KNOWLEDGE OF PREVENTIVE MEASURES OF CHOLERA DISEASE AMONG COMMUNITY MEMBERS IN AKOKO SOUTH EAST LOCAL GOVERNMENT AREA OF ONDO STATE, NIGERIA.

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Abstract

The study was conducted to ascertain the knowledge of preventive measure of cholera disease among community members in Akoko south east LGA Ondo State. A descriptive cross-sectional survey research design was used for the study. The population for the study consisted of 10,548 community members in Akoko south east LGA .Taro Yamane formula was used to draw 340 community members in Akoko South East LGA. A validated questionnaire titled "Knowledge of Preventive Measures of Cholera Disease Questionnaire (KPMCDQ) was used as instrument for data collection. A split-half method (Spearman-Brown) statistic was used to determine reliability coefficient (KPMCDQ) which gave 0.78 and the instrument was adjudged reliable for use. Frequency counts, percentages and Chi-square were all used to both answer the research questions and test the hypotheses. The results of the study showed that there was moderate knowledge of cholera disease (52.3%) among the community members. The result also showed that there was moderate knowledge of preventive measures of cholera disease (56.2%) among the community members. There was a significant difference in the knowledge of cholera disease and preventive measures based on age and gender. The researcher recommended among others that since the people of the community have moderate knowledge of cholera disease and

preventive measures, measures should be taken by public health educators to encourage the people of the community to sustain the knowledge of personal hygiene and to be treated water before drinking, in order to decrease morbidity cause by cholera.
Keywords: Knowledge, Cholera, Prevention Measures, Community Members, Akoko South East Local Government.

Introduction

Cholera is a disease caused by eating food and drinking water contaminated with the bacterium Vibrio cholerae. Its symptoms are severe diarrhoea ("rice water stool"), dehydration, weakness, muscle cramps, fever, vomiting, low blood pressure and thirst which continues to be a major health risk to the population of many parts of the world (Adejuwon,2023). As a global health problem, Sanni (2019) reported that estimated 1.3 to 4.0 million cases, and 21,000 to 143,000 deaths occur annually due to cholera outbreak. Odubanjo,(2021) cholera cause acute watery diarrhea in children and adults and if left untreated, it may lead to death within hours.Harunah (2021) stated that Children under 2-5 years are the most severely affected.by cholera disease.

Cholera remains a global threat to public health and tend to occur as a result of contamination of food or water with vibro cholera organisms. According to Graham (2020) stated that poor personal hygiene, and unsafe environmental sanitation conditions compounded by lack of portable water supply in the area causes cholera disease .Taiwo (2018) stated that most of those infected have no or mild symptoms and can be successfully treated with oral rehydration solution. Tairo (2017) noted that Nigeria records 63 deaths and 2,102 cholera cases in 2024 outbreak., World Health Organization (2021) opined that cholera outbreak in Kwara State, Nigeria, is currently remains localized and confined. Between May 1st and June 30th 2017, suspected cholera cases in Kwara State were recorded from five local government areas, namely, Asa (18), Ilorin East (450), Ilorin South (215), Ilorin West (780), and Moro (50), in June

2017 an aggregate of 1,558 associated cases with cholera have been documented, including 11 deaths (case casualty rate: 0.7%) Thirteen of these cases were confirmed in the laboratory. Lawrence (2018) reported that 50% of the presumed cases of Cholera Disease are males and 39% are females. Omeh(2021) noted that 50% of the cholera disease cases are aged between 23-35 years. The disease affects all age groups. Judge, (2020) stated that cholera disease mostly affected age groups 5–14 years (24.8%) and 1–4 years (23.4%). The onset of the rainy season is increasing the number of cholera cases reported in Nigeria(John, 2023)

