
Factors Contributing to Diarrhoea in Children Under Five Years at Okuryangava Clinic, Khomas Region

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Abstract

Diarrhoea remains a high burden disease among the under-fives despite the availability of simple, affordable and effective treatment modalities in Namibia, sub-Saharan African countries and elsewhere in the world. The high prevalence of diarrhoea is a cause for concern and is becoming a critical issue that needs to be attended to immediately. The purpose of the study was to describe factors contributing to diarrhoea among children under the age of five years at Okuryangava Clinic. The objective was to determine the factors that contribute to diarrhoea in children less than five years of age at the above-mentioned clinic. The study used a quantitative, descriptive research design. Data was collected using interviewer administered questionnaires. Data was entered manually and analysed by use of Microsoft excel software. The results revealed that lack of hand washing facilities, little access and lack of latrines at home and in the community and shortage of water supplies are the main factors contributing to diarrhoea. The researchers recommended different approaches in diarrhoea prevention such as promotion of hand washing before touching, cooking and eating food; toilet use; provision of safe water and proper sanitation in the community.

Keywords: Contributing factors, diarrhea, children, under-five years

INTRODUCTION

World Health Organization (WHO) (2019) defines diarrhoea as the passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual). WHO (2019) further stated that in breastfed babies, frequent passing of formed stools is not diarrhoea, nor is the passing of loose, "pasty" stools. According to Lucas and Gilles (2009), diarrhoea in most cases is caused by three major groups of micro-organisms namely; viruses, bacteria and protozoa or parasites. Every year, developing countries of Asia, Africa and Latin America experience approximately five million deaths of children under five years of age due to acute diarrhoea and about 80% of these deaths are in the first two years of life (Lucas & Gilles, 2009). According to the community-based survey or vital statistics registries and censurers data of the World Health Organization (WHO), this disease is one of the top three causes of childhood mortality in sub-Saharan Africa. This is a region where unique geographic, economic, political, socio-cultural and personal factors interact to create distinctive continuing challenges to its prevention and control (World Health Organization – Child Health Epidemiology Reference Group [WHO – CHERG], 2014). Diarrhoea has been estimated to be responsible for 25 to 75% of all childhood illnesses in sub-Saharan Africa (Walker et al., 2013).

A recent report by the WHO and United Nations International Children's Emergency Fund (WHO & UNICEF, 2013) shows that approximately 2.5 billion people do not have access to proper sanitation, of which 1 billion people continue to help themselves in an open space when nature calls. Another report by UNICEF (2013), describes that globally, an estimated 2000 children under the age of five years die every day from diarrhoeal diseases and of these 1800 deaths are linked to water, sanitation and hygiene.

There are certain factors that are likely to contribute to the high rate of morbidity and mortality of diarrhoea in children less than five years including poverty, poor water supply and basic sanitation, poor hygiene practices and inadequate health services (Park, 2009). Malnutrition is one of the risk factors that is highly contributing to mortality among children suffering from diarrhoeal diseases and this may be due to poor management or inadequate health care (Centres for Disease Control and Prevention (CDC, 2012).

In Ethiopia, the prevalence of diarrhoeal diseases among children under five years of age in a two week period was reported to be 31.0% in Arba Minch District (Shikur, Marleign & Dessalegn, 2013). Woldu, Bitew and Gizaw (2016) reported a prevalence of 26.1% in Hadaleala District whilst Gedefaw, Takele and Aychiluhem (2015) reported a prevalence of 24. 9% in Northwest Ethiopia for the same time period. A study done by Meningistie, Berhane and Worku (2011), revealed that the prevalence of diarrhoeal diseases in children less than five years in the eastern part of Ethiopia was 22. 5% compared to the prevalence of the same in young children living in rural areas of Southern Ethiopia which was 19, 6% (Tamiso, Yitayala & Awoke, 2013).

A study conducted in Kenya in 2013 reveals that there are at least six independent factors associated with diarrhoeal diseases in children. These factors include the occupation of parents, poor hand washing after changing the babies' nappies, consumption of dirty or untreated water by children, children not being exclusively breastfed, poor washing of hands in children before touching food or after using the toilet (Karambu, Matiru, Kiptoo & Oundo, 2013).

