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RESEARCH ARTICLE

Wealthy, urban, educated. Who is represented in population surveys of women's menstrual hygiene management?

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Abstract: *Inadequate menstrual hygiene presents a barrier to women's dignity and health. Recent attention to this marginalised challenge has resulted in the first national assessments of menstrual practices. Intuitively, surveys require women to have had a recent menses to be eligible. This study seeks to determine if there are demographic differences between women who are eligible and ineligible to answer questions about their menstrual hygiene during these assessments. Secondary analyses were undertaken on nationally or state representative data collected by the Performance Monitoring and Accountability 2020 survey programme across eight countries (Burkina Faso, Ethiopia, Ghana, India, Kenya, Niger, Nigeria, and Uganda). Female respondents were included in the study and compared on whether they had a menstrual period within the past three months and thus were eligible to answer questions regarding menstrual practices. On average, 29% of surveyed women across samples were ineligible to be asked menstrual hygiene questions. Higher levels of education, wealth, and urban residence were associated with higher odds of eligibility. Young and unmarried women were also more likely to be eligible. Demographic differences between eligible and ineligible women were consistent across all countries. Wealthy, urban, and educated women are more likely to be eligible to answer survey questions about menstrual hygiene. While population surveys may be representative of menstruating women, proportions of menstrual hygiene practices reported underrepresent the experiences of more vulnerable groups. These groups are likely to have greater struggles with menstrual hygiene when they are menstruating.* DOI: 10.1080/09688080.2018.1484220

Keywords: menstrual hygiene, women's health, survey, population survey, menstrual health

Background

Menstrual practices have long been the subject of stigma and taboo. More recently, recognition of the importance of menstrual management for dignity, health, and social participation has led to increased attention in advocacy, research, and policy. Although policies and guidance sensitive to menstrual needs are still lacking,[1] many initiatives are underway across low- and middle-income contexts. These include establishing menstrual hygiene improvements as a priority, reducing taxes on menstrual products, and providing menstrual materials to schoolgirls.[2–6] Much of the attention to menstrual hygiene has been focussed on girls in schools, with the experiences and needs of adult women yet to receive adequate attention.[7,8] More research is needed to understand the experiences and needs of women across the life course, recognising that menstrual hygiene is an important aspect of women's lives beyond the classroom.

The Performance Monitoring and Accountability 2020 (PMA2020) survey programme is one of the first large-scale assessments of menstrual hygiene practices across a range of ages. This programme uses mobile survey technology to provide rapid

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assessments of family planning, water, sanitation and hygiene (WASH), and aspects of menstrual hygiene across 11 countries.[9] Increased recognition of the importance of menstrual hygiene, and attention to the special needs of women and girls stated in Sustainable Development Goal (SDG) 6.2, mean PMA2020 may soon be joined by other large-scale surveys seeking to monitor women's menstrual needs and practices.[10]

In breaking new ground to provide the first national estimates of women's menstrual hygiene practices, PMA2020 data can offer unique insights into current needs and identify emerging measurement challenges. Using mobile-based data collection, the PMA2020 survey methodology applies automatic question filtering based on past answers to streamline the survey process and ensure respondents are only asked questions that are relevant to them. In the case of menstrual hygiene, women identified as eligible to answer questions about their management practices are those who have had a period in the last three months. This survey logic is intuitive. It prevents women who have not menstruated for some time from being asked questions they may feel are not relevant to them, contributing to fatigue or disengagement with the survey process. It also means that the survey captures recent menstrual experiences, not those from many months or years earlier, and supports the questions which ask about practices during the "last menstrual period." Significant time-lag since the last menstrual period may result in greater recall bias or increased socially desirable responding.[11] Moreover, for studies monitoring changes in practices over time or seeking to explore associations between menstrual practices and other household or reproductive health characteristics, the eligibility criteria ensure information about these considerations are all reflective of the same time point. Finally, it avoids asking menstrual management questions of girls prior to menarche, or women post menopause.

