

Period Products and Period Power: Investigating Knowledge, Sexuality, and Attitudes with Menstrual Cup Usage

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Abstract: Stigma toward menstruation is closely linked to a lack of knowledge about menstrual health taboos and negative attitudes toward sex and bodies. The menstrual cup (MC), an alternative menstrual product to pads and tampons, may mitigate these negative perceptions through the high levels of body contact and menstrual and anatomical knowledge required to use it. Hence, the current study examines the relationship between MC usage and 1) knowledge about menstruation and reproductive anatomy, 2) personal comfort with sexuality, and 3) attitudes toward menstruation. This study utilized a quantitative survey to investigate the attitudes and experiences of 180 menstruators ages 19-34 and the menstrual products they use. As predicted, more frequent MC usage was associated with higher knowledge, greater comfort with sexuality, and lower disgust and shame toward menstruation.

Keywords: *menstruation, menstrual cups, menstrual products, stigma, sexuality*

Introduction

While the menstrual cycle is a normal part of many people's lives, stigma toward menstruation still persists, contributing to self-consciousness surrounding normal bodily functions, taboo around sex, and, more broadly, women's inferiority in society (Johnston-Robledo & Chrisler, 2013). For example, a study of 200 female participants aged 12-61 found that women who felt more body shame and experienced greater sexual objectification of their own bodies had more negative attitudes toward menstruation, including shame and disgust (Roberts, 2004). In another study with 199 undergraduate women, shame around menstruation was also associated with more uneasiness around sex and higher levels of body shame (Schooler et al., 2005). Evidently, stigmatizing attitudes toward menstruation are closely linked to people's perception of sexuality and bodies, often accompanied by feelings of shame and disgust.

Furthermore, menstrual stigma appears to be associated with a lack of menstrual knowledge and discomfort talking about sex and bodies. In a study on 566 16- to 35-year-olds, researchers found that participants who received health information about endometriosis and the harms of menstrual taboos showed reduced menstrual stigma and increased acceptance of menstrual policy improvements (Reinhardt & Eitze, 2023). In other words, a lack of knowledge about menstruation, especially regarding social norms and taboos, likely contributes to menstrual stigma and people's negative attitudes toward menstrual health issues. A separate study on 785 undergraduate students found that stigma toward bodies, genitals, and menstruation is associated with decreased comfort in communicating with healthcare providers (Holland et al., 2020). Hence, it seems that menstrual stigma, along with other body-related stigmas, is connected to people's discomfort discussing their own bodies and medical symptoms, especially in a sexual healthcare setting. Similarly, a study with 167 female students revealed that comfort with one's personal sexuality was correlated with more accepting attitudes and comfort surrounding menstruation (Rempel & Baumgartner, 2003). These studies suggest that the magnitude in which people stigmatize

menstruation is potentially influenced by people's knowledge and comfort regarding menstrual and sexual health.

Considering these factors with body comfort and menstrual knowledge, attitudes toward menstruation may have improved with alternative menstrual product usage. Particularly, the menstrual cup (MC) is a reusable product that is manually inserted into the vagina to collect menstrual blood, which requires direct contact with the body and menstrual blood itself. For these reasons, MC usage may involve more anatomical knowledge and comfort with one's body than mainstream menstrual products like pads or tampons. With increased environmental sustainability, perceived comfort, and blood collection capacity compared to other menstrual products (Beksinska et al., 2015; Peter & Abhitha, 2021), the MC has grown in popularity since the early 2000s (Google Trends, n.d.) and continues to grow among menstruators globally (Surabhi & Onkar, 2020). As users first learn how to use it, many of them consult other experienced users to talk about their experiences; in fact, people are more likely to succeed in learning how to use the MC if they have a friend who also uses it (Oster & Thornton, 2012). The intravaginal placement of the MC and the interpersonal discussion around the product may counteract many of the body- and sex-related elements of menstrual stigma. Accordingly, the present study examined how different levels of MC usage may be associated with different attitudes toward and knowledge about periods, bodies, and sex. This adds to the discussion about menstrual stigma and addresses how menstrual product usage may change people's perceptions and conversations surrounding periods.

