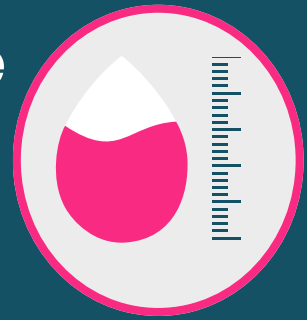


# The Menstrual Practice Needs Scale (MPNS)



## USER GUIDE

Everything you need to know about the MPNS in one place.

### Citation

**The MPNS is freely available, you do not need permission to use it. You should cite the relevant peer-review paper when reporting your data.**

**When using the MPNS-36** cite the peer-review publication reporting the development and validation of the MPNS-36.

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>

**Note** :that citations for the adult, short and rapid forms are shared in the pages below.

The content in this guide is made available under a Creative Commons BY attribution, non commercial license. In most cases where you have used this guide it is sufficient to cite the relevant manuscript on the development of the MPNS tool. If you wish to refer to content specifically in the guide, this can be cited as:

Hennegan, J., Head, A. (2024). The Menstrual Practice Needs Scale: User Guide V2.0. Available from: <https://www.menstrualpracticemeasures.org/>

### Acknowledgements

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MENSTRUAL  
HEALTH  
EVIDENCE  
TEAM



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## Introduction the MPNS

Understanding and improving menstrual experiences is the focus of many menstrual health programmes and research efforts. The MPNS-36, and subsequent adult, short form and rapid forms of the scale, offer a collection of items (36 items, 18 items, 9 items) that measure menstrual blood management experiences and perceptions.

**The MPNS measures the extent to which respondents' menstrual practices and environments are perceived by the respondent to meet their needs during their last menstrual period.**

Using the MPNS we can determine if a population's experience of managing their menstruation includes practices that are preferred, acceptable and experienced positively. Measuring where different populations have unmet menstrual management needs can inform policy and programming.

Historically, many studies measured only menstrual practices (for example the type of menstrual material used such as a pad or cloth, or the number of times menstrual absorbents were changed in 24 hours). This did not give us information on perceived need, such as whether the materials being used were the ones women and girls wanted to use or if they had enough of them.

**The MPNS offers a women/girl-centred approach that prioritises participants' comfort and preferences. Using the MPNS across research and practice means we are collecting comparable data and can more rapidly build the evidence base.**

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



## Suitability and version selection

### Is the MPNS right for you?

The MPNS is designed to measure menstrual blood management experiences and needs. Whether or not the MPNS is a suitable tool for your project will depend on your goals and methods of data collection.

#### The MPNS is suitable for



##### Needs assessments

To describe and understand the menstrual management needs and experiences in a population.



##### Investigating associations

To describe and test the associations between risk and protective factors (contributors) and consequences of menstrual management experiences and unmet needs.



##### Evaluation and monitoring

To test changes over time in menstrual management experiences and needs. Changes in experiences can be used to test the effectiveness of a programme or policy, or to measure changes in a population over time as part of monitoring.

#### The MPNS is not suitable for



##### Measuring other concepts

The MPNS only measures blood management experience/needs. It does not measure other concepts such as menstrual knowledge, pain or practices (e.g., the type of materials used, frequency of change). Additional survey questions or scales will be needed for other concepts in your work.

To measure menstrual practices refer to the **Menstrual Practices Questionnaire (MPQ)**.



##### Qualitative research

Such as in-depth interviews or focus group discussions. The MPNS is designed for quantitative/survey research.



##### A key informant survey or observational checklist

Only the woman or adolescent girl herself can accurately answer questions about her own experience.

## MPNS populations



### Low-and-middle income country contexts

The MPNS was developed based on the experiences of women and girls across low-income and middle-income countries (LMICs). The items were drawn from a systematic review and meta-synthesis of 76 qualitative studies of women's and girls' menstrual experiences in LMICs.

Research undertaken by the Menstrual Health Evidence Team has used items from the MPNS in high-income country settings. However, the scale needs further adaptation, and validated for high-income settings.

While the MPNS was designed to be relevant across LMIC settings, it has not been validated in all regions, population groups, or languages. Adaptation to your context and language may be needed, and subsequent validation studies may suggest further adaptations.

Using the MPNS across settings helps improve the consistency of data collected in menstrual health research and practice, to generate comparable findings and more swiftly build the evidence base.



### Ages and populations

The original scale (MPNS-36) was developed focused on adolescent, school-going girls. The scale has since been validated among working women with an alternative sub-scale structure.

In future, further validations and adaptations may be developed for specific population groups, for example, humanitarian settings. If you have undertaken a validation in a new population group, please contact us. We will seek to share additional resources via the website when available.



### Menarche and recent menstruation

As the MPNS asks about experiences of the last menstrual period, it is not suitable for girls prior to menarche. For surveys that include both pre- and post-menarche participants, pre-menarche participants should skip the MPNS section of the survey.

The MPNS seeks to capture the current state of menstrual practice needs, assessed by asking participants about their last menstrual period. If a participant has not menstruated in a long time (for example due to pregnancy, contraceptive use, or menopause) it will be more difficult for them to recall their last period, and the data will not be recent. Thus, we recommend that the MPNS is used with participants who have had a menstrual period in the past six months.

If needed, you may wish to include an eligibility questions in your survey, such as:

**Have you had a menstrual period in the past six months? [Yes/No]**

## Selecting the right MPNS for you

There are several versions of the MPNS available. Use the table below to help you select the most suitable version for your project.

Measure	Age-group validation	What it offers	Best for
<b>MPNS-36</b>	Adolescents	Provides the most comprehensive assessment of menstrual management experiences and needs. Individual items provide unique insights into the areas of greatest challenge and need for the individual or population. The total score provides the greatest explanatory power across versions of the MPNS.	<ul style="list-style-type: none"> <li>Needs assessment and research in new settings</li> <li>Programme evaluation and observational research where survey length is available</li> </ul>
<b>MPNS-36 (adults)</b> Note: the scale was reduced to 28 items for adults.	Adult working women (capturing experiences at home and at work)		
<b>MPNS-SF</b>	Adolescent girls * this measure has not yet been investigated among adults	Halves the length of the MPNS-36, while continuing to provide the same valid sub-scale scores. We have found that the sub-scale and total scores reflect the relationships observed for the full scale MPNS-36, with slight attenuation. Provides balance in reducing the MPNS-36 items while maintaining insights from individual items and sub-scales. Note that concepts related to transporting and storing menstrual materials are lost in the short form.	<ul style="list-style-type: none"> <li>Trials or programme evaluations with multiple outcomes</li> <li>Observational studies: research to understand menstrual health risk factors or consequences of poor menstrual health</li> </ul>
<b>MPNS-R</b>	Adolescent girls Adults* *based on past research we anticipate the total score generated from the Rapid form will be appropriate for adults.	Provides a rapid assessment of menstrual practice experiences and needs that can be used when survey space is highly limited. The Rapid form no longer offers valid sub-scales. The total score and individual items offer insights. The rapid form maintains relationships with related concepts, but with some attenuation of explanatory power from the MPNS-36 and MPNS-SF	<ul style="list-style-type: none"> <li>Data collection in which menstrual health is not the primary focus, such as studies of water, sanitation, and hygiene (WASH) or sexual and reproductive health (SRH).</li> </ul>

## Downloads and citations

The MPNS (36,SF,R) can be downloaded from the website [Downloads](#) page. Each measure has self-report and interview versions.