The 2008 Namibia Demographic and Health Survey (NDHS) data on diarrhoea indicated that between 2000 -2006 the prevalence of diarrhea was 12%. However, there was an increase of the incidence of diarrhoea in 2013 which was reported as 17% (MoHSS, 2013). The Presidential Commission of Inquiry reported that the most common cause of diarrhoeal diseases in children less than 5 years in Namibia is the rota virus (MoHSS, 2013). Hence, the government had introduced the rota virus vaccine in 2014. Unsafe water, poor basic sanitation in the community, poor housing, lack of knowledge by parents on how to prepare food and poor hygiene were stated in the report as some of the causes of diarrhoeal diseases. In the same report, MoHSS (2013) further stated that, "diarrhoea occurs more in children after 6 months usually when complementary feeds are introduced"

In Namibia, the control of diarrhoea includes the promotion of breastfeeding, oral rehydration therapy and specific health education as part of national strategies aiming to improve the quality of life and reduce the disease burden among the under-five children (CDC, 2012). However, due to the increase of incidences of diarrhoea in children under the age of 5 the researchers were

interested in investigating factors contributing to diarrhoea in children under five years at Okuryangava clinic, Khomas region.

PURPOSE

The purpose of the study was to describe factors contributing to diarrhoea among children under the age of five years at Okuryangava Clinic.

OBJECTIVE

The objective of the study was:

- Determine the factors contributing to diarrhoea in children under five years of age at Okuryangava Clinic.

METHODS

This study used a quantitative, descriptive research design. The population comprised caretakers of the under-five children who were visiting Okuryangava Clinic. According to patient register, 7 to 9 children with diarrhoea are seen per day which gives an estimate of around 63 children a week and 252 children a month. The population for the one week of data collection was 63. Convenient sampling was used. In this sampling method, the researcher took the elements who were present at that specific time of data collection. The universal sample formula for calculating the population sample size was applied to extract the sample size from the population, and the sample size had been calculated as follow:

$$n = \frac{N}{1+N \times a^2}$$

Whereby: n= sample size

N= population i.e. 63

A=confidence limit (5%) i.e. 0.05

$$n = \frac{63}{1+63 \times 0.05^2}$$

$$n = \frac{63}{1+63 \times 0.0025}$$

$$n = \frac{63}{1+0.11}$$

$$n = \frac{63}{1.11}$$

n=57

However, in this study sample size was 35 respondents since 22 caretakers refused to take part in the study. Interviewer administered questionnaires were used to collect data. Data was collected at Okuryangava clinic, in Windhoek in October 2018 after the researcher made appointment with the sister-in-charge of the clinic.

Validity and reliability

The researcher ensured validity and reliability of the study by applying two major types of validity: content and face validity. The researcher established face-value validity by submitting the questionnaire to the expert in the field, who evaluated the questions in relation to the objectives of the study. Content-related validity was achieved through pre-testing on caretakers resembled the sample but were not part of the main study. Upon receiving feedback on the questionnaires the data collection instrument was adjusted. To ensure the consistency, the researcher adopted a standardized data collection instrument.

The inclusion criteria was all caretakers of the children under five years of age either suffering from a diarrhoeal disease or whose child had suffered from such in the months that preceded data collection. All caretakers who had brought children under the age of five years to the clinic but whose children had no current or past recent history of diarrhoea were excluded from the study. Data were entered and analysed by use of Microsoft excel software.

RESULTS

A total number of 35 respondents participated in the study. Response rate was thus 100%. The response rate was thus adequate and reliable. The characteristics of the sample and relative number of responses are indicated below:

Demographic characteristic of respondents

The personal characteristics collected included the age of the child, the caretaker's age, religion, educational level and occupation.

Children's age

Respondents' children between ages 0-12 months were represented by 71.4% followed by 28.6% respondents' children aged between 13-24 months.

Caretaker's age

Caretakers aged between 18-25 years were 31.4%, followed by 26-32 years age categories who were 40%. Furthermore, 33-40 years age categories were represented by 25.7%, 41-49 years age categories were represented by 2%.

Additionally, respondents were assessed on other variables as indicated in the table below:

Table 1: Demographic characteristics of respondents

Variables	Response	Frequency (n=35)	Percentages (%)
Relationship to the child	Mothers	32	91.4
	Fathers	2	5,7
	Caretakers	1	2.9
Caretaker's status	Married	3	8.6
	Single	32	91.4
	Widowed	0	0
Caretaker's religion	Christian	35	100
	Muslim	0	0
	Others	0	0
Level of education of the caretaker	Never attended school	4	11.4
	Primary	4	11.4
	Secondary	24	68.6
	Tertiary	3	8.6
Caretaker's occupation	Employed	6	17.1
	Self employed	5	14.3
	Unemployed	24	68.6

Factors contributing to diarrhoea among children under the age of five years

Respondents were asked about environmental and socio-economic factors that were found to likely contribute to diarrhoea in children under the age of five years.

