What is the scope for addressing menstrual hygiene management in complex humanitarian emergencies? A global review

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Global attention on improving the integration of menstrual hygiene management (MHM) into humanitarian response is growing. However, there continues to be a lack of consensus on how best to approach MHM inclusion within response activities. This global review assessed the landscape of MHM practice, policy, and research within the field of humanitarian response. This included an analysis of the limited existing documentation and research on MHM in emergencies and global key informant interviews (n=29) conducted with humanitarian actors from relevant sectors (water, sanitation, and hygiene; women's protection; child protection; health; education; non-food items; camp management). The findings indicate that despite a growing dialogue around MHM in emergencies, there remains a lack of clarity on the key components for a complete MHM response, the responsible sectoral actors to implement MHM activities, and the most effective interventions to adapt in emergency contexts, and insufficient guidance on monitoring and evaluation. There is a critical need for improved technical guidance and documentation on how to integrate MHM into existing programming and monitoring systems and to ensure adequate coordination and communication about MHM across relevant sectors. There is also a need for improved evidence on effective MHM approaches, the development of MHM-specific indicators, improved consultation with girls and women in crisis-afflicted areas, and the documentation of practical learning. It is only through improving the resources available and enhancing this evidence base that MHM can be perceived as an integral and routine component of any humanitarian response.

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MASSIVE POPULATION DISPLACEMENT HAS BECOME a reality across much of the world, with an estimated 60 million people currently displaced by war, conflict, or disaster (UNHCR, 2015). With nearly half of the displaced comprising girls and women (UNHCR, 2015), there has been a growing impetus within the humanitarian response community to better address the gender-specific needs of displaced populations. This includes increasing efforts by many international relief organizations to mainstream gender priorities through targeted policy, programming, and research (Gasseer et al., 2004; Kovacs and Tatham, 2009; Mazurana et al., 2011). A critical gender issue that has yet to be adequately prioritized is that of meeting the menstrual hygiene management (MHM) needs of adolescent girls and women. Girls and women across low-income contexts face numerous challenges managing their menstruation safely, hygienically, and with dignity including physical access to latrines during menstruation, dedicated places of disposal for materials, and being able to manage menses without shame and repercussions (House et al., 2012; Mahon and Fernandes, 2010; Sebastian et al., 2013). In emergencies, they face additional challenges. Girls and women who flee their homes may not be able to carry adequate supplies of materials (cloths, pads, underwear) to manage monthly bleeding. They may prioritize children, the elderly, and other family members' needs over their own body-related needs. They may be on the move, or living in crowded, unsafe environments that lack access to private and safe water and toilet facilities (especially at night) for changing menstrual materials and washing themselves (Parker et al., 2014; Sommer, 2012; IFRC, 2013; Hayden, 2012). They may lack mechanisms for privately disposing of used materials, or for discreetly washing and drying reusable menstrual materials. All of these factors increase women and girls' exposure to risk of sexual violence and exploitation in humanitarian settings (Sommer et al., 2014; Gosling et al., 2011; Davoren, 2012).

The range of challenges girls and women face may differ if an emergency is acute or protracted, urban or rural, or if they find themselves on the move, living in camps, host communities, or informal settlements. Girls and women from different cultures will also have unique menstrual beliefs that influence how they manage menstruation, including strongly held taboos around disposal of menstrual waste (e.g. burying versus burning, or disposing of waste in a secret manner) (Hayden, 2012; Sommer, 2012; Sommer et al., 2013; Kjellén et al., 2011) and methods for washing and drying used menstrual materials (de Lange et al., 2014; Nawaz et al., 2006). They may, for example, prefer to manage menstruation in private bathing spaces instead of toilets. The varying socioeconomic backgrounds of the changing displaced global population may influence preferences for menstrual material distributions. As with other interventions in emergencies, the type of emergency (e.g. natural disasters, acute conflict) will determine the types of MHM response needed (Sphere Project, 2011). Programming must take

such vulnerability into account. Each humanitarian response scenario generates contextual considerations with regard to MHM across a range of sectors, such as water, sanitation, and hygiene (WASH), women and child protection, health, shelter, and education. Understanding what responses can be deployed across the diverse range of existing emergencies, what adaptations are essential, and the most effective interventions to apply is vital. This includes the need for ongoing coordination between the relevant sectors responsible for assuring an effective MHM response is delivered.

In 2012 a global desktop review was conducted to assess the inclusion of MHM within humanitarian response (Sommer, 2012). Given the limited peer-reviewed and grey literature on the topic, key informant interviews with a range of humanitarian experts were also conducted. The review identified several MHM-related gaps in the humanitarian sector. In general, there was a lack of uniform guidance for MHM inclusion, including key programmatic consider-ations and attention to timing (phase introduction). Existing guidance materials that mentioned MHM were limited in scope and primarily concentrated within WASH. There was minimal evaluation of MHM-related programming, especially examining beneficiary experiences, or the range of sectoral inputs needed for an effective response. Systematic documentation of practical learning was lacking, despite many key informants articulating experiences addressing MHM in emergencies and internal dialogues among organizations on how to improve future MHM responses.

