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Knowledge and practices regarding water, sanitation and hygiene (WASH) among mothers of under-fives in Mawabeni, Umzingwane District of Zimbabwe

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ABSTRACT

The research study sought to assess knowledge and practices of mothers of under-fives regarding WASH in Mawabeni communal area in Zimbabwe. Focus group discussions, interviews, questionnaires and observation checklists were used to collect data. Data was analysed by developing specific themes related to the objectives and then frequencies were computed in Microsoft Excel. The mean score on WASH knowledge for the mothers of under-fives according to the Knowledge Index was 1. Knowledge regarding safety of water from different sources was generally poor with 70% of the mothers regarding water from surface sources to be safe to drink without treatment. Use of wide mouthed containers without lids was also common in the study area. However, no relationship was established between the type of water container used and the socio-demographic characteristics of the respondents. Knowledge regarding the importance of ablutions was generally good as highlighted by 78% of the mothers who regarded latrines as being important in prevention and control of diseases as well as for hygiene purposes. However, latrine ownership was noted to be related to the income level of the household ($p < 0.0001$). A total of 57% of the mothers had good knowledge on hand washing, indicating that it helped to prevent diseases. Generally, knowledge levels and sanitation practices on WASH among mothers of under-fives in Mawabeni were both poor and this could be a contributory factor to the high incidence of diarrheal diseases for under-fives in the area.

1. Introduction

Lack of adequate sanitation, poor hygiene and lack of safe portable water are serious global health problems that contribute to deaths of 1.5 million children under the age of five annually due to diarrheal diseases (Kariuki et al., 2012). In many developing countries like Zimbabwe there exists a high prevalence of water and sanitation related diseases, causing many people, children under the age of five in particular, to fall ill or even die (UNICEF Sanitation and Hygiene Manual, 1998). Mothers are the immediate and reliable caregivers of children and their knowledge and practices on Water, Sanitation and Hygiene (WASH) have a strong influence on the occurrence of diarrheal diseases (ZWP, 2010). Mothers of under-five children should maintain a high standard of cleanliness at all times to prevent diarrhea occurrence. This assertion was supported by Huttly et al. (1997), who attributed 90% of all diarrheal diseases in under-five children to mothers' unhygienic practices and poor sanitation.

Inadequate treatment or disposal of human excreta and other waste can lead to transmission and spread of diseases that originate from excreta, (Kariuki et al., 2012). Although proper disposal of children's excreta is an important hygiene practice, some mothers use unhygienic practices when it comes to its disposal (ZWP, 2010). Studies have shown that children's excreta contains considerable amounts of pathogens as compared to that of adults hence the former needs proper disposal to prevent the spread of diarrheal diseases (Fewtrell et al., 2005). A WASH Baseline Knowledge, Attitudes and Practices (KAP) Survey of 2012 that was done in South Sudan reported that only 4% of mothers interviewed either buried or rinsed children's faeces into traditional latrines while 96% threw the stools into the bush or garden (WASH Baseline KAP Survey, 2012). Zimbabwean mothers in comparison have relatively better child excreta disposal practices according to a MIMS Report of 2009

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Table 1
Under-five diarrheal cases in Mawabeni for 2012.

Type of diarrhea	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
AWD	21	15	18	22	18	20	20	16	20	19	17	23
Blood diarrhea	15	10	17	9	8	13	11	14	14	10	12	11

which stated that 54% of the young children had their stools disposed of safely i.e. in a latrine or buried. Urban areas had a higher proportion (94%) of the children with stools disposed of safely than rural areas which had 35% (MIMS, 2009).

Hygiene practices such as hand washing with soap at critical times; including before eating or preparing food and after using the toilet or changing a child's diapers can reduce diarrhea rates by almost 40% (Waddington et al., 2009; Curtis and Cairncross, 2003). However, rates of hand washing around the world are low, ranging from 0% to 34% (Scott et al., 2003). Findings from a research carried out in Israel showed that if mothers encourage their children to wash hands prior to meals, diarrheal episodes would be reduced by 60% (Fewtrell et al., 2005).

