

# Knowledge, Attitudes and Practices towards the Risk of Open Defecation among the Inhabitants of Rural area

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## ABSTRACT

Open defecation defined as defecated in fields, bushes, bodies of water or open spaces. Open defecation is the last recourse for those without any form of sanitation, who must endure the daily indignity of defecating in open. In the year 2016, about 12 percent of the global population, practiced open defecation. The situation is even worse in the sub-Saharan African countries including Sudan. The practice of (OD) peaks 44.5% of the population in Abu Haraz, Sudan. This cross-sectional descriptive community-based study was conducted in Abu Haraz, with the aim to assess the knowledge, attitude, and practices towards the risk of open defecation. 397 respondents were selected by using multi stage sampling techniques. The data were collected by using standardized questionnaire and observation checklist and the collected data were analyzed by SPSS computer program and  $\chi^2$  test is used to show the association between the independent and dependent variable. The findings were presented in text, figures and Tables. Study findings revealed that (79.8%) of the respondents know that open defecation causes diseases, pollute water, affect women health and dignity and expose girl to sexual molestation. Study findings revealed that (17.4%) of respondents beliefs that open defecation is part of their daily routine. Findings also revealed that (47.9%) of respondents practicing open defecation, 10.1% of them leave the feces without burying, 15.9% of respondents use soil for cleanliness after defecating. The findings revealed that poverty was the major influencing factor for latrine owning among the households with ( $\chi^2=58.826$ ;  $P<.05$ ). (37.3%) of respondents said that type of soil influences latrine owning.

*Key words* : Open defecation, Open Defecation, Knowledge, Attitude, Practices

## Introduction

Open defecation refers to the practice whereby people go out in the fields, bushes, forests, open bodies of water, or other open spaces rather than using the toilet to defecate. It is an emptying of bowels in the open without the use of properly designed structures built for handling of human waste such as toilets (Wikimedia, 2019). Open defecators do so because either they do not have a toilet or due to tradi-

tional cultural practices. 12 percent of the global population practiced open defecation in 2016. 949 millions open defecators live in rural areas. Open defecation is predominantly a rural phenomenon, it is estimated that 8.22% of the urban population in sub-Saharan Africa practice open defecation. Sudan has been ranked first in Africa for open defecation, (Issaka, 2018). 27% of Sudan's population was still defecating in the open and only 35% were using basic sanitation in 2015. Poverty, socio-cultural factors,

education and family size are the main factors lead to open defecation. Poverty makes it a challenge to build latrines, the lower income levels of a household head, the higher likelihood of its members practicing open defecation. Socio-cultural factors result in end up preferring opened defecation, as in sharing toilets among family members, freedom it gives them as opposed to using a small dark structure or the displeasure in using toilets that are filthy or not clean. As the level of education increases, the likelihood of open defecation decreases. Open defecation can lead to water pollution when rain flushes feces that are dispersed in the environment into surface water or unprotected wells. It introduces toxins and bacteria into the ecosystem, destruct the aquatic systems thereby causing harm to aquatic life, cause eyesore and nauseate anyone who is close. The smells augment the problem by disgusting those who live within the affected regions making life awful (Issaka, 2018). The Infected human excreta contain several harmful organisms that are associated with a number of health problems; inappropriate human waste disposal increases the risk of exposure to these health risks such as; watery diarrhea diseases, dysentery, intestinal worm infections, typhoid, cholera, hepatitis, polio, trachoma and malnutrition in children. Every year 525,000 children die due to diarrhea, malnutrition rates are reported in countries which have higher proportions of people practicing open defecation field, (Wikimedia, 2019).

**Problem Statement :** Poor knowledge, beliefs misconceptions and negative attitudes towards open defecation are important factors in trend practicing open defecation. Having good knowledge is insufficient to adopt latrine use rather than practicing open defecation, because it is difficult to change the behavior of people. Open defecation is described as traditional, habitual, and part of one's daily routine, making this common behavior. Specific cultural norms may also further influence open defecation.

**Justification of study:** Open defecation poses a serious threat to the public health and dignity and development of human, (Jason, 2019). It causes malnutrition with 2 million cases among children and deaths of children under 5 years old with 11% as reported in FMOH, (Unicef, 2017). Abu Haraz Administrative unit selected due to the rampant cases of open defecation with 70% as reported in the Department of Environment Health of locality.

**Objective General:** To assess knowledge, attitude and practice of the households of the inhabitants of Abu Haraz Administrative Unit towards the risk of open defecation.