Cholera is a destructive disease that causes extreme and intense water loss. It takes between 12 hours and 5 days for an individual to show symptoms after ingesting contaminated food or water. Nwankwo (2020) stated that both young and old can be affected by cholera disease, and it can kill within hours if untreated. One of the major symptoms of cholera is diarrhea which is often described as “rice water”; it may also have a fishy smell. Untreated individual with cholera may eliminate 10 to 20 liters of diarrhea daily and serious cholera without treatment could result in life-threatening dehydration and electrolyte imbalances which kill about half of affected individuals. WHO (2020) estimates of the figure of asymptomatic to symptomatic cholera infections ranges from 3 to 100. Also, when infected with cholera, a person’s skin may turn bluish-gray from extreme loss of fluids. Falaye (2023), posited that fever is not common with cholera, but patients can be fatigued and lethargic, and might have sunken eyes, dry mouth, cold clammy skin, or wrinkled hands and feet. According to Bolaji (2023), breathing, which is characterized by a deep and labored breathing pattern, can occur as a result of blood pressure may drop because of dehydration, peripheral pulse is rapid, and urine output diminishes with time

Cholera can be spread when people do not wash their hands with soap and water after defecating and then cook or serve food with unwashed hands. Cholera also spreads when people eat food without washing their hands before and after eating. If cooked food is not covered, it may get contaminated from flies that carry the bacteria. Fatima (2021) Cholera spreads when raw fruits and vegetables are not thoroughly washed in clean running water before being eaten. Eating raw seafoods contaminated with cholera bacterium is another way people get infected (Omale,2022) A food handler who prepares drinks such as tigernut or zobo with contaminated water can spread cholera. The Lagos State government mentioned these local drinks as suspected sources of the latest outbreak. Not filtering and boiling unsafe water before drinking, or drinking sachet water that is not treated, can cause cholera. Cholera can spreads when an infected person defecates outside and contaminated faeces are washed into the water system that people drink from. Even a pit latrine that closely at a drinking water source. Ajayi and Ayo (2020) noted that muscle cramping and weakness, altered consciousness, seizures, or coma might occur due to electrolyte imbalances; these are common especially in children. Importantly, many people infected with V. cholerae do not develop any symptoms although the bacteria are present in their faeces for 1–10 days after infection and are shed back into the environment, potentially infecting other people (Ahmed, 2021).

Transmission of Cholera is primarily through the fecal-oral route of contaminated food or water caused by poor sanitation. Moshood (2021) stated that most cholera cases in developed countries are caused by the consumption of contaminated food while in the developing countries, it is caused by drinking contaminated water. Balogun (2023), individuals infected with cholera frequently have diarrhea, and infection transmission may occur if the liquid stool, and conversationally alluded to as “rice-water”, contaminates water used by others and just one

diarrhea stool can cause a one-million increment of V. cholerae in the environment. When the diarrhea stool of an infected individual enters public waterways, groundwater or drinking water supplies, contamination and transmission of cholera will occur. As such, drinking any contaminated water, eating any food washed in the contaminated water can predispose people to become infected with cholera

Knowledge is the awareness of something such as information, facts or skill which is acquired through experience or education. According to Makinde (2023), knowledge is the possession of information, skill and understanding gained through learning and experience. Knowledge is a prerequisite for good health which empowers community members to be capable of taking more effective actions on their health. Knowledge about signs and symptoms, transmission, and preventive measures of Cholera disease will help to improve the chance of detection of Cholera disease in early stages which results in an improvement in survival rate and quality of life (Folorunsho, 2024). It is therefore important that community members have this knowledge to avoid having cholera disease.

Preventive measures are those strategies that will help to curb the outcome of an illness or unhealthy situation. Olalekan (2023) opined that prevention of cholera disease can include drinking bottled water or water treated with chlorine and washing fruit and vegetables with chlorinated water before consumption. Olayemi (2022) stated that regularly washing hands with soap, eating thoroughly cooked food and avoiding consumption of raw seafood products can prevent contact cholera disease According to David (2023) proper hand washing with soap and clean water after using a toilet and before handling food or eating will help reduce the danger of contacted of cholera disease. Importantly, chlorination and boiling of water are often the least expensive, fastest, and most effective means of halting cholera transmission. Cloth filters or sari

filtration, though very basic, have significantly reduced the occurrence of cholera when used in poor villages (Uche, 2019). Warnings about possible cholera contamination can be posted around water sources, with directions on how to decontaminate drinking water. Oral cholera vaccines can be used in conjunction with improvements in water and sanitation to control cholera outbreak and for prevention in areas known to be high risk for cholera (Johnson, 2021)

