Unmet Menstrual Hygiene Needs Among Low-Income Women

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OBJECTIVE: To assess the menstrual hygiene needs of low-income women in St. Louis, Missouri.

METHODS: Using an exploratory, cross-sectional design, women 18 years of age and older were recruited from a purposive sample of 10 not-for-profit community organizations that serve low-income women in St. Louis. From July 2017 to March 2018, 183 interviewer-administered surveys and three focus group discussions were conducted. Surveys and focus groups identified where and how women access menstrual hygiene products and what they do when they cannot afford to buy them. Using a snowball sampling strategy, 18 community organizations were also surveyed electronically to assess what services and supplies they provide for menstrual hygiene.

RESULTS: All women invited to participate in the interviews and the focus groups agreed to do so. Nearly two thirds (64%) of women were unable to afford needed menstrual hygiene supplies during the previous year. Approximately one fifth of women (21%) experienced this monthly. Many women make do with cloth, rags, tissues, or toilet paper; some even use children's diapers or paper towels taken from public bathrooms. Nearly half of women (46%) could not afford to buy both food and menstrual hygiene products during the past year. There was no difference in menstrual hygiene needs by age. Two thirds of organizations indicated that menstrual hygiene was a need of their clients. Thirteen provide menstrual hygiene supplies to their clients; two provide menstrual hygiene education.

CONCLUSION: Menstrual hygiene supplies are a basic necessity that many low-income women lack. We document the extent to which low-income women in a major metropolitan area in the United States are unable to afford these basic necessities and what they do to cope. Women's health care providers should advocate for improved access to menstrual hygiene supplies for low-income females across the United States.

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Adequate menstrual hygiene involves access to clean sanitary materials that can be changed in private as often as necessary, access to soap and water for washing, and access to a place for the hygienic disposal of used sanitary materials or washing, if reusable pads are used.[1] Inadequate menstrual hygiene has been associated with infections[2] and poor health-related quality-of-life.[3] Negative experiences around menstruation have been associated with higher rates of school absenteeism and missed activities among urban adolescents in the United States.[4]

Menstrual hygiene has recently received increased global attention as a public health and human rights issue, especially in low-resource countries.[5,6] Lack of access to clean water and sanitation compounds poor menstrual hygiene for schoolgirls,[7,8] and for refugees and other displaced populations.[9] Increasing evidence shows that interventions that address menstruation improve knowledge and practices around menstrual hygiene[2] as well as

outcomes such as school attendance in developing countries.[6]

Little information exists about the extent to which menstrual hygiene is an issue for low-income women in the United States. We therefore conducted a needs assessment among low-income women served by not-for-profit community organizations in St. Louis, Missouri, where approximately 31,000 women 18 years of age and older were living in poverty in 2017,[10] to explore their menstrual hygiene needs. Our specific aims were 1) to identify and document women's needs and preferences regarding menstrual hygiene, 2) to understand barriers to adequate menstrual hygiene, and 3) to assess what local community organizations are currently doing to address these needs.

METHODS

We used an exploratory, cross-sectional design and triangulated data from three methodologies to explore the menstrual hygiene needs of women who receive housing shelter, food, or job training assistance from not-for-profit community service organizations in St. Louis (Table 1). We conducted interviewer-administered surveys of women at 10 participating organizations that provide services to low-income residents of St. Louis. We also conducted focus group discussions with women through three of these organizations. Data collection methodology was determined in coordination with each organization to minimize service disruption to their clients. Women participated in either the survey interview or the focus group discussion, but not both. Finally, we conducted a separate electronic survey of community service organizations more broadly to understand what, if anything, they are doing to address the menstrual hygiene needs of their clients. The Institutional Review Board at Saint Louis University approved this study. Data were collected from July 2017 through March 2018.

For the interviewer-administered surveys and the focus group discussions, women were recruited through participating not-for-profit community service organizations that were purposively selected to reflect a range of housing shelter (six), food (two), employment and training (one), and drop-in center (one) services available to low-income women in St. Louis. Some organizations provide services across a range of areas, for example, housing, food and job training. A community resource guide lists 65 unique organizations in St. Louis across these service areas.[11] Given an estimated population size of approximately 31,000 low-income women in St. Louis[10] and our purpose of conducting a descriptive needs assessment, we aimed to interview between 100 and 300 women, which is consistent with similar pilot studies.[12] All women 18 years of age and older at an organization on the days of data collection were eligible to participate because even many older women use liners for discharge or intermittent spotting. For the electronic survey of community service organizations, snowball sampling was used. We distributed the electronic survey first through existing contacts at local organizations, who were asked to share the survey with other organizations who might be interested. A link to the survey was also distributed through the electronic newsletter or list-serve of two umbrella organizations which work with many smaller partner organizations.

