

Handwashing knowledge and practices among caregivers of pre-school children in underprivileged areas of Nelson Mandela Bay

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Objectives: To explore and describe caregivers' handwashing knowledge and practices in the context of underprivileged urban communities.

Design: A qualitative descriptive and exploratory study was conducted during August and September 2017, through five focus-group discussions, with caregivers of children younger than five years attending ECD centres.

Setting: Early childhood development (ECD) centres in various underprivileged communities in Ibhayi and Motherwell, Nelson Mandela Bay.

Subjects: Thirty-five adults, aged between 24 and 60 years, functioning as primary or secondary caregivers to 105 children, participated.

Results: Three themes emerged, of which the first entailed the knowledge of handwashing and compliance with water, sanitation and hygiene (WASH) recommendations. Practical challenges that may prevent compliance with recommendations were highlighted. Handwashing as a social norm emerged as the second theme, and reflection on strategies at primary health care level to increase awareness regarding handwashing in communities was the third theme.

Conclusion and recommendations: Current handwashing counselling at primary health care sites may not be perceived as relevant in underprivileged communities. However, with adequate support ECD practitioners have influence to change the handwashing behaviour and knowledge of pre-school children and families. Furthermore, communication and dissemination of handwashing messages should be clear, practical and relevant to address inappropriateness of current poster images and should include suggestions on what to do when experiencing infrastructure challenges and in times of water restrictions. Health-promotion strategies should focus on optimising handwashing practices while caring for pre-school children.

Keywords health promotion, handwashing, challenges, early childhood development, underprivileged

Introduction

South Africa has been recognised as a country with one of the highest rates of inequality in the world and, despite some progress, poverty rates increased between 2011 and 2015.¹ Poverty is associated with inadequate access to quality basic services including health, education and infrastructure (such as water and sanitation) and inadequate access to early childhood development (ECD) programmes.² Inadequate water, sanitation and hygiene (WASH) practices are negatively associated with child health and development.³

ECD centres in underprivileged communities are ideal environments for the increased transmission of infections, specifically through shared water basins and drinking cups.⁴ Since WASH interventions have shown to significantly reduce intestinal infections⁵ and may also reduce malabsorption-related stunting,⁶ factors that may impact on WASH practices in vulnerable communities should be closely monitored.

Nelson Mandela Bay (NMB) Municipality encompasses an area of 1 959km² with a population of 1.26 million people. In 2016, 92.5% of this population had access to formal housing, with 77.8% having access to piped water in the dwelling and a further 11.5% with piped water in the yard. Only 2% of households had no access to formal piped water in the yard in

2016.⁷ Despite the majority of residents having access to safe water, a previous study found that 26% of a sample of primary school children ($n = 934$) were infected with *A. lumbricoides* and 22% with *T. trichiura*.⁸ Although this particular sample was drawn from eight primary schools, all located in underprivileged areas in NMB, it can be assumed that with each positive case the whole household, including younger siblings, would also be infected. Access to safe, piped water into each resident's yard in underprivileged areas may not necessarily translate into optimal handwashing behaviour and may lead to a high prevalence of soil-transmitted helminth infections, resulting in poor growth and development. Diazgranados *et al.* confirm 'positive advantages' for using an equipped ECD centre as a platform for educating children, and by implication the children's families, regarding health, hygiene and nutrition.⁹ To attempt to support primary health care counselling related to hygiene and specifically address inadequate handwashing behaviour, students from Nelson Mandela University together with a local non-governmental organisation (NGO) focused on handwashing skills training of ECD practitioners as well as practical demonstrations on how to assemble a *tippy tap* – a simple device for handwashing with running water, made from an empty plastic bottle.¹⁰

The aim of the study was to explore and describe caregivers' handwashing knowledge and practices in the context of underprivileged urban communities with limited access to adequate infrastructure.

Methods

As part of this descriptive and exploratory study, utilising a qualitative approach, five focus-group discussions (FGDs) were conducted with primary and secondary caregivers of children younger than five years. The FGDs were conducted during afternoons from August to September 2017, at ECD centres in various underprivileged communities in Ibhayi and Motherwell in NMB, by a trained facilitator (in isiXhosa). These areas are characterised by high-density living, unemployment, inadequate service delivery – especially waste management – and typically have access to water in the yard but not necessarily in the house. All questions were part of a discussion guide that was developed in collaboration with expert opinion from UNICEF-SA and tested during a pilot study of which the results were excluded from analysis. Participants were recruited by principals from ECD centres, who acted as gatekeepers and invited caregivers after conducting a parent meeting. Interviews were conducted at ECD centres to ensure safety of the interviewers and participants, and selection was done using convenience and snowball sampling. The sample included 35 adults, between 24 and 60 years of age, functioning as primary or secondary caregivers for 105 children.