The PMA2020 three-month eligibility criteria are consistent with the definition of amenorrhoea, and mean women and girls experiencing amenorrhoea for any reason would be not be asked survey questions regarding menstrual hygiene practices. Amenorrhoea is the absence of menstruation for three consecutive menstrual periods.[12] This can occur for many reasons, the most common being pregnancy. Amenorrhoea is also common in the postpartum period and while exclusively breastfeeding (lactational amenorrhoea).[13,14] Amenorrhoea can also occur due to poor nutritional status, weight loss, chronic illness, or stress (hypothalamic amenorrhoea).[12] Further, regular monthly bleeding can be disrupted among women using progestin-based contraceptive methods, which can result in amenorrhoea.[15]

Sociodemographic differences in fertility rates and access to modern contraceptives are well known, with more disadvantaged women experiencing higher birth rates, and more advantaged women reporting greater utilisation of modern hormonal contraceptives.[16] As such, it is unclear if there may be any over or underrepresented population groups in surveys of menstrual hygiene. Any differences would be significant for the interpretation of pooled estimates reported. Surveys representative of the population of menstruating women may overrepresent one group's experience of menstrual management. This is critical for understanding the distribution of unmet menstrual needs and to inform policy and practice. Differences represent important methodological considerations not only for future PMA2020 surveys, but for all other surveys of adult women's menstrual hygiene.

The present study uses available PMA2020 survey samples from eight national or state level surveys to test if there were any systematic differences in eligibility to participate in questions regarding menstrual hygiene, and thus, if there are over or underrepresented demographic groups.

Methods

Secondary analyses were undertaken of data collected in eight countries by the PMA2020 survey programme.[9] Dates, times, and details of data collection in each country are presented below, with more information available from the PMA2020 website. We selected the latest available PMA2020 country data which included menstrual hygiene questions. Menstrual hygiene questions are included in approximately every other round of PMA2020 survey data collection in each country and include questions which capture: the type of menstrual materials women use, the location used to change materials, women's perceptions of this location, menstrual material disposal practices, and self-reported unmet menstrual needs. For all surveys, enumeration areas (EAs) were drawn from national statistical agency master sampling frames, households were listed and mapped in each EA, then randomly selected for participation. All females in surveyed households

aged 15–49 were asked to participate in the female questionnaire. All participants who had slept in the house the night before and indicated they were usual residents of the household were included in the present study. A very small proportion of women who did not respond to the key variable of interest, the time since the most recent period, were not included.

Female interviews were conducted face-to-face by female resident enumerators, with responses entered into the smartphone survey. Interviews were conducted only with respondents who provided explicit and informed consent to participate. Menstrual hygiene questions were preceded with a prompt highlighting the sensitivity of the questions and reminding enumerators to ensure the privacy of the interview location and to reiterate to respondents that responses were confidential and anonymous. All female interviews were conducted with auditory privacy and, when possible, visual privacy.

Surveys

Burkina Faso. [17] Data were used from the fourth round of surveys in Burkina Faso. This survey used a two-stage cluster design with urban and rural strata. A total of 83 EAs were drawn from the National Statistics Institute (INSD) master sampling frame and 35 households were randomly selected from each EA. Data were collected between November 2016 and January 2017.

Ethiopia. [18] The fifth round of surveys in Ethiopia was used for the present study. This survey used a two-stage cluster design. EAs were drawn from the International Institute for Population Sciences master sampling frame. From each of the 221 EAs, 35 households were randomly selected. Data were collected between April and May 2017.

Ghana. [19] Data were used from the fifth round of surveys in Ghana. This survey used a two-stage cluster design with urban and rural and major ecological zones as strata. A total of 100 EAs were drawn by the Ghana Statistical Service from its master sampling frame. From these, 42 households were randomly selected from each EA, and data were collected between August and November 2016.

India, Rajasthan State. [20] The second round of surveys in Rajasthan State, India was used for the present study. This survey used a two-stage cluster design. EAs were drawn from the International Institute for Population Sciences master sampling frame. From each of the 147 EAs, 35 households were randomly selected. Data were collected between February and April 2017.

Kenya. [21] Data were used from the fifth round of surveys in Kenya. This survey used a two-stage cluster design, with urban, rural and county strata. EAs were drawn by the Kenya Bureau of Statistics. From 151 EAs, 42 households were randomly selected for survey in each. Data were collected between November and December 2016.

Niger. [22] The second round of surveys in Niger was used for the present study. This survey used a two-stage cluster design, with Niamey, urban areas outside of Niamey, and rural areas as the strata. From 84 EAs drawn by Niger's National Statistics Institute from its master sampling frame, 42 households were randomly selected in each. Data were collected between February and April 2016.

Nigeria, Kaduna State. [23] The second round of data collection in Kaduna State, Nigeria was used for the present study as no national survey was available and Kaduna State included a mix of urban and rural populations. A total of 66 EAs were drawn from the National Population Commission's master sampling frame. Thirty-five households from each EA were randomly selected for survey. Data were collected between August and September 2015.