**The MPNS is freely available, you do not need permission to use it. You should cite the relevant peer-review paper when reporting your data.**

Measure	Citation
<b><u>MPNS-36</u></b>	<i>Hennegan, J., Nansubuga, A., Smith, C., Redshaw, M., Akullo, A., &amp; Schwab, K.J. (2020). Measuring menstrual hygiene experience: Development and validation of the Menstrual Practice Needs Scale (MPNS36) in Soroti, Uganda. BMJ Open, 10, e034. <a href="https://doi.org/10.1136/bmjopen-2019-034461">https://doi.org/10.1136/bmjopen-2019-034461</a></i>
<b>MPNS-36 (adults)</b> Note: the scale was reduced to 28 items for adults.	<i>Hennegan, J., Bukenya, J. N., Kibira, S. P., Nakamya, P., Makumbi, F. E., Exum, N. G., &amp; Schwab, K. J. (2022). Revalidation and adaptation of the Menstrual Practice Needs Scale (MPNS) in a cross-sectional survey to measure the menstrual experiences of adult women working in Mukono District, Uganda. BMJ open, 12(7), e057662. <a href="https://doi.org/10.1136/bmjopen-2021-057662">https://doi.org/10.1136/bmjopen-2021-057662</a></i>
<b>MPNS-SF</b>	<i>Hennegan, J., Hasan, M.T., Jalil, T., Hunter, E.C., Head, A., Jabbar, A., Mohosin, A.B., Zoha, N.S., Alam, M.K., Dunstan, L., Akter, S., Zaman, A., Kaiser, A., Smith, C., Bagala, L., &amp; Azzopardi, P.S. Menstrual Practice Needs Scale Short Form (MPNS-SF) and Rapid (MPNS-R): Development in Khulna, Bangladesh, and validation in cross-sectional surveys from Bangladesh and Uganda. (2024). BMJ Open, 14, e079451. <a href="https://doi.org/10.1136/bmjopen-2024-084581">https://doi.org/10.1136/bmjopen-2024-084581</a></i>
<b>MPNS-R</b>	

It may also be helpful to cite the original measure development manuscript for context, particularly if you have made adaptations, or offer discussion of the measured construct (menstrual practice needs) as part of your report.

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 (MPNS36) in Soroti, Uganda. BMJ Open, 10, e034. <https://doi.org/10.1136/bmjopen-2019-034461>

# 3

## Implementing the MPNS

### Translating the MPNS

Where translations are available, we have shared these on the website [downloads](#) page. If the scale is not available in your language, you will need to translate it.

Key points to consider:

- The **quality of the translation** will impact the **quality of the data** collected.
- Translations should **maintain the meaning of the original item**. Capturing the intended meaning is more important than wording order or translating individual words in the items.

Refer to the [Key Terms](#) section or the website [Training](#) page, to learn about some of the key terms in the MPNS and their meanings. This will assist in translating into your language.

An annotated survey can be downloaded from the website [Training](#) page. This provides additional explanation on each MPNS item and can assist in understanding the meaning and intention of each item for translation. The annotated survey also includes examples of responses from cognitive interviews as further description.

### Steps to support effective translation

#### 1 Ensure your team is familiar with the participant population

When translating materials for specific populations, it's essential that your team understand nuances of the language and cultural context of your intended audience. This ensures that the translated content accurately conveys the original message while remaining contextually sensitive and comprehensible to the target population.

#### 2 Generate back-translations

Back-translations are an important step to check that translation has captured the intended meaning of the original text. Back-translation is best performed by a second translator. By translating a document back into the original language, discrepancies or misunderstandings can be identified and corrected, ensuring the integrity of the translated content.

Our team is always willing to review back-translations and offer feedback. [Get in touch](#) if you would like support with this.



### 3 Consider respondent age, education and use of language

By using language and terms that are familiar to the audience, the translated content becomes more accessible, relevant and engaging. Not considering this could lead to misunderstandings, confusion, or disinterest among the audience which, in turn could impact the data collected.

### 4 Pre-test your translated survey with individuals similar to your target population

Pre-testing helps refine your translation, and survey delivery. It tests how understandable your translated items are, and provides a way to check contextual relevance and usability. It provides the opportunity to identify and address any issues before data collection. This ensures a smoother data collection process and enhances the quality of the data.

### 5 Undertake cognitive interviews with a small sample of respondents.

In testing translations, cognitive interviewing may recruit a small sample of participants similar to the target population. Participants complete the survey, or a sub-set of questions, with an interviewer. Interviewers can ask participants to explain their answers (to check understanding and identify usability issues) and to rephrase questions in their own words to assist in contextually relevant translations.

#### 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 or clean ones.

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

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

If you make changes like this to the MPNS items they should be reported. This provides useful insights for future users and supports scientific transparency. When interpreting findings, you should judge if modifications have altered the meaning of the items.

## Where to place the MPNS in your survey

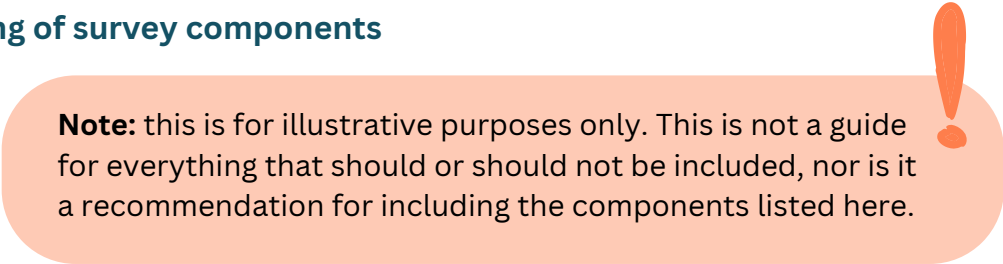
The MPNS can be used on its own, but will often be used as part of a larger survey. The measure does not need to be used in the formats provided on the website, however, it is important to retain the item meaning and response options. Failing to include all MPNS items will mean that the scale no longer reflects the one validated. It is best to use one of the shorter versions of the MPNS provided, than to select your own sub-set of items.

