

The Menstrual Practice Needs Scale (MPNS-36)

User Guide

Citation

The peer-review publication reporting the development and validation of the MPNS-36 should be cited when using the measure:

Hennegan, J., Nansubuga, A., Smith, C., Redshaw, M., Akullo, A., & Schwab, K.J. (2020). Measuring menstrual hygiene experience: Development and validation of the Menstrual Practice Needs Scale (MPNS-36) in Soroti, Uganda. *BMJ Open*, 10, e034461. <http://dx.doi.org/10.1136/bmjopen-2019-034461>

If citing material specific to this guide, the following citation can be used:

Hennegan, J., Nansubuga, A., Smith, C., Redshaw, M., Akullo, A., & Schwab, K.J. (2020). The Menstrual Practice Needs Scale (MPNS-36): User Guide V1.0. Available from:
<https://www.menstrualpracticemeasures.org/>

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What is the Menstrual Practice Needs Scale?

The Menstrual Practice Needs Scale (MPNS-36) is a set of self-report questions that work together to measure women's and girls' menstrual experiences. The scale focuses on a respondents' experience of her last menstrual period and captures experiences of the practices undertaken, and environments used to manage menses (menstrual bleeding and discharge). Items ask about perceptions of comfort, satisfaction, adequacy, reliability as well as worries and concerns during the last menstrual period.

The Menstrual Practice Needs Scale (MPNS-36) measures the extent to which respondents' menstrual management practices and environments were perceived to meet their needs during their last period.

The MPNS-36 has a total of 36 self-report items. Each item is a statement about the last menstrual period (e.g., “*I felt comfortable carrying spare menstrual materials with me outside my home*”), and respondents are asked whether this applied to them “Never”, “Sometimes (or less than half the time)”, “Often” (or more than half the time), or “Always.” The scale can be self-completed, or it can be delivered in interview format with the interviewer recording responses. We provide versions of the scale in both self-completion and interview forms, as well as materials to support participant responding.

Responses to each item are combined to produce a total MPNS-36 score, and six sub-scales which capture different dimensions of practice needs.

The scale provides a quantitative (number) estimate of the extent to which women's and girls' needs are being met. It can be used for needs assessment in baseline or cross-sectional investigations, or for programme evaluation, to monitor differences in experience over time or between groups.

Purpose of the User Guide

This guide supports the use of the Menstrual Practice Needs Scale (MPNS-36) in practice. It provides an overview of the purpose and development of the scale, and information to assist users in implementing the scale.

The guide focuses on the practical use of the tool. Those seeking more details on the development of the measure and its performance during testing should see the peer-review publication.

As the measure is tested in more populations, the website will be updated with additional related publications.

This guide is best used in combination with the downloaded survey tool. The MPNS-36 and available translations can be downloaded from:

<https://www.menstrualpracticemeasures.org/mpns-36/mpns-36-view-download/>

Why measure menstrual practice needs?

Much of menstrual health and hygiene research and practice is focused on understanding and improving women's and girls' experiences of menstruation. Yet, there are few tools available to quantitatively capture aspects of this experience or track improvements over time.

The menstrual practices undertaken by women and girls, that is, the behaviours they undertake to manage their menstrual bleeding, are one of the most frequently assessed outcomes in menstrual health research and program monitoring. Yet, measuring practices undertaken (for example, the type of menstrual material used such as a pad or cloth, or the location of disposal) fails to capture how women and girls experience these behaviours. We do not know if the practices undertaken are preferred, acceptable or experienced positively.

The MPNS-36 was developed using a holistic and woman-centered approach. It offers a way to capture women's and girls' perceptions of the way they manage their period. That is, if they felt their practices and environments met their needs.

It is a common assumption that providing education, products, or other menstrual health interventions will improve menstrual experience, and as a result improve other targets such as education or wellbeing. The MPNS-36 provides a way to objectively measure menstrual experiences, and test if interventions achieved this desired effect.

The MPNS-36 includes a broad set of practice needs identified through our measure development research, independently of any specific intervention. As a result, the MPNS-36 can be used across a range of programmes. The measure supports comparability across research and monitoring and avoids biases that may arise from individualised tools focused on the needs most likely to be addressed by an organisation's own programme.