Uganda. [24] The fifth round of surveys in Uganda was used for the present study. This survey used a two-stage cluster design. EAs were drawn from the Uganda Bureau of Statistics master sampling frame. From each of the 110 EAs, 44 households were randomly selected. Data were collected between April and May 2017.

Measures

Female questionnaires are publicly available on the PMA2020 website (https://www.pma2020.org/questionnaires).

Eligibility to answer questions regarding menstrual hygiene. The primary variable for comparison was whether women and girls surveyed were eligible to answer questions regarding menstrual hygiene. In PMA2020 surveys, women are asked questions about menstrual hygiene according to survey logic patterns. To be eligible for menstrual hygiene questions women must have had a period within the last three months. This is determined through an item asking "*When did your last menstrual period start?*" with response options indicating a number of days, weeks, months or years ago, and with additional options to indicate that women had reached menopause, had a

hysterectomy, not menstruated since their last birth, or never menstruated. Enumerators received training to elicit accurate recall of the time since the last period, such as recall of recent weekends, celebrations or events. Eligibility was defined, consistent with PMA2020 survey logic, as having had a menstrual period within the last 90 days, 13 weeks, or 3 months, depending which number category was used. For the present study a dichotomous variable reflecting if women were eligible or ineligible to answer questions regarding menstrual hygiene was created.

Demographic characteristics. Women were asked their age, marital status, and to report on the highest level of schooling they had completed. Wealth quintiles or tertiles were calculated using data from the household survey, with wealth reflected in items capturing: household building materials, asset ownership, and water and sanitation facilities in the household. Wealth quintiles or tertiles were calculated independently for each survey, and so are not comparable across countries. Urban or rural residence is defined according to the location of the household, categorised by the respective statistical agency for each country.

Analyses

For each country, the number and proportion of women from the total female questionnaire sample are reported according to their eligibility status. Descriptive statistics display the proportion of the sample of eligible and ineligible women according to demographic characteristics for each country. Binary logistic regressions present the odds and respective 95% confidence interval for women to be eligible for menstrual hygiene survey items according to demographic predictors. All analyses were weighted for the complex survey design using sampling weights provided in the PMA2020 data sets.

Ethical approvals

As a secondary data analysis of publicly available data, this study was exempt from review by the IRB of Johns Hopkins University Bloomberg School of Public Health. For the PMA2020 surveys, approval for human subjects research was granted by the following organisations in each country:

- **Burkina Faso:** Comite D'Ethique Pour La Recherche en Santé, Ministère de la Recherche Scientifique et de L'Innovation, Ministère de la Santé
- **Ethiopia:** Institutional Review Board of the Addis Ababa University College of Health Sciences (AAU/CHS IRB) and National Research Ethics Review Committee in Ethiopia (NRERC)
- **Ghana:** School of Medical Sciences, Kwame Nkrumah University of Science and Technology (KNUST) Committee on Human Research Publication and Ethics
- **India/Rajasthan:** Indian Institute of Health Management Research (IIHMR) University Institutional Committee for Ethics and Review of Research
- **Kenya:** Kenya Medical Research Institute (KEMRI) Ethics Review Committee
- **Niger:** Comité Consultatif National d'Ethique
- **Nigeria:** National Health Research Ethics Committee (NHREC) Department of Health Planning, Research, and Statistics
- **Uganda:** Makerere University School of Public Health (MUSPH) Higher Degrees, Research and Ethics Committee and the Uganda National Council for Science and Technology

The informed consent process for all female interviews was administered by PMA2020 resident enumerators.

Results

Table 1 presents the proportion of women in each of the eight included countries that were eligible and ineligible to be asked questions about their menstrual hygiene practices. On average, 29% of the full population of women surveyed were ineligible to answer questions regarding menstrual hygiene. This ranged from 14.35% of the female sample in India (Rajasthan state) to 43.32% in Niger.

The demographic characteristics and relationships between demographic characteristics and eligibility for menstrual hygiene survey items are presented in Table 2. The pattern of results was consistent across all eight countries. Younger age groups of women, particularly those aged 15–19, were more likely to be eligible for inclusion. Women who were not currently in a union (divorced, widowed or never married) had much higher odds of being eligible for menstrual hygiene survey items. Women with higher levels of education had higher odds of being eligible for menstrual hygiene questions in all countries, with effect sizes increasing with additional levels of education attained. Similarly, higher wealth quintile or tertile was associated with greater odds of eligibility

Table 1. Proportion of the surveyed female population eligible and ineligible to answer questions regarding menstrual hygiene.