Akoko South-East is one of eighteen Local Government Areas in Ondo State. The main economic activities amongst Akoko south east local government area are farming, petty trading and fishing. There are six (6) villages in the area; Isua, Epinmi, ipe, ifira, sosan and ipesi Akoko .The groundwater serves as the major sources of water supply for most of the residents in the area, because of lack of portable water supply in the area, rainy and river water is mainly sources of water supply which no doubt could expose the community members to the cholera disease. Therefore, the need to study cholera disease; its knowledge and preventive measures among community members become timely. This is because when the people of the community have knowledge in this area, the incident of having cholera disease will be reduced and the standard of living will improve, it becomes necessary to determine the level of knowledge of Preventive Measures of cholera disease among the Community Members in Akoko South East Local Government Area, Ondo State.

Purpose of the Study

The purpose of the study was to ascertain the knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state. Specifically, the study aimed to:

1. determine the level of knowledge of cholera disease among community members in Akoko South east local government area in Ondo state.

2. determine the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state.
3. determine the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state based on age.
4. determine the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state based on gender

Research Questions

1. What is the level of knowledge of cholera disease among community members in Akoko south east local government area in Ondo state?
2. What is the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state?
3. What is the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state based on age?
4. What is the level of Knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state based on gender?

Hypotheses

1. There is no significant difference in the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state based on age

2. There is no significant difference in the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government area in Ondo state based on gender.

Methods

The study adopted a descriptive cross- sectional survey research design. A cross-sectional survey is one that produces a snapshot of a population at a particular point in time, or at a different stages development (Cohen, Manion, & Morrison, 2011).

The study was conducted in Akoko South East LGA of Ondo State. The villages in the local government area are: Isua, Epinmi,Ifira, Ipe, Sosan and Ipesi Akoko . The population for the study consisted of all the community members in Akoko south east LGA. The number of community members was 10,548 (Community Record Development, 2023). A sample of 340 community members was selected for the study. This sample was determined using Yaro Yamen formula. Multi stage sampling procedure was used to select the respondents. First stage involved the use of simple random sampling to select four villages from the LGA .Second stage is by use of purposive sampling to select male and female community members. The third stage involved the use of systematic random sampling to select 85 commmunity members each from the four villages sampled. This procedure yielded a total of 340 community members used for the study.

The instrument used for data collection was researcher- designed questionnaire on Knowledge of Preventive Measures of Cholera Disease Questionnaire (KPMCDQ). The questionnaire consisted of three sections, A , B and C. Section A contained the demographic data of the respondents .Section B contained eight items on knowledge of cholera disease while section C contained eight items on preventive measures of cholera disease.

The face validity of KPMCDQ was established through the judgement of three experts from the Department of Human Kinetics and Health Education, and Measurement and Evaluation Department at Adekule Ajasin University Akungba Akoko Ondo State. Suggestions of the experts were incorporated to produce the final draft of the instrument. The internal consistency of KPMCDQ was established using split- half method (Spearman-Brown coefficient) and a reliability coefficient of 0.78 was obtained for the instrument which was adjudged reliable for the study. This is in line with the guidelines of Miller (2017) that if a reliability coefficient index of .70 and above is obtained, the instrument will be considered reliable. Hence the KPMCDQ was considered appropriate for the study on knowledge of Preventive Measures of cholera disease

Data was analysed using frequency counts and percentages to answer research questions while chi-square statistic was used to test the hypotheses at 0.05 level of significance. In determining the Knowledge of cholera and its preventive measures, Ashur's (1977) modified by Okafor (1997) criteria for determining knowledge was used. According to these criteria, scores from 0-39 per cent was considered low knowledge (LK), 40-59 per cent was considered as moderate knowledge (MK),60 per cent and above was considered High knowledge (HK).