For instance, one qualitative study has demonstrated how using a MC may help combat menstrual stigma. For 11 first-time MC users aged 20 to 24, MC usage encouraged participants to break from the typical silence surrounding menstruation and to articulate their experiences in ways that would otherwise be considered too intimate or taboo (Owen, 2022). Using the MC allowed some users to conceptualize menstruation more positively: for instance, some found that direct contact with their menstrual blood was useful or even "beautiful," and some described the MC to their friends as a "cool new thing" (Owen, 2022). This study

demonstrated that MC usage can open up conversations about people's personal experiences with menstruation and reduce social vulnerability surrounding the topic.

While there is limited literature about societal attitudes regarding the MC, a few studies contribute to the conversation about the MC's relationship with body comfort and knowledge. Grose & Grabe (2014) studied how self-objectification, or viewing one's own body as an object and thereby valuing it based on appearance and image, might affect MC usage through its association with attitudes toward menstruation. The study found that among 151 female undergraduates, higher levels of self-objectification were correlated with more negative attitudes toward menstruation, which led to lower willingness to use the MC. That is, women who were more likely to objectify themselves were less likely to use the MC due to discomfort surrounding menstruation and bodily contact (Grose & Grabe, 2014). In another study with 62 undergraduates, body shame also mediated a negative relationship between self-objectification and willingness to use the MC when controlling for attitudes toward environmentalism and body mass index (Lamont et al., 2019).

Therefore, MC usage is largely influenced by attitudes toward and comfort with one's own body and menstruation. Moreover, Milne & Barnack-Tavlaris (2019) examined how message framing and prior awareness about the MC and the intrauterine device (IUD) may predict attitudes toward those products among 128 female college students. The researchers found that participants who had previous knowledge about the MC or IUD and received information about its benefits had more positive attitudes toward the product (Milne & Barnack-Tavlaris, 2019). As mentioned before, a study on 198 Nepali middle school girls found that prospective users were also more likely to learn how to use a MC successfully if they had a friend who uses a MC too (Oster & Thornton, 2012). Hence, access to knowledge and resources about the MC results in more positive attitudes and greater usage of the MC.

Prior research on MCs has mainly focused on participants' likelihood to use the MC rather than their actual use of the MC. The literature has also only utilized samples that have generally

never used the MC or were using it for the first time. Even then, the majority of participants in many of these studies were unwilling to use the product. Therefore, the current study filled these knowledge gaps by examining the attitudes and knowledge of participants who had experience in using MCs. Mere willingness to use a MC may not be enough to capture the relationship between the product and attitudes toward menstruation. This study was also one of the first to address the MC's association with attitudes toward sexuality and knowledge about reproductive anatomy, both of which are central to reproductive health more broadly.

Additionally, differences in attitudes and knowledge among MC users and non-MC users were of interest. In particular, pads and tampons are two mainstream menstrual products that have some notable distinctions in usage and perception compared to MCs. Pads are worn on the menstruator's underwear and absorb menstrual blood outside of the body. Tampons, which absorb blood inside the vagina, are most commonly inserted using an applicator in the United States (Kissling, 2006) and are removed using a string.

In many cultures, people choose to use pads due to sexual taboos regarding tampons. Latinx menstruators discussed feelings of shame and fear surrounding tampon usage, often stemming from their mothers' sentiment that tampons end one's virginity or are associated with sexual promiscuity (Aragón & Cooke-Jackson, 2021). In China, the tampon is often considered a sexual object due to its intravaginal insertion and self-contact with genitals, which is especially looked down upon for menstruating women (Ren et al., 2018). In Western cultures, many people choose to use tampons for their comfort and discretion under clothing (Parent et al. 2021), which may also be connected to the stigmatizing idea that periods need to be hidden or concealed (Johnston-Robledo & Chrisler, 2013). People often choose to use pads because they are easy and comfortable to use (Parent et al., 2021). In contrast to pads and tampons, MCs are manually inserted into the vagina and need to be emptied of their collected menstrual blood, which many non-users find too difficult or impractical to use (Parent et al., 2021). However, many people decide to change their main menstrual product to the MC for ecological and

health reasons (Parent et al., 2021), thus overcoming concerns about usage difficulty and body- or sex-related taboos discussed with other menstrual products. While most articles that study menstrual product choice—particularly regarding MCs—focus on consumption and environmental sustainability, very few examine the societal perceptions that follow the MC’s increased contact with the body and difficulty to use. Therefore, the current study was the first to explore attitudes and knowledge associated with MC usage compared to usage of other menstrual products (e.g., pads and tampons).