Since the 2012 review, the management of menstruation in emergencies appears to have gained traction as an area worth analysing and improving upon. This is evidenced by the engagement of key players in developing resource documents (WaterAid/SHARE and Menstrual Hygiene Matters) and conducting operational research (International Federation of the Red Cross). Therefore, an updated review was undertaken. The main objectives were to assess the current state of documentation on MHM in emergencies, including the existence of clear guidelines on implementation and monitoring of a holistic MHM response in an emergency context; and to assess cross-sectoral perspec-tives on the definition of an MHM response, its prioritization in various emergency contexts, and existing gaps in addressing the MHM needs of adolescent girls and women in emergencies.

The review defined a 'holistic MHM response' (see Figure 1) as including the provision of safe, private, and hygienic water and sanitation facilities for changing menstrual materials and bathing, easy access to water inside or near toilets, supplies (e.g. laundry soap, separate basin) for washing and drying menstrual materials discreetly, disposal systems through waste management, and access to practical information on MHM, for adolescent girls in particular. There may also be unique needs for the health sector, such as post-partum women needing additional pads for managing heavy bleeding, or for the child protection or education sectors, such as sensitized staff or teachers being supportive of adolescent girls' menstrual-related needs.
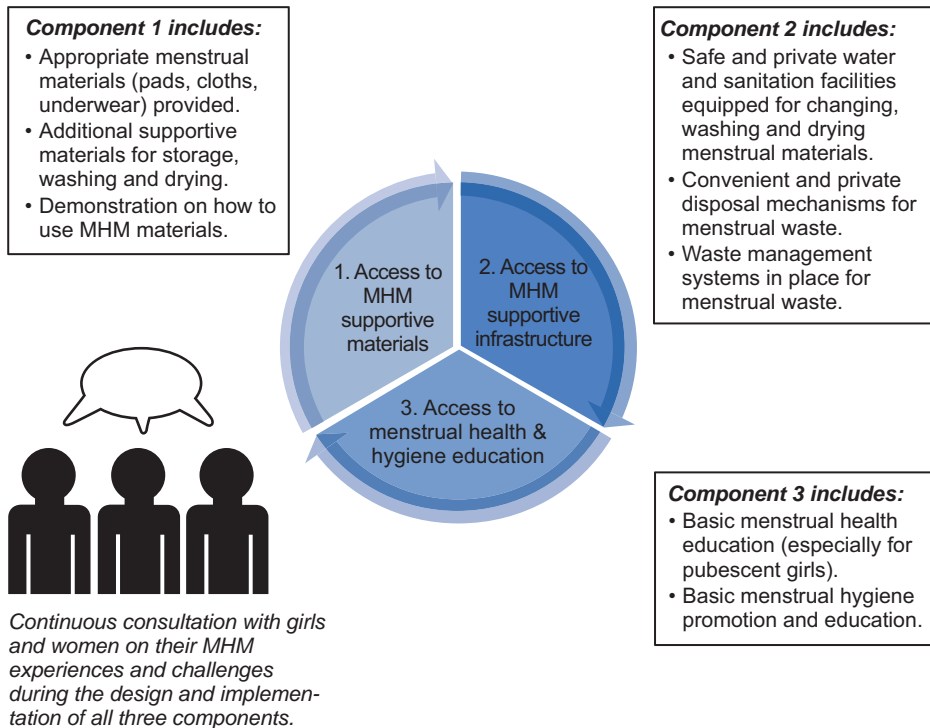
Component 1 includes:
- Appropriate menstrual materials (pads, cloths, underwear) provided.
- Additional supportive materials for storage, washing and drying.
- Demonstration on how to use MHM materials.

Component 2 includes:
- Safe and private water and sanitation facilities equipped for changing, washing and drying menstrual materials.
- Convenient and private disposal mechanisms for menstrual waste.
- Waste management systems in place for menstrual waste.

1. Access to MHM supportive materials

2. Access to MHM supportive infrastructure

3. Access to menstrual health & hygiene education

Component 3 includes:
- Basic menstrual health education (especially for pubescent girls).
- Basic menstrual hygiene promotion and education.

Continuous consultation with girls and women on their MHM experiences and challenges during the design and implementation of all three components.

Figure 1 Three essential components of a holistic MHM humanitarian response

Methods

The global assessment incorporated three components, two of which will be described in this paper: (1) a literature review, and (2) key informant interviews with a broad range of humanitarian experts from relevant sectors and organizations. Formative research in two differing emergency contexts (internally displaced people (IDP) camps in Myanmar and informal settlements of Syrian refugees in Lebanon) was also conducted and will be reported in a future publication.

