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Understanding of Water–Sanitation Practices and Health Risk among Women: A Study of Selected Rural Communities in Abuja, Nigeria

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ABSTRACT

This study examined the water-sanitation practices and health risk perceptions of women in selected rural communities in Abuja, Nigeria by assessing the knowledge of women in the sanitation practices adopted during collection, and preservation of potable water. Descriptive cross-sectional research design was employed and one hundred (100) questionnaires were administered. Eighty-one (81) were retrieved, deemed useful and consequently used for data analysis. The study found that women in the study area are fairly knowledgeable about sanitation practices. Sanitation practices such as washing of hands with soap and water before handling potable water, cleaning buckets, kegs and drums regularly, basic maintenance of hygiene around the water collection and preservation point were observed. The findings revealed moderate health risk perception concerning the consequences of poor water and sanitation practices, inadequate hygiene education, leading to inadequate environmental sanitation. Inadequate maintenance of facilities at water sources, restricted access to pipe-borne water, lack of funding for community sanitation officers, and shortage of community health workers, are the immediate problems faced in the collection and preservation of potable water in the study area.

1. INTRODUCTION

Sanitation refers to public health conditions related to clean drinking water and adequate treatment and disposal of human excreta and sewage (Blom, 2015; Fagbemiro et al., 2016). Preventing human contact with feces is part of sanitation, as is hand washing with soap (Cairncross and Valdmanis, 2006; Freeman et al., 2017). Sanitation systems aim to protect human health by providing a clean environment that will stop the

transmission of disease, especially through the fecal–oral route (Mills and Cumming, 2016; Naughton and Mihelcic, 2017).

Children in the rural areas of Nigeria are prone to diarrhoea which is a leading cause of malnutrition and stunted growth (WHO, 2019). There are several other diseases that are effortlessly spread in rural communities because of low levels of water sanitation (Duflo *et al.,* 2012). The actual application of the sanitary idea, belief, or method, as opposed to theories relating to it, can be used to achieve an hygienic environment, thus preventing the spread of waterborne diseases (Hunter, 2001; Choffnes and Mack, 2009; Mills and Cumming, 2016).

Evidence from the study by WHO (2019) shows that some 827 000 people in low- and middle-income countries such as Nigeria die as a consequence of inadequate water, sanitation, and hygiene each year, signifying 60 % of total diarrhoeal deaths. Poor sanitation is understood to be the foremost cause in some 432 000 of these deaths (Mokomane *et al.,* 2018; Peter and Umar, 2018). Healthier water, sanitation, and hygiene could avert the deaths of 297 000 children aged under 5 years each year (WHO, 2019).

Open defecation maintains a venomous sequence of disease and poverty (OECD, 2011). It has been observed that countries that allow open defection suffers from a high degree of undernourishment, poverty, and big incongruences of wealth and an increased number of deaths of children mostly under-aged and under 5 years (UNESCO, 2015; Spears, 2018; Headey and Palloni, 2019).

One of the reasons that might influence the practice of water sanitation is knowledge. In a situation where people in rural areas are uneducated and ignorant of proper water sanitation practices, this may help spread poor sanitation practices (Vivas *et al.,* 2010; Dube and January, 2012). Persons who are uneducated about water sanitation practices could also be uneducated about health risk perceptions (Anthonj *et al.,* 2018; Yaya *et al.,* 2018). Risk perceptions are a vital constituent of health behaviour change theory, and when the perception of risk is high, it is easier for water sanitation practices to be implemented (Akpabio, 2012; Ferrer and Klein, 2015; Anthonj *et al.,* 2018; Abdulkareem *et al.,* 2020). Evidence in the literature suggests that involvements that successfully engage and change risk perceptions produce subsequent improvements in health behaviours (Ferrer and Klein, 2015).

Fonyuy (2014) carried out a study to investigate the knowledge of hygiene and sanitation practices in the collection, treatment, and preservation of potable water in Santa, Northwest Cameroon. It was concluded that there exists inadequate knowledge on the protection and preservation of potable water. Their understanding of the notions of hygiene and sanitation, the knowledge and practices on the collection, and preservation of potable water are not based on the level of education but on how much public health information they got about drinking water collection, treatment, and preservation.

Thus, the present study extends the boundary of extant knowledge by considering a specific group of people in the rural area and how their risk perception affects sanitation practices. This study considers water sanitation practices as a crucial element in the battle against cholera and other waterborne diseases in Northern Nigeria.