We conducted surveys in 7 of the 10 participating organizations. All 184 women (18 years of age or older) who were invited to participate in the survey agreed to do so (100% response); one survey was excluded for noncompletion, leaving 183 for analysis. Surveys were verbally administered by female interviewers in a private space within the organization. Each survey lasted 15–20 minutes. Each woman provided verbal informed consent before taking the survey. Women were compensated $20 in the form of cash or as a store gift card, depending on the organization's preference. The survey instrument was developed for this needs assessment, and was pilot tested among university students and revised before administration. The survey included demographic, food insecurity, menstrual hygiene insecurity, and

Table 1. Needs Assessment Methodologies by Aim With Sample Size, St. Louis, Missouri, 2017–2018

Needs Assessment Specific Aim	Methodology	Sample Size
Identify and document women's needs and preferences around menstrual hygiene	Interviewer-administered surveys	183
Understand the barriers that women face to menstrual hygiene and gather their suggestions to address the identified needs	Focus group discussions	17
Assess what local community service organizations are currently doing to meet the menstrual hygiene needs of low-income women	Electronic surveys	18

menstrual hygiene product preference questions. Survey responses were analyzed using IBM SPSS Statistics 24. Descriptive statistics were calculated along with χ^2 statistics to test the relationships between age and food insecurity and menstrual hygiene outcomes.

We conducted focus group discussions in 3 of the 10 participating organizations that preferred this form of data collection to minimize disruption of services to their clients. The discussions allowed women to share their experiences with menstrual hygiene and to offer suggestions as to how to address the challenges they faced. Seventeen women participated across three focus group discussions, ranging from three to nine women per group. All women invited to participate in the focus groups agreed to participate. Women gave verbal informed consent and were compensated with a $20 store gift card or $20 cash. All women agreed to audio recording of the focus groups, which lasted between 45 and 60 minutes. The focus groups were conducted in a private room within the organization and were led each time by the same facilitator, who followed a semi-structured discussion guide and was assisted by a note-taker who also did the audio recording. Focus groups were analyzed using thematic coding.

The electronic survey was developed for this study and was pilot tested by a staff member from a local community service organization and revised before administration. Any staff member at the organization was eligible to complete the electronic survey, which took 5–10 minutes. No incentive was provided. The electronic survey was opened 72 times and was completed by staff members from 18 different organizations (25% completion). Data were downloaded into a spreadsheet for descriptive analysis.

RESULTS

The 183 women whose surveys we analyzed ranged in age from 18–69 years (mean±SD 35.8±13.3). All women 18 years of age and older were eligible to participate, because even women going through menopause may need menstrual hygiene products such as liners owing to discharge and intermittent spotting. Women varied widely in their reported age at menarche, from 8–17 years (mean±SD 12.5±1.7). Most women (125/183, 68%) had a high school-level education. Nearly three quarters (132/183) were single. More than two thirds (130/181, 72%) were currently unemployed, including several on disability (Table 2).

To gauge women's economic status and ability to provide for their own basic needs, we inquired about food insecurity as well as menstrual hygiene. Nearly 60% of women (109/183) had either skipped a meal or eaten a smaller meal than desired owing to a lack of money for food over the previous 12 months. Of these women, 36% (40/111) had to skip or reduce meals on a monthly basis. Similarly, 64% (117/182) did not have money to purchase needed menstrual hygiene products at some point during the previous year, and this happened on a monthly basis to 21% (24/116) of the women. Most importantly, nearly half of the women surveyed (83/182, 46%) struggled to buy both food and menstrual hygiene products over the previous 12 months (Table 3). Women who experienced food insecurity were more likely to struggle to purchase menstrual hygiene supplies (χ^2=21.71, df=2, P<.001). There was no difference in menstrual hygiene needs by age; women younger than 30 years of age and those 30 years of age or older experienced a lack of money to purchase needed menstrual hygiene supplies (P=.27), and with similar frequency (P=.60).

