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Urinary incontinence in children aged 5 to 12 in an emergency setting: lessons learned in Ethiopia

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Abstract: *This scoping study aimed to be the first to explore the number of children aged 5 to 12 in an emergency setting (Tukaley village, Ethiopia) wetting themselves, and demand for support to manage self-wetting in the home. A survey asked 524 children about their latrine behaviours; and 312 adult caregivers about the latrine behaviours of the children aged 5 to 12 they care for. Few adult caregivers (1 per cent) indicated that children were self-wetting during the day and/or night, and only one child indicated self-wetting (during the day). Yet the survey revealed demand from adult caregivers for household items typically used to manage involuntary self-wetting. This could suggest self-wetting is occurring, but there is a reluctance to disclose it. Given the impact of self-wetting on the lives of children and their adult caregivers, it would be unethical for it not to be considered when developing emergency programmes across sectors including the water, sanitation, and hygiene sector. With further research and modifications to the survey, it could provide greater clarity on the number of children self-wetting and the scale of demand for support to inform emergency programme design.*

Keywords: incontinence, child, emergency, bedwetting, enuresis, Ethiopia

URINARY INCONTINENCE (UI) IS THE involuntary leakage of urine. Leakage can be continuous or intermittent, and if intermittent can happen at any time, day or night (known as enuresis or bedwetting in children). It is difficult to determine the prevalence of UI in children. Numerous studies have been completed, but comparison is rarely possible due to a lack of homogeneity in study design including definitions, study population, means of sampling and enrolment, and methods of data collection. As global reference points, Buckley and Lapitan's (2010) review of the best available evidence found that the prevalence of daytime UI in children decreases with age, from 3.2–9.0 per cent in 7-year-olds, to 1.1–12.5 per cent in 11 to 13-year-olds (albeit most studies reported a prevalence of between 1.1 per cent and 4.2 per cent); and the 6th International Consultation on Incontinence found

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that most studies reported a prevalence of enuresis of 7.0–10.0 per cent at seven years of age, falling to 1.7–4.8 per cent at 11 to 12 years of age (Abrams et al., 2017). Children that wet themselves can experience incontinence-associated dermatitis (similar to nappy rash), skin infections, pressure sores, urinary tract infections, and dehydration (if fluid restriction is used as a management strategy) (Rosato-Scott et al., 2019). The social and emotional impact on their lives and their carers' lives can be significant, and children that wet themselves may also be at risk of abuse from caregivers in response to the leakage (Can et al., 2004; Sapi et al., 2009).

Many studies have investigated the prevalence, management, treatment, and impacts of UI in children in high-income countries (Chang et al., 2017, for example), but less is known about UI in children living in low- and middle-income countries (LMICs) (studies include Sapi et al., 2009; Fockema et al., 2012) and particularly in emergency contexts. For example, at Save the Children at least, incontinence is not included in emergency health data collection templates and would instead be captured in patient notes, yet anecdotally bedwetting is consistently recorded by Child Protection specialists (being a sign of stress and trauma). It is hypothesized that the prevalence of UI in an emergency context will be higher than global estimates for two reasons. First, because of inaccessible and/or inadequate sanitation facilities, a child who has full control of their bladder wets themselves because they do not want/are not able to use the sanitation facilities available – such as communal toilets in a refugee camp (this is known as social urinary incontinence (SUI) (Ryan, 2018)). The second reason is that the child is experiencing stress and trauma. Jurković et al. (2019) identified refugee status as a risk factor in the occurrence of enuresis in children. This is likely due to the cumulative stresses and traumatic experiences of displacement and forced movement, as stress and anxiety have been found to contribute to the causation of enuresis in some children (Nevéus, 2017; Jurković et al., 2019). Although some studies report a higher prevalence of daytime UI in children under stress, the direction of the causal relationship between psychological problems and daytime UI is unclear (Sureshkumar et al., 2000; Buckley and Lapitan, 2010; Abrams et al., 2017). For families with children that wet themselves, managing the condition in an emergency context – whether an established settlement or a camp – could be particularly challenging as required resources may be lacking, including significantly extra water and soap (estimated at five times as much as a person without incontinence); and time to bathe and wash clothes, bedding, and pads (Sphere Association, 2018). The impacts of the condition may also be far-reaching: embarrassment and shame, or social ostracism (for example, due to smell) could prevent children who wet themselves from participation in programming, education, and social activities (Hafskjold et al., 2016).