Literature review

The review included a systematic search of the literature, and outreach to humanitarian experts around the world to capture the range of existing documentation. First, a systematic web-based search was conducted of the peer-reviewed and grey literature. Key databases searched included PubMed, Google Scholar, the Sustainable Sanitation Alliance, and Reliefweb. Search terms included 'menstrual hygiene in emergencies', 'menstruation and refugee camps', 'WASH and menstrual hygiene', 'gender and sanitation', and 'menstruation and crisis'. The aim was to identify peer-reviewed and grey literature on aspects of implementation, relevant guidance

documents, published reports, training materials, and relevant accepted global emergency standards (e.g. Sphere Project). To avoid missing relevant studies, the search was not limited to emergency contexts. We included material that was in the English language and directed at low and middle-income countries, and we did not have any restriction on time periods.

Given that organizations may not make internal documents publicly available, and that new guidelines and internal studies may never be published in peer-reviewed journals, we communicated directly with individuals and organizations involved in humanitarian response to request additional documentation. We also asked for recommendations of humanitarian response experts from a diverse range of sectors and organizations who could serve as global key informants.

A flyer that described the effort to gather the existing guidance and evidence on MHM was shared through blog posts, relevant meetings, and conferences. We requested feedback from interested individuals over a five-month period.

Global key informants with humanitarian practitioners

Key informant interviews (KII) were conducted with a range of cross-sectoral humanitarian experts (e.g. practitioners, donors, policy makers). A key informant guide was developed for use over Skype, phone, in-person, or, in situations when experts were unable to participate due to limited internet connectivity (i.e. those engaged in an emergency response), written responses were submitted. Key informants were sampled purposively; maximum variation sampling was used to ensure at least two individuals were sourced from each sector (WASH, women's protection, child protection, health, education, camp coordination, and camp management). Key topics that we aimed to discuss included the frequency and rationale for inclusion of an MHM response, timing and content of MHM intervention components in differing humanitarian contexts (e.g. post-disaster versus post-conflict, rural versus urban, IDPs versus refugees), challenges experienced in delivery and coordination, sector-specific aspects, identified best practices, and recommendations for key guidance to include in the MHM in emergencies toolkit under development.

Informed consent was obtained from all participants. The KIIs were conducted in English by the Columbia University Principal Investigator (PI, MS) and one member of the research team (MSc). The names of KIIs and organizations are anonymized as informants were not asked to respond on behalf of their respective organizations.

The study obtained ethical approval from the Columbia University Medical Center and the International Rescue Committee (IRC) institutional review boards.

Analysis

Transcripts from the qualitative assessment were reviewed and key themes were identified by two researchers using deductive content analysis methodology (Elo and Kyngäs, 2008). The data were systematically reviewed to identify predominant

themes arising. The documentation gathered from the desk review was collated and analysed in terms of the type of resource (e.g. research, programmatic guidance, case study), sectoral relevance, accessibility, and significance (new source of evidence, best practices, or lesson learned).

Results

Direct emails were sent to 176 individuals with a 95 per cent response rate; 29 total KIIs were conducted across 18 global organizations and agencies. A number of thematic areas emerged from the review, including: 1) different understandings of what an 'MHM response' includes; 2) insufficient MHM technical guidance for practitioners; 3) minimal evidence on effective MHM interventions in emergencies; 4) challenges in cross-sectoral coordination and leadership in MHM emergency responses; and 5) the need for improved monitoring and evaluation.

Differing understandings of an 'MHM response'

There exists relatively widespread recognition of the importance of including MHM in humanitarian response activities across agencies; however, the timing and inclusion of response activities appears to vary. A significant finding was the differing interpretation of what a 'standard' MHM response should include, including varying interpretations of the responsibility of each sector. Part of this may be attributed to the ways in which the humanitarian community may already be addressing interventions of critical importance to MHM, such as gender-segregated toilets and the provision of flashlights, which also contribute to other humanitarian aims (e.g. safety, dignity) and so are viewed as part of broader programming led by specific sectors (e.g. WASH, protection). As a result, there is often a lack of clarity around which actor should lead or take primary responsibility. There was a general lack of consensus of key components of an MHM response beyond the distribution of hygiene or dignity kits, without mention of other key components (e.g. bathing facilities, toilets with easy access to water, washing and drying of reusable materials, endpoint disposal systems, the provision of MHM guidance to girls).