Hypotheses

Because of the direct contact and comfort with one’s own body required to use a MC, we hypothesized that compared to lower frequency of MC usage, higher frequency of MC usage would be associated with:

1. Greater knowledge about menstruation and reproductive anatomy,
2. Greater personal comfort with sexuality,
3. Less negative menstrual attitudes (e.g., disgust or shame) and more positive menstrual attitudes (e.g., life-affirming).

Additionally, we investigated three exploratory hypotheses to compare attitudes and knowledge across different menstrual products. Due to the varying amounts of body contact required to use different menstrual products, as well as the various cultural perceptions surrounding menstrual product choice, we predicted that:

4. MC users will be more knowledgeable about menstruation and reproductive anatomy than tampon and pad users,
5. MC users will have greater personal comfort with sexuality than tampon and pad users,
6. MC users will have less negative and more positive menstrual attitudes than tampon and pad users.

Methodology

Participants

This study had a total of 180 participants (see Table 1). To be eligible for the study, participants needed to be assigned female sex at birth, be at least 18 years of age, reside in the United States, and have used menstrual products. Participant ages ranged from 19 to 34 years old ($M = 21$, $SD = 2.10$). One hundred seventy-three participants identified as cisgender female (96%), and seven participants identified as agender or nonbinary (4%). One hundred twenty-six participants identified as heterosexual (70%), three as homosexual (2%), 29 as bisexual (16%), and 22 as another sexual orientation (12%). Sixty-three participants were White or Caucasian (35%), 44 were Asian American or Pacific Islander (24%), 23 were Hispanic or Latino (13%), eight were Black or African American (4%), one was Native American (<1%), and 31 were of mixed race or ethnicity (17%).

Table 1
Participant Demographics

Demographic	<i>n</i>	%
Gender		
Cisgender Female	173	96%
Nonbinary or Agender	7	4%
Sexual Orientation		
Heterosexual	126	70%
Homosexual	3	2%
Bisexual	29	16%
Other	22	12%
Race/Ethnicity		
White or Caucasian	63	35%
Asian American or Pacific Islander	44	24%
Hispanic or Latino	23	13%
Black or African American	8	4%
Native American	1	<1%
Mixed Race/Ethnicity	31	17%
Total Sample	180	

One hundred seven participants were recruited through the Department of Communication undergraduate subject pool at the University of California, Los Angeles (UCLA) and received class credit for participation. Two participants were excluded because they indicated not using any menstrual products. Because a smaller proportion of the general population uses a MC, 75 participants were recruited via flyers and were paid \$5 Target e-gift cards for participation. Participants from this targeted recruitment had the same eligibility requirements but needed to have used a MC before. The UCLA Institutional Review Board provided ethics approval for all study procedures.

Survey and Measures

Participants were recruited from either the undergraduate subject pool or via flyers and received a link to an online survey. After providing informed consent to participate, participants filled out demographic information and reported how frequently they used each menstrual product. Participants then completed each of the following measures in a randomized order: menstrual knowledge, anatomical knowledge, personal sexuality attitudes, and menstrual attitudes.

Menstrual Product Usage

The study recorded participants' frequency of usage for the following menstrual products: tampons, pads, and MCs. Participants reported how frequently they used each menstrual product on a 5-point scale from 1 (Never) to 5 (Always). For the purposes of this study, a MC user was defined as a participant who reported "Always" using a MC, but not pads or tampons. Similarly, a pad user was defined as a participant who "Always" uses pads but does not use MCs or tampons at the same frequency. A tampon user was a participant who "Always" uses tampons but does not use MCs or pads at the same frequency.