One third of women had used something other than disposable pads or tampons during menstruation, such as strips of cloth, rags, tissues, or toilet paper. Several women also reported using their children's diapers, adult incontinence diapers, or paper towels taken from public restrooms to manage their menses. Only one woman had tried a menstrual cup; none had ever tried a washable, reusable pad.

Table 2. Characteristics of Survey Participants in St. Louis, Missouri, 2017–2018 (N=183)

Characteristic	Value
Age (y)	35.8±13.3
Age at menarche (y)	12.5±1.7
Highest level of education attended	
Middle school	9 (4.9)
High school (or equivalency degree)	125 (68.3)
College, university, or professional training	49 (26.7)
Current marital status	
Single, never married	132 (72.1)
Married or living with partner	16 (8.7)
Separated or divorced	34 (18.6)
Widowed	1 (0.5)
Current employment status (n=181)	
Full-time	25 (13.8)
Part-time	26 (14.4)
Unemployed or on disability	130 (71.8)
Food insecurity* during previous 12 mo	109 (59.6)
Frequency of food insecurity (n=111)	
Almost every month	40 (36.0)
Some months, but not all	47 (42.3)
Only once or twice	24 (21.6)

Data are mean±SD or n (%).
* Skipped a meal or ate a smaller meal than desired owing to a lack of money for food.

Table 3. Menstrual Hygiene Among Low-Income Women in St. Louis, Missouri, 2017–2018 (N=183)

Characteristic	Value
"Period poverty"* during previous 12 mo (n=182)	117 (64.3)
Frequency of "period poverty" (n=116)	
Almost every month	24 (20.7)
Some months, but not all	48 (41.4)
Only once or twice	43 (37.1)
Don't remember	1 (0.9)
Ever used product†	
Disposable pads	166 (90.7)
Tampons	139 (76.0)
Other	61 (33.4)
Product used most commonly	
Disposable pads	108 (59.0)
Tampons	68 (37.2)
Other	7 (3.7)
No. of times change product on heaviest days (n=182)	
1–2	12 (6.6)
3–4	58 (31.9)
5 or more	112 (61.5)
Product preferred	
Disposable pads	102 (55.7)
Tampons	76 (41.5)
Other	5 (2.7)

Data are n (%).
* Needed menstrual hygiene products but did not have the money to buy them.
† Sums to more than 100% because women could have used more than one product type.

Open-ended questions about barriers to menstrual hygiene elicited many additional stories about "making do" with toilet paper, paper towels, or improvised, home-made pads or tampons.

Most women (108/183, 59%) used pads most often, whereas 37% of women (68/183) commonly used tampons. Most women preferred pads (102/183, 56%), whereas 42% (76/183) preferred tampons. Nearly all women were able to use their preferred product: 92% of those who preferred pads used them most frequently, and 80% of those who preferred tampons used them most frequently. There was no difference by age in either the most commonly used product (P=.19) or the type of product preferred (P=.36). In open-ended responses, some women who used pads expressed a strong preference for high absorbency or overnight pads to handle heavy flow, as well as for pads with wings to protect their underwear. All women who used tampons preferred tampons with applicators and higher absorbency products. Tampon users also desired disposable underwear liners to protect against leaks or spotting. A few women who used birth control methods that can cause menstrual irregularity (ie, injectable medroxyprogesterone acetate) experienced intermittent spotting and needed underwear liners on a regular basis.

Bleeding during a typical menstrual cycle lasts 2 to 7 days, and flow varies by day.[13] Nearly two thirds of women in this study (112/182) changed their pads or tampons five or more times per day on their heaviest days. Therefore, women used 10–35 or more pads or tampons in any given cycle. There was no difference by age regarding frequency of change on the days of heaviest flow (P=.98).

Most women (162/183, 89%) purchased their own menstrual hygiene products, but nearly two thirds (115/183) have relied on donations from community service organizations at some point. In open-ended survey responses, women mentioned dollar stores and discount box stores as the places where they usually purchased menstrual hygiene supplies. A few women reported going to a hospital emergency room to get pads when they had no other source. The hospitals gave them the same underwear and pads that were provided to postpartum women. At least five women said they had stolen pads or tampons out of desperation.

Few of these women (51/181, 28%) were working either full-time or part-time. More than one third (18/50, 36%) of the women who worked missed one or more days of work per month owing to their periods, generally due to cramps or heavy menstrual flow. There was no difference by age in terms of days absent owing to periods (P=.69).