Results

Table 1: Socio-demographic Characteristics of the Community Members in Akoko South East LGA in Ondo State (n=340)

Variables	Frequency	Percent
Age (in years)		
20-29	43	12.65
30-39	74	21.76
40-49	106	31.18
50+	117	34.41
Gender		
Male	152	44.71
Female	188	55.29

Table 1 reveals the Socio-demographic variables of community members in Akoko south east Local Government Area. The data shows that majority is within the age bracket 50- 59 years and greater percentage 55.29 percent are female.

Table 2: Knowledge of Cholera Disease Possessed by Community Members in Akoko South East LGA in Ondo state (n=340)

S/N	Signs and Symptoms	Yes		No		Decision
		F.	%	F.	%	
1	Diarrhoea and vomiting	216	(63.53)	124	(36.47)	HK
2	Thirst	188	(55.29)	152	(44.71)	HK
3	Increased heart rate	117	(34.41)	223	(65.59)	MK
4	Tiredness	197	(57.94)	143	(42.06)	LK
5	Leg cramps	147	(43.24)	193	(56.76)	HK
6	Dry mucous membranes in the mouth, throat, nose, and eyeslids	195	(57.35)	145.	(42.65)	MK
7	Decrease in urine frequency	161	(47.35)	176	(52.76)	HK
8	Shriveled skin	201	(59.12)	139	(40.88)	MK
	Overall (%)		52.3		47.7	Mk

The Table 2 shows that overall percentage (52.3%) indicates that community members had moderate knowledge of cholera disease. Result in Table 2 showed that (55.29%) experience thirst as the sign and symptom of cholera disease. The table also showed that (36.47%) did not have sign and symptom of diarrhea and vomiting. The table further showed that (57.94%) of the community members experience tiredness in their body as a sign and symptom of cholera disease. majority of the community members (57.35%) experience dry mucous membranes in the mouth, throat, nose, and eyelids.

Table 3: Knowledge of preventive measures of cholera disease possessed by community members in Akoko south east local government area, Ondo state (N=340)

S/N	Preventive measures	Yes		No		
		F	%	F	%	Decision
9	Avoid consuming unpeeled fruits vegetables	144	(42.35)	196	(57.65)	HK
10	Avoid undercooked seafood	215	(63.24)	125	(36.76)	Mk
11	Using purified or boiled water that is chemically disinfected for drinking, cooking, and washing	191	(56.18)	149	(43.82)	Hk
12	Avoid unpasteurized milk	251	(73.82)	89	(26.18)	Mk
13	Environmental sanitation should be practices	154	(45.29)	186.	(54.71)	Hk
14	Eating cooked food	178	(52.35)	162	(47.65)	Mk
15	Drinking clean water	194	(57.06)	146	(42.94)	Mk
16	Avoid contaminated food	201	(59.12)	139	(40.88)	Mk
	Overall (%)		56.2		43.8	Mk

Table 2 showed that overall percentage (56.2%) indicates that community members had moderate knowledge of preventive measures of cholera disease. Majority of the community members (57.65%) not avoid consuming unpeeled fruits vegetables. The table also showed that (57.06) of the community members practice drinking clean water. The table further revealed that

(59.12%) of the community members avoid contaminated food. While (47.65%) of the community members did not eaten cooked food.