One identified challenge is that many organizations distribute their own kits, with the timing of delivery and contents varying within a given emergency. This was reported to occasionally cause resentments between beneficiaries and gaps in access to supplies (especially sanitary pads). In addition, the rapid decision to prioritize the provision of materials may sometimes be done without consideration of local menstrual practices (e.g. preference of disposable versus reusable pads) or the broader 'lifecycle' for menstrual waste, including disposal systems, the impact on toilet lifespan of improper disposal, the privacy-related needs for washing and drying of reusable pads, and waste management. As one WASH adviser explained, 'there is often a flood of [menstrual hygiene] materials at the start and no way to deal with disposal. I think that has fallen off the radar'. This focus on

prioritizing the distribution of materials may result in some emergency responses not addressing the spectrum of MHM components. Differences in MHM response measures were identified across categories of emergency (e.g. natural disasters versus active conflict). As one WASH adviser conveyed:

> If it's a disaster like a drought, you probably won't see hygiene or dignity kits. It is assumed that while they may be lacking food or water, the rest of their lives had not shifted as much, they are still at home. (WASH adviser, government agency)

The MHM products distributed are also impacted, as one WASH expert explained, 'during a flood, you will think more about materials you can wash than ones you dispose', taking into account the limitations (e.g. disposal) for that type of disaster. The state of the emergency (acute versus protracted) can also influence the provision of MHM supplies. Several actors explained how it is often assumed that after the initial acute phase of an emergency, girls and women should be able to access local markets or return to using their traditional methods. However, a few respondents suggested that more recent events of sustained active conflict, such as in Syria and Iraq, have required prolonged MHM assistance.

The review also identified differing perspectives on the prioritization of MHM interventions. Decisions on what to implement and when appear to be influenced by a number of factors, such as the gender of programme staff, especially senior leadership, with females generally perceived to more rapidly prioritize MHM interventions. As one NGO's senior health adviser noted, 'The reason why it hasn't been taken up is the lack of understanding and the lack of senior women in roles and program design. If you look at WASH programming, it's male dominated'.

In addition, perceived cultural taboos around discussing MHM with beneficiaries may impact the comfort of staff in responding to beneficiary MHM needs. Respondents identified challenges for both male and female staff in discussing issues related to MHM, and viewed this as a barrier to MHM inclusion in programming. Differing views in relation to acute emergencies also appear to exist, with some experts articulating MHM as 'not a life-saving intervention' of relevance in an acute response. These varied perspectives for MHM inclusion at the onset of an emergency were conveyed by both a WASH and a health practitioner:

> I don't think it's a lack of means or capacity of people – it's just that you need to change the mind-set of an entire sector. Even after 10 years, we have been saying we need to segregate latrines between men and women and you go to the field, and it never happens. (WASH sector, UN agency)

> It is pressing for women but it is not pressing for survival of people. It's not water and it's not sanitation. It's part of sanitation but it's not general health or food or infectious disease or vaccinations. (Health sector, NGO)

Despite these differing views, there was generally consensus that attention to MHM is growing at all phases of a given response, from pre-positioning of supplies

(i.e. pads, underwear, soap), to responses in acute and protracted scenarios. However, the absence of a recommended package of interventions for an MHM response across a range of emergency scenarios, and the lack of clearly defined minimum standards for MHM, is likely contributing to differing understandings of an 'MHM response'.

Insufficient MHM technical guidance for practitioners

There have been minimal additions to the limited MHM technical guidance available since 2012. Existing guidelines for assessment and response, and documentation of MHM interventions, are generally disseminated internally within organizations, or mentioned only briefly within sector-owned or other broader humanitarian guidance publications (see Table 1). Overall there exists a lack of clear and specific guidance on appropriate timing for introducing MHM interventions, on recommendations of culturally adapted and effective interventions, and designation of sectoral responsibility for leadership of a coordinated response. There also exists limited consensus on which MHM guidance resources to prioritize.

Across humanitarian response, the Sphere Project continues to be the most widely cited and internationally recognized set of standards (Sphere Project, 2011). The latest edition makes specific references to MHM within the context of WASH. Chapters 2 and 3 define a set of minimum standards on MHM within WASH, including key actions (discreet provision of appropriate materials and disposal mechanisms) and guidance notes for hygiene promotion, water supply, excreta disposal, and solid waste management. Although a significant improvement, these references are limited to WASH, lack specificity on process and timing, and do not address broader cross-sectoral responsibilities.

In terms of sector-owned guidance documents, MHM (or MHM-related interventions, such as the building of gender-segregated latrines or the provision of dignity kits) is present, to varying degrees, within 10 sector guidelines. These include institutional guidance recommendations, such as UNICEF's *Immediate Response WASH and Dignity Kits and Family Hygiene and Dignity Kits,* and broader inter-agency manuals, such as the *Guidelines for Integrating Gender-based Violence Interventions into Humanitarian Response.* The latter, a robust cross-sectoral resource for reducing risks to women and girls, includes many interventions relevant to MHM, and discusses MHM most specifically within the WASH chapter. Other sectors, such as child protection and education, and camp coordination and management, articulated the need for incorporation of attention to MHM in the next updating of their global guidelines for emergencies (see Table 1).