In open-ended survey questions and focus group discussions, women described the challenges they faced in obtaining menstrual hygiene products. In addition to the lack of money to buy menstrual hygiene supplies, the women faced three main challenges: 1) difficulty managing heavy flow and the need to use higher absorbency products; 2) difficulties with transportation (time and cost) to reach stores that sell larger quantities of sanitary products at more affordable prices; and 3) concerns about safety, security, and sanitation during menstruation. Several women said the pads they received through community service organizations had low absorbency and did not adequately meet their needs. In these cases, women either went through pads more quickly or were forced to "double up" and wear two pads at one time, thus using up the donated pads they received twice as quickly.

Many women talked about the time and expense involved in using public transportation to reach discount box stores where they could purchase larger

packs at lower prices. It can take two or more buses and more than an hour each way to reach such stores in St. Louis. Trip Planner searches on the St. Louis Metro Link website (https://www.metrostlouis.org/trip-planner) that used community service organizations' locations and the addresses of discount box stores verified this transportation challenge. Women also reported that, if they had to make two transfers to get to a store, the 2-hour window for the transfer ticket often would expire if busses were late or they missed their connection. If the transfer expired, they had to purchase a new ticket mid-route, doubling the price of the trip one-way and costing money that might have been spent on menstrual hygiene supplies.

It [money] can become tight because a lot of people don't have no income to get on and off busses. Bus is $3 for a transfer going and coming…sometimes the bus is 45 minutes [ie, bus arrives every 45 minutes]. Your transfer runs out a lot. You know, 2-hour for a transfer…if you miss it, another $3…if you only have a small amount of money, it's so tight, so if you put $3, $6…then you go try to get the cheapest, whatever you can.–Focus group participant

Homeless women, in particular, often had no place to change their menstrual hygiene supplies. At night, these women were afraid to use a public toilet for fear of getting assaulted when exiting the facility. Some women simply waited all night until they could get to a safe location in a public restroom, day shelter, or soup kitchen during daylight hours. During the winter, women often went 12–14 hours overnight without using a toilet or changing their pad or tampon.

Women's suggestions for improving their situation fell into three main categories: 1) increasing access to menstrual hygiene products; 2) increasing education and awareness concerning menstrual hygiene; and 3) increasing access to safe, secure public restrooms. Women recommended making a greater variety of sizes and absorbency levels of menstrual hygiene supplies available through donations and community service organizations. Women also suggested increasing community awareness about where menstrual hygiene supplies are available. Finally, they suggested offering coupons to reduce the cost of products purchased out-of-pocket.

Focus group discussants described the challenges they faced and how they might be solved in considerable detail. The overarching theme was their concern about the high-cost of menstrual hygiene products, and their frustration that Women, Infants, and Children and Supplemental Nutrition Assistance Program benefits cannot be used to purchase menstrual hygiene supplies, even though these are necessities for women. Similar frustrations were expressed about menstrual hygiene supplies being taxed at the full sales tax rate, instead of at the lower rate for food.

There should be a tax write-off…They [stores] had it where women's products are way higher than men's.–Focus group participant

People who receive food stamps should be allowed to buy pads, along with toilet paper, too…if a woman receives food stamps, it [menstrual hygiene supplies] should be included because you have to recognize that if she's low income…it should be.–Focus group participant

…if they pass some type of law and made it mandatory, every store and restaurant had to have some type of dispenser…like toilet paper is mandatory, it's [menstrual hygiene supplies] kind of mandatory for women.–Focus group participant

Concerns were often expressed that women–and teenagers in particular–did not know enough about menstruation and menstrual hygiene. This was particularly emphasized by women who lived in transitional housing with shared bathrooms. Women suggested that more menstrual hygiene education be provided in schools. They also suggested boosting education and awareness programs at community service organizations.

Several women, especially those who were homeless, emphasized the need for better access to safe, secure public restrooms, for their general personal hygiene and sanitation as well as for menstrual needs. They know that lack of regular access to a bathroom compromises their personal hygiene, and they lamented that not all organizations that distribute hygiene products to the homeless include menstrual hygiene supplies. They all desired regular access to safe bathroom facilities.