2. METHODOLOGY

The objective of this study necessitates the cross-sectional nature of the descriptive research design, with the implication that data would be collected at one point in time as opposed to over a period of time, which would make it longitudinal in nature. In this study, primary data was collected from selected rural areas in Abuja, namely Nuku and Rimba Communities of Abaji Area Council. The target population for this study comprised of women who engage more in water sanitation practices because of household chores. Fifty (50)

women were purposively sampled at Nuku and Rimba Communities of Abaji Area Council while another fifty were sampled at the central market at Kwali and Orozo making a total of one hundred study respondents (100).

For a study such as this, a structured questionnaire was used to collect primary data because of the size of the study area while an unstructured interview was adopted to ensure that additional information that could not be captured by the structured questionnaire could be obtained from respondents.

Primary data that was collected was coded and analysed using both SPSS and Excel. The study considered descriptive statistics as the best analytical method because of the objectives of the study and also because of the descriptive research design adopted earlier.

3. RESULTS AND DISCUSSION

It should be noted that, items are rejected when the mean score falls below 2.5. This decision was made based on the critical value approach, which involves determining "likely" or "unlikely" by determining whether or not the observed test statistic is more extreme than would be expected if the null hypothesis were true. That is, it entails comparing the observed test statistic to some cutoff value, called the "critical value." If the test statistic is more extreme than the critical value, then the null hypothesis is rejected in favor of the alternative hypothesis. If the test statistic is not as extreme as the critical value, then the null hypothesis is not rejected (Dahiru, 2008; Cooper, 2019). In this study, two items were rejected, while four were accepted as shown in Table 1. The implication of the findings is that the women sampled in the study area have a basic understanding of water sanitation. This is evidenced by the respondents who agreed to the washing of hands in soap and water before handling potable water. Respondents also agreed on the regular cleaning of buckets, kegs, and drums with the intention of preventing the growth of spirogyra.

Table 1: Mean ratings of the responses of respondents on collection, and preservation of potable water

S/N	Item statement	Mean	SD	Remark
1	Washing of hands in soap and water before handling potable water	3.45	0.72	Accepted
2	Cleaning bucket, kegs, and drums regularly	3.25	0.96	Accepted
3	Covering of open cuts during water collection and preservation	2.38	1.09	Rejected
4	Good basic maintenance of hygiene around the water collection and preservation point	3.20	0.84	Accepted
5	Boiling of water from the well or stream before drinking	2.22	1.02	Rejected
6	Prohibition of open-air defecation around water collection and preservation points	3.57	0.71	Accepted

Study respondents also agreed to the existence of good basic maintenance of hygiene around the water collection and preservation point. This was made possible by the good leadership of the community, which ensures that there is proper environmental sanitation at the water collection point. Study findings also revealed that open-air defecation is not a challenge around the water collection and preservation points in the community. Furthermore, the study findings revealed that women did not cover wounds and open-cut during water collection and storage as shown in Table 1. This can spread disease and germs around water collection and preservation points. Study participants who fetched water from the well regularly and also from the stream attest to not boiling it before drinking. This could lead to health complications in situations where well or stream water is contaminated.

Study findings show that the health risk perceptions of women in selected rural areas in Abuja regarding the consequences of poor sanitation practices are relatively low but not very low, as shown in Table 2. As seen in Table 2, the majority of the women sampled in the study area believe that it is possible for poor sanitation to result in diarrhoea. However, with a mean score of 2.88, the respondents judged the likelihood of suffering from Diarrhoea as a result of poor sanitation. The respondents also believe that poor sanitation can result in typhoid, cholera, stomach worms, and food poisoning. Judging from the mean score, the respondents are of the opinion that the likelihood of suffering from typhoid, cholera, stomach worms, and food poisoning as a result of poor sanitation practices is low as shown in Table 2.

Table 2: Mean ratings of the respondents on the health risk perceptions of women regarding consequences of poor sanitation practices

S/N	Item statement	Mean	SD	Remark
1	Possibility of diarrhoea	2.88	0.74	Accepted
2	Possibility of Typhoid	2.76	0.89	Accepted
3	Possibility of Cholera	2.92	0.97	Accepted
4	Possibility of stomach worms	2.84	0.89	Accepted
5	Possibility of food poisoning	2.89	1.01	Accepted
6	Possibility of hospitalization	2.01	0.72	Rejected
7	Possibility of death	1.93	0.95	Rejected

Furthermore, study findings show that most of the sampled women in the rural area do not believe that poor sanitation practices can lead to hospitalization or death as shown in Table 2. This is not strange considering that people in the rural area connect death and hospitalization to spiritual and religious reasons. This might be one of the reasons why the sampled women did not believe that poor sanitation practices have health risk implications that can lead to hospitalization and death.