The most comprehensive resource available is *Menstrual Hygiene Matters*, published in 2012 by WaterAid/SHARE. Although this resource is focused primarily on the development sector, it contains a chapter dedicated solely to MHM in emergencies. Much of the other guidance throughout the document is relevant, especially to protracted emergency contexts, including content on MHM in schools, the household, and workplace environments (House et al., 2012).

Table 1 MHM content in key guidelines for humanitarian response

Title	MHM content identified	Last revision
The Sphere Handbook	*Distribution:* Provision of culturally appropriate MHM materials *Infrastructure:* Provision of gender-segregated toilets, access to water source, and support for the disposal, washing, and drying of MHM materials (WASH sector)	Sphere Project (2011) *(new edition under way)*
Inter-agency Field Manual on Reproductive Health in Humanitarian Settings	*Distribution:* Provision of culturally appropriate sanitary materials *Infrastructure:* Ensure for gender-segregated toilets	Inter-Agency Working Group on Reproductive Health in Crises (2010) *(new edition under way)*
Minimum Initial Service Package for Reproductive Health in Crisis Situations	*Distribution:* Provision of culturally appropriate sanitary materials	Quick (2011)
Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings	*Distribution:* Provision of culturally appropriate sanitary materials to adolescent girls (including distributions through teachers at schools)	UNFPA and Save the Children (2009)
INEE Minimum Standards for Education: Preparedness, Response, Recovery – A Commitment to Access, Quality and Accountability	*Distribution:* Provision of culturally appropriate sanitary materials to adolescent girls *Education:* Ensure that adolescent girls receive education on menstruation and teachers are sensitized *Infrastructure:* Provision of gender-segregated toilets and nearby water source (INEE Gender Task Team, n.d.)	INEE (2010)
Camp Management Toolkit	*Distribution:* Provision of culturally appropriate sanitary materials	Bentzen et al. (2015)
Guidelines for Integrating Gender-based Violence Interventions into Humanitarian Response	*Distribution:* Provision of culturally appropriate sanitary materials (WASH sector) *Education:* Ensure that adolescent girls receive education on menstruation (education sector)	IASC (2015)
The Minimum Standards for Child Protection in Humanitarian Action	No current MHM references identified during this review exercise	Child Protection Working Group (2012)

Médecins Sans Frontières (MSF) developed a relevant water and sanitation assessment tool that addresses MHM along with other gender concerns. The *Gender and Sanitation Tool for Displaced Populations* provides step-by-step guidance for addressing gender concerns, including specific MHM and proxy measures, throughout the design and development of water and sanitation facilities (MSF, 2015). This includes developing contextually appropriate toilets and bathing spaces that better support

the menstrual needs of girls and women through improving measures related to safety (gender segregation, doors), privacy (locks), and comfort (nearby water source) (de Lange et al., 2014).

A small literature of inter-agency and/or institutional technical guidance briefs is also available. The majority are concentrated in the WASH sector. For example, the WASH cluster in Myanmar in 2014 developed an internally disseminated brief focused on the contextual needs of MHM within the Kachin and Rahkine emergency response activities. The brief includes guidance on culture and MHM supportive interventions for the local context (i.e. providing disposable pads, waste bins, and education focused on deterring girls and women from disposing of pads directly in the latrines) (IRC-Myanmar, 2014).

Minimal evidence on effective MHM interventions in emergencies

There continues to exist minimal literature and, more importantly, limited rigorous evidence in the scientific, peer-reviewed literature on MHM interventions in emergencies. Conducting research during emergencies is challenging, due to the volatile nature of many crisis-affected areas, the perceived vulnerability of displaced populations, and heightened political tensions. These sensitivities influence the process of conducting research, including the methods used, evidence produced, and the obtainment of ethical clearances (Ford et al., 2009). Two studies exist which included both qualitative and observational methodological approaches. A qualitative study explored the MHM challenges faced by girls and women in an IDP camp in northeast Uganda. This assessment, which compared findings with those of girls and women living in the host community, indicated that IDPs experienced greater challenges in accessing MHM supplies, appropriate water and sanitation facilities, and menstruation education. These challenges were found to have a negative impact on women and girls' dignity and mobility (Parker et al., 2014). Another relevant article published in 2014 included an evaluation of MSF's *Gender and Sanitation Tool for Displaced Populations* in IDP camps in South Sudan (described earlier) (MSF WatSan Working Group, 2015). The study examined the feasibility of the tool, satisfaction of users, and its effects. Initial findings revealed women's discomfort with the proposed design of facilities for washing menstrual cloths, resulting in the use of shower stalls as a more appropriate solution. In addition, an evaluation comparing the intervention group (those engaged with the tool) and a control group found a 25 per cent increase in usage of toilet and water facilities among those consulted using the prescribed tool (de Lange et al., 2014).