Menstrual Knowledge

Participants were measured on their knowledge about menstruation by marking “True” or “False” on a list of 10 statements about menstrual and reproductive processes, adapted from Ameade & Garti (2016). The original list of questions included a combination of free response, multiple choice, and true or false questions. The current study adapted these questions to be all true or false questions. Participants were scored on menstrual knowledge from 0 to 10, and one point was assigned for each question answered correctly. Higher scores denoted greater menstrual knowledge.

Anatomical Knowledge

To measure participants’ knowledge of female reproductive anatomy, participants identified 11 reproductive structures on diagrams of both internal and external reproductive anatomy, adapted from worksheets from the Vagina Museum (n.d.). Participants were given a diagram with each reproductive structure (e.g., vagina, uterus, cervix) numbered 1 to 11 and a list of possible answer choices. Participants were asked to match the correct structure to each number on the diagram. Anatomical knowledge was scored from 0 to 11, and one point was given for each correct answer. Higher scores conveyed greater anatomical knowledge.

Comfort With Sexuality

Attitudes toward one’s personal sexuality were measured using the Personal Comfort with Sexuality Scale (Rempel & Baumgartner, 2003), which contained 10 items rating respondents’ acceptance and openness with personal sexuality as a normal part of life (e.g., “I feel comfortable talking about sexuality with strangers”). The scale had good internal consistency (Cronbach’s $\alpha = .79$), indicating that the scale items were measuring the same thing—comfort with sexuality. Participants were asked to indicate their agreement with each statement on a 7-point scale

from 1 (Strongly Disagree) to 7 (Strongly Agree). Items were reverse-coded as appropriate and averaged to create a composite score, with higher scores demonstrating higher levels of comfort with sexuality.

Menstrual Attitudes

Participants' menstrual attitudes were measured using the Attitudes Toward Menstruation Factors from the Menstrual Self-Evaluation Scale (Roberts, 2004). Developed to measure respondents' attitudes about their own experiences with menstruation, the measure consisted of 16 items organized into four subscales: Menstruation as Disgusting or Shameful (6 items), Menstruation as Bothersome (5 items), Menstruation as Enabling Awareness of One's Body (3 items), and Menstruation as Life-Affirming (2 items). Participants indicated their agreement with each statement on a 7-point scale from 1 (Strongly Disagree) to 7 (Strongly Agree). Items were reverse-coded appropriately and averaged to give a composite score for each subscale. On the Menstruation as Disgusting or Shameful subscale, higher scores suggested greater menstrual shame, involving shame around bodily functions (e.g., "I find menstrual blood disgusting") and social embarrassment (e.g., "I would prefer not to talk openly about menstruation"). This subscale had good internal consistency (Cronbach's alpha = .75). Higher scores on the Menstruation as Bothersome subscale indicated a higher tendency to perceive one's period as inconvenient or disruptive (e.g., "I hope it will be possible someday to get a menstrual period over within a few minutes"). This subscale had good internal consistency (Cronbach's alpha = .74). The last two subscales, Menstruation as Enabling Awareness of One's Body and Menstruation as Life-Affirming, captured more positive aspects about menstruation, such as health (e.g., "The recurrent monthly flow of menstruation is an external indication of a woman's general good health") and awareness of one's body (e.g., "Menstruation provides a way for me to keep in touch with my body"). Higher scores on these subscales indicated more positive attitudes toward menstruation. The Menstruation as Enabling Awareness of One's Body subscale

had good internal consistency (Cronbach’s alpha = .73). The Menstruation as Life-Affirming subscale had low internal consistency (Cronbach’s alpha = .34) since it only contained two items.

Analysis & Results

A statistical program (R version 4.2) was used to run analyses for this study. Quantitative data was analyzed using descriptive statistics and Cronbach’s alpha for survey measures. Because the data was non-normal, non-parametric tests were used to analyze the data. For Hypotheses 1-3, Spearman’s rank correlation tests were used to examine the association between the frequency of MC usage and each sociocultural outcome (e.g., knowledge, comfort with sexuality, menstrual attitudes). Additional exploratory analyses were conducted for Hypotheses 4-6 using Kruskal-Wallis tests to investigate the differences in sociocultural factors among menstrual product users (e.g., tampons, pads, MCs). Any significant differences found were followed up with post hoc Dunn’s tests.