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

### Our recommendations:

- If asking about behavioural practices, ask these first, and then ask about perceptions of menstrual practices (the MPNS). For example, it is more intuitive for participants to report on the type of menstrual material the use, before being asked questions about if they had enough materials and they were comfortable.
- Switching back and forth between behavioural and perception questions with varying response options may lead to confusion.
- Delivering the MPNS as a whole allows respondents to familiarise themselves with the response options (on the 4-point response scale).

### Example ordering of survey components



**Note:** this is for illustrative purposes only. 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.

1.	Demographic questions
2.	Psychological health or wellbeing questions
3.	Menstrual knowledge questions
4.	Menstrual characteristics (e.g., timing of the last period, pain, regularity, anticipating menstruation)
5.	WASH infrastructure
6.	Menstrual Practices
7.	MPNS items
8.	Impacts of menstruation (school absenteeism, health outcomes)

On our website we provide further examples of how we have used the MPNS in surveys in our research work. For example, we have an [overview of surveys](#) used as part of the Adolescent Menstrual Experiences and Health Cohort (AMEHC) study, which may provide a useful example of a full suite of questions related to menstrual health.

## Filtering and eligibility questions

Menstrual management practices differ across contexts and individuals. As a result, not all MPNS items may be relevant to all respondents. If a respondent uses single-use (disposable) menstrual materials, multi-use (reusable) menstrual materials, or a mix of the two, may impact the MPNS items relevant to their experience. Further, the MPNS captures experiences at home and at school or work. If respondents have not attended these environments outside their home then there are further items they may not be able to answer. Where possible, the scale can be completed more easily if respondents are only presented with the items that are relevant to them. This can be done by using prior survey questions to test eligibility and filter the presentation of MPNS items.

Where the MPNS is used as part of a broader survey, questions asked earlier in the survey can be used to filter the MPNS items. We have provided a set of 'eligibility' questions to support filtering the scale items in case helpful.

Filtering and eligibility questions work when an enumerator (interviewer) is delivering the survey electronically, and to a lesser extent with a paper-based survey. If a respondent is self-completing a paper survey, filtering questions will not be applicable. In this case, disposal and reuse items have an additional answer category "non-applicable."

1

### Disposal

MPNS-36 items 12 - 15 (MPNS-SF items 5-6) (MPNS-R item 3) ask about disposal of menstrual materials. These items are intended to capture experiences of disposing of both single-use (disposable) and multi-use (reusable) menstrual materials. However, it is possible that a respondent did not dispose of any reusable materials during their last period. Below is an example of the type of eligibility question you could include:

Did you dispose of (throw away) any menstrual materials during your last period?  
[Note: includes single-use materials and reusable materials at the end of their life]

2

### Reuse

MPNS-36 items 29-36 (MPNS-SF items 15-18) (MPNS-R items 8-9) are only relevant to those respondents who are reusing menstrual materials. If a respondent only uses disposable products, these questions should be skipped. Below is an example of the type of eligibility question you could include:

Did you wash and reuse any menstrual materials during your last period?

## 3

**School/work attendance**

MPNS-36 items 23-28 (MPNS-SF items 11-14) (MPNS-R items 6-7) ask about a respondents menstrual experience at school or work/outside of the home. It is possible that respondents have not attended school or work during their *last* (most recent) menstrual period.

To avoid unnecessary missing data due to holidays, we suggest that in this case respondents answer questions related to the last menstrual period that they experienced at school (within a 6 month window). If a respondent has not attended school/work during menstruation in the past 6 months, these items should be skipped. In observational research and intervention studies, we suggest capturing whether a participant attended school/work within the past menstrual period, past 3 months, or past 6 months, to allow for sensitivity analyses. These response categories could be adapted to the past school term, or other reference points relevant to your work.

Below is an example of the type of eligibility questions you could include to support this:

Did you attend any school/work during your last menstrual period? [Yes; No]

- If No: “Did you attend any school/work during your menstrual period in the past 3 or 6 months?” [Yes, past 3 months; Yes, past 6 months; No]
- If No: Respondent should skip MPNS items 23-28

Alternatively, a ‘not applicable’ option can be added to the responses for these survey items. For example, “Not applicable - did not attend school/work during my last menstrual period, or a menstrual period in the past 6 months”.

## 4

**Changing at school/work/away from home**

MPNS-36 items 27 - 28 (MPNS-SF items 13-14) (MPNS-R item 7) are focused on changing menstrual materials at school, work, or outside of the home. These items ask about participant experience of privacy and safety while changing their menstrual materials. Note that items 24-26 are relevant to respondents regardless of whether they changed their menstrual materials at school/work.

We recommend adding the following survey question to filter items:

The last time you attended school during your menstrual period, did you change your menstrual materials at school? [Yes; No]

\*note this question should only be asked of respondents who attended school during menstruation in the past 6 months. Alternatively, an additional response option could be added [I did not attend school during menstruation in the past 6 months].

By including this question alongside the MPNS provides an additional indicator of menstrual health, recommended in the [shortlist of indicators for national monitoring](#).

## Electronic delivery

Surveys delivered electronically, either by enumerators (interviewers, data collectors) or self completed using Smartphone or Tablet Apps offer useful tools for filtering relevant items and providing additional support for delivering the MPNS. For example, enumerators can be provided with reminders based on survey training.

We provide the basic ODK filtering on our websites [Using the MPNS page](#).

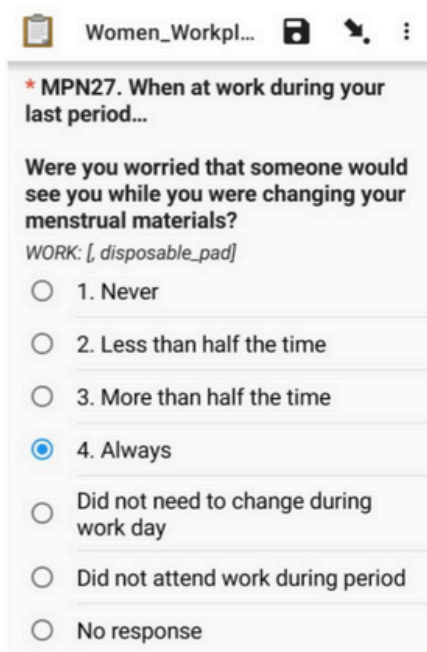
Questions about ‘menstrual materials’ may be facilitated electronically by importing the type of material or product used by the participant if this has been provided in previous questions. It is likely that respondents use more than one material during one menstrual cycle. This information could be 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. Additionally, adding the below question to the start of your survey will enable the filtering, and support survey delivery.

During your most recent menstrual period, what were all the materials [items] you used to catch or absorb your menstruation?

### Worked example.

MPNS-36 survey items loaded into ODK for an enumerator to deliver.