Findings in Table 3 show the descriptive analysis of the responses of the rural women sampled in this study. The responses of the study sampled centered on certain issues that were considered immediate problems faced in the collection, and preservation of potable water. Inadequate hygiene education is one of such problems since everybody in the community make use of similar water source. Those who are ignorant of sanitation practices such as children can pollute and contaminate water sources. Activities such as the washing of face and legs using public taps were also a common observation during the research. The second problem was that of inadequate environmental sanitation, which is also similar to the scarcity of dustbins, which is the third problem identified during the field survey.

Table 3: Mean ratings of the respondents on the immediate problems faced in the collection, and preservation of potable water

S/N	Item statement	Mean	SD	Remarks
1	Inadequate hygiene education	3.30	0.74	Accepted
2	Inadequate environmental sanitation	3.56	0.57	Accepted
3	Scarcity of dustbins and refuse bin	3.03	0.88	Accepted
4	Inadequate maintenance of facilities at water sources	3.57	0.49	Accepted
5	Restricted access to pipe borne water	3.22	0.88	Accepted
6	Lack of funding for community sanitation officers	3.17	0.91	Accepted
7	Inadequate community health workers	3.01	0.89	Accepted

The surrounding environment of water sources would eventually contaminate the water itself and make it less potable. The public water systems also suffer from inadequate maintenance. The implication is that when the community water systems develop a fault, it may take some time before it is fixed. These results in restricted access to pipe-borne water supply, and this further complicates the problem of getting potable water to drink. In such situations, community dwellers had to go to the stream or well as an alternative source

of water. The study respondents also revealed that the lack of funding for community sanitation officers and inadequate community health workers were major problems contributing to poor sanitation practices. The community health workers are few, and in certain areas, they are not present. The burden of responsibility falls mostly to community leaders and responsible persons within the community to fix water systems during damage and also to put in place protocols for sanitation and maintenance.

Unstructured interview and questionnaire administration revealed that the respondents were not all ignorant of strategies to improve sanitation in the study area as shown in Table 4. Different suggestions were collected from study participants and women leaders in the market and community places. One of the strategies suggested is that sanitation practices be emphasized to children in schools. The women who formed the study sample were of the opinion that if the children were taught proper hygiene in school, it would make it easier to implement in the community. It was also agreed that all members of the community should see themselves as stakeholders in ensuring a hygienic environment

Table 4: Mean ratings of the respondents on the strategies that could be employed to improve sanitation in the study area

S/N	Item statement	Mean	SD	Remarks
1	Teaching children sanitation practices	3.30	0.74	Accepted
2	Concerted community effort	3.56	0.57	Accepted
3	Government support for the implementation of sanitation laws	3.03	0.88	Accepted
4	Private partnership for solar-powered water initiative	3.57	0.49	Accepted
5	Community education program on sanitation practices	3.22	0.88	Accepted
6	Proper handling and disposal of waste	3.17	0.91	Accepted
7	Forbidding certain acts near water sources	3.01	0.89	Accepted

The government was also encouraged by the study participants to implement sanitation laws by punishing offenders and bringing such to book. Private partnerships for solar-powered water initiatives would go a long way in ensuring a steady supply of pipe-borne water, which will help prevent the use of well or stream water.

Study findings show that it is not only the children who need education about sanitation practices but the entire community. This education would provide insights and instructions as to the proper handling and disposal of waste. This education would also inform people and also enlighten them to acts that are forbidden near public water sources. Forbidden acts could include feet and face washing, amongst many others.

4. CONCLUSION

The study concludes that the women in selected rural communities are fairly knowledgeable about sanitation practices. The knowledge makes the women implement certain sanitation practices during water collection and preservation. Washing of hands with soap and water before handling potable water, cleaning buckets, kegs and drums regularly, basic maintenance of hygiene around the water collection and preservation point are some of the sanitation practices. However, the study concludes that women were found without covering open cuts during water collection and preservation. Also, boiling of water from the well or stream before drinking was not done in most cases.

5. CONFLICT OF INTEREST

The authors declare that there is no conflict of interest associated with this work.

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