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Knowledge, Attitude, and Practice on Open Defecation among Rural Communities of Sule Tankarkar Local Government of Jigawa State, Nigeria

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Abstract

Background
The practice of unhygienic defecation in an open spaces other than toilets is what is termed as open defecation. One of the reasons for poor hygiene in Nigeria is open defecation. Assessing the knowledge of people assesses the general understanding of a community on a particular topic under study, whereas the attitude component assesses the feeling and cultural beliefs toward the topic. To ensure an open defecation free environment, more attention should be towards changing the attitudes of the community toward OD, not only building latrines.

Broad objective
This study assessed the factors associated with open defecation as well as Knowledge, Attitude, and Practice in a rural community of Sule Tankarkar Local Government of Jigawa State.

Methodology
This cross sectional study was a community based that recruited 160 participants using multistage sampling techniques. A questionnaire was interview administered to the participant. Data was analyzed using frequency, percentage, mean, standard deviation and chi-square in SPSS version 20 at alpha level of 0.05.

Results
The majority of the participants were male 132 (82.5%) within the age range of 29-39 49(30.6%) with only primary education were 33.8 %. The majority 158 (98.7%) households possessed latrines in their houses. Majority of the participants, 133 (83.1%), possessed a good knowledge of negative effects of open defecation. However, two-third of the participants had a negative attitude (66.9%) and poor practice (36.3%) towards ending open defecation.

Conclusion and recommendation
Latrines were found to be present in almost all the households which participated in this study. Factors associated with latrine ownership were government policy, the type of soil, poverty, and educational level. Good Knowledge on open defecation was seen among the participants but possess negative attitudes and poor practice of latrine usage. Therefore, there is need for empowerments to construct very good latrine with less cost in order to improve on the current practice to end open defection.

Keywords: *Open defecation, WASH, Latrine, Cholera.*

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Introduction

The practice of unhygienic defecation in the field, bushes, forest, ditches, streets, or any other open spaces other than toilets is what is termed as open defecation (1). One of the reasons for poor hygiene in Nigeria is open defecation (2).Gbadegesin & Akintola, (3) reported that Nigeria had taken an action plan in 2016 to end open defecation. Still, unfortunately, in 2018, it was found out that many of her regions were intensely battling with water-borne diseases that could be linked to poor sanitation open defecation inclusive (4). Therefore, an emergency declaration to end open defecation was immediately made (5).

Feces defecated contains bacteria and parasites that have the potentials for contaminating drinking water (6) and, as such, predispose not only the community practicing the act but other communities to water-borne diseases and other associated infectious diseases (3). The practice may also endanger girls to violence (7), such as sexual harassment, snake bite, among others, and thus implicates girl child education. Furthermore, the act may reduce the human capital of the countries' workforce and deprive citizens of physical and cognitive development(8). Open defecation leads to stunting and an increase in children mortality rate, malnourishment, intellectual retardation, cognitive and educational deficit (9).

Open defecation is more common in rural areas than urban areas, with 33% and 15%, respectively (2). In some rural areas, people have the habit of defecating openly in rivers and lakes that is part of drinking water source hence predisposing self to the consequences of drinking unsafe and unclean water as well as the poor sanitary environment (10). The practice is usually passed on from generation to generation, and within peer groups since childhood to the extent that even if facilities are available, the person may still defecate in an open space become it has become a habit (11). Other reasons include a high ratio of the population to the facility (3) and poverty (3, 12) Lack of built-up areas, access to water, subsidies ((13), and race influences the prevalence of open defecation (12). Makhfudli et al. (13) reported that proximity to water bodies and vegetation, behavior change communication, and community-provided subsidies significantly influence open defecation. Educational level was also said to influence the practice of open defecation(14).