Operational research that was not published in a peer-reviewed journal was also found. The International Federation of Red Cross and Red Crescent Societies (IFRC) piloted menstrual hygiene kits for 2,000 Congolese refugees living in Burundi. The evaluation demonstrated concrete improvement in knowledge, hygiene practices, and perceptions of dignity following the distribution of MHM kits. Findings also provided valuable learning on the appropriate design of menstrual hygiene kits for this context, including the type of washing container, preferences for reusable pads, and the need for both washing and bathing soap

(IFRC, 2013). Another MSF-related study is a Master's thesis that describes an evaluation conducted on gender and WASH (with a primary focus on MHM) in MSF health facilities for displaced Burmese and host communities in southeast Bangladesh. This included a desk review and qualitative appraisal with staff and beneficiaries. Findings indicated difficulties for women accessing menstrual materials, their preferences for washing menstrual materials in shower facilities, and health staff's low knowledge of MHM. The learning was used to develop guidelines for better integrating MHM within health facility operations and an MHM monitoring tool (Mena, 2015).

Challenges in cross-sectoral coordination and leadership on MHM in emergencies

A key challenge remains a lack of consensus on a recommended sector lead for assuring that a holistic MHM response is delivered. The majority of respondents indicated the crucial role of the WASH sector, given its responsibility for water, sanitation, and disposal (all of great relevance to MHM), and its role in the distribution of hygiene kits in many contexts. Many respondents also articulated the importance of the women's protection sector, given its experience, expertise, and comfort working with girls and women on sensitive topics. There was generally consensus that WASH and women's protection should be collaborating on MHM, and that the decision about 'who takes the lead' may vary depending on a given emergency context. There was a strong consensus on the importance of one sector taking the lead so that MHM and its various components do not fall through the cracks, missing out on the staffing and funding required for a complete response.

There was also articulated a need for clearer delineation of each sector's role in supporting an MHM response. For example, the education sector may be collaborating with WASH to design the sanitation facilities in schools, but may also need to focus on the distribution of MHM materials and software (MHM information, sensitized teachers). Similarly, the health sector may need to focus on the provision of private, safe latrines near health facilities for girls and women who seek out providers, and for those managing heavy menstrual bleeding related to the post-partum period or other reproductive health issues. Other examples emerged from Sierra Leone and Nepal, where girls and women reportedly had preferences for household latrines for MHM (an issue for the shelter sector); from Liberia and Guinea, where girls felt at heightened risk for sexual violence or rape while using toilets (UNHCR and Save the Children-UK, 2002) (an issue for protection and WASH); and from Pakistan and Haiti, where gaps in menstrual hygiene knowledge and education were identified, illustrated by the use of sanitary pads for other household purposes beyond MHM (an issue for the WASH, non-food items (NFIs), and education sectors).

In general, the review findings suggested that the WASH sector should take the lead for MHM response in close collaboration with women's protection, child protection, education, health, NFIs, camp coordination and camp management, with the NFIs and shelter sectors playing important but subsidiary roles. The failure to coordinate may lead to piecemeal programming, or inadequate attention to the

multiple components needed for a successful MHM response (e.g. adequate lighting for night-time latrine use). One WASH adviser warned of these coordination challenges, explaining: 'We have people [sectors] looking at MHM in just their angle and nothing else. It makes them blind in many ways when you only look at one thing and don't see it as a holistic matter' (WASH adviser, UN agency).

Respondents indicated that improved coordination was likely contingent on the heightened visibility of MHM as an issue across sectors, especially within the cluster system.

The need for improved monitoring and evaluation

The review identified a lack of adequate monitoring and evaluation (M&E) of MHM interventions, with three main issues emerging. First, emergency responders are already overwhelmed with the number of indicators they need to collect on other key response aspects, so there is a hesitancy to introduce more indicators that may be burdensome to staff. As one WASH adviser explained:

> There is a tendency to have indicator overload. It is a bit like that for solid waste disposal, with all these wonderful indicators, but no one collects the data. At our level, if I can get one indicator on water and one on sanitation and one on hygiene, I am considering myself very lucky … anything more than that, the quality is challenging. (WASH adviser, UN agency)

Second, there are a number of proxy indicators that likely capture relevant MHM content (e.g. gender-segregated latrines, distribution of hygiene kits) and may not be articulated as 'MHM' indicators but are nevertheless very relevant. Third, there do not exist recommended (and tested) global indicators for capturing the multiple components of a complete MHM response. The Inter-Agency Standing Committee's Gender-Based Violence Guidelines provide one indicator related to coverage of materials distribution, but in other cases where indicators are discussed, notably Sphere, the focus is on what to measure, rather than how to measure. However, in reviewing the available lists of any non-crisis indicators, including those from WaterAid (2015), Save the Children (2015), and Plan International (Roose and Rankin, 2015) which focus on the development sector, there is a lack of sufficient information on how to correctly measure quantitative indicators without an intensive population-based survey, or how to integrate these indicators within existing population-based surveys. Guidance on appropriate qualitative methods to assess monitoring needs is also lacking.