Jurković et al. (2019) believe that interest in the connection between enuresis and war stressors is on the rise, originating from Ceri et al.'s (2016) single study group of Yazidi refugee children living in Turkey. Yet a review of the literature did not find a specific study on the prevalence of UI (during the day and/or night) in children aged 5 to 12 (those too old to use small potties, but usually too young to safely and confidently use adult latrines during both the day and night) in

an emergency setting, or how best to manage incontinence in children during an emergency. As emergencies progress, the water, sanitation, and hygiene (WASH) sector must move beyond providing initial rapid relief, to 'ensuring conditions that allow people to live with good health, dignity, comfort and safety' (Sphere Association, 2018: 92). Given the impact of UI on the lives of children and their caregivers, it would be unethical for the WASH sector not to consider UI when developing WASH interventions (and preferably with community participation), particularly after the initial stages of an emergency response. Studies that explore UI in children in an emergency context will therefore raise awareness of the condition and support the inclusion of UI on the WASH sector's agenda.

This study aimed to be the first to explore the number of children aged 5 to 12 in an emergency setting wetting themselves, and demand for support to manage self-wetting in the home. The emergency setting was Tukaley in Ethiopia, an established village that hosts an internally displaced person (IDP) population. The study used a survey to ask 1) children aged 5 to 12 about their latrine behaviours; and 2) adult caregivers about the latrine behaviours of the children aged 5 to 12 they care for, as a means to indicate if there were children self-wetting during the day and/or at night. The survey also asked adult caregivers to indicate preferred support options to manage self-wetting in the home.

Materials and methods

The data collection was conducted by Eclipse Experience (Eclipse) and Save the Children (STC, together the Partners) between September 2019 and January 2020 in a protracted emergency setting, Tukaley in Ethiopia. Tukaley is a small *kebele* (village) with a population of 570 households, located north of Kebridahar town in the Korahey Zone of the Somali Region of Ethiopia. The inhabitants of Tukaley are pastoralist families from various parts of the Somali region, internally displaced since early 2010 due to droughts and large-scale loss of cattle (Bourne and Varampath, 2019). STC constructed the first latrines in Tukaley (four blocks of latrines, each with four cubicles) in 2019, and prior to construction the inhabitants practised open defecation (Bourne and Varampath, 2019). As at September 2019, there were 1,131 children aged 5 to 12 living in Tukaley.

The study used the User-Centred Community Engagement (UCCE) methodology to better understand the latrine behaviours and needs of children aged 5 to 12 in Tukaley (Eclipse Experience, 2019). During an emergency, community engagement – and particularly with vulnerable populations – is often insufficient or of too low a quality to enable WASH activities to be better designed for the various needs of the community. Rapid needs assessments seldom enable the collection of significant and reliable data and although a lack of time is definitely a constraint, there are also few tools to support data collection and analysis during this time, and those that do exist are not always used. UCCE was designed in response to these challenges. The methodology is composed of several components, the first being an Interactive Digital Survey (IDS) to quickly identify respondents' problem areas related to the latrine and handwashing facilities.

Participants in the IDS are either children aged 5 to 12 (child respondents), or adults who care for children aged 5 to 12 (adult caregiver respondents). Once the IDS has been conducted (IDS I), an automatically produced report is reviewed by engineers and priority problems are identified. Co-creation sessions are then held with children and adult caregivers (separately) to explore the problem areas in depth and decide on design changes in a participatory way. The design changes that can be implemented are, and after a period of use a second IDS (IDS 2) is conducted to collect feedback on the altered construction and identify whether there is a need for further alterations (Eclipse Experience, 2019).

By early 2019, the UCCE methodology had been successfully proved as a concept in Bangladesh (December 2017, an early emergency context) and Iraq (February 2018, a protracted emergency context), and a further study was planned in Ethiopia. It was at this stage that the lead author asked the Partners if they would be willing to amend the surveys used in Bangladesh and Iraq to explore the number of children aged 5 to 12 in an emergency setting wetting themselves, and demand for support to manage self-wetting in the home. Of relevance to this paper:

- The question asked in the Bangladesh and Iraq adult caregiver IDS 'where do your children currently defecate most often?' was split into four to ask where children 1) currently urinate most often during the day; 2) urinate most often during the night; 3) defecate most often during the day; and 4) defecate most often during the night; and multiple choice answers were expanded to include the home.
- An additional question was added to the adult caregiver IDS, being 'These are images of three household items: a nappy, a bedpan, and a mattress protector. Please point out any items that would be useful for you and your children'.
- Two additional questions were added to the child IDS, asking 'where do you currently urinate most often during the day?' and 'where do you currently urinate most often during the night?'