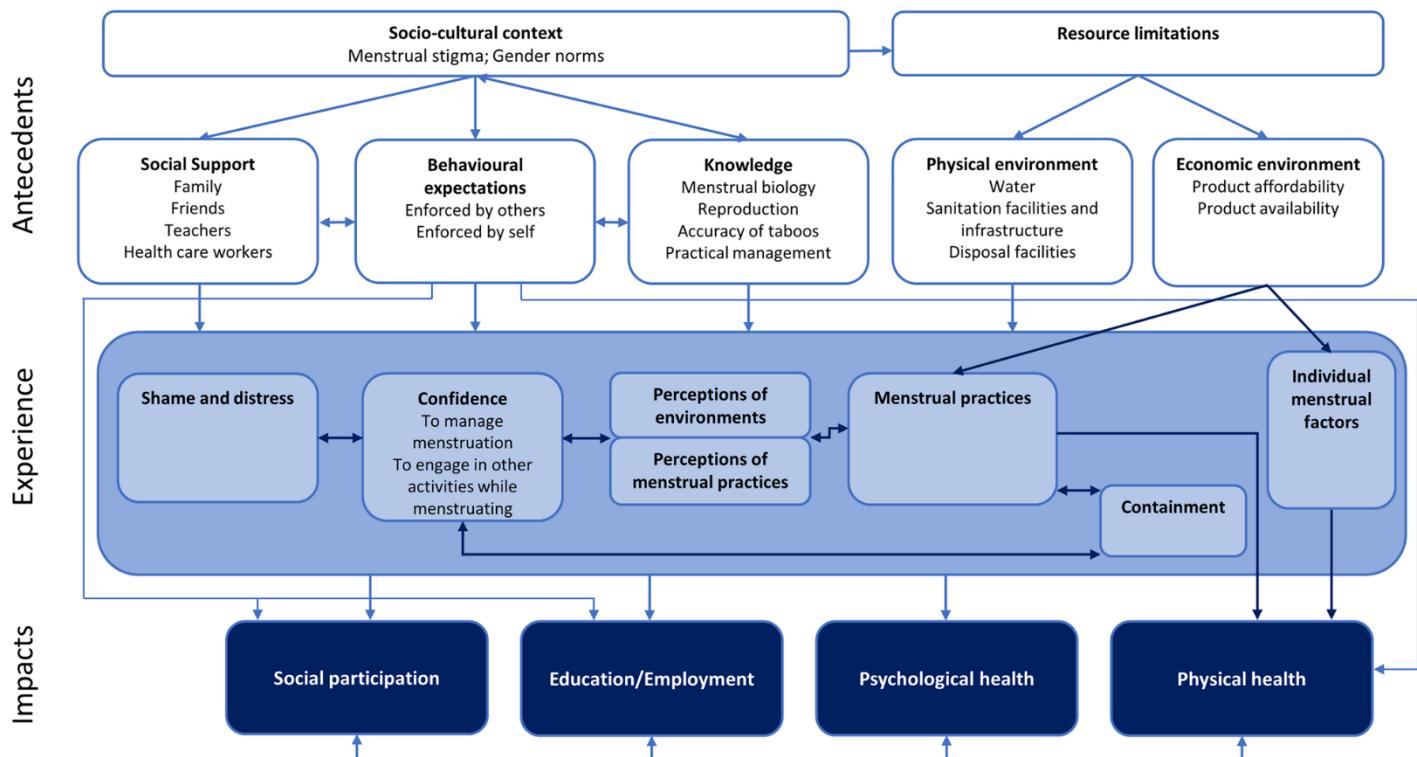
Development of the Menstrual Practice Needs Scale (MPNS-36)

Defining the concept for measurement

The first step in developing the MPNS-36 was to define the concept for measurement. We wanted to focus on women's perspectives and to benefit from the large body of qualitative studies on menstrual health and hygiene.

Our team undertook a systematic review of past qualitative studies. We brought together a total of 76 studies across 35 low- and middle-income countries. Synthesizing the findings of these studies we developed an integrated model of menstrual experience.

Integrated model of menstrual experience



Source: Hennegan, J., Shannon, A.K., Rubli, J., Schwab, K.J., & Melendez-Torres, G.J. (2019). Women's and girls' experiences of menstruation in low-and middle-income countries: A systematic review and qualitative metasynthesis. *PLOS Medicine*, 16(5), <https://doi.org/10.1371/journal.pmed.1002803>

Through our systematic review, we identified both “menstrual practices” and “perceptions of menstrual practices and perceptions of environments” as important concepts for measurement in menstrual health research and practice.

Menstrual practices

We define menstrual practices as the actions undertaken to manage menstrual bleeding. This includes accessing, storing and transporting acceptable menstrual materials (e.g., pads, cloth), changing and disposing of used materials, washing and drying reusable materials, as well as cleaning the hands, genitals and body. In assessing menstrual practices, it is also important to capture the environments women may use to undertake these practices. That is, the spaces women use to change materials, dispose of them, and clean their bodies and materials.

There are other actions that women and girls may undertake to care for their body during menstruation, these might include pain relief or accessing information about the menstrual cycle. However, our review found experiences of pain and pain management, as well as knowledge and social support to be separate concepts in menstrual experience. Our conceptualization of practices needs in the MPNS-36 focuses on actions taken to manage bleeding. Other measures will be required to capture other concepts related to menstrual experience.

Measuring menstrual practices and practice needs

The [menstrual practice measures](#) website provides information about the Menstrual Practices Questionnaire which contains exemplar questions for capturing behavioural practices (e.g., the type of materials used, frequency of change).

This guide focuses on the MPNS-36, which measures perceptions of menstrual practices and environments.

In our review we found that when women and girls were interviewed about their menstrual experiences, they consistently discussed the challenges they faced in managing their menstrual discharge. For example, they discussed being dissatisfied with the materials they used to absorb menstrual blood and difficulties changing or disposing of materials in ways they felt were acceptable. They also discussed the role of the spaces (environments) that they used to undertake their menstrual practices. For example, the sanitation facilities that they used throughout the day to change their menstrual materials, or the locations they used to dry reusable menstrual materials. In interviews and focus groups, women and girls described the way that these spaces supported them, or failed to support them, to care for their bodies during menstruation.

Unmet menstrual management and environment needs were important parts of individuals' menstrual experiences. Further, unmet needs were consistently described as leading to distress, and had implications for participants' health, well-being, education and social participation. Thus, we determined that whether women's and girls' menstrual practices and environments were perceived as supportive, reliable and acceptable to them was an important part of their menstrual experience.