The Research Ethics Committee (Human) at the Nelson Mandela University provided ethical approval (H16-HEA-DIET-005). After obtaining informed consent, each FGD was audio-recorded while a fieldworker took notes. The recorded audio tracks were transcribed verbatim, and only then translated into English, and back-translated to ensure accuracy, by a fully bilingual, independent health professional. Five FGDs of approximately 30 minutes each took place before data saturation was reached. Responses from the various participants were grouped together into codes from which various themes emerged,¹¹ using the Tesch method of data analysis.¹² Transcriptions were also uploaded to ATLAS.ti (<https://atlasti.com/>) for coding by an independent coder experienced in qualitative data analysis. Coding was done inductively, after which the codes were merged into themes to represent the participants' handwashing knowledge and practices. Trustworthiness was ensured by using the four key components originally developed by Guba and Lincoln.¹³ Credibility was achieved by prolonged engagement with the participants to assist them to trust the process enough to share their experiences openly, as well as member checking after translation of transcripts. Dependability was ensured by each process in the study being reported in detail, describing the research steps taken and recording them throughout the study. Confirmability to establish that data and interpretations of the findings are not subjectively from the researcher, but are clearly derived from the data, was ensured by using an independent coder. Transferability was achieved by using thick description, meaning describing not just the behaviour and experiences, but their context as well, to enable the reader to understand the participants' reality.¹³

Findings and discussion

The three themes that emerged from data analysis and discussion relating to each, are provided below.

Knowledge regarding handwashing and adherence to WASH recommendations

As part of the above theme two sub-themes emerged.

The first sub-theme showed that most participants in this study had a sound basic knowledge about why, when and how to wash hands: 'handwashing protect against germs' (FG1, P4), and were clear that 'everybody who has hands should wash them' (FG4, P8). Participants also emphasised 'those nails, you need to scrub them' (FG2, P2), with 'lukewarm water and soap' (FG1, P4). Participants seemed to be particularly concerned about contact with babies and to wash hands when 'touching a baby and after changing the nappy' (FG1, P5) and even 'before you breastfeed a baby' (FG1, P5).

However, it was clear that despite the apparent basic knowledge related to handwashing some participants, when probed, were unable to provide a deeper understanding of the importance regarding handwashing and when it should take place, for instance that you should wash hands before you do 'anything that is hygienic' (FG2, P2), or 'just clear your conscience and wash those hands ...' (FG5, P3).

With the second sub-theme, participants revealed that practical challenges may interfere with compliance with handwashing standards. 'I see people wipe [their hands] on their bodies ... they are putting back the dirt ...' (FG1, P2). Time constraints seem to play a role, with participants admitting 'we are always in a hurry ... not washing like we are supposed to ...' (FG3, P3). Participants also stated that 'sometimes we forget that the children need to wash their hands, because we think they do not handle food ... but they eat ...' (FG4, P8).

UNICEF highlighted the need to instil correct handwashing practices at a young age using innovative approaches, such as group handwashing in schools.³ This principle has since been incorporated into ECD activities at ECD centres, as part of education and nutrition programmes in the NMB area.¹⁴ Teachers at ECD centres use weekly themes as part of their planned lessons, presenting an opportunity for handwashing messages to be integrated into a lesson theme or home-based activity. Participatory approaches where mothers and community members jointly identify problems and possible solutions in their community are equally important to improve health outcomes for children.¹⁵ This is supported by statements from the participants such as: 'It must be something we enjoy ... there is this programme [Tippy Tap] where the bottle is used. It's interesting, the child gets overwhelmed with the water coming out of the straw; handwashing is boring, we should do something interesting' (FG2, P3). Caregivers also receive handwashing messages at primary health care facilities to prevent diarrhoeal disease in children. These messages might not translate into practice, especially if the home has inadequate infrastructure such as piped water into the yard but not into the dwelling. 'My family uses a bowl for washing hands because the running water is outside' (FG5, P2). It is therefore necessary for ECD practitioners to ensure that handwashing lesson content includes why handwashing is important and practical, adding how to make a *Tippy Tap*. The latter can also be discussed with parents at meetings, so that they realise they play an important role in creating a safe environment for children.¹⁶ Dissemination of child care messages is the responsibility of parents, teachers and community members,¹⁷ but for teachers to disseminate these messages they need to understand the significance of how inappropriate practices in the home can impact

on the health and development of all the children in the ECD centre. Education and mentoring of ECD practitioners regarding handwashing at the ECD centre, and within the community, is thus essential.