The final surveys were translated from English to the local language of the IDPs (Somali) by a member of the STC field team based in Ethiopia. IDS I was conducted in September 2019 by five data collectors who were trained by members of Eclipse. The selection criteria for being asked to take part in IDS I were 1) for adults, to reside in a household with children aged between 5 and 12 years old; and 2) for children, to be aged between 5 and 12 years old. Each data collector was assigned an area of the village and over the course of four days, they called at each household once. The number of surveys completed was limited by the time available, and 524 children and 312 caregivers took part (as some caregivers had multiple children within this age bracket).

This paper has only considered data related to three questions asked in the adult caregiver IDS, and two questions asked in the child IDS:

- Adult caregiver respondents answered the questions 'where do your children currently urinate most often during the day?' and 'where do your children currently urinate most often during the night?' by tapping once on the appropriate answer

text: at home in a bed, at home in a bucket, outside of home around the camp, camp latrines, child-friendly spaces latrines, or other. If other was given as an answer, the data collector asked for more detail and input text to the IDS.
- Adult caregiver respondents also answered the question 'These are images of three household items: a nappy, a bedpan, and a mattress protector. Please point out any items that would be useful for you and your children' by tapping on the relevant image(s).
- Child respondents aged 5 to 12 answered the questions 'where do you currently urinate most often during the day?' and 'where do you currently urinate most often during the night?' by tapping once on an illustration with images depicting home, outside of home around the camp, camp latrines or bush. If home was given as an answer, the data collector asked the respondent 'Where at home?', and the respondent answered by tapping once on an illustration with images depicting a child (representing the respondent), a bed, and a bucket.

The anonymous data was stored on a server managed by AidIQ under a subcontract from Eclipse. The lead author viewed the aggregated data on an online hub using a username and password, and the raw data (with individual responses identified by time stamp of survey completion) was also exported in a Microsoft Excel format for analysis. Descriptive statistics were computed to assess the distribution of answers given by adult caregiver respondents and child respondents to 1) where do your children/you currently urinate most often during the day and 2) where do your children/you currently urinate most often during the night; and to assess the distribution of answers given by adult caregiver respondents to the question on household item choices as a means to triangulate the data.

Ethical considerations

The amendments made to the survey for the purpose of exploring the number of children wetting themselves, and demand for support to manage self-wetting in the home were designed to ensure that:

- the primary purpose of the survey (to quickly identify, with minimum intrusion for participants, the most common problem areas children experience during their latrine journey) was not altered;
- there was no mention or suggestion of UI to ensure that such experiences were not interpreted by the survey participants as being problematic, particularly given that support to manage the condition was not being immediately offered.

At each household visited, the data collectors asked the adult residents if there were any children within the target age group (5 to 12 years old) living in the home. If there were any children within the target age group living in the household, the data collector verbally provided information about IDS I (including its purpose and the type of questions that would be asked) to the adult resident, and then asked the adult resident if they would 1) verbally consent to taking part in IDS I, and 2) verbally consent for the children in the household aged between 5 and 12 years old to being asked to assent to take part in IDS I. If the adult resident gave

consent to ask the child(ren) aged 5 to 12 in the household to take part in IDS I, the data collector verbally provided child-appropriate information about IDS I to the child(ren) aged 5 to 12 and then asked them individually if they would verbally assent to taking part. Only after verbal consent/assent was obtained was the IDS conducted.

Approval to conduct the Ethiopia study was granted by the STC Deputy Country Director in Ethiopia. The lead author's use of data from the Ethiopia study was approved by the Research Ethics Committee, Faculty of Engineering, University of Leeds, United Kingdom (Reference MEEC 19-018).

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Results

Of the 312 adult caregivers, 223 (71 per cent) reported that their children aged 5 to 12 urinate most often during the day at the camp latrines and 398 (76 per cent) of children aged 5 to 12 reported the same (Table 1). Four caregivers reported that their children aged 5 to 12 urinate most often during the day at home in bed, and two reported urination most often during the day at home in a bucket. Only one child self-reported urinating most often during the day at home, which was in bed.