In the App, the enumerator (interviewer) sees additional notes about the question, and can see the type of menstrual material the participant reported using in previous questions (at home and at work as relevant to the MPNS item).



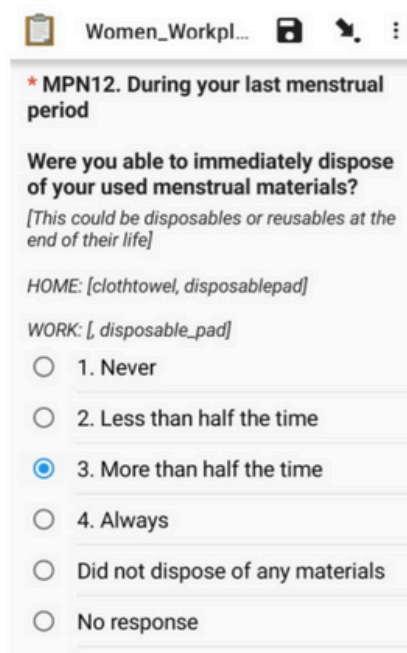
Women\_Workpl... [save] [share] [menu]

**\* 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



Women\_Workpl... [save] [share] [menu]

**\* 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: [clothtowel, 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

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.

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



## Understanding the MPNS

Here we provide a brief overview of some of the key aspects of the MPNS that are important to understand when using the measure. Further learning resources, including videos can be found on the website [Train](#) page.

### What is the MPNS?

The Menstrual Practice Needs Scale asks a respondent about their **last or most recent menstrual period**. It measures a respondent's **experience and perception** of their **menstrual practices** and the **environments used** to manage their menstrual bleeding. The measure produces a quantitative (number) estimate of the extent of which an individual's menstrual needs are being met.

#### What are “Menstrual Practices“?



The MPNS defines 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,
- Cleaning the hands, genitals and body.

### Why measure respondents’ practice experiences and perceptions?

By measuring a person's perceptions, we are learning how they feel, not only what they do and where they are doing it.

Items ask about a respondent's perceptions of comfort, satisfaction, reliability as well as worries and concerns (e.g., “Did you feel comfortable carrying spare menstrual materials outside of your home”).

The MPNS is based on a systematic review of 76 qualitative studies of menstrual experiences across low-and-middle-income countries.<sup>1</sup> In this review, the author team found that women and girls consistently discussed the challenges they faced in managing their menstruation such as:

- dissatisfaction with materials,
- difficulties changing or disposing them, and
- problems with the spaces that they used to manage their menstruation.

The full set of different experiences and challenges identified across this review was used to develop the original MPNS. The review notes that *met or unmet* menstrual practice needs were important parts of individuals’ menstrual experiences and were described as leading to distress, and had implications for health, well-being, education and social participation.

1. 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), e1002803.

## Sub-scales

The MPNS includes sub-scales that reflect unique dimensions of menstrual practice experiences within the scale. The main difference between adult and adolescent versions of the scale, is the different sub-scales.

The MPNS-36 and SF for adolescents both contain the same six sub-scales. Four sub-scales are applicable to all respondents, and a further two apply to those who washed and reused menstrual materials. The MPNS-R does not contain any subscales (due to the short length).

- **Material and home environment needs:** these items capture 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 [In the MPNS-SF this sub-scale is only “School environment needs”]:** this group of items captures 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 reflects 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 apply to those who reused materials and capture concerns around washing and drying materials.
- **Reuse needs:** these items apply to those who reused materials and capture the extent to which respondents were satisfied with (had their needs met) in relation to washing and drying materials.

The MPNS-36 (adult) also contain six sub-scales, but these include some different domains. Four sub-scales are applicable to all respondents, and a further two apply to those who washed and reused menstrual materials.

- **Material and home environment needs:** the extent to which menstrual materials and environments used to manage menstruation met respondents needs, at home. This remained mostly unchanged, although a small number of items were reduced as they were found to duplicate information. Items related to disposal were removed from this sub-scale to represent their own dimension.
- **Material and home environment insecurity:** the extent of insecurity (worries, concerns) that women experienced related to their menstrual materials and changing menstrual materials at home. This combined items formerly in the ‘material reliability concerns’ subscale, and the home-related items of the ‘changing insecurity’ sub-scale.
- **Disposal needs:** the extent to which needs were met with regards to disposal. This included both satisfaction with needs being met, and insecurities.
- **Work practice needs:** the extent to which women’s needs were met, and their level of insecurities related, to the management of menstruation at work.
- **Reuse insecurity:** as above
- **Reuse needs:** as above

## Features of the MPNS

### ★ Recall period

Respondents' are asked to recall their **last menstrual period** when responding to each item, that is, their **most recent menstrual period**. Answers will reflect recent experiences which is important when considering changes over time.

**NOTE:** Depending on the timing of your survey, it is possible that an adolescent girl did not attend school, or that an adult women did not attend work, during the most recent menstrual period. In these instances, we suggesting **using recall of the most recent period at school/work for these items, up to a six-month window**, to avoid unnecessary missing data due to school holidays.

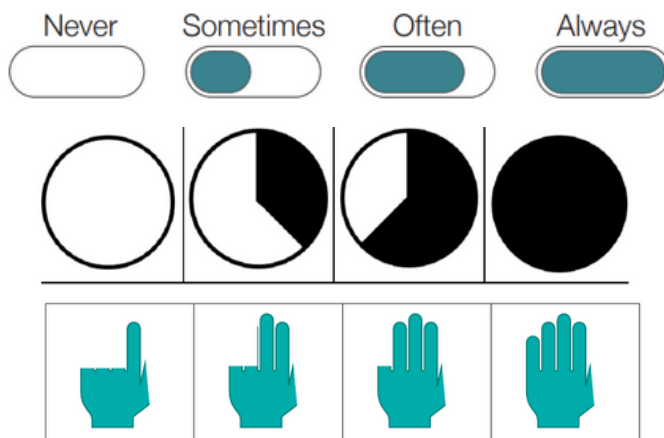
### ★ Response options

The measure uses a 4-point response scale (Never, Sometimes, Often, Always) or (Never, less than half the time, more than half the time, always).

- Using a different response scale that differs from 4 points will mean your findings are not aligned with the validity tested for the MPNS.
- A pre-survey activity is available to familiarise respondents with the response options. We recommend use of this activity, particularly among populations who may be less familiar with Likert-style responding.
- We have developed a series of visual response tools that can be incorporated into paper surveys, electronic delivery, or that enumerators can use to remind respondents of the response options and support responding.

The pre-survey activity is available in the Training manuals, and as a stand-alone document on the website [Training](#) page.

A stand-alone document of the visual response on the website [Training](#) page.







## Location dependency

Menstruation is experienced throughout the day and night, and research has highlighted that the difficulties posed by managing menstruation can vary based on the location. For example, it may be much more difficult to manage menstruation at school than at home.