Across the global KIIs, the majority of emergency experts indicated that few or no indicators are currently being collected specific to MHM. Individual organizations or agencies may have their own internal indicators; however, there is a clear need to better integrate MHM into existing M&E systems to ensure that more rigorous and systematic monitoring occurs. Some existing examples of monitoring and measurement include post-distribution monitoring surveys and focus group discussions. These methods did not appear to be widespread in use, and tools were frequently described as being ad hoc or only internally

available to organizations. As this practical learning is essential for improving MHM implementation and addressing the needs of girls and women in ongoing and future responses, it is critical that the monitoring of MHM is more uniformly adopted, including improved access to measurement tools and collective sharing of lessons learned.

Discussion

The MHM in emergencies global review was useful in identifying the progress being made in attention to MHM in a range of emergency response scenarios and global dialogues, and the continuing gaps in addressing MHM in emergencies. The latter includes the absence of clear guidance and standards, best practices for implementation of MHM-related interventions, recommended coordination for key components, and the generation of evidence for improved beneficiary outcomes. The key differences identified since the 2012 review included an overall increase in attention and programming targeting MHM during emergencies, improved global dialogue on the topic (as illustrated by the wider range of organizations and experts familiar with MHM), and, lastly, a growth in the analysis on what appropriate MHM supplies should be provided in a given context (IFRC, 2013). The review also highlighted some particular areas in need of focus from the humanitarian community.

First, much of the programing and learning being generated is focused on addressing MHM within camp settings, with populations that are easier to target with MHM distributions and infrastructure improvements. However, there are increasing numbers of displaced populations in states of sustained movement, living in host communities, in urban contexts, in areas of active conflict, or in environmentally challenging settings (e.g. limited water availability) (Burkle et al., 2014). These dissimilar environments require MHM responses to be adaptive and able to accommodate a range of considerations, such as differing preferences for menstrual management materials or differing levels of safety around latrine usage. As an example, while the inherent MHM needs for girls and women may be the same, the MHM experiences and challenges of migrants journeying across mainland Europe may vastly differ from those living in urban Kenya. There is an urgent need for improved guidance that better supports responders in managing MHM across a greater range of contexts.

Second, there is a clear need for improved consensus and clarity on sectoral responses, including a system for identifying the 'MHM lead' sector within a given emergency. The overall recommendation is for WASH to lead in close coordination with women's protection, and other sectors serving subsidiary but important roles. This will require engagement with the cluster systems, inter-agency working groups, and other approaches to not only enhance global and local dialogue on MHM in responses, but also to define these roles. A complete MHM response is contingent on effective collaboration between multiple sectors and established partnerships. In addition, it is recommended that as well as the MHM in emergencies toolkit currently under development, that MHM be incorporated into sector-owned guidance

documents to enhance the ownership of MHM response activities within sectors beyond WASH (R2HC, 2015). This may require MHM advocates within each sector to articulate the need to include MHM (as a new addition or as expanded content) into sector responses in future guideline revisions.

Third, there is a need for attention to the MHM needs of specific (and sometimes difficult to reach) populations. This was made evident by the dearth of programming targeting the MHM needs of adolescent girls in many contexts. Prior to, during, and following a crisis, adolescent girls are at a heightened risk of abuse, neglect, and rape (Robles, 2014). At the same time, broader children or women's protection responses often fail to reach adolescent girls or to find safe, functional, tailored entry points for girls to access information and assistance (Robles et al., 2015). In many protracted emergencies, there may be a breakdown of traditional familial networks and education systems, which are important for sharing information about menarche with girls. A few examples were identified through the women's protection and health sectors of targeted outreach to adolescent girls on MHM, including health education, the provision of girl-tailored dignity kits (IRC Adolescent Girls Initiative, 2015), and the provision of sanitary materials through schools (Bishop et al., 2014; Parker et al., 2014). However, these activities were not widespread, lacked coordination across sectors (especially crucial linkages with WASH actors), were rarely documented, and often overlooked the needs of the rapidly increasing population of out-of-school adolescent girls living in crisis (Alam et al., 2016). Another overlooked population is that of vulnerable girls and women, which can include those who are very poor, very young, orphaned, or with physical or mental disabilities. This population may have limited access and movement within communities, making it more difficult to identify them and address their specific needs. Specific considerations for vulnerable girls and women include ensuring access to MHM supplies (beyond traditional distributions), educating care-takers, and the design of water and sanitation infrastructure to meet their specific needs.

