Devaraj University URS found that 65% of respondents expressed interest and willingness to use menstrual cups if available (Meghana and Gomathy, 2021). Almost half of the total respondents (49.1%) were willing (Sudevan Devan et al., 2022), a survey by Rani and Swaminathan (2023) also revealed that the majority of respondents, namely 205 out of 325 respondents, were interested if provided (Rani and Swaminathan, 2023).

CONCLUSION AND SUGGESTION

Based on the results of research on 100 respondents, namely women of reproductive age in the Mulyorejo Health Center working area, the results of the chi square test analysis obtained a p value of 0.086 ($p > 0.05$) which means that statistically there is no significant relationship between knowledge and interest in using menstrual cups. The level of knowledge about menstrual cups shows that more than half, namely 52 (52%) respondents have insufficient knowledge, 31 (31%) respondents have sufficient knowledge and only 17 (17%) have a good level of knowledge. There were 69 (69%) respondents who were not interested in using menstrual cups and the remaining 31 (31%) respondents felt interested in menstrual cups. It is recommended for future researchers to be able to conduct research with other methods, scopes, and variables in order to get more in-depth results from various points of view regarding menstrual cups. It is also recommended for health workers, especially midwives, to be able to help increase public knowledge about menstrual cups by socializing.

DECLARATION

Conflict of Interest

Authors declare no conflict of interest regarding the publication of this research

Authors' Contribution

All authors contributed significantly to all stages of the research, including study design, data collection, analysis, manuscript writing, final revisions and approval

Ethical Approval

The Health Research Ethics Committee of Universitas Airlangga has reviewed and approved this study, deeming it ethically feasible with letter number 287/EC/KEPK/FKUA/2023

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Data Availability

The data underlying this study's findings can be accessed upon reasonable request to the corresponding author, subject to restrictions to maintain participant confidentiality



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