



# Practice and Factors Associated with Open Defecation among Residents of Kalambaina Sokoto State Northwestern Nigeria

<sup>1</sup>Nuhu Tanko, <sup>2</sup>Ahmed Kayode Abdulmumin, <sup>3</sup>Salisu Mohammed Abdullahi, <sup>4</sup>Nafiu Aminu, <sup>5</sup>Nura Umar Muhammad, <sup>6</sup>Tama Happy Jacob, <sup>7</sup>Aminu Yusuf Fardami, & <sup>8</sup>Fatima Garba Inuwa

<sup>1</sup>Department of Pharmaceutical Microbiology and Biotechnology Faculty of Pharmaceutical Sciences, Usmanu Danfodiyo University Sokoto

<sup>2</sup>Federal Medical Centre, Abeokuta, Ogun State

<sup>3</sup>Department of Clinical Pharmacy and Pharmacy Administration, Faculty of Pharmaceutical Sciences, University of Abuja

<sup>4</sup>Department of Pharmaceutics and Pharmaceutical Technology, Faculty of Pharmaceutical Sciences, Usmanu Danfodiyo University Sokoto

<sup>5</sup>Department of Family Medicine, 661 NAF Hospital Ikeja Lagos

<sup>6</sup>Department of Microbiology, Usmanu Danfodiyo University Sokoto

<sup>7</sup>Department of Microbiology, Sokoto State University

Correspondence

Department of Pharmaceutical Microbiology and Biotechnology Faculty of Pharmaceutical Sciences, Usmanu Danfodiyo University Sokoto

[nuhu.tanko@udusok.edu.ng](mailto:nuhu.tanko@udusok.edu.ng)

+234(0) 8034985445

## Background

Open defecation is an act of defecating in open spaces (fields, bushes, or bodies of water), instead of using toilet or other sanitation facilities.

The practice of open defecation remains widespread phenomenon in Nigeria, which is a primary factor that leads to poor access to improved water and hygienic environment, leading to increased vulnerability to water-borne diseases, especially diarrhoea outbreak.

Addressing the problem of open defecation requires a multi-faceted approach, including improving access to sanitation facilities, promoting hygiene and sanitation education, and changing cultural attitudes towards open defecation.

## Aim

The study was carried out to assess practice and factors associated with open defecation among residents of Kalambaina area in Wamakko local government area of Sokoto State.

## Methods

The study was descriptive, and cross-sectional. A semi-structured questionnaire consisting of closed-ended questions used to generate information that addresses variables of the subject matter of the study. The questionnaire was divided into different sections in a chronological order.

Households without numbers were not included in the study, while non-residential houses were excluded. Households that are visitors were excluded from the study, and any household members less than seven in a household was excluded from the study.

Locality lists was generated, and the localities were classified into urban and rural. Various categories of roads were used during the exercise.

Data were checked, entered, sorted, coded, cleaned and analysed using GraphPad Prism 10.0.2 (232). Descriptive statistics such as proportions and frequencies were used to perform descriptive statistics on the data obtained for the study variables. The association between the dependent and independent variables was measured using Chi-square with  $p < 0.05$  or 5% used to determine statistical significance.