Assessing people's level of Knowledge, Attitude, and Practice (KAP) will give room for a better awareness program to the peoples studied since KAP explores people's understanding, feeling, and action on a particular topic (15). KAP study can be used to evaluate intervention success, a better understanding of common Knowledge, beliefs, and behaviors, and set priorities (16). Several studies and interventions were done in Nigeria to address open defecation in the country, but the practice seems to be unchanged. Therefore,

this study assessed the factors associated with open defecation as well as KAP in a rural community of Sule Tankarkar Local Government of Jigawa State. The results of this study provided important baseline information, which could improve on adequate hygiene and sanitation as critical determinants of health.

Methods

Research setting

Sule -Tankarkar (STK) Local Government Area (LGA) is one of the 27 LGAs in Jigawa State, Nigeria, with its headquarters in Sule Tankarkar town. Sule Tankarkar LGA comprises ten political wards villages, namely: - Albasu,Amanga, Dangwanki, Danladi, Danzomo,Jeke, Shabaru,Sule Tankarkar, Takatsaba, and 'Yandamo Wards. The inhabitants are predominantly Muslims, with some few maguzawas. Hausa & Fulfulde are the major tribes. The main occupation of the inhabitants is perennial farming, domestic animals rearing, and some, however, engage themselves in civil service. The local Government was one of the five local governments selected by UNICEF and state Government collaboration to be declared open defecation free LGAs and hence the need to assess the KAP of the people of the LGA on the OD.

Participants

The participants in this study were all consenting households head or his representative from the selected wards. The head of the households were interviewed however in their absent the next person in charge in the house was interviewed.

Research Design

This was a descriptive cross-sectional survey as the study was not intended to assess the trend in KAP of the participants on open defecation.

Sample Size Determination

The sample size was determined using

$n = Z^{⅔} = pq/d^2$ (17)

Where n=the desired sample size

Z= standard normal deviation set at 1.96, which corresponds to the 95% confidence interval.

P =prevalence of open defecation in north-west which is 10.3% (18)

Q = complimentary probability =1.0 - p =1.0 - 0.10%= 0.9%

d = the degree of accuracy (precision) set at 0.05 (acceptable margin error)

n = $(1.96)2\times 0.1 \times 0.9/0.05^2$

Therefore n = 138

138+10% (wastage factor and non-response rate) =160

Sampling technique

Multistage random technique was used to recruit participants into this study.

Stage one: Involved the selection of wards from Sule Tankarkar local Government. There are ten political wards in the local government. Five (5) wards were selected by simple random sampling method.

Stage two: Involved the selection of the study participant at their household using systematic random sampling techniques

Fifty percent (50%) of the wards were randomly selected, that is, five wards. The selected wards were Albasu, Dangwanki, Suletankarkar, Takatsaba, and Yandamo. The total population sample was calculated to be 160 and was equally divided to the chosen wards, which gives 32 from each Ward. Due to the dispersed settlement pattern of the wards, 5% of the total number of the communities in each Ward was randomly selected, and the household was selected using systematic sampling.

Instrument

The instrument for data collection was an interview administered questionnaire. The questionnaire was adapted from Busienei, Ogendi, and Mokua et al. (19). The questionnaire comprises three parts; the first part enquires about the socioeconomic status of the participants, the second part enquires about factors associated with latrine usage while section three enquires about Knowledge, attitude, and practice (KAP) towards open defecation. The first three questions of the third part were involved with Knowledge; the second two consists of two questions, and the last six questions were practice questions. The questionnaire was scored using 3 points Likert scale 0 for disagree, 1 for undecided, and 2 for agree.

Ethics approval and consent to participate

Ethical approval was sought and obtained from the Jigawa state Research Ethics Committee with reference number JHREC/2020/001. The head of each household was interviewed, and if absent, the eldest son/daughter or eldest wife was interviewed after the purpose and

procedure (which included confidentially, voluntary nature of participation, freedom of withdrawing from the study at any time during the study, and no any harm attached) for the study was explained. The interview was conducted after agreeing and signing of informed consent.