MPNS items most likely impacted by location have been separated in the scale, specifically to capture experiences **at home** and **at school** (for adolescents) or **at work** (for adults). This means that the scale provides a comprehensive picture of experience. It also means that it can detect if interventions delivered at home, or at school/work, have an impact across the participants' menstrual experience. Notably some items also ask about experiences broadly (not specific to a location), and thus represent experiences across all locations.

### Explaining location specific items to participants

The MPNS starts by asking questions about experience generally (that is, all locations that may be relevant to the experience). The MPNS then asks questions about menstrual management environments specific to home and out of home experiences. Here, the same set of items are given twice, once for the context of home and then for the context of school or work. It is important to clearly highlight the location-specific nature of the questions, and avoid respondent confusion that the same questions are being repeated.

Using a preamble can help highlight the location specific nature of the upcoming questions and prime the participant to respond correctly.

“Women’s and girls experiences of managing menstruation can change depending on where they are. The next set of questions will ask you about your experiences managing your menstruation when you are at home. After that, I will ask the same set of questions about your experiences at school.” “Now I would like to ask you about your menstrual experiences when you are at your home...”



More guidance on location dependency can be found in the training manuals and via the [Training](#) page on the website

**Note:** Where there is a need to capture experiences exclusive to the working environment, we note that researchers have developed an ‘MPNS-W’ for this purpose:

Salinger, A.P., Haardörfer, R., Hennegan, J., Patrick, M., Conrad, A., Ramaswamy, A., Stephen, A Caruso, B., & Sinahroy, S. (under review). Menstrual Practice Needs Scale for the Workplace (MPNS-W): Validation and associations with well-being indicators among adult women in Kathmandu, Nepal and Nairobi, Kenya.



## Key terminology



### ✓ Menstrual materials

Refers to all the materials or products that may be used to collect or absorb menstrual blood. Individuals may use multiple different materials during a single period. The MPNS uses “menstrual materials” to avoid terms like “menstrual products” which may bias participants to think about commercial products, or feel judgement if they use a collection of other materials.

### ✓ Satisfaction

Satisfaction means a participant is happy or contented with a location, and that they find it acceptable. Everyone has different individual standards for what they consider to be a satisfactory space for menstrual management, for example based on their own perceptions of cleanliness and privacy. This means participant responses may differ, even if they are using the same location. Most MPNS items discussing satisfaction have incorporated examples that can be added to the question, highlighting satisfaction with cleanliness and the available resources.

### ✓ Worry

Worry means that a participant feels concerned or anxious. In the MPNS we ask about participants’ worry related to being seen, or being able to enact menstrual management practices when they need to. Worrying about something does not mean that it has happened. For example, a participant may worry about someone seeing them while they change their menstrual materials, even if it has not happened.

### ✓ Comfortable

The scale uses both physical and emotional understandings of the term “comfortable,” meaning relaxed and at ease. This may or may not be applicable in your language and should be considered during translation. You may need to use different translations for emotional and physical comfort.

### ✓ Needed to and wanted to

Different items in the scale ask if a participant was able to undertake tasks when they ‘needed to’ or when they ‘wanted to’. It is important to note how this impacts the meaning of the statement. Being able to do something when you want to implies control, agency and choice. In contrast, doing a behaviour when needed, means when that action becomes necessary (which may or may not be at the time someone wants to do that practice).

# 5

## Train your team on the MPNS

Training research team members is critical for the effective and consistent delivery of any survey tool, including the MPNS. Whether the survey is to be self-completed by respondents, or delivered by an interviewer, research teams should have an understanding of the key features and terminology used in the scale and how to support respondents where needed.



Detailed training is available on the website [Training](#) page of the website. We have provided a Training Manual for Trainers, with a corresponding manual for enumerators. These manuals can be used to train your team, and provide activities and group discussion prompts.

When training your research team, all topics from the above section “Understanding the MPNS” should be covered. Key points:

**Comfort discussing menstruation** openly is essential for an effective survey.

**Strong understanding of each item’s intention, wording and response options.**

- This ensures interviewers are able to accurately and swiftly administer the questions and are able to answer respondents’ questions when required.

**Note:** An annotated version of the MPNS, and corresponding slides, provides additional information and examples to further explain each item. These resources can be found on the [Training](#) page on our website.



Familiarity with **recall period (the last menstrual period)**.

- Asking about the last menstrual period mean that answers reflect recent menstrual experiences, this is important for considering changes over time.
- Users who have not had a recent period within 6 months may not be well placed to answer these questions.

Familiarity with **4-point response options: “never”, “sometimes”, “often”, “always”**.

Understanding **“Menstrual materials” as a ‘catch all’**.

- Recognising respondents may use more than one material during a single period.
- Avoiding implications that a certain ‘product’ is superior or that the questions ask only about dedicated menstrual products and not improvised materials such as toilet paper.

**Electronic delivery of survey.**

- Using smartphones or tablets and survey platforms such as ODK, will mean you are able to adapt the presentation of questions or add notes on the menstrual materials reported in previous questions to aid with flow of the survey. Understanding these prompts and any skip patterns will require training.



## Scoring and reporting

### Calculating Scores

For all three scales, the MPNS-36 (adolescent and adult), MPNS-SF, and MPNS-R, scores are calculated in the same way - by calculating the mean.

Each item is scored between 0-3. It is important to note that some items or sub-scales are reverse scored (from 3-0). Refer to the scoring guidance attached to each individual measure for detailed information.

1. Calculate the mean (average) of answered items to find the total score.

#### Worked example - Total Score.

Scoring a complete MPNS-R survey.

$$\begin{aligned} \text{Total score} &= \\ (2+1+3+2+2+1+1+3+1)/9 &= \\ 1.78 \end{aligned}$$

During my last menstrual period...				
	Never	Sometimes	Often	Always
MPNS Item 1	0	1	2	3
MPNS Item 2	0	1	2	3
MPNS Item 3	0	1	2	3
MPNS Item 4	0	1	2	3
MPNS Item 5	0	1	2	3
MPNS Item 6	0	1	2	3
MPNS Item 7	0	1	2	3
MPNS Item 8	0	1	2	3
MPNS Item 9	0	1	2	3

2. Individual sub-scale scores can be calculated for the MPNS-36 (adolescent and adult) and MPNS-SF, by the same method of calculating the mean. The MPNS-R does not have sub-scales, only a total score.

#### Worked example - sub-scale.

Score the transport and school environment needs sub-scale in the MPNS-36.

$$\begin{aligned} \text{Sub-scale Score} &= (2 + 1 + 3 \\ &+ 2 + 2)/5 \end{aligned}$$

$$\text{Sub-scale Score} = 2.0$$

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-scales

The ordering of the survey is design to aid the flow of delivery. The sub-scales are not grouped together. Items relating to different sub-scales are dispersed throughout the survey. The below tables indicate which MPNS items fit into each sub-scale.