Hypotheses 1-3

Participants reported how frequently they used a MC from “Never” to “Always.” Our sample consisted of 97 participants who have never used a MC, 15 who rarely use a MC, 11 who sometimes use a MC, 27 who often use a MC, and 30 who always use a MC (see Table 2).

Table 2

Participants’ Frequency of MC Usage

Frequency of MC Usage	<i>n</i>	%
Never	97	54%
Rarely	15	8%
Sometimes	11	6%
Often	27	15%
Always	30	17%
Total Sample	180	

For Hypothesis 1, we predicted that a higher frequency of MC usage would be correlated with greater knowledge about menstruation, as well as greater knowledge about female reproductive anatomy. Consistent with our hypothesis, we found a positive correlation between menstrual knowledge and frequency of MC usage, $r_s(178) = .16$, $p < .05$, and a positive correlation between anatomical knowledge and frequency of MC usage, $r_s(178) = .38$, $p < .001$ (see Table 3).

Table 3*Hypothesis 1: Knowledge*

	Menstrual Knowledge		Anatomical Knowledge	
	<i>M</i>	<i>SD</i>	<i>M</i> <input type="checkbox"/>	<i>SD</i>
MC Usage Frequency				
Never	6.68	1.05	8.57	2.50
Rarely	7.27	.70	10.73	0.70
Sometimes	7.18	.87	9.73	1.90
Often	7.15	.99	10.41	1.45
Always	6.90	1.09	10.17	1.72
Spearman's Rank Correlation r_s	.16*		.38***	

Note. Menstrual Knowledge can range from 1 to 10, and Anatomical Knowledge can range from 1 to 11.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Hypothesis 2 predicted that MC usage frequency would positively correlate with personal comfort with sexuality. The correlation test indeed showed a positive correlation between personal comfort with sexuality and MC usage frequency, $r_s(178) = .26$, $p < .001$ (see Table 4). Therefore, our findings align with Hypothesis 2.

Table 4

Hypothesis 2: Personal Comfort with Sexuality

	Personal Comfort with Sexuality	
	<i>M</i>	<i>SD</i>
MC Usage Frequency		
Never	4.30	0.74
Rarely	4.28	1.06
Sometimes	4.28	0.53
Often	4.56	0.75
Always	4.67	0.58
Spearman's Rank Correlation r_s	.26***	

Note. Personal Comfort With Sexuality can range from 1 to 7.

* $p < .05$. ** $p < .01$. *** $p < .001$.

In Hypothesis 3, we predicted that a higher frequency of MC usage would correlate with less negative menstrual attitudes and more positive menstrual attitudes. For negative menstrual attitudes, our analysis showed a negative correlation between the frequency of MC usage and attitudes toward Menstruation as Disgusting or Shameful $r_s(178) = -.36, p < .001$, and no significant correlation between the frequency of MC usage and attitudes toward Menstruation as Bothersome, $r_s(178) = -.09, p = .252$ (see Table 5). For positive menstrual attitudes, we found a negative correlation between MC usage frequency and feelings of Menstruation as Enabling Awareness of One's Body, $r_s(178) = -.19, p < .01$, and a negative correlation between MC usage frequency and feelings of Menstruation as Life-Affirming, $r_s(178) = -.15, p < .05$ (see Table 6). Hence, Hypothesis 3 was only partially supported by these results.

Table 5*Hypothesis 3: Negative Menstrual Attitudes*

	Menstruation as Disgusting or Shameful		Menstruation as Botherome	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
MC Usage Frequency				
Never	3.92	1.20	4.89	.95
Rarely	3.36	1.09	5.04	.59
Sometimes	4.14	1.34	5.24	.59
Often	2.85	.95	4.70	.82
Always	2.89	.89	4.67	.98
Spearman's Rank Correlation r_s	-.36***		-.09	

Note. Menstrual attitudes can range from 1 to 7

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6*Hypothesis 3: Positive Menstrual Attitudes*

	Menstruation as Enabling Awareness of One's Body		Menstruation as Life-Affirming	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
MC Usage Frequency				
Never	4.94	1.31	5.25	1.09
Rarely	4.22	1.54	4.83	1.22
Sometimes	4.76	1.61	5.14	1.57
Often	4.75	.96	4.96	.99
Always	4.13	1.65	4.78	1.16
Spearman's Rank Correlation r_s	-.19**		-.15*	

Note. Menstrual attitudes can range from 1 to 7

* $p < .05$. ** $p < .01$. *** $p < .001$.