Table 4: Level of Knowledge of Preventive Measures of Cholera Disease among Community Members in Akoko South East LGA, Ondo State based on Age

Age (in years)	Low n(%)	Moderate n(%)	High n(%)	Frequency
20-29	16(18.0)	18(8.9)	9(18.8)	43(12.6)
30-39	27(30.3)	38(18.9)	9(18.8)	74(21.8)
40-49	14(15.7)	75(36.9)	17(35.4)	106(31.2)
50+	32(36.0)	72(35.5)	13(27.1)	117((34.4)
Overall	**89(26.2)**	**203(59.7)**	**48(14.1)**	**340(100.0)**

Table 4 shows the level of knowledge of preventive measures of cholera disease among community members in Akoko south east local government Area based on age. The table show that respondents within the ages of 20-29 years had moderate knowledge (18.9%), the ages between 30-39 years had highest respondents with Low knowledge (30.3%), also, ages between 40-49 years had highest respondents with moderate knowledge level (36.9%), while ages between 50+ years have highest respondents with low knowledge (36.0%). Overall result indicates that community members have moderate knowledge (59.7%) of preventive measures of cholera disease based on age.

Table 5: Level of Knowledge of Preventive Measures of Cholera Disease among Community Members in Akoko South East LGA, Ondo State based on Gender

Gender	**Low n(%)**	**Moderate n(%)**	**High n(%)**	**Frequency**
Male	48(28.6)	96(48.5)	8(21.6)	152(44.7)
Female	57(54.3)	102(51.5	29(78.4)	188(55.3)
Overall	**105(30.9)**	**198(58.2)**	**37(10.9)**	**340(100.0)**

Table 5 revealed the level of knowledge of cholera preventive measures possessed by community members in Akoko south east local government area based on gender. The female has the highest respondents with High knowledge (78.4%) while male (48.5%) have moderate

knowledge of preventive measures of cholera disease. Overall result indicates that majority of the community members have moderate knowledge (58.2%) of preventive measures of cholera disease based on gender.

Table 6: Summary of the Chi-square Analysis of Responses Regarding the level of knowledge of preventive Measures of Cholera Disease possessed by Community Members in Akoko South East LGA, Ondo State based on Age

Age(in years)	Low	Moderate	High	X2	Crit	Df	P-val	Decision
20-29	16(18.0)	18(8.9)	9(18.8)	282.97	12.592	6	0.00	Rejected
30-39	27(30.3)	38(18.9)	9(18.8)					
40-49	14(15.7)	75(36.9)	17(35.4)					
50+	32(36.0)	72(35.5)	13(27.1)					

Table 6 showed that there is a significant difference in the knowledge of preventive measures of cholera disease based on age (x=282.97, df=6, p-value=0.00) since p-value is less than .05 level of significance. This implies that level of knowledge of preventive measures of cholera disease possessed by community members differs based on different age group .

Table 7: Summary of the Chi-square Analysis of Responses Regarding the level of Knowledge of Preventive Measures of Cholera Disease possessed by community Members in Akoko South East LGA , Ondo State based on Gender

Variable	Low	Moderate	High	X2	Crit	Df	P-val	Decision
Male	48(28.6)	96(48.5)	8(21.6)	149.02	5.991	2	0.00	Rejected
Female	57(54.3)	102(51.5)	29(78.4)					

The table 7 shows that there is significant difference in the knowledge of preventive measures of cholera disease based on gender (x=149.02, df=2, p-value=0.00) since p-value is less than .05 level of significance. This implies that both males and females differed in their knowledge of preventive measures of cholera disease.

Discussion

Table 1 revealed the socio-demographic characteristics of the respondents. The data shows that the majority is within the age bracket 40-49 years and 50 years above and others are 20-29% and 30-39% years living in the commumity while percentage of females respondents (55.29%) is greater than that of males (44.71%). Similarly, study conducted by Clement (2021) that over 50% of the cholera disease cases are aged between 23-34 years. This finding is in disagrees with the study conducted by Harunah (2021) stated that Children under 2-5 years are the most severely affected by cholera disease

Table 2 revealed that overall of the respondents have moderate knowledge (52.3%) of cholera disease among community members in Akoko south east local government area of Ondo state. The finding is expected and not surprising. This is because knowledge of cholera disease such as itching, thirst, decrease in urine frequency, shriveled skin among others is reasonable. This finding contradict with the Balogun (2023) which stated that individuals infected with cholera frequently have diarrhea, and infection transmission may occur if the liquid stool, and conversationally alluded to as “rice-water”, contaminates water used by others and one diarrhea stool can cause a one million increment of V. cholerae in the environment.