<b>The MPNS-36 and MPNS-SF (adolescent populations)</b>	<b>MPNS-36 items</b>	<b>MPNS-SF items</b>
Material and home environment needs	1, 2, 3, 4, 10, 11, 12, 13, 16, 17, 18	1, 2, 5, 7, 8
Material reliability concerns	5, 6, 7	3, 4,
Transport and school/work environment needs [In the MPNS-SF this sub-scale is only “School environment needs”]	8, 9, 23, 24, 25	11, 12,
Change and disposal insecurity	14, 15, 19, 20, 21, 22, 26, 27, 28	6, 9, 10, 13, 14
Reuse needs	29, 30, 31, 32, 33	15, 16
Reuse insecurity	34, 35, 36	17, 18

<b>The MPNS-36 (adult populations: note this scale contains 28 items)</b>	<b>MPNS-36 items</b>	<b>MPNS-SF items</b>
Material and home environment needs	1, 2, 3, 4, 10, 17	N/A
Material and home environment insecurity	5, 6, 19, 20, 21, 22	N/A
Disposal needs	12, 14, 15	N/A
Work practice needs	9, 23, 24, 26, 27, 28	N/A
Reuse needs	29, 31, 32, 33	N/A
Reuse insecurity	34, 35, 36	N/A

<b>The MPNS-R</b>
The MPNS-R does not have sub-scales. Only a total score, and individual responses to each item, should be used.

## Handling missing data

### Random missing questions

Missing data occurs when a participant does not answer individual scale questions. This might happen because a participant is self-completing the survey and accidentally skips a question, or if a participant declines to answer a question in an interviewer-administered survey. We recommend that if a participant is missing 3 or more items on a sub-scale in the MPNS-36, that they are excluded from that sub-scale. For those missing less than 3 items, using an average score means that they can still receive a score from their completed items. For the short form we select reducing the allowable missing to 2 items per subscale.

**Worked example.** Scoring with one item missing.

$$\text{Sub-scale Score} = (2 + 3 + 2 + 2)/4$$

$$\text{Sub-scale Score} = 2.25$$

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

When first assessing data collected using the MPNS it will always be useful to calculate the frequencies (percent of responses) for each question individually. This will provide insights into the experiences of the population, and variability in responses. It will also show you where there is missing data. If a particular question has a lot of missing data, it is important to explore why. For example, participants may have poorly understood this question, or there may be another reason why this question is not relevant to many participants.

### Missing questions due to 'not applicable' or filtered questions

There are several questions in the MPNS that may be skipped due to eligibility (relevance). We treat these items differently to questions that are missing due to participant error or declining to answer.

#### Disposal

MPNS-36 items 12, 13, 14 and 15, MPNS-SF items 5 and 6 MPNS-R item 3 capture participant experiences of disposing of menstrual materials. This may be either single-use materials (e.g., pads, tampons) after each use, or disposing of reusable materials (e.g., cloth, reusable pads) at the end of their life (after multiple uses).

if a participant does not dispose of any materials, 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. As noted above in the guide, in setting up the MPNS in your survey, you may choose to use a survey question capturing whether a participant has disposed of any materials to filter (skip) these items (e.g., in an electronic survey). If using the MPNS alone on printed paper, adding a 'not applicable' option to these items is recommended.

In the case of the adult MPNS the 'Disposal' sub-scale is not calculated for participants who did not dispose of any materials.

**Reusing (laundry) materials**

MPNS-36 items 28-36, MPNS-SF items 15-18, MPNS-R items 8-9 capture participant experiences of washing menstrual materials and drying them.

Two sub-scales for participants reusing materials are calculated for only these respondents. These sub-scales are not relevant for participants who did not reuse materials, so should not be calculated. 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 others.

**Experiences of changing menstrual materials at school/work when a participant 'never' changed their materials in this setting**

MPNS-36 items 28-36, MPNS-SF items 13-14, MPNS-R item 7. These questions ask about the privacy and safety of the spaces used for menstrual management at school or work.

Where a participant never changes their materials in a setting outside the home (school/work), items capturing experiences of the environment used for changing materials are not applicable. These items may be marked as 'not applicable' by participants, or in electronic surveys may be skipped by asking additional eligibility questions about whether a participant changed their menstrual materials at school/work. As for other ineligible items, these should not be considered 'missing', but 'not applicable' and scale and sub-scale scores should be calculated as the average item score excluding these items.

## Interpreting total and subscale 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.

### Thresholds (categories)

Increasing use of the MPNS has suggested groupings that are likely to be useful across studies. We suggest creating categories using the total score. At this time, we suggest the below categories for presenting (ordinal) groupings of need using MPNS, MPNS-SF and MPNS-R total scores.

Score range	Grouping
3*	Menstrual practice needs met
2.50-2.99 (or 3)	Few unmet needs
2.00-2.49	Some unmet needs
1.50-1.99	Many unmet needs
0.00-1.49	Severe unmet needs

\*This category may not be useful in all populations. It is more likely to be applicable for adult women than adolescents. If <5% of your population has a score of 3, we recommend a top category of scores 2.5-3 ('few unmet needs').



Note that currently we do not have sufficient normative data for the MPNS. 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 threshold scores that reliably predict better outcomes.

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. The above groupings may be used as categorical predictors of outcomes, or as ordinal outcomes.



## Reporting findings

When reporting findings, it is important to prioritize transparency so that readers can understand the measures used and the results. Part of the value of using the MPNS is consistent assessment across studies and settings. This consistency means we can more easily compare and learn from the data when building the evidence base for menstrual health.

What should be reported	Section
Which version of the MPNS was used (MPNS-36 including the version for adults, SF or R) and whether a self-completed or interview form was used.	Methods
Language of delivery, and if an existing translation of the measure was used or if it was developed for your study. Remember to cite the measure development paper and appropriate re-validations where applicable.	Methods
Response options used for the study and how these were scored; this should be consistent with the existing scale. If alterations were made, these should be highlighted and explained.	Methods
Any pre-testing and translation (and back translation)	Methods
Any modifications to item wording or modifications resulting from pre-testing. If survey items were dispersed across your survey/questionnaire instead of delivered together.	Methods
If any MPNS items were not included	Methods
The proportion of missing data, and if any respondents were excluded or not represented in scale scores due to missing data.	Results
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 (Impacts)

In addition to the above, it may be useful to describe the frequency of responses (percentage of the population) responding to each item, or to selected items to describe participant experiences.

Describing your population according to the current suggested categories will also help us understand the usefulness of these groupings across contexts and inform any future modifications.