Country (survey round)	Ineligible		Eligible	
	n	%	*n*	%
Burkina Faso (R4)	1088	34.20	2092	65.80
Ethiopia (R5)	2761	37.58	4586	62.42
Ghana (R5)	761	20.80	2898	79.20
India (Rajasthan state) (R2)	864	14.35	5156	85.65
Kenya (R5)	1319	22.46	4554	77.54
Niger (R2)	1292	43.32	1690	56.68
Nigeria (Kaduna state) (R2)	842	29.84	1980	70.16
Uganda (R5)	1219	29.76	2877	70.24

for menstrual hygiene questions across all countries. Women living in urban areas typically had two times higher odds of being eligible for menstrual hygiene items across countries, with the exception of India (Rajasthan State) and Kenya where smaller effect sizes (OR = 1.13 and 0R = 1.24, respectively) were not statistically significant although effects trended in the same direction.

Discussion

This study found that population surveys of women's menstrual hygiene practices overrepresent the experiences of more educated, wealthy, and urban women, as well as younger and single women, as these respondents are more likely to be menstruating and thus eligible to answer questions regarding their management. Effects were consistent across all eight countries assessed. Women with post-secondary education were much more likely to be eligible for survey with effects ranging from an increase in odds of 2.19 (95%CI 1.14–4.22) in Kaduna State, Nigeria, to a 7.66 increase in odds (95%CI 4.25–13.79) in Burkina Faso. Similarly, the wealthiest quintile or tertile of women had higher odds of being eligible for survey, ranging from 1.35 (95%CI 0.94–1.94) in Rajasthan State, India to 2.80 times higher odds (95%CI 2.03–3.86) in Uganda. Effect sizes increased with additional levels of education and wealth, suggesting a dose-response relationship between increasing advantage and the odds women were eligible for survey regarding their menstrual practices. Urban residence was significantly associated with eligibility for survey in all countries, with the exceptions of Rajasthan State in India and Kenya, where results trended towards higher odds of eligibility for urban, compared to rural respondents. Across all countries, younger women (15–19 years of age) had higher odds of eligibility for menstrual hygiene questions compared to women older than 35. Higher odds were also observed in some countries for the 20–24 age group. When age was used as a continuous predictor of eligibility, small but significant decreased odds of eligibility were observed for each additional year of age (with ORs ranging from 0.95 to 0.99). Single women had much higher odds of being eligible to answer questions about menstrual hygiene than those in a union.

Results of the study are important for interpreting national estimates of menstrual hygiene practices. Complex sampling approaches mean that PMA2020 survey data can make estimates representative of the population of women, and menstrual practices representative of the population of menstruating women. This study does not suggest that aggregated menstrual hygiene practices presented are not representative of the population; however, results do suggest that the menstruating population overrepresents certain demographic groups. This means that the practices of poorer, rural, and less educated women contribute to a smaller proportion of the practices reported.

Findings have implications for the use of aggregated menstrual hygiene estimates generated from large-scale surveys. First, advocates and funders recognising the importance of menstrual hygiene for women's human rights and health must attend to the experiences of vulnerable and disadvantaged women. These women are less likely to have access to preferred menstrual supplies and supportive WASH facilities, and they may also be also less likely to have access to comprehensive menstrual education and health services. At the same time, results of this study suggest that population estimates are reflective of the experiences of more advantaged women. Policy responses and donor funding may be misspent or

Table 2. Eligibility to answer questions regarding menstrual hygiene according to demographic characteristics