Table 1 The location of daytime urination of children aged 5 to 12 in Tukaley, Ethiopia

Location[1]	*Interactive Digital Survey I respondent group*			
	Adult caregivers (responding on behalf of children cared for aged 5–12)		*Children aged 5–12 (self-reporting)*	
	(n)	*(%)*	*(n)*	*(%)*
Camp latrines	223	71	398	76
Outside of home, around the camp	67	21	44	8
Bush	Not an answer option[1]		79	15
Child-friendly spaces latrines	12	4	Not an answer option[1]	
At home, in bed	4	1	Not an answer option[1]	
At home, in a bucket	2	1	Not an answer option[1]	
At home	Not an answer option[1]		1	0
Other	4	1	Not an answer option[1]	
Total	**312**	**100**	**522**[2]	**100**

[1] Survey respondents were given different answer options dependent on their respondent group: 1) adult caregivers or 2) children aged 5 to 12.
[2] Two respondents did not answer.

Table 2 The location of nighttime urination of children aged 5 to 12 in Tukaley, Ethiopia

Location[1]	*Interactive Digital Survey I respondent group*			
	Adult caregivers (responding on behalf of children cared for aged 5–12)		*Children aged 5–12 (self-reporting)*	
	(n)	*(%)*	*(n)*	*(%)*
Camp latrines	204	65	298	57
Outside of home, around the camp	99	32	182	35
Bush	Not an answer option[1]		41	8
Child-friendly space latrines	1	0	Not an answer option[1]	
At home, in bed	3	1	Not an answer option[1]	
At home, in a bucket	1	0	Not an answer option[1]	
At home	Not an answer option[1]		0	0
Other	4	1	Not an answer option[1]	
Total	**312**	**100**	**521**[2]	**100**

[1] Survey respondents were given different answer options dependent on their respondent group: 1) adult caregivers or 2) children aged 5 to 12.
[2] Three respondents did not answer.

Of the 312 adult caregivers, 204 (65 per cent) reported that their children aged 5 to 12 urinate most often during the night at the camp latrines, and 298 (57 per cent) of children aged 5 to 12 reported the same (Table 2). Of the caregivers, 99 (32 per cent) reported that their children aged 5 to 12 urinate most often during the night outside of home around the camp, and 223 (43 per cent) children aged 5 to 12 also reported urinating most often during the night outside of the home (including in a bush). Three caregivers reported that their children aged 5 to 12 urinate most often during the night at home in bed, and one reported urination most often during the night at home in a bucket. No child self-reported frequent urination at home during the night.

Of the 312 adult caregivers, 289 (93 per cent) indicated that a bedpan would be useful for them and their children; 73 (23 per cent) selected a nappy; and 59 (19 per cent) chose a mattress protector (Table 3).

Table 3 Household items selected by adult caregivers that would be useful for them and their children

Household item[1]	*Adult caregivers*	
	(n)	*(% of 312 respondents)*
Bedpan	289	93
Nappy	73	23
Mattress protector	59	19

[1] Survey respondents could select up to three answers.

Discussion

Of the adult caregivers, 1 per cent (4 of 312) reported that their children aged 5 to 12 urinate most often during the day at home in bed. The number of children to which this relates is unknown: on average adult caregivers reported that three children aged 5 to 12 lived in their household and they may have answered the question thinking about one child in particular, or the children as a group. The age and gender of the children to which these answers relate are therefore also unknown. Only one child of the 522 that completed the IDS self-reported urinating most often during the day at home, which was in bed. The age and gender of the child is unknown as the answer was provided by tapping the screen, and the IDS currently lacks the functionality to report the location of the tap by individual data record (identified by time stamp). Children wetting the bed during the day could have daytime UI, but the results suggest a much lower number of children than global prevalence data indicates: Buckley and Lapitan (2010) found that the prevalence of daytime UI in children decreases with age, from 3.2–9.0 per cent in 7-year-olds, to 1.1–12.5 per cent in 11 to 13-year-olds, albeit most studies reported a prevalence of between 1.1 per cent and 4.2 per cent.