Procedure for data collection

The questionnaire survey was administered to the participants by trained interviewers who were readily available at the time of the study. The research assistant read out the questions and the options in English and translated it to Hausa to the participants. The participants then chose the appropriate answer as per he is concern and the research assistant ticked it for him. For literate participants the research assistant would give him the questionnaire to fill it himself and return it.

Analysis of Data

Data were analyzed using SPSS 20.0 version software and summarized using a descriptive statistic of Mean, frequency, mean and standard deviation. Inferential statistic of the chi-square or fisher exact tests when a frequency of less than 5 was observed, were used to determine an association between demographic variables and the knowledge, attitude and practice of open defecation among the participants. The probability level was set at 0.05. We later categorized each part of the questionnaire as follows; Knowledge component's score ranges from 0 to 6. Score ≥4 was referred to good Knowledge, while a score of 4 or less was regarded as poor Knowledge. The score of the attitude domain ranges from 0 to 4; any score less than one or two is regarded as a positive attitude, and any score ≥2 was interpreted as a negative attitude. For the practice domain with a score from 0 to 12, a score ≥ of 5 was interpreted as a poor practice, and a score of 4 or below was referred to as a good practice. The questionnaire was pre-tested to examine its internal consistency giving a Cronbach alpha of 0.72 for the KAP section.

Results

One hundred and sixty household heads were interviewed using an interview administered questionnaire with a 160 (100%) response rate, and all were included in data analysis because all were fully completed.

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Socio-demographic characteristics of the household head

Table 1 shows the socio-demographic characteristics of the head of the household interviewed. The majority of the participant is within the age range of 29-39 49(30.6%) followed by the age range of 18-28 (23.1%), 40-50 (21.9%), 51-61 (10%) and 62-72 (8.1%) respectively with only a few below the age of 18 (4.4%) and age 73 and above (1.9%). Of the gender of the head of the household male 132 (82.5%) predominated female 28 (17.5%). The major occupation of the participant is farming/rearing (44.4%), with 38% into business, and very few are civil servants (10%). With regards to the level of education, most of the participants attained no formal education, with 33.8%, 13.8% attaining primary and secondary education, while only 4.4% of the participant had tertiary education. Individuals with low socioeconomic status 61.9% predominated in the study. Of the number of household members, Most of the household contains 5-9 members (33.8%), followed by a household with 0-4 members (32.5%), 10-14 members (30%), and 15 or more members (15%).

Table 1: socio-demographic characteristics of the head of the household

Variables	n	%
Wards		
Albasu	32	20
Dangwanki	32	20
Sule tankarkar	32	20
Takatsaba	32	20
Yandamo	32	20
Age		
<18	7	4.4
18-28	37	23.1
29-39	49	30.6
40-50	35	21.9
51-61	16	10
62-72	13	8.1
73 and above	3	1.9
Sex		
Male	132	82.5
Female	28	17.5
Occupation		
Civil Servant	16	10
Farming/rearing	71	44.4
Business	38	23.8

Others	35	21.9
Educational level		
Primary level	54	33.8
Secondary level	22	13.8
Tertiary level	7	4.4
Non formal education	77	48.1
Socio-economic status		
Low	99	61.9
Middle	56	35
High	5	3.1
Family size		
0-4 members	52	32.5
5-9 members	54	33.8
10-14 members	30	18.8
15 members and above	34	15
Total	160	100

n=frequency, %=percentage

Presence of a latrine in the household

Table 2 shows that only 2 (1.3%) of the interviewed household head do not possess latrine in their house while the majority 158 (98.7%) possess latrine in their house.

Presence of a pit latrine in the household

Table 2 shows that only 2 (1.3%) of the interviewed household head do not possess pit latrine in their house while the majority 158 (98.7%) possess latrine in their house.