	Burkina Faso		Ethiopia		Ghana		India (Rajasthan State)	
	Eligible %	OR (95%CI)	Eligible %	OR (95%CI)	Eligible %	OR (95%CI)	Eligible %	OR (95%CI)
Age								
15-19	77.63	2.24 (1.63–3.07)	79.26	2.86 (2.29–3.57)	85.43	1.94 (1.29–2.91)	95.19	5.24 (3.30–8.33)
20-24	66.65	1.29 (0.99–1.68)	64.57	1.37 (1.10–1.69)	83.92	1.73 (1.27–2.34)	83.78	1.37 (1.04–1.80)
25-34	61.84	1.05 (0.83–1.31)	53.53	0.86 (0.73–1.02)	76.62	1.08 (0.84–1.38)	87.45	1.85 (1.42–2.40)
35+	60.79	1.00	57.21	1.00	75.16	1.00	79.04	1.00
Continuous		*0.97 (0.96–0.98)*		*0.96 (0.96–0.97)*		*0.97 (0.96–0.98)*		*0.95 (0.94–0.96)*
Marital status								
In union	59.70	1.00	51.17	1.00	72.30	1.00	82.95	1.00
Widow/divorced	74.34	1.96 (1.32–2.90)	71.40	2.38 (1.96–2.90)	80.32	1.56 (1.07–2.29)	77.58	0.72 (0.45–1.15)
Never married	86.84	4.45 (3.10–6.39)	88.85	7.60 (6.10–9.46)	91.53	4.14 (2.77–6.18)	96.87	6.44 (3.49–11.90)
Education								
Never	60.34	1.00	52.00	1.00	69.94	1.00	80.93	1.00
Primary	68.20	1.41 (1.08–1.84)	63.00	1.57 (1.34–1.84)	72.33	1.12 (0.80–1.57)	84.27	1.26 (0.98–1.62)
Middle	-	-	-	-	80.17	1.74 (1.29–2.34)	-	-
Secondary	80.93	2.79 (2.09–3.73)	81.98	4.20 (3.42–5.16)	89.88	3.82 (2.62–5.56)	91.35	2.49 (1.79–3.45)
Higher	92.09	7.66 (4.25–13.79)	82.99	4.50 (3.23–6.27)	84.68	2.38 (1.27–4.44)	90.70	2.30 (1.79–2.95)
Wealth								
1 (lowest)	57.97	1.00	56.04	1.00	70.66	1.00	82.63	1.00
2	62.28	1.20 (0.94–1.53)	56.36	1.03 (0.83–1.24)	75.10	1.26 (0.92–1.71)	85.85	1.27 (0.86–1.89)
3 (highest tertile)	77.54	2.50 (1.94–3.23)	55.68	0.99 (0.77–1.25)	84.39	2.25 (1.54–3.28)	84.39	1.14 (0.78–1.66)
4			66.87	1.58 (1.23–2.04)	81.96	1.89 (1.15–3.11)	87.96	1.54 (1.07–2.20)
5 (highest quintile)			75.22	2.38 (1.91–2.97)	86.32	2.62 (1.81–3.78)	86.53	1.35 (0.94–1.94)
Rurality								
Urban	79.43	2.41 (1.94–3.00)	76.20	2.32 (1.98–2.73)	83.19	1.66 (1.19–2.34)	86.62	1.13 (0.84–1.53)
Rural	61.56	1.00	57.95	1.00	74.84	1.00	85.11	1.00

(*Continued*)