## Reporting additional information about the MPNS

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

Internal consistency appropriate revalidations where applicable.	Cronbach's alphas or ordinal alphas (ordinal alpha is more appropriate) for the total score and sub-scale scores.  When calculating alphas for total scores researchers should ensure that items are forced to be considered with response options in the order specified. Some programs automatically reverse items and this can give false alphas for the MPNS-36 as some insecurity items can be falsely reverse coded.
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Factor structure	Fit statistics from confirmatory factor analysis for the measure sub-scale structure. Factor analysis should be undertaken using a robust diagonally weighted least squares estimator (DWLS) as the MPNS items are 4-point Likert responses.  For those undertaking exploratory factor analysis, polychoric correlations should be used reflecting the ordinal nature of the 4-point response options.
Associations with related constructs	Assess construct validity through relationships between the MPNS and hypothesized related concepts and between groups expected to differ on scale scores.

For more information on scale validity and concepts, the [COSMIN](#) website provides information and guidance.



### Connect with us

We would love to hear about your experience using the MPNS. Further, if you generate a translation of the scale and are willing to share it with others via the website, please [get in touch](#).

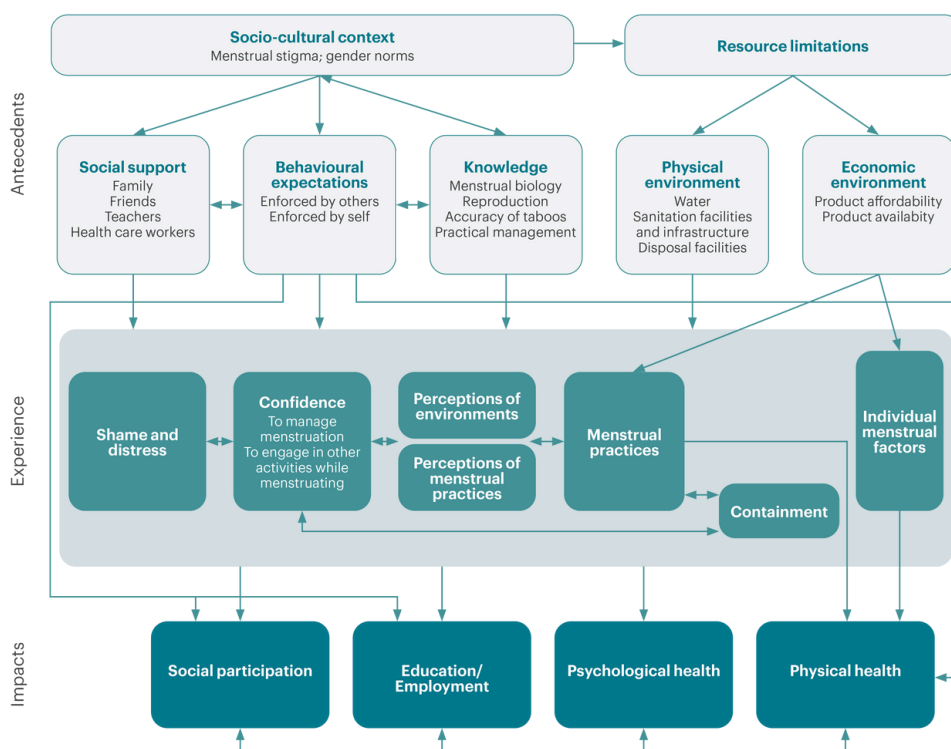
## Developing the MPNS

### 1 Defining what to measure

The first step in developing the MPNS-36 was to define the concept for measurement.

The construct for measurement was defined by using a systematic review of qualitative research capturing women’s and girls’ experiences of menstruation in low- and middle-income countries. This identified both “menstrual practices” and “perceptions of menstrual practices and perceptions of environments” as important concepts in women’s and girls’ experiences. We selected this as our concept for measure development to advance research and practice. At the same time, we determined through a review of the measures that there were no tools available to quantitatively measure this concept, and integrated lessons learned from the assessment of questions used in menstrual health research to date. Further to this, the development team assessed the questions being used in national surveys to capture menstrual hygiene-related experiences.

**Figure 1** Integrated model of menstrual experience in low- and middle-income countries



Source: Hennegan, J., et al., 'Women's and Girls' Experiences of Menstruation in Low- and Middle-Income Countries: A systematic review and qualitative metasynthesis', PLOS Medicine, vol. 16, no. 5, 2019: e1002803.

## 2

### Developing the items

Using the findings from our review the development team generated 54 statements (items) that captured the variety of different menstrual practice and environment needs (eg., “I had enough of my menstrual materials to change them as often as I wanted to.”). These were drawn directly from the studies across the review (e.g., by using author interpretations, meanings, and direct quotations from participants).

Note that the items developed reflected the construct identified in the systematic review. There are other actions that women and girls may undertake to care for their body during menstruation, such as accessing information or pain relief. However, the systematic review of qualitative research found these to be separate concepts in menstrual experience. Our conceptualization of practices needs in the MPNS focuses on actions taken to manage bleeding. Other measures will be required to capture other menstrual experience concepts. In research, it is also helpful to have specific measures that capture single concepts so that these can be compared (e.g., to look at the changes an intervention is able to achieve in improving menstrual-related knowledge measured separately from changes in menstrual practice needs/blood management experience).

## 3

### Developing the MPNS-36

To develop the MPNS-36, the candidate 54 items were administered in a survey of 538 menstruating schoolgirls in Soroti, Uganda. Feedback from the study enumerators, and enumerators supporting data collection for national surveys in Niger, helped to refine question wording, and offered feedback on the interpretability of items. Finally, global experts rated the candidate items and assessed the 4-point response options (“Always”, “Often (or more than half the time)”, “Sometimes (or less than half the time)”, “Never”).

Items were removed based on: (1) providing duplicate information, (2) not being understandable for participants, (3) enumerator feedback, (4) statistical performance of the items in the survey.

We undertook analyses to understand how items ‘fit’ together. After removing similar or poorly fitting items, the scale consisted of 36 items. Through this process we identified multiple dimensions that were being measured by the MPNS.

## Sub-scales

- **Material and home environment needs:** the extent to which menstrual materials, disposal, and environments used to manage menstruation met respondents needs, at home.
- **Material reliability concerns:** insecurity about the quality of menstrual materials (leakage, supply, displacement)
- **Transport and school/work environment needs:** the extent to which needs were met when transporting materials, and changing materials at school (or work).
- **Change and disposal insecurity items:** the extent of insecurities related to being able to change or dispose of materials, and privacy and safety while managing menstruation both at home and at school (or work).
- **Reuse insecurity items:** applied to those who reused materials and captured concerns around washing and drying materials.
- **Reuse needs items:** applied to those who reused materials and captured the extent to which laundering practices met respondents needs

Testing internal consistency: The six sub-scales had acceptable internal consistency (that is, individuals responded in a similar way across items in the sub-scale).