Further, this concept was consistent with the goals of many menstrual health and hygiene interventions, which seek to improve women's and girls' experiences of menstruation. At the same time, we determined through a [review of the measures used in the study of menstrual experience](#) that there were no tools available to measure this concept.¹

¹ Hennegan, J., Brooks, D., Schwab, K. J., & Melendez-Torres, G. (2019, November 5). Measurement in the study of menstrual health and hygiene: A systematic review and audit. <https://doi.org/10.31235/osf.io/n8j5w>

Menstrual practice needs (perceptions of menstrual practices and environments)

Women and girls undertake a variety of actions and use a range of environments to manage their menstruation. They also vary in their satisfaction and concerns about these practices. Perceptions of menstrual practices, positive or negative, may reflect the practices themselves, but are also dictated by women's personal perspectives and past experiences, their context and the expectations of others in their community.

For the MPNS-36, practice needs were identified through our systematic review of qualitative research where we found that women and girls had expressed varied experiences of comfort, reliability, acceptability and concerns about cleanliness, privacy and safety related to the practices undertaken to manage menstrual bleeding.

Developing the scale

Generating the items

There are a wide range of practices that women and girls undertake to manage menstrual discharge. In developing a tool that could be widely used in research and practice, we needed to balance measuring experiences across the different types of practices (for example, the menstrual material used, disposal, storing and transporting materials), and the length of the scale. Any measure that focused too heavily on only one practice would not fairly represent experiences. At the same time, we can never ask as many questions as we would like to.

We used the findings from our review of women's and girls' menstrual experiences to help generate a large pool of statements that captured the variety of different menstrual practice and environment needs. We generated a total of 54 statements that reflected menstrual practice and environment needs. This created a scale much longer than would be practical to use and allowed us to test the different items (statements) to identify which would contribute to a useful and intuitive tool, removing items that fit poorly.

Further, we asked experts to rate the usefulness of the different items, and our 4-point response options ("Always", "Often (or more than half the time)", "Sometimes (or less than half the time)", "Never").

Considering location dependency

Menstruation occurs throughout the day and night. It is a relevant experience at home, and outside the home as women and girls engage in education, employment and other activities. Using data collected in Bangladesh, we found that schoolgirls reported different menstrual practices, and very different levels of confidence to manage menstruation at home and at school.² Drawing on this insight, we separated items relating to menstrual environments for home and

² Hennegan, J., & Sol, L. (2020). Confidence to manage menstruation at home and at school: findings from a cross-sectional survey of schoolgirls in rural Bangladesh. *Culture, health & sexuality*, 22(2), 146-165. <https://doi.org/10.1080/13691058.2019.1580768>

school (or work) locations. It was not feasible to separate every item and preserve brevity in the scale, so we prioritized those likely to be most impacted by being at home or work.

Testing the scale

We tested the MPNS-36 through a study of the experiences of 538 menstruating schoolgirls in Soroti, Uganda. Girls completed the 54 test items alongside a series of other questions to help us understand the usefulness of the items and the scale.

In testing the MPNS, our team found that the questions were straight-forward to administer and were understood by participants.

To pilot the measure, research assistants provided schoolgirls with paper copies of the questionnaire. Girls completed the survey in groups of 6, marking their own responses, with the research assistants providing verbal translation of each question and facilitating the survey. This included an activity to help participants familiarise themselves with using the response options.

Using the data from all 54 items, we undertook a series of analyses to understand how the different statements (items) ‘fit’ together. We wanted to determine if participants responded to all items similarly (indicating that there was just one single concept we were measuring) or if there were groupings of items that may indicate that our scale contained multiple dimensions. Through this process, we removed items that fit poorly with the scale, or items that were too similar to one another.

Through this process we identified multiple dimensions within our scale. Four were applicable to all respondents, and a further two applied to those who washed and reused menstrual materials.

Material and home environment needs: these items captured the extent to which respondents were satisfied (had their needs met) in relation to their menstrual materials, preferred disposal, and environments (spaces) they used to manage their menstruation at home.

Material reliability concerns: a group of three items fit together to capture respondents' worries about the quality of their menstrual materials (that they would leak, that they would run out of materials, or that materials would move out of place)

Transport and school/work environment needs: this group of items captured the extent to which respondents' needs were met in relation to transporting materials, and changing materials at school (or work).

Change and disposal insecurity: this group of items reflected respondents' worries and concerns that they would not be able to change or dispose of materials when they needed to, and their concerns about privacy and safety while managing menstruation both at home and at school (or work).

Reuse insecurity: these items applied to those who reused materials and captured concerns around washing and drying materials.

Reuse needs: these items applied to those who reused materials and captured the extent to which respondents were satisfied with (had their needs met) in relation to washing and drying materials.

We found that the sub-scales had acceptable internal consistency, that is, individuals responded in a similar way across items in the sub-scale. We also found that the sub-scales, total score, and other questions included in our study (self-reported school absenteeism, psychological distress, and confidence to manage menstruation at home and school) were related in ways we expected. These relationships supported our interpretation that the scale was measuring what we set out to measure.

Using the Menstrual Practice Needs Scale

The following sections of the Guide cover 8 steps involved in using the MPNS-36 in your monitoring or research project.

1	Purpose (determine the fit of the tool)
2	Access the tool
3	Incorporate the MPNS-36 into your survey package
4	Pre-test and consider context
5	Train your data collection team
6	Implement the MPNS-36 through different modalities
7	Calculate scale and sub-scale scores
8	Report findings

1. Purpose

For each monitoring or research project, teams will need to consider their intended outcomes and impact. This will dictate what they will need to measure. Measurement decisions will be informed by the goals of the project and feasibility.