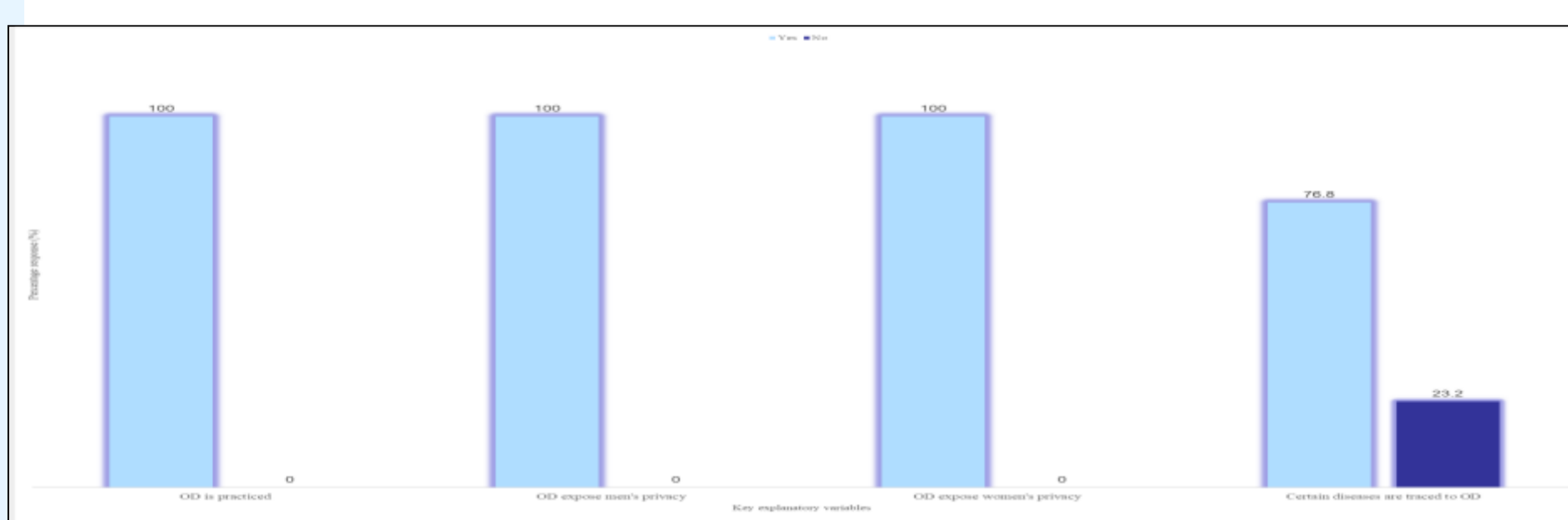


Figure 1. Figure 1. Awareness of open defecation

## Results

### Socio-Demographic Characteristics of the Participants

A total of 142 participants took the survey. The age group with the highest respondents is 35 – 39 years (28.9%). This is followed by 40 – 44 years (13.4%), while 5.6% was accounted for in 45 – 49 years. There were no respondents in the age group 55 – 59 years and 65 years and above. A total of 126 (88.7%) of the respondents were male, while 16 (11.3%) were females. Hausa tribe accounted for 101 (71.1%), while Igbo accounted for 2.8% of the study participants. On level education, participants with secondary school certificates were 68 (47.9%), and the least were respondents with tertiary education 14 (9.9%). An 83.8% of the respondents were married. On employment, 74.6% were employed, with predominantly practicing agriculture (34.5%) and livestock farming (32.4%).

### Awareness of Open Defecation

On awareness of open defecation by the respondents, all respondents know that open defecation is practiced with same also accept the fact that open defecation expose men's and women's privacy.

### Practice of Open Defecation

The practice of open defecation by respondents showed that 23.2% practice open defecation, while 93.7% defecate in their own houses with 64.8% do not dispose feces into nearby bushes, public refuse bins and canals.

### Relationship between Awareness and Practice of Open Defecation

On the relationship between awareness and practice of open defecation, the  $p$  value  $< 0.0001$ , and is statistically significant at  $p < 0.05$ . This suggest that one can be 95% confident that the actual value of 6.078 odd ratio for awareness and practice of open defecation lies between 3.557 to 10.20. Moreover, at odd ratio 6.078 for awareness on open defecation, the tendency for practice of open defecation increases.

### Health Implication of Open Defecation

On health implications, a very high percentage of the respondents (80.3%) accept the fact that open defecation is a threat to public health with 79.6% open defecation harm their overall sanitation. A 77.5% accept that open defecation is dangerous to health and leads to diseases.

### Reasons and Factors Responsible for the Practice of Open Defecation

On reasons responsible for open defecation, 76.1% agreed that lack of proper knowledge of hygiene is one of the reasons of open defecation with as high as 84.5% disagreed that unavailability of toilets in the living area is a reason of open defecation. Respondents agreed (93.4%) that good knowledge of hygiene, but careless lifestyle is also a reason of open defecation.

On factors responsible for the practice of open defecation, 93.7% of the respondents disagreed that overpopulation leads to insufficiency of toilets facilities, while 17.6% disagreed that filthy/dark/smelling/unattractive toilets are responsible for the practice of open defecation..