Hypotheses 4-6

For our exploratory analyses for Hypotheses 4-6, we examined the different sociocultural factors across participants who used MCs, tampons, and pads. Our sample contained 26 MC users, 30 tampon users, and 30 pad users.

For Hypothesis 4, we predicted that MC users would be more knowledgeable about menstruation and reproductive anatomy than tampon and pad users. The Kruskal-Wallis test yielded no significant differences in menstrual knowledge among different menstrual product users, $\chi^2(2) = 2.59, p = .273$. However, there was a significant difference in anatomical knowledge among different menstrual product users, $\chi^2(2) = 11.77, p < .01$. Post hoc tests found that MC users had higher anatomical knowledge ($M = 10.35, SD = 1.35$) than pad users ($M = 8.40, SD = 2.51$), $z = -3.40, p < .01$.

Hypothesis 5 predicted that MC users would have greater personal comfort with sexuality than tampon and pad users. There was a significant difference in personal comfort with sexuality among users of different menstrual products, $\chi^2(2) = 11.04, p < .01$. After running post hoc tests, we found higher levels of comfort with sexuality for MC users ($M = 5.38, SD = 0.73$) than pad users ($M = 4.55, SD = 0.93$), $z = -3.32, p < .01$.

For Hypothesis 6, we predicted that MC users would have less negative and more positive menstrual attitudes than tampon and pad users. There were no significant differences in attitudes toward Menstruation As Bothering among different menstrual product users, $\chi^2(2) = 1.51, p = .470$. There was, however, a significant difference in attitudes toward Menstruation as Disgusting and Shameful among different menstrual product users, $\chi^2(2) = 17.00, p < .001$. Post hoc tests revealed that attitudes toward Menstruation as Disgusting and Shameful were lower for MC users ($M = 2.89, SD = 0.92$) than tampon users ($M = 4.14, SD = 1.14$), $z = 4.12, p < .001$. For positive menstrual attitudes, there were no significant differences among menstrual product users for attitudes toward Menstruation as Enabling Awareness of One's Body, $\chi^2(2) = 2.04, p = .360$, or Menstruation as Life-Affirming, $\chi^2(2) = 1.85, p = .400$.

Discussion

The current study aimed to investigate the relationship between MC usage and knowledge, comfort with sexuality, and menstrual attitudes. Our findings demonstrated that many of these factors were indeed associated with the degree of MC usage and can vary with the menstrual product used.

Knowledge

Although there was a positive correlation between MC usage frequency and knowledge about menstruation, the analysis showed no significant differences in menstrual knowledge among MC, pad, and tampon users. Prior studies have suggested that negative attitudes about menstruation were associated with both decreased knowledge about menstrual health taboos (Reinhardt & Eitze, 2023) and increased body shame (Roberts, 2004; Schooler et al., 2005). If a lack of menstrual knowledge and greater discomfort with one's body were both connected to menstrual stigma, we anticipated that people who tended to use menstrual products with less direct body contact would also have decreased knowledge of menstruation. However, these prior findings do not appear to translate to the relationship between menstrual knowledge and menstrual product usage. This contradiction could also be due to a potential limitation in the operational definition of MC, pad, and tampon users. Because a MC user was defined as a participant who reported "Always" using a MC, but not pads or tampons (and pad users and tampon users were defined similarly), the operational definition does not account for people who may use multiple menstrual products on a frequent basis. Further analysis is necessary to determine how menstrual knowledge may vary with the usage of multiple menstrual products.

On the other hand, we did find a positive relationship between MC usage frequency and knowledge about reproductive anatomy. Tests also showed a significant difference in anatomical knowledge between MC users and pad users; more specifically, MC users had more knowledge about anatomy than pad users.