Type of the floor of the house

Respondents were asked about the types of floor they had in their houses. About 54.3% of the respondents indicated that all floors in their houses were tiled whereas 22.9% of the respondents

indicated that their house floors were earthen. The remaining 22.9% of the respondents indicated that their house floors had cement.

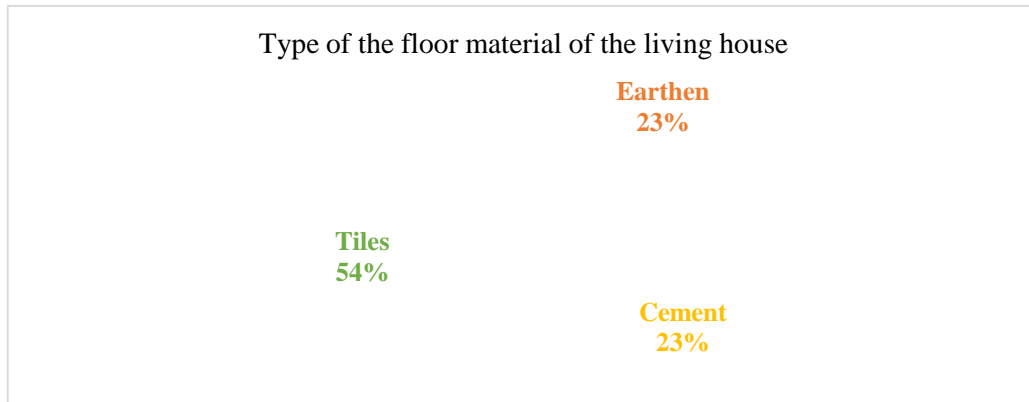


Figure 1:Types of the floor material used in the living houses

Number of sleeping rooms in the house

Out of the 35 respondents, 19 (54.3%) indicated that they had one to two rooms sleeping rooms whilst 9 (25.7%) had three rooms in their houses while 7 (20%) respondents indicated that they had four and above sleeping rooms in their house.

If the child ever breastfed

Respondents were asked whether children have ever breastfed. 33 (94.3%) of the respondents indicated that the child had breastfed whereas 2 (5.7%) of the respondents indicated that the child had not breastfed due to certain medical reasons.

If the child is on any special treatment

Out of the 35 respondents, 31 (88.6%) said that the child was not on any special treatment and 4 (11.4%) indicated that the child was on special treatment.

Type of special treatment

Four (11.4%) of the respondents indicated that their children were on antiretroviral treatment (ART) and none were on TB or any other treatment.

Availability of hand washing bucket

Out of 35 respondents only 17 (48.6%) said that they had hand washing facilities at home and 18 (51.4%) of the respondents said they did not have such facilities.

Ownership of latrine facilities

Nine (25.7%) of the respondents indicated that they had their own latrine facilities, 19 (54.3%) indicated that they shared the facilities while 7(20%) of the respondents did not have any access to the latrine facilities and that they used the valley.

Source of drinking water

Out of 35 respondents, (27) 77.1% indicated that their source of water was piped and from public taps while 8 (22.9%) of the respondents have highlighted that their source of water was piped and from private taps.

DISCUSSION

Below three-fourth of the children were within the age category of 0-12 months. Two-fifth of the caretakers were within the age category of 26-32 years and the least (2.9 %) were within the age category of 41-49 years. Almost all the respondents (91.4%) were mothers to the children. It is very probable that mothers are the primary caretakers of children under the age of five years more than the fathers. Again almost all the caretakers were single.

Caretakers with the lower levels of education (primary or never went to school) formed about two-ninth (one-ninth for each of the 2 levels). The rest had either secondary or tertiary level of education. This finding contradicts with researchers like Yilgwan and Okono (2012) in Nigeria who showed that the prevalence of diarrhoea varies according to education status of children's caretakers, and is relatively high among children whose mothers had no education.

Three-fifths of the respondents were unemployed. This is similar to the findings of other researchers such as Mamo and Hailu (2014) who conducted their study in Ethiopia and indicated that parental occupation was associated with the occurrence of the diarrhoeal diseases among their children. This is also confirmed by the study done by Sokhna, et al. (2017) which indicated that the risk of diarrhoea was significantly associated with the mother's occupation. They further stated that unemployed caretakers were associated with higher risk of diarrhoeal diseases compared to those with jobs.