Whether or not the MPNS-36 is a useful tool for your project will depend on your goals and methods of data collection.

Goals

The data collected by the MPNS-36 is likely to be useful in many monitoring and research efforts.

The tool offers a way to understand menstrual practice needs among populations of interest (for example, at baseline before an intervention) and to track or compare changes over time. However, when developing any monitoring or research tool it is critical to consider study aims and to balance comprehensive measurement with participant fatigue.

Where programs or policies seek to improve experiences of menstruation (or menstrual management) as one of their objectives, the MPNS-36 is likely to be highly relevant. Further, where programs aim to improve long-term outcomes such as education, health or wellbeing, menstrual experiences and the MPNS-36 are likely to be important concepts to investigate program theory of change. Measuring intermediate outcomes will help identify whether improvements in menstrual management (practice) experiences contributed to long-term effects.

At the same time, the tool may not always be relevant. For example, if evaluating a program focused exclusively on increasing knowledge about the menstrual cycle, then the MPNS-36 may be not be the most relevant measure to include.

Methods

The MPNS-36 is a self-report measure, meaning it needs to be answered by members of your population of interest. It is designed to be used in surveys that are either self-completed or administered by an enumerator, interviewer or computer program.

The scale asks about individual experiences, that must be reported by each participant. The MPNS-36 can only be used if you are undertaking a survey with your population of interest. For example, the measure could not be used where only key informants are surveyed or an observational checklist implemented.

The MPNS-36 is primarily a quantitative tool. While the concepts introduced by the measure may be useful to explore using qualitative methods such as in-depth interviews or focus group discussions, the measure is not intended to be used as a topic guide for qualitative work.

2. Access the tool

The MPNS-36 can be downloaded from the Measure website. We have provided the original tool for self-report, as well as an interview version of the tool in English. Where other translations are available, we will continue to update these on the website.

www.menstrualpracticemeasures.org/mpns-36/mpns-36-view-download/

The measure does not need to be printed directly in the form provided on the website. It is important to retain the item meaning and response options, but these can be presented as part of a larger survey. Items may be loaded into electronic software for smartphone or tablet delivery of questions.

You do not need permission to use the MPNS-36. It is freely available under a creative-commons by attribution license for non-commercial purposes.

When reporting on data collected using the measure, you should cite the original peer-review paper, as well as any studies re-validating the measure in your context or language when this is appropriate.

3. Incorporate the MPNS-36 into your survey package

You may be using the MPNS-36 on its own, but it is more likely that the measure will be integrated into an existing questionnaire you already use for needs assessment or evaluation.

Where the MPNS-36 fits in the order of your survey will depend on the survey content, length and your population.

We have found that it makes sense to ask about perceptions of menstrual practices *after* asking about behavioural practices if questions on these are included. For example, you may have questions from the [Menstrual Practices Questionnaire](#) capturing which menstrual materials were used during the last period, as well as other disposal and washing practices. It is likely that it will be easier for respondents to start with answering these types of questions before reporting their experiences of these behaviours.

It often makes sense to deliver the tool as a whole so that participants can familiarise themselves with the response options (on the 4-point response scale) and to standardize responses across each item asked.

It may be more difficult for respondents to switch back and forth between behavioural questions and perception questions which include response options based on frequency (e.g., “always” “often” “sometimes” “never”). However, there may be circumstances in which users choose to ask MPNS-36 items relevant to each practice immediately following behavioural questions. We encourage pre-testing, including the flow of your survey.

It is also important to consider that failing to include MPNS-36 items will mean that the scale no longer reflects the one validated.

Below we have provided an example of how sections of your questionnaire might be ordered, based on our experience. Please note that this is not a guide for everything that should or should not be included, nor is it a recommendation for including the components listed here. It is for illustrative purposes only.

Example ordering of survey components:

Demographic questions
Questions about psychological health or wellbeing
Questions about menstrual knowledge
Questions about menstrual characteristics (e.g., timing of the last period, pain, regularity, anticipating menstruation)
Questions about WASH infrastructure
Questions about menstrual practices
MPNS-36 items
Questions about impacts of menstruation such as absenteeism or health symptoms
Questions about attendance at/exposure to the intervention/program and participant feedback on the intervention

The MPNS-36 asks about the last menstrual period. Users who have not had a recent period (longer than 6 months ago) may not be well placed to answer these questions.

The choice of the last menstrual period means that answers reflect recent menstrual experiences, for those who are menstruating regularly. This is particularly important for considering changes over time.

Your survey may use other time periods for other questions. Other recall periods (for example, the last three menstrual periods) have not been tested for the MPNS-36. Where necessary users may choose to amend the time period but should consider investigating the performance of the tool (re-validation where possible) if doing so. Use of a different time period should be clearly reported.

4. Pre-test and consider context

As translations of the MPNS-36 are completed and tested, they will be uploaded to the website. If a translation is available in your language, you can use the tool as provided.

If a translation is not available, you will need to translate the MPNS-36 into the appropriate language.

Appropriate translation is critical for any survey. The quality of the translation will impact the way the questions are received by respondents and the quality of the data collected. Close collaboration with those familiar with the participant population and generating back-translations can help to improve the quality of translation. You will also need to think about the level of education and age of your respondents, and the terminology that will be intuitive to them.

To maintain the integrity of the MPNS-36, translations must maintain the *meaning* of the original item. Terms and phrasing can be adapted as appropriate, these modifications should be noted in reporting.

Note that changing the meaning of any MPNS items means that you are no longer using the same measure. Scale properties tested in past research may no longer apply.