With regard to lack of piped water into individual dwellings participants reflected that hot clean water and soap were not always available. 'Water [in my area] get finished and there will be no water for the day' (FG5, P6). Participants showed some resilience in coping strategies: 'we use one basin for all, add a drop of bleach, because germs are eaten by the bleach' (FG5, P6), while others admitted that their circumstances of no piped water into the house prevent them from optimal handwashing 'I have running water outside ... after using the toilet, you only wash with water, the admin of going inside and find the soap otherwise thieves will steal it ... is not practical; we all know how it is supposed to be but reality only allows us to use water' (FG5, P8).

The reality of water restrictions in the NMB metropole, where there was a severe drought at the time of the study, was also a concern among participants. 'We are saving water ... you need to make use of a cup to wash hands, even if you can see you did not scrub well' (FG2, P2) and 'we are told to save water ...' (FG5, P1). Furthermore, some frustration with the local government emerged: 'It [the burst pipe] won't be a thing of tomorrow, it will take time [to fix]' (FG5, P1). Therefore 'when there is no water, we don't have an option, we do not wash them' (FG2, P2). Added to the above is a further challenge: 'and vandalism by the people that steal these pipes and sell them, causes the water to be closed and not to come from the taps' (FG4, P5). It is evident that water security is a concern for people living in under-resourced communities,⁴ and these challenges will most likely continue to result in poor handwashing practices.

Furthermore, in the context of water restrictions in the area where the study was conducted, available WASH educational material aimed at ECD centres, which depicts children in a modern bathroom with a running tap, may result in conflicting messages, hindering the potential impact of handwashing standards. ECD Practitioners and parents should engage in dialogue regarding WASH practices and the challenges that the community may experience, which are relevant to their context and provide feedback to the relevant department that distributes the pamphlets.

Handwashing as social norm

The importance of developing a good hand hygiene habit is essential, and needs to become a habit in all communities through behaviour change.¹⁸ Sustained handwashing behaviours have to be fostered – for instance promoting a social norm around handwashing.¹⁷

One participant stated 'that is how it is supposed to be and, our mothers taught us like that as we grew up' (F4, P6). They also realise the vulnerability of children: 'since we take care of children who are not aware of the presence of germs around them ... it is important to educate them about handwashing' (FG5, P5). Cultural and societal practices are embedded in daily life, and are acquired through social learning, therefore parental knowledge and role modelling should be in line with handwashing standards in order to ensure adequate handwashing practice. This can be achieved using educational campaigns and interventions to target caregivers through parent education

programmes, local healthcare facilities and ECD centre parent gatherings, all sharing the same messages.¹⁹

A participant reflected on the importance regarding handwashing in the context of other diseases:

'The Minister of Health said it will be painful to protect yourself from AIDS, only to find out that you are going to die because of diarrhoea, because you did not wash your hands. We are concerned about the things we can see, sickness ... HIV, but the most dangerous one is diarrhoea, which occurs through a simple thing like not washing your hands.' (FG2, P3)

Significantly, communication about handwashing behaviour change in underprivileged communities has been identified as challenging.²⁰ Communal washing behaviour is a trend that translates into learnt behaviour observed in ECD centres and schools. Since the presence of a *tippy tap* in households with limited sanitation infrastructure, together with the promotion of handwashing practices, appears to have a significant impact on both adults and children, dietitians/nutritionists, nurses and other health workers need to incorporate this in strategies.¹⁰

Reflection on strategies at primary health care level to increase awareness about handwashing in communities

The third theme describes participants' reflections on strategies to create more awareness about the importance of handwashing. The role of parents was emphasised with 'everything starts at home right?' (FG1, P6). 'It starts in us ... when I am lazy ... it will fail' (FG2, P3). Parents identified the need for active role modelling in the home. However, ECD centres are also catalysts for teaching handwashing practices. There is a perception that ECD centres are a protective environment and would adhere to ideal hygiene standards because 'the teachers are with them [our children]' and that insinuates a scenario where the ECD practitioner has been trained, disciplined and is accountable for handwashing standards. Participants were supportive of awareness campaigns but 'not one [campaign] that will be there and disappear ... it should be there all the time' (FG1, P2) and thought campaigns should focus on the 'consequences of not washing hands' (FG3, P1). 'Posters with pictures, for even a child who cannot read can see what is on the picture' (FG5, P1) were favoured by participants. However, emphasis was made that the content should be suitable for people in a township:

'... in an advert ... you see somebody in the bathroom with fancy lights and a mirror ... washing hands in a nice place that plants ideas in your head that OK, hands are washed in a bathroom ... so when I [one day] have that bathroom I will definitely wash my hands ...' (FG4, P8)

Participants therefore favour images that take their circumstances and context into account:

'I have seen posters in hospital about how to ... but in that posters is a tap. Having posters about somebody pouring water with a jug, so that we can see this thing of everybody using the same basin/bowl is not helping anyone.' (FG4, P3)

Participants indicated that resources that are available at primary health care facilities were not sensitive to the challenges they face, and that health workers do not provide solutions for their unique problems. They also understood the importance of being actively involved in searching for solutions and programmes that are beneficial to their communities. Participants from this study indicated a clear willingness to make their voice heard; one participant reflected their idea: 'a water campaign and invite the councillor as we are part of the project; invite our parents so that we have a talk ... we can create an awareness, water awareness' (FG4, P5).

Participants have highlighted the need for materials to be suitable for people in the townships. This finding should nudge health professionals in a direction to consider why, currently, certain handwashing promotion material might not be context specific for the target group. Participants also felt that handwashing messages were not a priority. As one participant said, 'Most people don't know about germs ...' (FG5, P9). 'Like the promotion of handwashing it is not really out here like you see with save electricity turn off the light have been in our face for a long time but this handwashing it's okay like ...' (FG5, P6). Furthermore, even though the majority of participants have access to piped water in the yard, it does not always follow that the water is available or accessible to all household members, which complicates compliance, and leads to some participants suggesting a lack of adherence to requisite handwashing etiquette:

'... but if I'm now honestly speaking you [say you] wash your hands after you going to the toilet, after you finish eating, but it's becoming a full-time job like each every time [you do something] you have to go wash your hands ...' (FG2, P5).

Awareness strategies and media campaigns must be contextual and relevant to the target group, as a participant points out: 'not to actually have to making [sure] campaigns are good, implementation is key' (FG5, P3) and contextualisation of such messages ensures effective delivery. The same participant adds an interesting observation in this regard, 'now if we are saying that we are doing operation "germ", also have things in place, if you go to schools then pass samples of hand sanitizer or soaps, you know, or build water fountains where people where people can wash their hands' (FG5, P3). Evidently in order to effectively leave a lasting impression on people, strategies to improve handwashing, with the ultimate view to decreasing morbidity and mortality, need to be aligned to the reality of the situation of the person receiving the information.

Conclusion, limitations and recommendations

Handwashing goes beyond access to piped water in the yard; it links closely to individuals' knowledge, attitudes, learned behaviours and community context. The three themes that emerged in this study provided insight regarding handwashing messages and strategies and why they do not penetrate into the selected communities.

Although most caregivers in this study held foundational handwashing knowledge related to germs, water, and the importance of hygienic child care, certain challenges interfered with implementation of knowledge. Participants felt that access to safe water in their areas was unreliable, with the further complication of water being unavailable in the house.

Handwashing behaviour change occurs through meaningfully engaging both caregivers and children with activities that will build, sustain and create the habit of handwashing with soap. Communication and dissemination of handwashing messages

- All WASH messages linked to WASH standards should be simple, realistic and practically orientated, particularly in underprivileged communities.
- The local community authority should be involved in discussions about infrastructural limitations and water restrictions to address insufficient access to safe water in dwellings.
- ECD practitioners should be encouraged to view the child as a valuable 'teacher' of health messages, which he/she can take back to their family through take-home activities.
- Health-promotion recommendations should include active community participation and practical solutions to local challenges such as water restrictions.
- WASH messages and campaigns should be aligned with the reality of the community situation and the process can move forward by mentoring ECD practitioners to train community members in the need for, and building of, a *tippy tap*.
- Health-promotion provincial departments should improve planning processes by ensuring that international awareness campaigns are adapted to local contexts.

Figure 1: Summary of recommendations.

should thus be clear, practical and targeted at caregivers to sustain behaviour change.

With adequate support regarding handwashing knowledge and practices, caregivers and ECD practitioners would have the necessary influence to change handwashing behaviour and knowledge of preschool children. All of this is necessary to improve WASH in underprivileged communities and support optimal growth and development in children. The results of this study are based on FGDs from two areas in NMB and results cannot necessarily be generalised. However, health promotion material could be adapted to be applicable to all areas in the Eastern Cape by acknowledging the opinions of the participants.

This study makes recommendations (Figure 1) to optimise hygiene practices related to the care and support of preschool children.

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