Factors associated with latrine ownership

When asked about the factors that influence latrine ownership, law enforcement 92 (58.2%) was the highest factor associated with latrine ownership, followed by the nature of the soil of the area, which is loose. Others (46.8%). 60 (38%), 57 (36.1%), and 45 (28.5%) attributed latrine ownership to be influenced by culture, poverty, and educational level, respectively. When asked about the reasons people practice open defecation, the main reason cited is culture 100 (65.8%), almost filled up latrines 64 (42.1%), latrine sharing among household 31 (20.4%), presence of feces in the latrine 26 (17.1%). Most of the participants, 95 (59.4%), were not scared of a latrine. The 65 (40.6%) who are scared of latrine mostly cited being afraid of falling inside 59 (37.1%) and cost of maintenance 26 (16.4%) as the reason for being scared of using a latrine. This can be deduced from table 2.

Table 2: factors associated with latrine ownership

Variables	n	%
Presence of a latrine in the household		
Yes	158	98.7
No	2	1.3
What are the factors associated with latrine ownership?*		
Poverty	57	36.1
Loose sand	74	46.8
Culture	60	38
Law enforcement	92	58.2
Education level	45	28.5
Why do people practice OD?*		
Culture	100	65.8
Tattered latrine walls	17	11.2
Almost filled-up latrines	64	42.1
Sharing of latrine with many households	31	20.4
Feces present in the latrine floor	29	19.1
Leaking latrine roof and stagnant water on the floor	7	4.6
Bad odor in the latrines	26	17.1
Presence of flies in the latrine	20	13.2
Are you scared of using a latrine?		
No	95	59.4
Yes	65	40.6
Why are you scared of using a latrine?*		
One can fall inside	59	37.1
For some, one has to pay to use them	9	5.7
One has to clean the latrine when it is dirty	13	8.2
Its maintenance is costly	26	16.4

*= *multiple response question*

Knowledge, attitudes, and practice **of ending open defecation**

Table 3 shows that the majority of the participant, 133 (83.1%), possess a good knowledge of open defecation. However, only one-third of the participant has a positive attitude (66.9%) and good practice (36.3%) of open defecation.

Association between socio-demographic characteristics of the household head and Knowledge, attitudes, and practice **of ending open defecation**

All demographic characteristics of the household head were not significantly associated with the level of open defecation knowledge ($p>0.05$) except residing Ward, socioeconomic

status, and presence of latrine ($p<0.05$) as revealed by table 4. Table 5 also showed All demographic characteristics of the household head were not significantly associated with attitudes towards open defecation ($p>0.05$) except residing in Ward ($p<0.05$). Likewise, table 6 showed that all demographic characteristics of the household head were not significantly associated with practice of open defecation ($p>0.05$) except residing Ward and family size ($p<0.05$).

Table 3: Knowledge, attitudes and practice **of open defecation**

Variables	n	%
Knowledge		
Good knowledge	133	83.1
Poor knowledge	27	16.9
Attitudes		
Negative attitude	107	66.9
Positive attitude	53	33.1
Practice		
Good practice	58	36.3
Poor practice	102	63.7

Table 4: Association between socio-demographic characteristics of the household head and level of open defecation knowledge

Variables			X^2/fisher exact	p-value
	Good	Poor		
Wards			16.31	.003*
Albasu	28	4		
Dangwanki	31	1		
Sule tankarkar	29	3		
Takatsaba	25	7		
Yandamo	20	12		
Age			2.61	0.87
<18	5	2		
18-28	22	5		
29-39	41	8		
40-50	29	6		
51-61	13	3		
62-72	11	2		
73 and above	2	1		
Sex			1.01	0.32
Male	108	34		