In order to ensure MHM interventions reach all women and girls, all sectoral actors must also recognize the role that men and boys can play, either as supporters or as barriers. In a household, for example, the male head of family may often be the primary individual registered for aid and, even when women and girls are explicitly targeted, may control and make decisions about household goods and resources. This can impact women and girls' privacy and access to appropriate menstrual supplies. Research and experience have shown that men may not be aware of girls' and women's basic MHM needs, including sanitary pads, within their households (Pillitteri, 2011). Improving their understanding and ability to support women and girls may help increase women and girls' ability to manage their own menstrual needs. Currently there remains a lack of consensus on the best approach and timing for male engagement on MHM within a given emergency response, and this may vary widely depending on context. There is a need for evaluation of various approaches. Relevant learning on male engagement with MHM may also be gleaned from the development sector (Plan International, 2015; Mahon et al., 2015) and from strategies employed for tackling other traditional female-focused approaches, such as reproductive health (White et al., 2003).

Fourth, there is an urgent need for practical learning and evidence on basic solutions for integrating MHM into existing emergency response interventions, particularly in the WASH sector. For example, although there are some evaluations of the types of sanitary kit most acceptable to girls and women under way, along with interest in identifying more sustainable methods (e.g. reusable pads), there continues to be limited examination of improved water, sanitation, and disposal approaches in relation to MHM in emergencies. The use of various pads (disposable or reusable) will only be successful if enabling environments support their actual usage. This includes identifying improved, culturally appropriate approaches for discreetly and privately washing and drying these products, and improved designs for gender-supportive toilet and washing facilities, disposal mechanisms for menstrual waste (e.g. covered dustbins), and methods for waste management (e.g. incinerators or safe burying mechanisms). More practical examples of successful MHM interventions are also needed, such as strategies for sensitively distributing and demonstrating MHM supplies and educating girls and women in a range of sociocultural contexts, and examples (including curricula and trainings) for improving staff (especially males) comfort and confidence in addressing MHM. It is essential that the learning from evaluations of such activities is documented and disseminated to improve the limited existing body of MHM knowledge. Lastly, there may be some variance between girls' and women's reported preferences (e.g. water inside toilet stalls) and the standards deemed feasible by water and sanitation actors in a humanitarian response.

Finally, this review identified a compelling argument for the need to expand the breadth of M&E methods and strategies for assessing MHM in emergencies. It is important for this research to occur in a range of locations and during various phases of an emergency. One area requiring further investigation is the impact of cash assistance programming on MHM. As international response organizations are increasingly adopting cash assistance and voucher programmes (Harvey, 2005), including to address WASH and hygiene-related needs, there is little understanding of how that impacts the MHM needs of girls and women. To generate evidence of the effectiveness of a particular MHM approach, randomized or quasi-randomized studies using well-defined and measurable outcomes relevant to social functioning are necessary. The latter will be difficult but important to do well, but lessons from other domains such as mental health in crises could be applied to develop relevant outcome measures for MHM (Sumpter and Torondel, 2013; Lahiri et al., 2016). Proxy outcomes, such as measuring use of WASH services by women and girls, may be sufficient for achieving an understanding of whether specific needs are being met in crisis settings.

As research and learning is conducted, it is important for this information to be disseminated more widely. Although this review identified the existence of significant valuable knowledge on MHM, it was found to frequently remain within institutions, rather than being published or more widely disseminated. Tremendous workloads, shifting priorities, and lack of forums for sharing this type of informal information are all very legitimate reasons why this occurs. The *MHM in Emergencies Toolkit* (R2HC, 2015) currently under development will

aim to synthesize much of the practical learning, tools, and guidance captured during this global review. The toolkit will seek to address many of the gaps identified, including standardizing the elements of a complete MHM response, providing practical tools for research and monitoring, and simplifying directions for assessment and response. In addition, the integration of MHM into existing sectors' key guidance documents as they are revised in the coming years would serve to greatly enhance the quality and frequency of attention to this critical issue for adolescent girls and women.

Limitations

Although this review attempted to be as systematic and comprehensive as possible, there are some important limitations to note. First, given the common practice of including MHM within internal rather than external publications of organizations, it is very possible that additional documents on MHM learning were missed. As well, documentation from national and sub-national organizations may have been missed. Second, as many of the global key informants were recruited based on their familiarity with the topic of MHM in emergencies, participants may have been more likely than others to advocate for the importance of this topic.

Conclusion

If the field of humanitarian response is to improve standards and safety for girls and women affected by emergencies, their MHM needs can no longer be overlooked. This review indicates an urgent need for guidance on the components of a holistic MHM response in emergencies, including effective approaches to implementation, monitoring, and evaluation of this work across a range of contexts. The review also reveals the need for a defined articulation of a sectoral lead for MHM, linked to recommendations for improved cross-sectoral work and coordination. This can only occur through strategic buy-in, leadership, and prioritization of MHM within organizations, sectors, and funding agencies. MHM should be integrated into existing emergency responses, and not delayed through a perception that its implementation can wait for later phases of humanitarian response or that it exists as a separate area of programming, disconnected from ongoing WASH, protection, and other efforts. Only recognition of and movement towards cross-sectoral action on MHM in emergencies will ensure that humanitarian action more comprehensively meets the needs of women and girls.

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