## Tables & Figures of Results

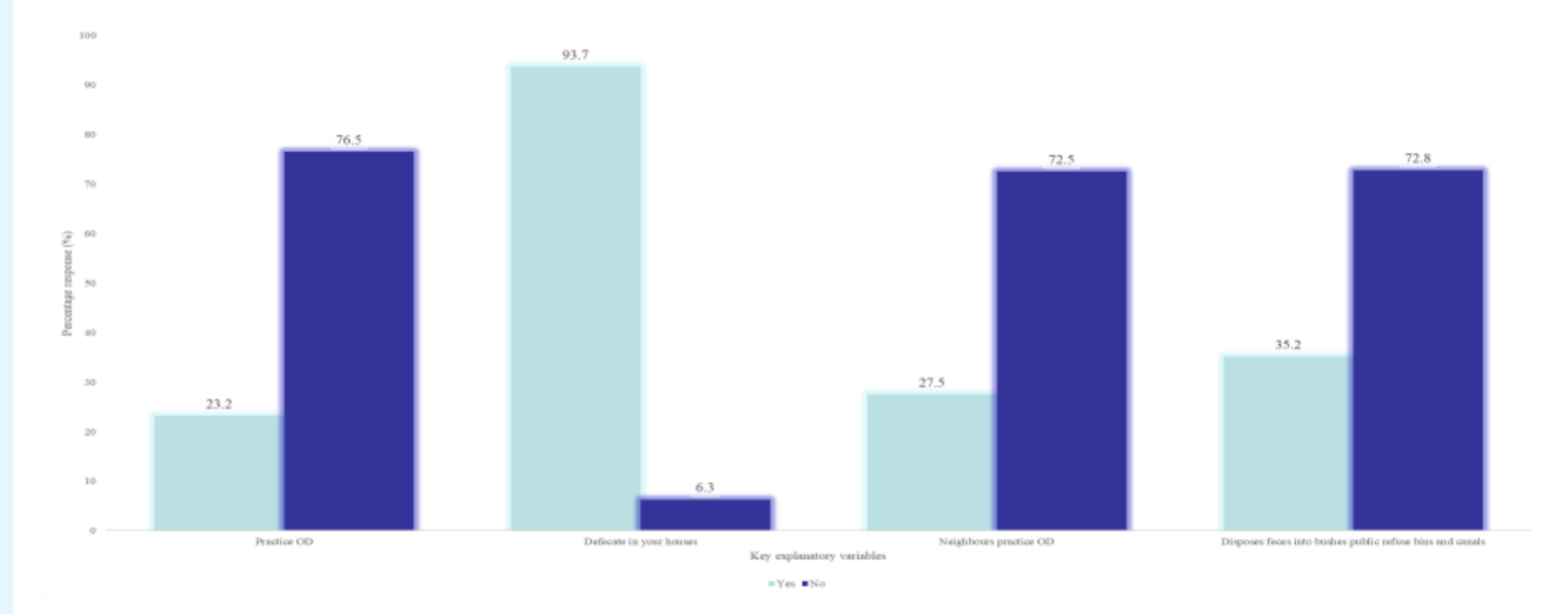
Table 1. Health Implications of Open Defecation

Description of variables	Yes	No
	N (%)	N (%)
Open defecation is a threat to public health	114 (80.3)	28 (19.7)
Open defecation is a threat to achievement of SDGs	113 (79.6)	29 (20.4)
Open defecation leads to water pollution	110 (77.5)	32 (22.5)
Open defecation is dangerous to health and leads to diseases	110 (77.5)	32 (22.5)
Open defecation facilitates fecal-oral transmission of diseases	109 (76.8)	33 (23.2)
Factor of diarrhea, cholera, typhoid, hepatitis, trachoma and other diseases	110 (77.5)	32 (22.5)
Open defecation harm our overall sanitation	113 (79.6)	29 (20.4)

Table 2. Reasons and factors Responsible for the Practice of Open Defecation

Description of variables	Agree	Undecided	Disagree
	N (%)	N (%)	N (%)
Lack of proper knowledge of hygiene	108 (76.1)	0 (0)	34 (23.9)
No toilets available in the living areas	22 (15.5)	0 (0)	120 (84.5)
Good knowledge of hygiene but careless lifestyle	134 (93.4)	0 (0)	8 (5.6)
Government refused to provide toilet facilities	140 (98.6)	0 (0)	2 (1.4)
Overpopulation leads to insufficiency of toilets facilities	9 (6.3)	0 (0)	133 (93.7)
Toilet is filthy/dark/smelling/unattractive	30 (21.1)	87 (61.3)	25 (17.6)
Diarrhea/there is no time to visit toilet	11 (7.7)	0 (0)	131 (92.3)
Toilet distance	51 (35.9)	0 (0)	91 (64.1)
Cultural/habitual/religious preference for open defecation	0 (0)	0 (0)	142 (100)
No toilet at the workplace	142 (100)	0 (0)	0 (0)
Ignorance of the benefit of a toilet	0 (0)	0 (0)	142 (100)
Dilapidated toilet	91 (64.1)	0 (0)	51 (35.9)
There is a risk for personal safety	142 (100)	0 (0)	0 (0)
Open defecation done voluntarily or involuntarily	142 (100)	0 (0)	0 (0)
Finance	52 (36.6)	0 (0)	90 (63.4)
Lack of land and space	4 (2.8)	0 (0)	138 (97.2)

Figure 2. Practice of Open Defecation



## Conclusions

1. The practice of open defecation is still a challenge of public health importance despite various interventions in the past.
2. This study revealed that both sexes' privacy are exposed in the practice of open defecation.
3. Also established is that open defecation is threat to public health, and can lead to water pollution, dangerous to health and leads to diseases.
4. There is awareness on good knowledge of hygiene by respondents, but they are careless about their health. Cultural, habitual, and religious preference are not reasons for open defecation, likewise voluntary or involuntary open defecation is a choice by the respondents.
5. The need for constant public health promotion and awareness should be encouraged most especially through traditional and religious leaders.
6. Environmental sanitation should be encouraged, and enforcement should be in place for any infraction by the people.

### SOME SELECTED REFERENCES

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