Female	25	3		
Occupation			2.03	0.57
Civil Servant	14	2		
Farming/rearing	56	15		
Business	34	4		
Others	29	6		
Educational level			1.41	0.71
Primary level	47	7		
Secondary level	17	5		
Tertiary level	6	1		
Non formal education	63	14		
Socio-economic status			7.77	.02*
Low	87	12		
Middle	44	12		
High	2	3		
Family size			0.4	0.98
0-4 members	43	9		
5-9 members	44	10		
10-14 members	26	4		
15 members and above	20	4		
Presence of latrine			7.1	.03*
Yes	21	137		
No	0	2		

Table 5: Association between socio-demographic characteristics of the household head and attitude towards open defecation

Variables			**X^2/fisher exact**	**p-value**
	Negative	**Positive**		
Wards			10.61	.003*
Albasu	21	11		
Dangwanki	16	16		
Sule tankarkar	28	4		
Takatsaba	20	12		
Yandamo	22	10		
Age			7.38	0.27
<18	5	2		
18-28	52	12		
29-39	30	19		
40-50	24	11		
51-61	14	2		
62-72	6	7		
73 and above	3	0		

Sex			**2.03**	0.15
Male	92	40		
Female	15	13		
Occupation			0.08	0.1
Civil Servant	11	5		
Farming/rearing	48	23		
Business	25	13		
Others	23	12		
Educational level			3.2	0.36
Primary level	34	20		
Secondary level	12	10		
Tertiary level	5	2		
Non formal education	56	21		
Socio-economic status			**2.61**	0.3
Low	70	29		
Middle	33	23		
High	4	1		
Family size			1.8	0.62
0-4 members	38	14		
5-9 members	35	19		
10-14 members	20	10		
15 members and above	14	10		
Presence of latrine			**1.01**	0.69
Yes	105	52		
No	1	1		

Table 6: Association between socio-demographic characteristics of the household head and practice towards open defecation

Variables			**X^2/fisher exact**	**p-value**
	Negative	**Positive**		
Wards			33.16	.00*
Albasu	13	18		
Dangwanki	11	21		
Sule tankarkar	0	32		
Takatsaba	12	20		
Yandamo	22	10		
Age			10.9	0.07
<18	6	1		
18-28	13	24		
29-39	20	19		
40-50	11	29		
51-61	3	24		

62-72	5	8		
73 and above	0	3		
Sex			3.41	0.56
Male	46	86		
Female	12	16		
Occupation			2.51	0.46
Civil Servant	3	13		
Farming/rearing	32	39		
Business	9	29		
Others	14	21		
Educational level			3.2	0.36
Primary level	20	34		
Secondary level	6	16		
Tertiary level	1	6		
Non formal education	31	46		
Socio-economic status			2.31	0.32
Low	40	59		
Middle	16	40		
High	2	3		
Family size			9.9	.02*
0-4 members	15	37		
5-9 members	23	31		
10-14 members	16	14		
15 members and above	4	20		
Presence of latrine			2.39	0.28
Yes	58	100		
No	0	2		

Discussion

The study aimed at investigating the Knowledge, attitude, and practice of open defecation in rural communities of Sule Tankarkar Local Government of Jigawa state. The study recorded a 100% response rate as obtainable in most interview administered questionnaire.

The study revealed that only a negligible percentage of the interviewed individuals do not possess latrine in their houses. The finding is in contrast with a study in Kenya (19) and Indonesia(13), where there were only a few latrines in the houses of low and middle-income earners. This could be linked to the recent policy of the state of emergency on open defecation enforced by the state government of the state, immediately following the declaration of the Federal Government on a campaign of Executive Order 009, 2019 termed Nigeria open defecation free by 2025 (20). In fact, most of the participant, when asked on whether they have the latrine in their houses during data collection, they jokingly answered:

"of course yes since the government had necessitated it." It was already established that pressure from leaders is among the drivers of latrine ownership (21).In addition, UNICEF, Federal, and State government collaboration have selected Sule Tankarkar local government authority among the next five targeted local governments to be declared open defecation free local governments, after declaring six local governments free this year (22). This collaboration can be said to have led to the high number of latrine ownership in the local government because it involved empowering the community to own a latrine.