Testing validity: The sub-scales, total score, and other questions related in ways we expected, indicating the scale was measuring what we set out to measure. The total and sub-scales also correlated in ways that we hypothesised with other concepts (such as differing by the type of menstrual absorbent used, correlating with psychological wellbeing, confidence to manage menstruation, and school absenteeism).

These activities resulted in a valid and reliable MPNS-36 for use among adolescent populations, with initial validation in Soroti, Uganda. It offered a way for researchers and practitioners to understand if the menstrual management and environment needs of their population are being met.

## 4

## Developing the adult scale

Further development work was undertaken to assess the validity of the MPNS among adult working women in Uganda, to re-validate the tool and identify any amendments needed for adult samples.

More detail on this work is reported in the peer-review manuscript:

Hennegan, J., Bukenya, J. N., Kibira, S. P., Nakamya, P., Makumbi, F. E., Exum, N. G., & Schwab, K. J. (2022). Revalidation and adaptation of the Menstrual Practice Needs Scale (MPNS) in a cross-sectional survey to measure the menstrual experiences of adult women working in Mukono District, Uganda. *BMJ open*, 12(7), e057662. <https://doi.org/10.1136/bmjopen-2021-057662>

In brief, the team found that women in Mukono, Uganda had a good understanding of the items in cognitive interviews. There were a few examples added to item statements and translation modifications made from the original measure for use in Luganda in the study sample.

Following the cognitive interviews, the MPNS-36 was administered (by enumerators) to a sample of 525 adult women who were working in marketplaces, schools or health care facilities.

This data was used to test the dimensionality, internal consistency, and validity of the measure in this population.

The team found that while the original sub-scale structure was a modest fit for the data, an alternative set of dimensions was a better fit. These were similar to the original dimensions, with some updates:

- **Material and home environment needs:** the extent to which menstrual materials and environments used to manage menstruation met respondents needs, at home. This remained mostly unchanged, although a small number of items was reduced as they were found to duplicate information. Items related to disposal were removed from this sub-scale to represent their own dimension.
- **Material and home environment insecurity:** the extent of insecurity (worries, concerns) that women experienced related to their menstrual materials. This combined items formerly in the ‘material reliability concerns’ subscale, and the home-related items of the ‘changing insecurity’ sub-scale.
- **Disposal needs:** the extent to which needs were met with regards to disposal. This included both satisfaction with needs being met, and insecurities.
- **Work practice needs:** the extent to which women’s needs were met, and their level of insecurities related to the management of menstruation at work.
- **Reuse insecurity items:** unchanged
- **Reuse needs items:** unchanged

For adults, this research found that the main change to the pattern of responding was that work and disposal related needs and concerns were more aligned with one another than had been observed in adolescent samples. In the paper, the team highlights that this is consistent with adult women having more experience with menstruation, and a more realistic picture of sources of worries and dissatisfaction. It also represented the very different experience being had in the workplace, compared to at home where women were more in control of their household environment than adolescent girls.

Testing internal consistency: The six sub-scales had acceptable internal consistency (that is, individuals responded in a similar way across items in the sub-scale).

Testing validity: The sub-scales, total score, and other questions related in ways we expected, indicating the scale was measuring what we set out to measure. This was the case for both the original scale and sub-scales, and for the updated factor structure for adult women. The total and sub-scales also correlated in ways that we hypothesised with other concepts (such as differing by the type of menstrual absorbent used, correlating with psychological wellbeing, confidence to manage menstruation, and work absenteeism).

These activities resulted in a valid and reliable MPNS for use among working adult populations, with validation in Mukono, Uganda.

## 5

### Developing the short and rapid forms

Following stakeholder feedback about the need for a shorter version of the MPNS our team set out to develop a short (18 item) and rapid (9 item) version of the tool.

For more comprehensive details on the short form development see the peer-review publication:

Hennegan, J., Hasan, M.T., Jalil, T., Hunter, E.C., Head, A., Jabbar, A., Mohosin, A.B., Zoha, N.S., Alam, M.K., Dunstan, L., Akter, S., Zaman, A., Kaiser, A., Smith, C., Bagala, L., & Azzopardi, P.S. Menstrual Practice Needs Scale Short Form (MPNS-SF) and Rapid (MPNS-R): Development in Khulna, Bangladesh, and validation in cross-sectional surveys from Bangladesh and Uganda. (2024). *BMJ Open*, 14, e079451. <https://doi.org/10.1136/bmjopen-2024-084581>

#### Prioritising items for the short-form:

The team used a series of considerations to prioritise items within the MPNS for inclusion in shorter versions. These included:

- Theoretical considerations including retaining balance in items capturing positive assessments of needs being met (e.g., comfort, satisfaction) and items capturing insecurities, capturing experiences at home and at school (or work), capturing a breadth of menstrual practices such that the scale holds balance across the different practices required to care for the body during menstruation.

- Items with greater overlap: where items were more similar to one another, a single item was selected.
- Use of MPNS items as recommended indicators for national and global monitoring: select items from the MPNS have been included as part of recommended indicators for monitoring (see LINK]. These items were prioritised to retain comparability with national data
- Statistical performance of MPNS items across existing studies (e.g., their factor loadings and any challenges for translation or interpretability that had been reported
- Participatory interviews with adolescent schoolgirls in Khulna, Bangladesh in which girls were asked to rate the importance of MPNS items to capture their experiences.

Drawing on the considerations for prioritisation, the author team developed candidate short and rapid forms. These were then tested using cross-sectional survey data sets, including a pilot survey of 313 girls in Khulna, Bangladesh, a larger survey of 891 girls that served as the baseline for the Adolescent Menstrual Experiences and Health Cohort (AMEHC) study, and the original dataset of 538 girls from Soroti, Uganda.

**Dimensionality:** This work found that the MPNS-SF has the same factor structure among adolescents as was identified for the MPNS-36, with fewer items contributing to each sub-scale. The MPNS-R has too few items to test the original sub-scale structure, and alternative structures were a poorer fit. We recommend using only an MPNS-R total score.

**Internal consistency:** The study found acceptable internal consistency for the MPNS-SF and MPNS-R across all data sets.

**Validity:** The study investigated the relationship of the MPNS-36, MPNS-SF and MPNS-R with other concepts that are hypothesised to be associated with menstrual practice needs. The team found that this pattern of relationships was consistent for all three versions of the measure, with a slight loss of information at each reduction in items.

This suggests that the original scale still offers the most comprehensive measure and strongest associations, but the MPNS-SF offers comparable validity for use in shorter applications. We advise use of the MPNS-R in efforts that require a very short tool, for example studies investigating Water, Sanitation and Hygiene or Sexual and Reproductive Health more broadly, but including a component on menstrual health.