Table 2. Continued

	Kenya		Nigeria (Kaduna State)		Niger		Uganda	
	Eligible %	OR (95%CI)	Eligible %	OR (95%CI)	Eligible %	OR (95%CI)	Eligible %	OR (95%CI)
Age								
15-19	88.40	2.86 (2.20–3.71)	68.61	1.74 (1.32–2.30)	79.28	2.28 (1.40–3.72)	79.94	1.38 (1.02–1.88)
20-24	76.83	1.24 (1.02–1.52)	56.46	1.04 (0.72–1.48)	71.10	1.47 (0.90–2.38)	67.96	0.74 (0.56–0.97)
25-34	74.67	1.11 (0.92–1.32)	49.85	0.79 (0.57–1.10)	68.80	1.31 (0.83–2.08)	62.65	0.58 (0.47–0.73)
35+	72.72	1.00	55.64	1.00	62.64	1.00	74.23	1.00
Continuous		*0.97 (0.96–0.97)*		*0.99 (0.98–1.00)*		*0.97 (0.95–0.99)*		*0.99 (0.98–1.00)*
Marital status								
In union	70.84	1.00	51.67	1.00	65.35	1.00	62.22	1.00
Widow/divorced	72.54	1.09 (0.83–1.43)	75.36	2.86 (1.73–4.73)	71.85	1.35 (0.73–2.49)	73.67	1.70 (1.27–2.27)
Never married	90.83	4.08 (3.39–4.90)	82.39	4.38 (2.76–6.94)	91.67	5.83 (3.18-10.70)	90.69	5.91 (4.24–8.24)
Education								
Never	55.01	1.00	51.14	1.00	65.77	1.00	62.25	1.00
Primary	73.15	2.23 (1.54–3.22)	62.97	1.62 (1.27–2.08)	63.75	0.91 (0.70–1.20)	66.04	1.18 (0.87–1.60)
Secondary	83.75	4.21 (2.80–6.35)	74.93	2.86 (2.10–3.88)	78.60	1.91 (1.26–2.90)	78.80	2.25 (1.55–3.28)
Higher	85.67	4.89 (3.20–7.49)	81.95	4.34 (2.72-6.92)	80.81	2.19 (1.14–4.22)	81.77	2.72 (1.81–4.10)
Wealth								
1 (lowest)	71.27	1.00	49.26	1.00	59.84	1.00	60.60	1.00
2	74.74	1.19 (0.91–1.57)	53.52	1.19 (0.91–1.54)	71.33	1.67 (1.20–2.31)	63.97	1.15 (0.87–1.53)
3 (highest tertile)	78.74	1.49 (1.12–1.98)	65.28	1.94 (1.36–2.76)	68.41	1.45 (0.98–2.15)	69.64	1.49 (1.11–2.01)
4	79.36	1.55 (1.13–2.12)			73.43	1.85 (1.33–2.59)	75.48	2.00 (1.49–2.68)
5 (highest quintile)	83.08	1.98 (1.49–2.63)			77.25	2.28 (1.65–3.15)	81.15	2.80 (2.03–3.86)
Rurality								
Urban	80.06	1.24 (1.00–1.54)	72.39	2.34 (1.83–3.05)	76.67	1.92 (1.43–2.60)	79.35	1.83 (1.18–2.82)
Rural	76.38	1.00	52.63	1.00	67.06	1.00	67.80	1.00

Ineligible OR=1.00

underprioritised if the voices of vulnerable women are minimised through aggregated reporting of menstrual practices and unmet needs. In response, national or state level estimates of menstrual health and hygiene should be presented with attention to key demographics such as rural residence or education level. Smaller scale studies which may seek to compare their identified estimates of menstrual hygiene to population estimates must be mindful of demographic differences in the samples assessed. Future research is needed to understand recall and other biases in reporting menstrual hygiene practices and to advance the development of best-practices for the survey of women's menstrual experiences. This would also inform any changes to eligibility requirements for population surveys.

It was not the aim of this study to explore the reasons for amenorrhoea across the sample, and the available information from the PMA2020 survey is limited to support such investigation. However, the pattern of results is consistent with higher fertility rates among more disadvantaged populations of women,[16] meaning these women may be amenorrhoeic due to pregnancy or during their postnatal period. This suggests that improvements in access to family planning services over time may mean that more disadvantaged populations of women will begin to experience regular menses for greater proportions of their lives. Thus, unmet menstrual hygiene needs may increase over time if improvements trail behind increases in contraceptive uptake. This has implications for time-series analyses of menstrual hygiene, such as those which may seek to evaluate improvements due to policies changes. Improvements may be hidden if the population of menstruating women, and thus those eligible for survey, changes over time. At the same time, increases in the use of hormonal contraceptives with known impacts on women's menstruation will also interact with menstrual hygiene needs. This relationship has received limited research attention to date.[25]

Limitations

As a secondary analysis of PMA2020 survey data, findings of this study are based on cross-sectional self-report data. The eligibility criteria assessed are contingent on women's ability to recall the timing of their most recent period. However, women may not keep an accurate record of their menstrual cycle, and more vulnerable women may be less likely to do so. Whilst this may limit the reliability of responses to this questionnaire item, accuracy is only required within a three-month window for eligibility purposes. Assuming most women experience a monthly cycle, only a small proportion would need to report on timing close to the three-month point. Moreover, analyses presented here remain applicable to the real-world implementation of the PMA2020 methodology and other surveys which are likely to rely on the self-reported timing of the last period. The PMA2020 survey only includes women between 15 and 49 years of age. Many girls are likely to experience menarche before 15 and may experience greater difficulties in menstrual management during this time. As such, the survey fails to capture these experiences and more targeted work may be needed to be sensitive to experiences of younger girls.