The study further showed that the main reasons for the presence of latrine in the houses as perceived by the participants were mostly attributed to policy enforcement, nature of the soil in the environment, culture, and poverty. This is similar to the findings of others (19, 23, 24). The nature of the soil in the study location is a sandy loose type that is difficult to dig and is easily collapsible during rainy seasons as such discourages latrine ownership (25). People believed that even if a latrine is constructed, it may not last long as it may collapse during the rainy season. In fact, 30% of constructed latrines in the neighboring local government were reported to have collapsed during the rainy season(25). Another report from the same state reported the collapse of latrines during the rainy season (23). A collapsed latrine reverts almost all the members of the family to open defecation (23). In response to the nature of the soil, several maneuvers to improve the soil quality to reduce its collapsibility were invented in community-led total sanitation (CLTS) and was taught to the people of some part of the state(25). This maneuver includes tire and mud block latrine type(25).

Culture, poverty, and level of education were reported to influence latrine ownership. With regards to the poverty level, similar findings from Tanzania, Indonesia, India (11), and Ethiopia(26) were reported in line with these findings. The reason may not be unconnected to the cost of construction material. In a study conducted by Ebimgbo et al. (24) showed that despite the good knowledge of open defecation, the reason for the high practice of OD is a financial constraint to build a latrine. With regards to culture, as this study was conducted from a rural community which may be characterized by strong cultural belief and adherence may be the reason for stating culture as the predictor of latrine ownership as reported by similar studies (19, 24). Though Ajayi and Philip (27) argued that level of education is not directly proportional to latrine ownership, however, a person who is of higher education level may have a better knowledge of health calamities of open defecation and, as such, has a lesser tendency of practicing open defecation as reported by Busienei et al. (19).

When a latrine is filled up, the next option for the household members is to revert to open defecation (23). This study also showed that almost filled up latrines are one of the reasons

favoring open defecation. This study further stated that latrine sharing, bad odor, feces on the latrine floor also encourage open defecation. This can be so because sharing latrine is linked with poor cleanliness of the latrine as some members do not bother to clean the latrine after usage, and another person may not want to clean other person's feces (23). This will lead to the untidiness of the latrine and later will result in bad odor, and as such, the next option is to go for open defecation in such a household. Water Aid (23), in a study, showed that communities with less open defecation rates have only a few dirty latrines. This may be true, especially due to the abundance of bushes in rural areas that encourages open defecation. Furthermore, it was reported that latrine sharing is a function of wealth (inversely proportional); as such, it is not surprising when the participants of this study stated that latrine sharing encourages open defecation taking a look at the socioeconomic level of the majority of the participants. The tidiness, odor-free latrines encourages latrine usage (23).

One-third of the participants are scared of using latrines, as indicated by this study. This can hinder the adoption of latrine usage. The reasons for being scared, as perceived by the participant scared of latrine usage, include the fear of falling inside and the cost of maintenance. The type of the soil in the setting is loose type may easily be collapsed as such; this is not surprising when someone in this type of environment is concerned with a tendency of latrine falling inside as a reason for open defecation. The cost of constructing a latrine, can make one be scared of latrine usage considering the fact that most of the participants are mostly low and middle-income individuals. Similar reports have stated cost of construction material as the concern for the construction of latrines (23).