It was established from the study that the type of the house floor could have an influence on the occurrence of diarrhoea in the children less than five years of age as two-ninth of the proportion indicated that the house floors were earthen. This finding is similar to the study conducted by Datar (2014) on improving health and living conditions in Rwanda which showed that diarrhoea spreads more easily in homes with dirt floor because, cleaning the floor is so difficult in order to get rid of faecal matter that ends up on the floor.

Based on the findings the study shows that half of the study had only one to two sleeping rooms in their house. The study done by El-Gilany et al (2009) in Sudan states that overcrowding and living in rural areas were associated with a history of diarrhoea due to poor management of latrines and high chance of contaminations.

The study showed that majority of the children were breastfed and only a small proportion was not. However, findings of this study are in contradiction with the findings of a study done by Quigley, Kelly and Sacker (2007) which concluded that the incidence of diarrhoea in infants who were breastfed was lower than for those who were formula-milk fed and this shows the role of breast milk to control the disease.

According to Lamberti, Ashraf, Walker and Black (2016) rotavirus is still the leading cause of vaccine-preventable diarrhoea among children under five years of age globally. From this study, however, it was discovered that all children had received rotavirus vaccine to ensure protection from the diarrhoeal diseases.

From this study it was discovered that one-fifth of the respondents had no access to latrines causing them to defecate in the open space. Half of respondents shared the latrines which put the children at high risk of contracting diseases such as diarrhoea and only one-fourth owned or used private latrines. Thus the majority of the respondents did not have their own private latrines. The findings of study are similar to an assertion by UNICEF (2014) which states that about 2.5 billion people do not have adequate toilets and among them approximately 1 billion people defecate in the open space putting their lives and especially of children in danger of deadly faecal-oral diseases such as diarrhoea.

According to the study findings, it was noted that all the respondents had access to clean and safe water even though not all of them owned the water sources (piped taps). The study showed that seven-ninth of the respondents use piped-public taps as a source of water. The study further indicated that only just above four-ninth of the respondents had access to hand washing facilities while the half did not. In 2013 more than 340 000 children under five years of age died from diarrhoeal diseases due to lack of safe water, poor sanitation and lack of basic hygiene (UNICEF 2014). Pruss-Ustun, Bos, Gore and Bartram (2008) added that poor access to safe, clean drinking water and basic sanitation as well as to poor hygiene causes almost 90% of all deaths due to diarrhoea with most of the deaths being in children.

Study findings indicated that just above one-ninth of the children were on ART. A compromised immune system can predispose children to developing chronic and persistent diarrhoea. These findings are in contradiction to the findings of a research by Ejik et al. (2010), who stated that HIV (infection and exposure) is associated with increased risk of developing diarrhoea since in this present study only a small proportion of the respondents' children were on ART.

ETHICAL ISSUES

Permission was granted by Welwitchia Health Training Centre (WHTC) research ethical committee and the study was conducted after approval had been granted by the Ministry of Health and Social Services. Respondents were selected without discrimination by treating them fairly regardless of their age, occupation and educational background. Meanwhile, respondents were informed about the importance/aim of the study and what was expected from them. Thereafter, they signed the informed consent before the interview began. In addition to that,

respondents were assured that the information they gave will be treated confidentially and with respect to ensure privacy. To ensure anonymity, codes were used to identify the respondents in the study.

CONCLUSIONS

The study revealed that majorities of the children were within the age category of 0-12 months. Caretakers with the lower levels of education were few and majorities were having either secondary or tertiary level of education. The study also found out that three-fifth of the respondents was unemployed indicating that parental (caretaker) occupational status may have an influence on the occurrence of diarrhoea.

The study confirmed that a small proportion of the respondents' house floors were earthen. These kinds of floors are difficult to clean and as such may lead to unhygienic conditions hence diarrhoea. The study also revealed that the majority of the respondents had only one to two sleeping rooms in their house. Just above three-fourth of the respondents had their own private latrines, while the rest either used the open space or shared the latrines with other families. Although most of the respondents used piped water more than half did not have hand washing facilities. Based on the study findings the researchers are recommending that the government and local authorities ensure that communities has access to proper toilet facilities to cater for the communities that defecate in the open space. Awareness has to also be raised on safe disposal of faecal matter and hand hygiene.

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