Pre-testing your survey and translations is a good way to improve your survey and data quality. For example, you may undertake a practice survey with a few individuals similar to those in your target population. This may provide enumerators/interviewers a chance to practice their delivery, and it provides an opportunity to test that questions are understood by your target group. Cognitive interviews in which interviewers administer the survey and ask respondents to provide more details about their responses, to ‘think aloud’ when answering questions or explain what they think the questions are asking them or how the questions could be asked better, offer a more intensive pre-test and can help to refine any survey tools used.

Worked example

When undertaking cognitive interviews with adult women in Mukono district, Uganda, we found that MPNS item 10 “*I felt comfortable storing my menstrual materials until my next period*” often required clarification to respondents, they asked if “storing” was the same as “keeping your materials for the next period” and sought clarification on if we meant used materials.

Based on these interviews, we amended the question to “*I felt comfortable storing [keeping] my leftover or cleaned menstrual materials until my next period*”.

“Keeping” rather than “storing” was more intuitive for our population and so this term was used instead in the survey. We were also asked by respondents if we meant used materials or ones that were left over or clean, and so we added this clarification to the question to avoid confusion.

The meaning of the item – that the respondent was comfortable storing their menstrual materials between periods – remained the same.

When making changes like this one to MPNS-36 items it will be important to note modifications when reporting on the results obtained using the scale. This provides useful insights for future users and supports scientific transparency. Elaboration or wording changes can be substantial such that they diverge from the intended meaning of the item, in these cases readers need to be able to judge for themselves if changes to the item have altered the meaning of the question when they interpret the scale findings.

Menstrual materials

Throughout the MPNS-36 we use “menstrual materials” as a way to refer to all the different materials or products that may be used to collect or absorb menstrual blood. We recognise that women and girls are likely to use more than one material during a single period. We do not want to imply in our questions that they only use a single material, or use language that may imply that a certain ‘product’ is superior.

How this phrase is interpreted should be considered, whether during translation or in the way menstrual materials/products are discussed in your survey. In some translations we have found this to be straightforward, while in others it is likely to be more difficult. It may be helpful to provide an explanation of this terminology for participants or users may choose to change the wording. Again, the meaning is more important than retaining the exact words. It is important to note that if changing the words, they should be neutral and not impose any judgement on material types or suggest women use only one material.

When surveys are delivered electronically it may be feasible to adapt the MPNS-36 items to ask about the specific menstrual materials used by the respondent. We have included an example of this at (6) Implementing the MPNS-36.

Response options

The MPNS-36 has been developed and validated using a 4-point response scale. Responses on a shorter (e.g., 3-point) response may not be comparable. We currently recommend using “*never*”, “*sometimes*”, “*often*”, “*always*”, OR “*never*”, “*less than half the time*”, “*more than half the time*”, “*always*”. When using the measure in different contexts, alternative response options may be needed.

Where respondents may be unfamiliar with these types of questions, we recommend using a short activity to help familiarise them with the response options. For example, the interviewer may use off-topic examples (“During the last week, I had rice with dinner...”) to discuss with participants and help to calibrate responding.

5. Training your data collection team

For many surveys of menstrual health, the MPNS-36 is likely to be delivered directly or with the aid of an interviewer. Training of these research team members is critical for the effective and consistent delivery of any survey tool, including the MPNS-36.

Talking about menstruation

It is important that when asking questions about menstrual experiences, team members are comfortable, relaxed and calm. The team should endeavour to use terms that are acceptable to respondents to refer to menstruation and should not convey discomfort with menstrual terminology. Menstruation may be a sensitive topic for respondents. Team members have an important role in normalising the topic. If team members are uncomfortable it is unlikely that participants will feel free during surveys and provide honest and accurate responses.

It is very unlikely there is a context where it would be appropriate for male interviewers to administer MPNS-36 items.

Knowledge of the survey items

Ensuring that all interviewers understand the intention of each survey question and are familiar with question wording and response options is critical to successful implementation of any survey.

It is critical that interviewers (enumerators, data collectors) can comfortably explain the response options. If they are not familiar with items, they are likely to complicate the survey process by needing to re-read items or confuse response options.

It will be important to regularly reiterate response options throughout MPNS if it is delivered by an interviewer. Interviewers will need to be patient with this repetition, and sensitive to respondent needs.

Points of note during training should include:

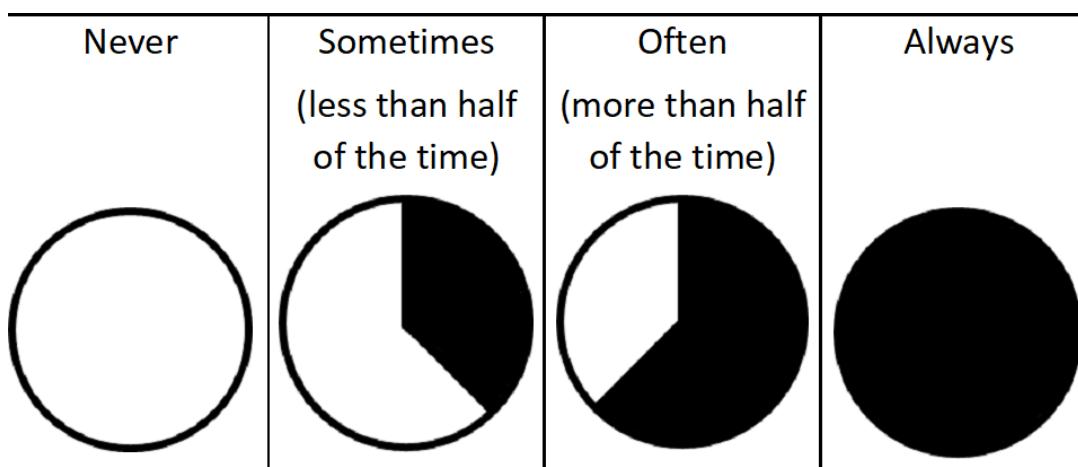
- The need to ensure participant comfort with the survey topic and with the response options.
- That items refer to the last menstrual period. Depending on context, those currently menstruating may answer based on their current, or immediately past period. As long as answers are consistently answered for the same period, either is appropriate and is likely to depend on if the current period is nearer its start or end. This should be highlighted to interviewers during training and if a consistent approach is agreed this should be noted in reporting.
- Where items refer to a single location vs all locations across the last menstrual period. For example, MPNS item 1 asks about the comfort of menstrual materials. The response reported will capture how often this applied to the respondent across their last period (that is, in all locations). In contrast, item 18 asks about having a clean place to change materials **at home**. Thus, responses are only for how often this applied when at home.
- Understanding the purpose behind the use of ‘menstrual materials’ or alternative terminologies and relating questions to all the materials used for those using more than one type of menstrual material.
- Items concerning disposables can refer to single-use menstrual materials (e.g., disposable pads) but can also refer to reusable menstrual materials when they are discarded (e.g., a woman may use a cloth for two days and then dispose of it into her pit latrine – this is still disposal and she should answer the disposal items relating to this experience).

6. Implementing the MPNS-36

The MPNS-36 can be delivered alongside any other questions you are asking participants, and in the same format. This may be a written survey that is self-completed by the respondent, a digital or computer assisted survey, or a paper or digital survey completed by an interviewer who verbally asks questions to the participant.

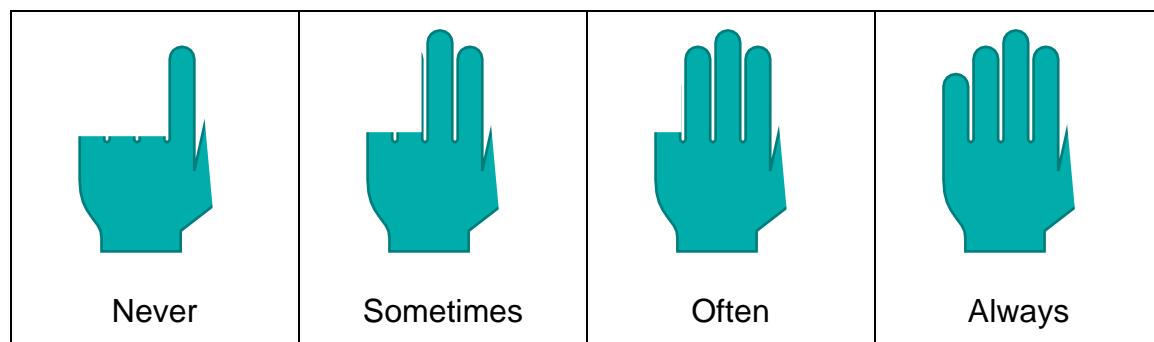
The mode of delivery will influence the display of the MPNS-36. The version downloaded from the website may be appropriate for those completing a written form.

To assist participant responding, we have developed a series of response tools. These are aids that *may* be useful for some groups in visualizing the response options. When delivering the MPNS-36 through an interview these may be particularly useful for respondents to point to or indicate their response and to be reminded of the response options.



Never	Less than half the time	More than half the time	Always
<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

It is important to note that groups with lower educational levels or literacy may not feel comfortable with these tools. Adapting to your population and context is essential. For those who would not benefit from a visual tool, highlighting the response options using 4 fingers (displayed by the interviewer) may be useful.



Surveys delivered by enumerators (interviewers, data collectors) using Smartphone or Tablet Apps may have more tools to provide support for delivering the MPNS.

For example, enumerators can be provided with reminders based on survey training. Questions about 'menstrual materials' may be facilitated electronically by importing the type of material or product used by the participant if this has been provided in previous questions. This information could be substituted into the item where only one type of material is used, or used as a reminder of what 'menstrual materials' means for that participant.

Worked example

MPNS-36 survey items loaded into ODK. The App contains additional notes about the question, and displays for the interviewer the type of menstrual material the participant reported using in previous questions (at home and at work as relevant to the MPNS item). In this study interviewers could choose to substitute 'menstrual material' for the type of material used, where this was only one material and it made sense to do so.

* MPN12. During your last menstrual period

Were you able to immediately dispose of your used menstrual materials?

[This could be disposables or reusables at the end of their life]

HOME: [clohtowel, disposablepad]

WORK: [, disposable_pad]

- 1. Never
- 2. Less than half the time
- 3. More than half the time
- 4. Always
- Did not dispose of any materials
- No response

* MPN27. When at work during your last period...

Were you worried that someone would see you while you were changing your menstrual materials?

WORK: [, disposable_pad]

- 1. Never
- 2. Less than half the time
- 3. More than half the time
- 4. Always
- Did not need to change during work day
- Did not attend work during period
- No response

Note here that the coding contains no response options, and allowances for questions which may not be applicable.

7. Calculating scores

Scale total score and sub-scores are calculated as the average answer across all relevant items answered.