#### Specific objectives

- To define knowledge of the households of the inhabitants of Abu Haraz Administrative Unit towards the risk of open defecation
- To identify the attitude of the households of the inhabitants of Abu Haraz Administrative Unit towards the risk of open defecation.
- To determine the practices of the households of the inhabitants of Abu Haraz Administrative Unit towards the open
- To explore the socio-economic factors that contributes in practicing open defecation among the inhabitants of Abu Haraz Administrative Unit.

**Literature Review:** A study that conducted in Nepal by Navin in 2019 revealed that the respondents expressed that they defecated in the open because of the lack of resources to build a latrine. Respondents expressed that open defecation as a regular habit for which they had never felt the need for alternatives. Some of the respondents expressed it as very uncomfortable to sit in a dark room with an unpleasant smell (Navin, 2019). A study conducted in Cambodia, India, Indonesia, Kenya, Malawi, Peru, Tanzania, and Uganda by Kathryn O'Connel in 2014. The study revealed that materials for latrines are perceived as unavailable and costly. 56 % of households believe that a key disadvantage of using a latrine is the malodor, 40 % of respondents agree or strongly agree that "it is normal for people to defecate in the open in their community. There was the belief that females and male in-laws should not share the same latrine facilities, or in contexts where men are not meant to be seen going to a toilet, (Kathryn, 2014). A study that conducted in Ghana by Issaka in 2018 revealed that 49.8% of households had no form of toilet facility at home and were either using communal/public toilets or practicing open defecation. There is inability to procure construction materials and pay for labor, there is some relationship between educational background of respondents and ownership of toilet facilities. 68% of the respondents believed that cultural practices and beliefs influence where some people defecate, (Issaka, 2018). A study that conducted in Kenya by Phylis in 2019 revealed that 83% of the respondents stated that the latrine construction materials influenced latrine ownership,

76% agreed that open defecation was unsafe, about 70% were aware that some illnesses were related to open defecation practices, 49% agreed that the open defecation practice had become part of their tradition, (Phylis, 2019). A study that was conducted in Kenya by Thiga and Cholo in 2017 revealed that the respondents' monthly income had a great influence on the availability of latrines at their homesteads, 23.3% of the sampled homesteads did not have latrines, Majority of the respondents pointed out outbreak of diseases as one of the major effects of open defecation, the respondents said that open defecation leads to water pollution and deaths of infants, 17% had suffered from diarrhea in this year, also 53.4% had no hand washing facility near the latrine, 34.5% of family members were not washing their hand after visiting latrine and 70% of them did not have water and soap available for hand washing, (Thiga, 2017). A study that conducted in Uremia in White Nile by Ahmed Subahi, in 2012 revealed that all mothers were aware of the reinforce factors and enabling factors to open defecation, there was fecal contamination in whole area, children were seen defecating in open yard outside houses, (Ahmed, 2012). A Multi Indicator Cluster Survey (MICS) that conducted in Sudan by Central Bureau of Statistics (CBS) Sudan in collaboration with the Ministry of Health, in 2014 revealed that Correlation of Incidence of Poverty for 18 states with the population practicing open defecation; shows positive correlation for Kordofan and Darfur regions. In general, open defecation seems to be very much linked with the level of poverty among the 12 states, (UNICEF, 2013).

## Materials and Methods

**Study designs:** A cross –sectional, descriptive community-based study was conducted among the inhabitants of Abu Haraz Administrative Unit

**Study area:** Abu Haraz Administrative Unit is located in an Arid and Semi-Arid Land (ASAL) in (Sheikan) Locality. It lays within GPS coordinates 12.2158 N 29.5116 E. It covers an approximate area of 8080km. It is one of the biggest administrative units in Sheikan Locality with 93 villages. It is 35 km away from Elobied city. It is bordered by Elobied city from the East, West Kordofan State from the west, Um Semamah Administrative Unit from the north and South Kordofan State from the south. The

population living here cannot afford improved sanitation facilities such as VIP latrines, covered pit latrines, connection to a septic tank, or a sewer.

**Study Population :** The target population is (7697) households according to the local authorities (2016). This area was chosen due to rampant cases of open defecation OD 70% as reported in the Department of Environment Health of locality. The main activity of the study population is commercial, agricultural and pastoralist activities. Their mean monthly income level is 1500 SDGs according to local Statistical Center of North Kordofan, with high level of illiterate according to the local authorities (department of education). The respondents are the fathers of the households if not the mothers will be the second choice.