This distinction between menstrual knowledge and anatomical knowledge in our findings has interesting implications. Knowledge

about menstruation (i.e., the menstrual cycle or biological causes of menstruation) may not make any one menstrual product easier to use. However, MC usage can be facilitated by knowing more about one's own anatomy, such as one's cervix height or location of the vagina relative to other anatomical parts. Pad usage, on the other hand, requires little to no knowledge about reproductive anatomy since it absorbs menstrual blood outside of the body. Tampons, especially if inserted with an applicator, may require some anatomical knowledge (i.e., knowing where the vagina is) but not enough to result in a significant difference from pads or MCs. Due to the lack of literature regarding people's knowledge about menstruation and reproductive anatomy, further research could benefit from investigating how knowledge may influence people's attitudes toward menstruation and choice of menstrual products.

Comfort With Sexuality

Our results showed a positive correlation between MC usage frequency and personal comfort with sexuality. We also found that personal comfort with sexuality was significantly higher for MC users than for pad users. Because MC usage requires more direct contact with the genital region, people who are less comfortable with their sexuality and their bodies may opt to use a pad over a MC. Likewise, people who are more comfortable with sexuality and their bodies may also tend to use MCs more frequently. This seems to align with previous literature indicating a positive relationship between discomfort communicating with healthcare providers and stigma toward genitals and bodies; that is, people who feel more shame about their bodies, especially the sexual parts of their bodies, may tend to be more uncomfortable discussing sexual health topics and sexuality (Holland et al., 2020). Our findings also align with another study suggesting that greater comfort with personal sexuality was associated with greater comfort with menstruation (Rempel & Baumgartner, 2003). Therefore, our findings about the relationship between MC usage and comfort surrounding sexuality add to the current conversation about menstruation and sexuality in people's societal

attitudes.

Negative Menstrual Attitudes

We found that the frequency of MC usage was associated with lower disgust and shame toward menstruation. Additionally, menstrual disgust and shame were significantly higher for tampon users than for MC users. Out of the three menstrual products, tampons involve the least amount of contact with menstrual blood; especially with applicator insertion and removal with the string, tampons do not require users to touch the cotton that absorbs the blood directly. In contrast, MC users must insert their fingers into their vagina while actively menstruating, as well as empty and clean the cup of its contents. Pads also require some contact with the material that has absorbed the menstrual blood, but not so much as to deviate from tampons or MCs in terms of disgust and shame. In other words, the varying levels in which people must come into direct contact with their own menstrual blood and actively interact with their menstruation may reflect in their attitudes toward Menstruation as Disgusting or Shameful. Considering that body shame has previously been associated with more negative menstrual attitudes and menstrual shame (Roberts, 2004; Schooler et al., 2005), our finding that more frequent MC users tend to have lower disgust and shame toward menstruation is significant in combating menstrual stigma.

However, for attitudes toward Menstruation as Bothersome, there were no significant differences among the different menstrual product users. There was also no significant correlation between MC usage frequency and attitudes toward Menstruation as Bothersome, inconsistent with our predicted negative correlation between the two variables. These findings suggest that menstrual product choice may not influence or be influenced by how bothersome menstruation is. In discussion with our findings on comfort with sexuality, this aligns with Rempel & Baumgartner's (2003) finding that participants' Perceived Menstrual Convenience had no significant association with their personal comfort with sexuality.

Although we hypothesized that the frequency of MC usage

would be correlated with less negative menstrual attitudes, perhaps not all negative menstrual attitudes are mitigated by the MC. Because of the direct contact with blood and the genital region, users may need to overcome feelings of disgust and shame in order to use the MC more often. In contrast, the MC may not necessarily make menstruation less bothersome. These attitudes may also vary based on people's individual menstrual flows, period lengths, schedules, and other factors. While the MC does decrease inconvenience in some aspects, such as wear time and intravaginal placement, menstruation may still be bothersome regardless of MC usage. Because there is limited literature investigating feelings toward menstruation as bothersome, distinct from feelings toward menstruation as disgusting or shameful, further research can examine what other factors may influence people's perceptions of menstrual inconvenience.