Knowledge on household water treatment, safe handling and storage is of chief importance as research has found that contamination of water can occur due to poor knowledge on handling and storage practices even after being acquired from a safe source (Ahmed et al., 2004). A study on water handling and defecation practices in rural India, found that 100% of the study participants reported storing water in wide-mouth containers along with using cups to retrieve water from the containers (Brick et al., 2004). This type of practice increases the risk of contaminating the water with unclean hands (Banda et al., 2007). However studies have shown that improved practices in water supply, sanitation and hygiene can be a vital tool in preventing these diarrheal diseases.

According to Umzingwane WASH Inventory Report (2012), Mawabeni communal area has high cases of under-five diarrheal diseases in Umzingwane district as compared to other areas in the district. Table 1 shows cases of under-five diarrheal diseases for both acute watery diarrhea (AWD) and dysentery (Blood Diarrhea) in 2012.

The above statistics show an action level as they exceed the threshold limit value of 25cases according to the Zimbabwe's Ministry of Health and Child Welfare (MOHCW) guidelines, hence the need to assess the knowledge and practices of mothers of under-fives regarding WASH practices as they are contributory factors to diarrheal diseases (Botting et al., 2010). Therefore, the overall objective of the study was to assess knowledge and practices of mothers of under-fives regarding WASH in Mawabeni communal area in Zimbabwe. In line with the overall objective of the study the specific objectives were:

- To assess the levels of knowledge regarding WASH of mothers of under −5 children,
- To investigate sanitation practices that may be contributing to the occurrence of diarrhea diseases in under-5 children, and
- To determine household water practices that may be contributing to the occurrence of diarrheal diseases in under-5 children.

2. Methods and materials

2.1. Study area

The study was carried out in Mawabeni Communal area which is located in Zimbabwe's Umzingwane district. Umzingwane district is located in Matabeleland South Province as shown in the map below:

Umzingwane is in agro-ecological region IV, which is characterized by low annual rainfalls, seasonal droughts, and dry spells occurring during the rainy season, (FAO, 1997). The main drinking water sources are communally owned boreholes, protected wells and traditional shallow wells. Sanitation coverage is low (34%) which has contributed to diarrheal diseases in the area (Teezed, 2012). However, according to Umzingwane WASH Inventory Report (2012), Mawabeni communal area had the highest cases of under-five diarrheal diseases in Umzingwane district in 2012 as compared to other areas in the district hence the selection of the area (Fig. 1).

2.2. Research design

The study was a descriptive study which utilized qualitative methods of data collection. A survey was done targeting households with mothers who had children under the age of five. A survey was used for this study as it provides a wide and inclusive coverage of people so that the results are likely to be representative of the population and therefore ideal for generalising conclusions (De Vos, 2002). Records from the local Rural Health Center (RHC) showed that these households were a total of two hundred (200). The size of sample was calculated as 30% of the total population since it is ideal for small samples, which had a statistical margin of error of ±3% and a confidence level of 95%. A probability sampling technique was employed in this study. Probability sampling is one in which each person in the population has an equal chance of being selected. The study population also included the health personnel at the RHC (3 Registered General Nurses) and one Environmental Health Technician (EHT) as well as Village Health Workers (VHWs) in the area.

2.3. Data collection methods

Data was collected using the following methods; questionnaires, observations, focus group discussion (FGDs) as well as interviews. A total of sixty questionnaires were administered to the households. Observations were also done using an observation checklist. Observations were done on how water is collected, handled and stored. Sanitation and hygiene enabling facilities were also observed in terms of their physical condition and level of cleanliness. Hygiene practices such as demonstration of hand washing were also observed. A total of three interview sessions were done; one with the nurses, the second one with the EHT and one with two VHWs. Participants in FDGs were the mothers of the under-five children. The sessions of the FGDs were four where 15 participants attended each session. The use of multiple methods of data collection or a combination of these methods in this study helped to reduce bias and limitations associated with each particular method.

2.4. Data analysis

Qualitative data was analysed by developing themes related to the specific objectives. These themes were: knowledge levels on