Good knowledge of open defecation and its health-related negative consequences were seen in this study participants. However, despite the good knowledge majority hold a negative attitude and poor practice toward latrine usage. Similar to this, Ajayi and Philip (27) noted that the knowledge level does not necessarily determine behaviors toward a particular topic. Knowledge attitude and practice studies examine what people know, feel, and behave about a certain topic (15). In broader terms, the knowledge component of KAP assesses the general understanding of a community on a particular topic under study, whereas the attitude component assesses the feeling and cultural beliefs toward the topic and practice is the method through which the community manifests their Knowledge and attitudes on the topic (15). A study by Ebimgbo et al. (24) in the southeastern part of Nigeria showed a good knowledge of the health consequences of OD. In the same vein, Ahmad (28) also suggested that to ensure an open defecation environment, more attention should be towards changing the attitudes of the community toward OD, not only building latrines. This high negative

attitude and poor practice of open defecation seen in the study may hinder the adoption of latrine usage (29) especially considering the fact that the research setting is rural where the practice is high (30). This means that the possession of latrines by the majority of the participant of this study does not guarantee it is utilization because the construction of the latrine may be due to pressure from the government. To add to this, the majority of the participants are low-income earners with poor sanitary behaviors(31) that in turn lead to odor, feces on the floor and thus encourages open defecation (23). In fact, construction of latrine alone does not stop open defecation owing to the poor sanitary behaviors of the people(31).

Only Residing Ward, socioeconomic status, and presence of latrine were the only socioeconomic status that was significantly associated with the level of Knowledge of open defecation. This may be explained by the fact that different wards might have received awareness programs better than their counterparts in other wards and hence the reason for the former to have a better level of Knowledge than the latter. Individuals with higher socioeconomic status might possess more social amenities than those in a lower class and as such may be exposed to orientation programs in radio, television, and during interaction with other colleagues in the same economic class. It is not surprising if someone who possesses a latrine in his house has good knowledge of open defecation because he might have been aware of the health consequences of open defecation, and that is why he owns a latrine.

Residing Ward was significantly associated with attitudes and practice of open defecation. This could be explained by the disparity in the level of knowledge between the wards. Thought,Ajayi and Philip (27) argued that the level of knowledge does not necessarily correlate with a positive attitude or good practice of open defecation. However, this could be true, but it is more likely for someone who is better aware of health-related consequences of OD to be possessing a positive attitude and good practice of OD than someone who is not aware of its health-related consequences. In addition, the family size was significantly associated with the practice of open defecation, which may be due to the fact families with a high number of members in the family has a better chance of sharing latrine. The participants already cited latrine sharing as one of the reasons that hinder the use of latrine. Latrine sharing leads to dirty and smelly latrines (23), which can explain the relationship between the size of a family and the poor practice of open defecation.

Limitations

Despite the fact that care was taken while translating the questionnaire to the participants, there might be some elements of unintentional bias from the research assistant while translating. This is because majority of the participants were not literate enough. The study was conducted using structured questionnaire as such some factors specific to the area might not have been captured. In addition, the study was a cross sectional study and as such does not show trends in the factors and KAP of OD.

Conclusion

The latrine is present in almost all the households interviewed. Factors associated with latrine ownership are government policy, the type of soil, poverty, and educational level. The factors that encourage open defecation include latrine sharing by too many members, smelly latrine, fear of falling inside due to the loose nature of the soil type, and cultural belief of some individuals. Good Knowledge on open defecation was seen among the participants but have negative attitudes and poor practice of latrine usage.

Recommendations

A tire maneuver and other maneuvers should be taught to these people to accommodate the weakness of the soil as done in the neighboring LGA. This should be followed by other community-led total sanitation programs targeting the feelings (attitude) and the practice of the people to change their mindset. A study should also be conducted to assess the level of utilization of latrines, taking a look at the highlighted attributes of the community that could be linked with poor latrine usage despite the fact that it is available.

Abbreviations

CLTS	Community-Led Total Sanitation
NBS	National Bureau of Statistics
OD	Open Defecation
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Competing interest

Authors declared no competing interest.

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Author contributions

SA initiated and designed the study, analyzed the data, wrote methodology, results section and coordinate the study. ZU and EB contributed in performing literature review, data collection, discussion and manuscript review. DG help in data analyzed, wrote result section, prepared, formatted and submitted the manuscript for publication. All authors read and approved the final version of the manuscript.

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