Of the adult caregivers, 1 per cent (3 of 312) reported that their children aged 5 to 12 urinate most often during the night at home in bed, but no child self-reported frequent urination at home during the night. Children wetting the bed at night could have enuresis, but for the same reasons as cited above, prevalence data by age cannot be calculated for this study. Again the results suggest a much lower number of children that could potentially have enuresis than global estimates: the 6th International Consultation on Incontinence found that most studies reported a prevalence of enuresis of 7.0–10.0 per cent at 7 years of age, falling to 1.7–4.8 per cent at 11 to 12 years (Abrams et al., 2017).

Understanding of UI in LMICs, and including emergency settings, is still in its early stages. Previous research conducted in Zambia found a low level of disclosure by adults that they were experiencing incontinence symptoms (that is, self-wetting), with a reluctance to disclose attributed to a lack of awareness that incontinence is a medical condition, and/or the stigma associated with the condition (Rosato-Scott and Barrington, 2018). Interviews with adults and their caregivers revealed this reluctance to disclose rather than an absence of UI, and this is supported by systematic reviews looking at the prevalence of adults experiencing UI in LMICs which find rates in line with global estimates (Walker and Gunasekera, 2011; Rosato-Scott and Barrington, 2018; Mostafaei et al., 2020).

This study assumed that the number of children self-wetting in Tukaley would also be in line with global estimates, or even higher due to the impact of stress and trauma, but this may not hold true. Ashenafi et al. (2001) conducted a survey of mental and behavioural disorders in children aged 5 to 15 years in rural Butajira, a district of southern Ethiopia. The study diagnosed enuresis in 0.8 per cent of the study children (that is, across the age range) through interviews with their caregivers (Ashenafi et al., 2001). Ashenafi et al. (2001) were surprised by their results and concluded that caregivers may not be reporting the condition in children as they do not recognize it (due to, for example, children in rural areas sleeping alone and

parents rarely changing children's clothes or making their beds) and children may not be reporting the condition to parents due to the stigma associated with it. Desta et al. (2007) further hypothesized that in rural areas caregivers may not detect bedwetting due to a lack of bedding (commonly children sleep on hay) and the smell of animal excreta masking the smell of human urine (where animals and humans spend the night in the same room).

The prevalence of UI could also be low in Tukaley relative to global estimates. However, when given the choice many adult caregivers selected household items (and some selected multiple household items) that are typically used to manage urinary leakage (bedpans, nappies, and mattress protectors). The selection of nappies (23 per cent, or 73 of 312 caregivers) and mattress protectors (19 per cent, or 59 of 312 caregivers) is indicative of having to manage a problem of involuntary self-wetting. The results of the IDS could therefore indicate a lack of caregiver knowledge about the latrine behaviours of the children they care for and/or a reluctance to disclose. Caregivers may not know where the children they care for usually urinate during the day and night: prior to the installation of latrines in the village open-urination was practised. There may also be a reluctance to report children wetting the bed/self-wetting due to the stigma associated with doing so. Yet 93 per cent (289 of 312) of adult caregivers also selected bedpans. This suggests that a child would voluntarily be able to use it; that is, they are not wetting themselves without control (either during the day or during sleep). This could indicate a reluctance to leave the home to urinate (SUI) rather than having the medical condition of UI. Further, the selection of answers may not actually be related to managing children self-wetting at all: items could have been selected to be used by an adult to manage self-leakage or for completely other purposes, for example to collect rainwater (mattress protector) or store water (bedpan). Without interviews with caregivers and children to interrogate the IDS data, such hypotheses cannot be further explored and it is not possible to determine if the result can be generalized to rural populations of IDPs located elsewhere in Ethiopia and further afield.

Limitations

This was a scoping study to explore the number of children aged 5 to 12 in an emergency setting wetting themselves, and demand for support to manage self-wetting in the home, using a survey-based methodology. However, in the absence of interviews with participants it is not possible to interrogate the data to fully understand the true meaning of the answers given. Further, the study was limited to participants who were available at the time of the household visit, and each household was only visited once. This may affect the generalizability of the findings.

Conclusions

Four of 312 caregivers reported that their children aged 5 to 12 urinate most often during the day at home in bed (number of children, age, and gender unknown); one child (of 522 that answered the IDS, age and gender unknown) self-reported

urinating most often during the day at home in bed; 3 of 312 caregivers reported that their children aged 5 to 12 urinate most often during the night at home in bed (number of children, age, and gender unknown); and not one child (of the 521 that answered the IDS) self-reported urinating most often during the night at home in bed. If it is suggested that children wetting the bed during the day and/or night could have UI, this is an unexpected result relative to global estimates (Buckley and Lapitan, 2010; Abrams et al., 2017).