Table3, revealed that overall of the respondents have moderate knowledge (56.2%) on the preventive measures of cholera disease.Thus, the knowledge of Preventive Measures of Cholera disease among community members in Akoko south east local government area of Ondo state is moderate .The finding is expected and not surprising. This is because majority of the community members in Akoko south east local government area must have had information about cholera disease on radio or television. This findings is in line with the study of Olalekan(2023) opined that preventive of cholera disease can include drinking bottled water or

water treated with chlorine and washing fruit and vegetables with clean water or chlorinated water before consumption.

Table 4, revealed that majority of the respondents have moderate knowledge (59.7%) on the Preventive Measures of Cholera disease. Thus, the level of knowledge of Preventive Measures of Cholera disease among the community members in Akoko south east local government area in ondo state based on age is moderate. The data implies that age of individuals did not determined the level of knowledge of Preventive measures of cholera disease, because cholera can affects both young and old. The finding is contradictory with the study of Nwankwo(2020) which stated that cholera affects both young and old, and it can kill within hours if untreated.

Table 5, revealed that majority of the respondents have moderate knowledge (58.2%) on the preventive measures of cholera disease. Thus, the level of knowledge of Preventive Measures of Cholera disease among the community members in Akoko south east local government area based on gender is moderate. This implies that gender did not determined the level of knowledge of preventive measures of cholera disease, The finding is in line with the finding of Olayemi (2022) stated that regularly washing hands with soap, eating thoroughly cooked food and avoiding consumption of raw seafood products also proper hand washing with soap and clean water after using a toilet and before handling food or eating will help reduce the danger of contacted cholera disease

Table 6, revealed that there is a significant difference on the knowledge of preventive measures of cholera disease possessed by community members in Akoko south east local government area of Ondo state based on age. This finding is expected and not surprising because the age of individual determined the level of knowledge of preventive measures of cholera

disease. This finding is in disagrees with the study of Judge,(2020) which stated that the most affected age groups are 5–14 years (24.8%) and 1–4 years (23.4%). This is because no one can specify the age group that mostly affected by cholera disease.

Table 7, revealed that there is a significant difference on the knowledge of preventive measures of cholera disease possessed by community members in Akoko south east local government area of Ondo state based on gender. This finding is expected and therefore not surprising because one would expected that gender of individuals may determined the level of knowledge of preventive measures of cholera disease. This finding is in disagreed with the study of Lawrence (2018) stated that 50% of the presumed cases of Cholera disease are males and 39% are females.

Conclusion

Based on the findings and discussions of the study, the following conclusions were reached. Findings from the study revealed that the knowledge of Preventive Measures of Cholera disease among community members in Akoko south east local government area in ondo state is moderate. Based on the findings of this study, it is concluded that the community members in Akoko south east local government area in ondo state are knowledgeable of the preventive measures of Cholera disease. Both male and female had a moderate knowledge of Preventive Measures of Cholera disease Also there was a significant difference in the level of knowledge of Preventive Measures of Cholera disease among the community members in Akoko south east local government area of Ondo State based on age and gender.

Recommendations

Based on the findings and conclusions, the following recommendations were made:

1. The people of the community should make sure that water is well boiled and treated before drinking also, boiled and treated water should be stored in a clean and safe container.
2. Personal hygiene should be constant and paramount, hence hands must be washed frequently with soap and clean water or alcohol-based hand sanitizer should be used if soap and water are not available.
3. They should ensure all food is well cooked before consumption and avoid eating fruits, vegetables in raw form, except after washing them in clean water or peeling them.
4. People of the community should avoid open defecation and indiscriminate refuse dumping and ensure proper disposal of waste and clearing of sewage.
5. Public health education and adherence to appropriate basic sanitation practices should be practiced to help prevent and control transmission of cholera and other diseases

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