Conclusions

In sum, a human rights and equity perspective means it is essential that the menstrual hygiene needs of vulnerable women and girls are considered. As a group, these women are more likely to be amenorrhoeic at the time of population surveys and ineligible to answer questions regarding their menstrual management. Thus, women likely to have greater struggles with menstrual hygiene when they are menstruating are underrepresented in population surveys of menstrual management practices. In interpreting the findings of large-scale surveys, funders, policy-makers, and actors must be mindful of this limitation and the risks of minimising the needs of the most vulnerable.

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Author contributions

Conceived the study: JH. Contributed to research design and survey materials: AS KS. Analysed the data: JH. Wrote the manuscript: JH. Provided comments on the manuscript: AS KS. All authors have read and approved the final manuscript.

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Data sharing statement

Data are publicly available for request on the PMA2020 website: https://www.pma2020.org/

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Résumé

Une mauvaise hygiène menstruelle compromet la santé et la dignité des femmes. L'attention accordée récemment à ce problème marginalisé a abouti aux premières évaluations nationales des pratiques menstruelles. Intuitivement, les enquêtes exigent que les femmes aient récemment eu leurs menstrues pour être éligibles à l'enquête. Cette étude souhaite déterminer s'il y a des différences démographiques entre les femmes qui remplissent ou non les conditions pour répondre à des questions sur leur hygiène menstruelle pendant ces évaluations. Des analyses secondaires ont été entreprises sur des données représentatives au niveau national ou de l'État, recueillies par la plateforme d'enquête de PMA 2020 (*Performance Monitoring and Accountability 2020*) dans huit pays (Burkina Faso, Éthiopie, Ghana, Inde, Kenya, Niger, Nigéria et Ouganda). Les répondantes ont été incluses dans l'étude et ont indiqué si elles avaient eu leurs menstrues dans les trois derniers mois, condition leur permettant de répondre à des questions sur l'hygiène menstruelle. Des

Resumen

La higiene menstrual inadecuada presenta una barrera para la dignidad y salud de las mujeres. La atención reciente a este reto marginado ha propiciado las primeras evaluaciones nacionales de las prácticas menstruales. De manera intuitiva, las encuestas exigen que las mujeres hayan tenido una menstruación reciente para ser elegibles. Este estudio busca determinar si existen diferencias demográficas entre las mujeres que son elegibles y las que son inelegibles para contestar preguntas sobre su higiene menstrual durante estas evaluaciones. Se realizaron análisis secundarios sobre datos representativos a nivel nacional o estatal recolectados por el programa de encuestas 2020 de Monitoreo y Rendición de Cuentas del Desempeño en ocho países (Burkina Faso, Etiopía, Ghana, India, Kenia, Níger, Nigeria y Uganda). Las mujeres encuestadas fueron incluidas en el estudio y comparadas con relación a si tuvieron la menstruación en los últimos tres meses y, por ende, eran elegibles para contestar preguntas sobre sus prácticas menstruales. En promedio, el 29% de las

niveaux supérieurs d'instruction et de fortune ainsi que la résidence en milieu urbain étaient associés avec des probabilités plus élevées d'éligibilité à l'enquête. Les femmes jeunes et célibataires avaient aussi plus de chances d'être éligibles. Les différences entre les femmes éligibles et non éligibles étaient les mêmes à travers les pays. Les femmes aisées, urbaines et instruites ont plus de probabilités de réunir les conditions pour répondre à des questions sur l'hygiène menstruelle. Alors que les enquêtes démographiques peuvent être représentatives des femmes réglées, les proportions de pratiques d'hygiène menstruelle rapportées sous-représentent l'expérience des groupes les plus vulnérables. Les femmes de ces groupes risquent de rencontrer plus de difficultés en matière d'hygiène menstruelle quand elles ont leurs menstrues.

mujeres encuestadas de las muestras eran inelegibles para contestar preguntas sobre la higiene menstrual. Mayores niveles de escolaridad, riqueza y residencia urbana se asociaron con mayor probabilidad de elegibilidad. Las mujeres jóvenes y solteras también eran más propensas a ser elegibles. Las diferencias demográficas entre las mujeres elegibles y aquéllas inelegibles coincidieron en todos los países. Las mujeres ricas, urbanas y educadas son más propensas a ser elegibles para contestar las preguntas de la encuesta sobre higiene menstrual. Aunque las encuestas poblacionales pueden ser representativas de las mujeres menstruantes, los porcentajes de prácticas de higiene menstrual reportados subrepresentan las experiencias de grupos más vulnerables. Es probable que estos grupos tengan más dificultades con la higiene menstrual durante la menstruación.