The number of children self-wetting could be relatively low in Tukaley, but IDS answers indicating demand for nappies and mattress protectors suggests a greater need for support to manage self-wetting than would be expected given the low number of children self-wetting. The results may therefore indicate a reluctance to disclose (by both adult caregivers and children) due to the stigma associated with incontinence, and the study has identified a further context in which incontinence is a taboo subject. However, a high demand for bedpans was also revealed, which suggests a reluctance to leave the home to urinate (SUI) rather than involuntary leakage (UI). Further, demand for bedpans, nappies, and mattress protectors could be indicative of different problems to be managed, for example, adult self-wetting and/or the need to store water. Without interviews with caregivers and children to interrogate the IDS data such hypotheses cannot be further explored.

Little is known about how displaced children understand and experience health. Migrant research to date has tended to prioritize adult frames of reference, including caregiver's perspectives on children's health-related experiences and needs even though adults do not necessarily make good proxies for children (Curtis et al., 2018; Spencer et al., 2019). The IDS is distinctive in that children themselves participate, and the Ethiopia study was therefore an ideal opportunity to explore the latrine behaviours of the children in greater detail. Amending the questions asked provided deeper insight into how and why the children were using (or not using) the latrines in Tukaley; additional changes could provide further understanding about the number of children wetting themselves in an emergency context and the need for support to manage self-wetting without unnecessarily burdening the data collectors (remember that the primary purpose of the IDS is to quickly identify, with minimum intrusion for participants, the most common problem areas children experience during their latrine journey). For example, adult caregiver answer options could be amended to more clearly identify self-wetting. Current answer options are at home in a bed, at home in a bucket, outside of home around the camp, camp latrines, child-friendly spaces latrines, or other. The authors suggest that adult caregiver answer options are revised to at home (which if selected triggers further answer options depicted using images of a child, a bed, and a bucket), outside of home around the camp, camp latrines, child-friendly spaces latrines, or other. Ideally, these answers would be aligned with the children's answer options to allow a quick and easy comparison. It is also suggested that interviews are held with participants (retrospectively or with participants of future studies) to explore how the question on identifying the need for household items is interpreted by respondents – and if anything else should be added, for example, additional soap – in order to amend it as necessary to more clearly identify demand for support to manage self-wetting (and perhaps for adults as well as children). It is noted that this

survey was not designed to determine the prevalence of UI in children and further research is therefore needed to calculate the prevalence of UI in children aged 5 to 12 in an emergency context. Ideally such a study would also incorporate comparable research in a non-emergency context to determine if prevalence rates are impacted by the stress and trauma associated with emergencies.

Such amendments to the UCCE methodology would be of great use to multiple sectors (including health, protection, children, and WASH) as a means to quickly provide an indication of the numbers of children self-wetting and identify if self-wetting is an issue that requires programmatic support. However, this is reliant on adult caregiver IDS participants being willing to report that the children they care for wet themselves and/or the bed, and child IDS participants self-reporting self-wetting. Where incontinence is a taboo subject, this study suggests that disclosure levels may be low even if support is wanted. The experience of self-wetting can have negative implications for the life of a child medically, socially, and emotionally, and increase the risk of abuse. Support should therefore be provided to manage self-wetting where possible. Research conducted to determine if and how much UI exists in an emergency context may increase awareness across sectors that it should be included on their emergency response agendas, but it should not be necessary to justify providing support for its symptoms where demand is clearly indicated. The IDS is therefore recommended as a tool to focus on the scale of the support needed, rather than to deeply explore why such support is requested.

Final thoughts for the WASH sector

- Families with children that wet themselves will require additional water, soap, and time to bathe and wash clothes, bedding, and pads.
- Camp latrines may never be suitable for all children aged 5 to 12 to use at night (due to, for example, a fear of the dark) and some children may prefer to urinate (and defecate) outside close to home which could be unsafe and unhygienic. The distribution of items to support hygienic urination (and defecation) in the home would discourage open urination (and defecation).
- Surveys to determine the need for household items may not reveal the underlying reason for selection. For example, in this instance it is not known if there is a high demand for bedpans to urinate in, or for an alternative purpose such as to store water. Interviews are therefore recommended to supplement surveys to ensure that the most appropriate household items are distributed.

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