Users should download the scoring sheet from the website:

www.menstrualpracticemeasures.org/mpns-36/mpns-36-view-download/

Worked example. Score the transport and school environment needs sub-scale. Circles represent participant responses to each item.

Transport and school environment needs items...				
	Never	Sometimes	Often	Always
MPNS Item 8	0	1	2	3
MPNS Item 9	0	1	2	3
MPNS Item 23	0	1	2	3
MPNS Item 24	0	1	2	3
MPNS Item 25	0	1	2	3

Sub-scale Score = $(2 + 1 + 3 + 2 + 2)/5$

Sub-scale Score = 2.0

Missing data

Missing data occurs when a participant fails to answer certain questions.

Currently, we recommend excluding those who are missing 3 or more items.

For those missing less than 3 items, using an average score means that they can still receive a score from their completed items.

Worked example. Scoring with one item missing

Circles represent participant responses to each item, item 9 has been missed.

Transport and school environment needs items...				
	Never	Sometimes	Often	Always
MPNS Item 8	0	1	2	3
MPNS Item 9	0	1	2	3
MPNS Item 23	0	1	2	3
MPNS Item 24	0	1	2	3
MPNS Item 25	0	1	2	3

Sub-scale Score = $(2 + 3 + 2 + 2)/4$

Sub-scale Score = 2.25

Disposal

The exception to our recommendation to exclude participants with 3 or more items missing is those who report that they did not dispose of any materials during their last period.

MPNS items 12, 13, 14 and 15 concern the disposal of used menstrual materials. This can be either disposable (single-use) materials, OR reusable materials at the end of their life. However, it is plausible that a respondent using exclusively reusable materials may not have disposed of anything during their last period. In this case these items should be considered not applicable, rather than missing, and scale total and sub-scale scores should be calculated for the number of applicable items answered.

The same approach is used for those using reusables. Two sub-scales for reusable users are calculated for only these respondents. The total score is calculated for all applicable items; that is, including reusable items for those to whom these questions apply, and excluding these items for those exclusively using disposables.

When first assessing data collected using the MPNS-36 it will likely be very useful to calculate the frequencies (percent of responses) for each question. This will provide insights into the experiences of the population, and variability in responses offered.

Interpreting total and sub-scale scores

Following the scoring guide, higher scores represent a more positive experience. A score of 3 would indicate that a respondent has no unmet practice needs.

We do not currently have any normative data for the MPNS-36. That is, we do not have ‘cut off points’ for scores that indicate certain experiences or ‘levels’ across contexts. Respondent appraisals of their menstrual needs may vary by context. More research is needed to determine whether average (mean) scores

can be compared across settings, and if there are scores that reliably predict better outcomes.

At this time, you can compare scores within your population. Looking at the responses to individual items (for example, the proportion of the population that reports their menstrual materials were “always” comfortable) will also provide insights into the menstrual experiences of your population.

Statistical methods (e.g., t-tests, correlations) and related effect sizes should be used to compare scores across groups and over time, and to assess the relationship between scale scores and other outcomes of interest.

8. Report findings

When reporting findings, it is important to prioritize transparency so that readers can understand the measures used and the results. Further, part of the value of using the MPNS-36 is consistent assessment across studies and settings.

Consistent reporting across studies and reports means we can more easily compare and learn from the data when building the evidence base for menstrual health and hygiene.

Recommended minimum reporting for the MPNS-36

What should be reported	Section in which to report (illustrative)
<p>Clearly report which version of the MPNS-36 was used. For example, in self-completed or interview form.</p> <p>Report the language of delivery, and if an existing translation of the measure was used or if it was developed for your study.</p> <p>Remember to cite the measure development paper and appropriate re-validations where applicable.</p>	Methods
<p>Report the response options used for the study and how these were scored; this should be consistent with the existing scale.</p> <p>If alterations were made, these should be highlighted and explained.</p>	Methods
<p>Report any pre-testing and translation (and back translation) of your survey, including the MPNS-36.</p>	Methods
<p>Note any modifications to item wording or modifications resulting from pre-testing.</p> <p>If survey items were dispersed across your survey/questionnaire instead of delivered together, this should also be noted.</p>	Methods

If any MPNS-36 items were not included, this should be highlighted.	Methods
Report the proportion of missing data, and if any respondents were excluded or not represented in scale scores due to missing data.	Results
Report the mean and standard deviation for the total score and each sub-scale score. These should be reported for the different time points, or different groups where these are of interest.	Results (this may be "Impacts" in Reports)

In addition to the above, it may be useful to describe the frequency responses (percentage of the population) to particular MPNS-36 items if these are of particular interest or useful to describe participant experiences.

Reporting additional information about the MPNS-36

Where there is user capacity, the following information could be reported to continue to monitor the performance of the MPNS-36 and to assess its acceptability in your context.

Internal consistency	<p>Report Cronbach's alphas or ordinal alphas (ordinal alpha is more appropriate) for the total score and sub-scale scores.</p> <p>Note that when calculating alphas for total scores researchers should ensure that items are forced to be considered with response options in the order specified.</p> <p>Some programs automatically reverse items and this can give false alphas for the MPNS-36 as some insecurity items can be falsely reverse coded.</p>
Factor structure	Report fit statistics from confirmatory factor analysis for the measure sub-scale structure.

	<p>Factor analysis should be undertaken using a robust diagonally weighted least squares estimator (DWLS).</p> <p>For those undertaking exploratory factor analysis, polychoric correlations should be used reflecting the ordinal nature of the 4-point response options.</p>
Associations with related constructs	Assess construct validity through relationships between the MPNS-36 and hypothesized related concepts and between groups expected to differ on scale scores.