The 18 organizations that completed the electronic survey provide a variety of services, including food and shelter, crisis intervention, assistance with utilities and transportation, and educational support. Twelve of these organizations indicated that their clients have expressed concerns about menstrual hygiene, particularly the affordability and accessibility of menstrual hygiene products. Thirteen of the organizations provided menstrual hygiene products to their clients, but nine said they were available only intermittently. Six organizations purchased products, and the others relied on donations. Only two organizations indicated that they provided any type of menstrual hygiene education.

Most organizations reported that their clients' menstrual hygiene preferences were a mix of

disposable pads and tampons with a few indicating a preference only for sanitary pads. Several organizations noted that their clients preferred brand name products to generics, regarding these to be of better quality and higher absorbency.

DISCUSSION

Our data converge to show that women in St. Louis receiving assistance from not-for-profit community organizations that serve low-income women often cannot afford to meet their own basic menstrual hygiene needs. Many of these women "make do" with old cloth, toilet paper, or baby diapers. Most women in society can identify with improvising for a few hours if their menses start unexpectedly; but many women we surveyed must improvise all day, throughout their entire cycle, often every month. Despite living in a wealthy country such as the United States, the low-income women in St. Louis we surveyed face many of the same menstrual hygiene challenges as women living in low-resource countries.[6]

We identified important barriers to menstrual hygiene including money to purchase supplies, transportation to reach stores where larger quantities can be purchased more cheaply, and safety and security accessing toilet facilities. Our results show greater needs in this population than a recent online, public survey where 25% of respondents had financial difficulty purchasing menstrual hygiene supplies over the previous year, and 20% reported missing school or work owing to lack of menstrual hygiene supplies.[14] Both our study and the online survey reported similar resourcefulness in improvising by using cloth, tissues, paper towels or prolonging pad or tampon use.[14] Although only one woman reported using a menstrual cup, reusable products such as underwear, pads, and cups may provide women a more cost-effective means to manage their menses.

Efforts to draw attention to the importance of menstrual hygiene in the United States have focused on financial and policy-equity, including a push to provide free menstrual hygiene products in schools and prisons. In states with no sales tax, menstrual hygiene products are never taxed. Some states exempt menstrual hygiene products from sales tax.[15–17]

California[18] and New York City[19] now provide free menstrual hygiene products in schools with low-income students. The Federal Bureau of Prisons recently began providing menstrual hygiene products at no charge,[20] as do some state departments of correction.[21]

Although menstrual hygiene is only recently receiving policy attention in the United States, other developed countries are addressing these challenges. Scotland recently announced it will provide menstrual hygiene products to low-income women[22]; Canada has eliminated sales tax on menstrual hygiene products nationwide.[23] Two thirds of American women polled said access to menstrual hygiene supplies is a right,[24] yet nearly two thirds of the low-income women in St. Louis we surveyed cannot afford to purchase them.

Our purposive sampling strategy recruited women already receiving support from community service organizations that other low-income women may not be receiving, potentially resulting in a conservative estimate of unmet menstrual hygiene needs among low-income women in St. Louis and limiting the representativeness of the sample. Interviewer-administered surveys and focus group discussions can be prone to social desirability bias. We minimized this by using female interviewers and conducting all surveys and focus groups in private spaces within the organizations. Because most women were unemployed and all were 18 years of age or older, we could do only limited analysis of the consequences of poor menstrual hygiene on school or work absences. Finally, the representativeness of the electronic survey should be interpreted with caution given the snowball sampling strategy and low completion rate. Our systematic triangulation and synthesis of data across multiple sources builds confidence, however, in our findings.[25]

We recommend developing a network of community service organizations to distribute menstrual hygiene supplies–which is already gaining momentum in St. Louis as a pilot site for the recently announced Alliance for Period Supplies,[26] creating a community directory of available menstrual hygiene resources, and providing additional menstrual hygiene education in schools and community service organizations. We also recommend greater advocacy for policy changes, such as eliminating taxes on menstrual products and increasing coverage for menstrual hygiene supplies in safety-net programs, lengthening transfer times on public transportation systems, and improving access to clean, safe public bathrooms at all hours. Further research should explore menstrual hygiene issues among girls and female adolescents, as well as among recent immigrants and refugees who may come from countries where menstrual hygiene is a concern.

Adequate menstrual hygiene management is not a luxury; it a basic need for all women and should be regarded as a basic women's right. Our failure to meet these basic biological needs for all women in the

United States is an affront to their dignity and a barrier to their full participation in the social and economic life of our country. This must change. We urge women's health care providers and their professional organizations to advocate for such policy changes.

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