**Sample size:** The sample size is taken by the following formula  $n = N / (1 + Ne^2)$  Where:

$n$  = corrected sample size,  $N$  = population size, and  $e$  = Margin of error (MoE),  $e = 0.05$  based on the research condition.

$n = 57600 / 1 + 57600(0.05^2) = 57600 / 145 = 397$  sample.

**Sampling procedure:** The multi stage sampling method is used as follow:

Stage one: The study area is divided into four geographically areas, north, south, east and west. The north area is chosen by simple random sampling technique.

Stage two: The northern area has 13 villages. A Simple random sampling technique is used to select 4 villages; these villages are Al Tina Alshargia, Um Baouda, Alnimar and Algabsha.

Stage three: The total sample size is distributed among these four villages proportionally as the following: 123 respondents, from Al-Tina Alshargia, 84 respondents, from Um Baouda, 99 respondents, from Al-Nimar and 91 respondents, from Al-Gabsha

Stage four: within selected villages a systematic random sampling is used to distribute the samples among the households. The sampling interval is 2. The first house will be chosen by toss from interval. The second house is selected by add the interval and so forth till all sample is selected. This applied in all selected villages. This process will be continued in the selected villages until the required sample size will be achieved.

**Data collection analysis :** A questionnaire and observation are used as data collecting tools. The collected data were coded and entered into the com-

puter for analysis using Statistical Package for Social Sciences (SPSS) 21.0 versions,  $\chi^2$  tests was used to show the association between independent and dependent variables. The results were presented in text, figures and Tables.

### Ethical Consideration

Agreements were taken from Al- Zaeim Al- Azhari University, North Kordofan Ministry of Health, the Department of Environmental Health of Skeikan locality, the Abu Haraz Administrative Unit, the local community leadership and consent agreement from the respondents.

### Discussion

The significance of sanitation to safeguard human health is irrefutable and has important public health dimensions. Access to sanitation has been essential for human dignity, health and well-being. The study findings showed that 79.8% of the respondents have good knowledge about the risk associated with open defecation. This respondents know that open defecation causes diseases, pollute water, affect women health and dignity and expose girl to sexual molestation because 44% of the respondents were primary educated, this result agreed with the study that conducted in Kenya by Phylis in 2109, which revealed that about 70% of the respondents know that some illnesses were related to OD practices, (Phylis, 2019). This study revealed that 55.4% of respondents stated that the cost of latrine structure was prohibited factors to latrine ownership; this is true as that the permanent materials for latrine structure is not available in the study area but need to be brought from other place which cost a lot of money and the respondents live in poverty as 78.3% of respondents' level of income were 1000 – 3000 SDGs. This agreed with the study that was conducted in Kenya by Thiga and Cholo, which revealed that the respondents' monthly income had a great influence on the availability of latrines at their homesteads, (Thiga, 2017). This study revealed that (22.9%) of the respondents' family members suffered from diarrhea in this year, this because there is poor hygiene and lack of sanitation facilities. This finding agreed with the study that conducted in Kenya by Thiga and Cholo, which revealed that 17% of the households had members who suffered from diarrhea, (Thiga, 2017). The finding of this study showed that 30.5% of respondents preferred open defecation. This ex-

plained that open defecation is a part of their life and daily routine as 38.9% of the respondents believe that defecating in the fresh air is better. This finding agreed with the study that conducted in Kenya by Phylis, which revealed that 49% of the respondents agreed that the open defecation practice had become part of their tradition, (Phylis, 2019). The result of this study revealed that (47.9%) of respondents stated that they practicing open defecation, this explained that the open defecation is rooted in the culture of community and people can't relinquish of open defecation. This result revealed that (80.4%) of the respondents haven't water and soap available for hand washing, this clearly showed that sanitation and the level of personal hygiene is very low in most of the households in the area of study. This finding agreed with the study that conducted in Kenya by Thiga and Cholo., which revealed that 53.4% of household had not hand washing facilities, 34.5% of household stated that their family members were not washing their hand after visiting latrine and 70% of the households did not have water and soap available for hand washing, (Thiga, 2017).

### Conclusion

The study concluded that even though poverty level is high in the study area, provision of a latrine and latrine facilities, without raising awareness, modifying attitudes and restructuring norms couldn't solve the current issue of open defecation.

### Recommendation

Based on the results and the objective, the study stated the following recommendations; the State Ministry of Health should activate health education and promotion programs in the study area to change the practice of open defecation and adoption of latrines use and should create and strengthening partnerships with NGOs, local community to help structure a latrines.

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