Positive Menstrual Attitudes

For positive menstrual attitudes, the frequency of MC usage was negatively correlated with attitudes toward Menstruation as Life-Affirming and Enabling Awareness of One's Body. That is, more frequent MC users were less likely to believe that menstruation allows women to be in touch with their bodies and womanhood. There were also no significant differences in positive attitudes toward menstruation (Menstruation as Enabling Awareness of One's Body and Menstruation as Life-Affirming) among the different menstrual products. These findings contradict our original prediction of a positive relationship between MC usage frequency and positive menstrual attitudes. The items measuring these positive attitudes tended to frame the effects of menstruation abstractly: statements for Menstruation as Enabling Awareness of One's Body included "Menstruation allows women to be more aware of their bodies," and statements for Menstruation as Life-Affirming included "Menstruation is an obvious example of the rhythmicity which pervades all of life" (Roberts, 2004). However, the direct contact with menstruation required to use a MC may lead frequent MC users to see menstruation as a normal bodily process rather than an abstract connection to womanhood.

Owen (2022) explains this as “confronting” menstruation: MC users must reconsider their own relationships with and attitudes toward menstruation (i.e., whether menstrual blood is distinct from normal blood) as they use the product more frequently. Similar to our findings on Menstruation as Life-Affirming, Rempel & Baumgartner (2003) also found that their measure of Symbolic Menstrual Affirmation had no significant correlation with personal comfort with sexuality. The researchers suggested that people comfortable with personal sexuality tended to accept menstruation as a normal event rather than a philosophical connection to womanhood (Rempel & Baumgartner, 2003). For the current study, this indicates that MC usage may potentially neutralize attitudes toward menstruation rather than make them more positive. Further research should examine different factors that may contribute to menstrual positivity.

Limitations and Future Directions

While the present study has important implications for sexual and reproductive health more broadly, some limitations exist in generalizing and interpreting our findings.

The study’s survey methodology and recruitment strategies may involve some voluntary response bias in our sample, resulting in participants who were inherently more willing to talk about experiences with menstruation. Participants were mostly within UCLA, which skews younger and more politically liberal compared to the general population. The study was also entirely correlational, so we cannot determine any causal relationships among our study variables.

Some of our survey’s measures may also limit our findings. For instance, the Menstruation as Life-Affirming measure in our survey had low internal consistency, which could affect the reliability and validity of our findings on positive menstrual attitudes. As mentioned, the operationalization of menstrual product use can be refined to account for people who use multiple menstrual products, as the current operational definition only captured participants who reported “Always” using only one product. Some measures also tended to center around cisgender

women's experiences with menstruation, which could feel exclusionary to our nonbinary or agender participants and affect our results.

Because our sample was relatively small and limited to mostly undergraduate students at UCLA, future work should utilize a larger, more representative sample to capture more perspectives on menstruation and sexuality. Certain study measures can also be improved, such as positive menstrual attitudes and menstrual product usage, to increase validity and reliability. Future investigations should consider methodologies and study measures that are more inclusive of different cultures and diverse gender identities, as experiences with and attitudes toward menstruation and sexuality may be influenced by various social identities. Lastly, because the current study was entirely correlational, future research can look into experimental methodologies to examine the potential causality between menstrual product usage and menstrual attitudes.

Conclusion

The current study found that more frequent MC usage was significantly associated with higher knowledge about menstruation and reproductive anatomy, greater personal comfort with sexuality, and lower disgust and shame toward menstruation. Prior literature shows that negative attitudes and stigma toward menstruation are often connected to body shame, a lack of menstrual knowledge, and discomfort with personal sexuality; therefore, MC usage (and menstrual product choice in general) may be an important addition to the menstrual stigma conversation. Exploring these issues helps menstruators to not only destigmatize menstruation but also take power over their menstrual and reproductive health decisions. Especially because reduced menstrual stigma is correlated with increased comfort communicating with healthcare providers (Holland et al., 2020) and accepting menstrual policy changes (Reinhardt & Eitze, 2023), the present study suggests that MCs can be critical in advocating for menstrual and sexual health and opening up discussions about periods and sexuality. Ultimately, this study takes a step toward

reshaping the narrative around menstruation and, more broadly, reproductive health.

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