Share your translation and learning

We would love to hear about your experience using the MPNS-36.

Further, if you generate a translation of the scale and are willing to share it with others via the website, please get in touch.

You can reach the MPNS-36 developers at info@menstrualpracticemeasures.org or through the website contact form.

MPNS-36 Frequently Asked Questions (FAQ)

Do I need permission to use the MPNS-36?

No, you do not need permission to use the MPNS-36. The measure is freely available under a creative-commons by attribution license for non-commercial purposes.

We would love to know where the measure is being used and hear your feedback. Please drop us a note via the website or at info@menstrualpracticemeasure.org to help us keep up to date on where the measure is being used.

If you would like to share a translation via the website, please also get in touch.

How do I cite (reference) the measure?

The measure should be cited as: Hennegan, J., Nansubuga, A., Smith, C., Redshaw, M., Akullo, A., & Schwab, K.J. (2020). Measuring menstrual hygiene experience: Development and validation of the Menstrual Practice Needs Scale (MPNS-36) in Soroti, Uganda. *BMJ Open*, 10, e034461.

<http://dx.doi.org/10.1136/bmjopen-2019-034461>

In NGO reports, this could be in your list of references or as a footnote. This highlights to readers where the measure you used was from, and links them to more information about the scale.

Do I need to use all of the items in the scale?

The measure has been developed to include 36 items and is comprised of 6 sub-scales. At this time no alternative versions have been validated. In the future a short-form version of the measure may be available.

Users may choose to select individual sub-scales for measurement. Removing individual items is not recommended. Users should justify their decision to remove items and recognise that the measure may no longer be valid (accurate).

Can I change the time-frame on the MPNS?

The MPNS has been developed to capture respondents' menstrual needs during the last menstrual period. In principle, items should be applicable over a larger time window. For example, the recall period could be amended to the last three menstrual periods. Note that other time-frames have not been tested.

Additionally, the accuracy of individual recall may decrease as the time period increases; it is harder to accurately remember three months than one month.

Can I change the response options for the MPNS?

The measure has been developed and validated using a 4-point response scale.

We recommend using:

"never", "sometimes", "often", "always"

OR

"never", "less than half the time", "more than half the time", "always"

When using the measure in different contexts, alternative response options, sensitive to translation, may be needed.

We do not recommend changing the response options unless you are equipped to undertake a revalidation, or in extreme cases where a 4-point response option cannot be adapted to for context. Responses on a shorter (e.g., 3-point) response are unlikely to be comparable.

Where respondents are unfamiliar with this type of responding, we recommend using a short activity to help familiarise them with the response options. For example, the interviewer may use off-topic examples ("During the last week, I had rice with dinner...") to discuss with participants and help to calibrate responding.

Can I change the item wording?

The current scale was developed and tested in English and Ateso. When translating the measure for use in different populations, it is likely that some terms may need to be adapted. In particular, "menstrual materials" may need to be modified to terms that best reflect this meaning in the population.

When translating the tool we recommend maintaining the meaning of the original item, while adapting terms and phrasing as appropriate. Note that changing the meaning of individual items means that you are no longer using the same measure.

What should I do if respondents miss some items?

We currently recommend scoring the scale using an average (mean) score. Using this scoring method, respondents with some missing items can still be given a score (which will reflect the average of the items answered).

If a respondent is missing responses to 3 or more items, we suggest excluding the respondent. Respondents using only reusable items that were not disposed of during the last period may be missing on these three items, scores should be generated for all relevant items, and this should not be included in the 2 missing items permitted.

If you have user capacity, multiple imputation methods could be used to estimate missing data. Those not disposing of reusable materials should not have these items imputed.

What is a good score on the MPNS?

Following the scoring guide, higher scores represent a more positive experience. A score of 3 would indicate that the participant has no unmet menstrual practice needs.

There are currently no levels or thresholds that indicate a ‘good’ or ‘bad’ score. As the scale is used more and more, we will be able to understand if any such categories exist and how these could be applied.

Respondent appraisals of their menstrual needs may vary by context. More research is needed to determine whether scores can be compared across settings, and if there are scores (levels) that reliably predict better outcomes. At this time, you can compare scores within your population.

Looking at the responses to individual items (for example, the proportion of the population that reports their menstrual materials were “always” comfortable) will also provide insights into the menstrual experiences of your population.

Has the scale been validated in [my context/language]?

We aim to keep the menstrualpracticemeasures.org website updated with information on translations and revalidations as they become available. We may not be alerted to all translations of the measure.

The best way to see if the scale has been validated in your context is to search for studies testing the measure, for example using [GoogleScholar](#) or an academic database such as [PsycINFO](#). You can also get in touch with the developers via the email or website.

If you have translated the MPNS-36 and are willing to make your translation freely available, please send us a note via the website or at info@menstrualpracticemeasures.org.

I would like to study the reliability and the validity of the MPNS in my context.

Great! You do not need permission to use the MPNS-36, or to test the reliability and validity of the measure in a new setting.

We are eager to hear feedback on the usefulness of the measure so we can continue to improve the scale. If you have feedback on the measure, or if you would like to collaborate with the developers on this work, you can get in touch via the website or info@menstrualpracticemeasures.org.

I have more questions about the measure, can I contact the developers?

Yes, you can get in touch with specific questions via the website or info@menstrualpracticemeasures.org.