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KNOWLEDGE OF TYPHOID FEVER PREVENTION AND CONTROL MEASURES: A STUDY OF ISIALA MBANO LGA, IMO STATE

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Abstract

This study focused on knowledge of typhoid fever prevention and control measures: a study of Isiala Mbano LGA, Imo State**.** The design adopted was survey; questionnaire was used as an instrument of data collection. The data collected was presented in tables and analyzed using simple percentage; mean statistic and Pearson product moment correlation coefficient (at 0.05% level of significance) through SPSS version 23.0. The study discovered that the level of knowledge and awareness of typhoid fever prevention and control is unknown in Isiala Mbano LGA, Imo State; and the major causes of typhoid fever is fecal contamination of food and water This research concludes that the issue of typhoid fever prevention and control can be achieved based on public knowledge about the causes, symptoms and consequences of typhoid fever. Based on the findings, the study recommended that health professionals should carry out public awareness on all issues relating to typhoid fever so as to reduce its challenges and have a healthy society. Again, there is need for public health enlightenment and education on the causes and preventive mechanism for typhoid fever.

Keywords: Typhoid Fever, Control Measures

INTRODUCTION

There are many disease affecting African countries in general and Nigeria in particular. One of such disease is typhoid fever. Basically, typhoid fever, also called enteric fever, is caused by salmonella bacteria (Ugochukwu, Mbaezue, Lawal, Azubogu, Sheikh & Vallières, 2020). Typhoid fever is rare in places where few people carry the bacteria. It also is rare where water is treated to kill germs and where human waste

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disposal is managed. One example of where typhoid fever is rare is the United States. Places with the highest number of cases or with regular outbreaks are in Africa. It is a serious health threat, especially for children, in places where it is more common, like Nigeria. Food and water with the bacteria in it cause typhoid fever.

Close contact with a person who is carrying the salmonella bacteria also can cause typhoid fever (Rehm & Shield, 2019). Symptoms include high fever, headache, stomach pain and constipation or diarrhea. Most people who have typhoid fever feel better about a week after they start treatment to kill bacteria, called antibiotics (Ossai, Uwakwe, Anyanwagu, Ibiok, Azuogu & Ekeke, 2016). But, without treatment, there is a small chance of death from typhoid fever complications. Vaccines against typhoid fever can provide some protection. But they can't protect against all cases of illness caused by other strains of salmonella. Vaccines can help lower risk of getting typhoid fever. According to Lasebikan, Owoaje and Asuzu (2022), in Nigeria, there is poor knowledge on the best strategies for prevention and control of typhoid fever. One of the best ways for prevention of typhoid fever is through vaccination.

People can get a vaccination against typhoid fever. This is an option if you live where typhoid fever is common. It is also an option if you plan to travel to a place where the risk is high. More so, where typhoid fever is common, access to treated water helps avoid contact with the Salmonella enterica serotype typhi bacteria (Osoba, Usman, Oyadiran, Odeyemi, Abode, Usman, Olulaja, Ajidahun & Lucero-Prisno, 2021). Management of human waste also helps people avoid the bacteria. And careful hand-washing for people who prepare and serve food is also important. If you're recovering from typhoid fever, these measures can help keep others safe. The number one is Take your antibiotics. Follow your health care provider's instructions for taking your antibiotics and be sure to finish the entire prescription.

Statement of the Problem

Typhoid fever is one of the major health challenges affecting the people of Imo State in general, and Isiala Mbano in particular. This is because of poor and unhealthy environment where most people lives and unhygienic food most people consume. Typhoid is caused by the bacteria *S. typhi*. It spreads through food, drinks, and drinking water that are contaminated with infected fecal matter. Washing fruit and vegetables can spread it as well if the water is contaminated. Some people have typhoid without experiencing any symptoms (Kerebih, Salelew & Hailesilassie, 2019). Others continue to harbor the bacteria after their symptoms have gone. Sometimes, the disease can appear again.

Aims an Objectives of the Study

The general objective of this study focused on knowledge of typhoid fever prevention and control measures. Specifically, the objectives include to:

1. identify the level of knowledge and awareness of typhoid fever prevention and control in Isiala Mbano LGA, Imo State.
2. find out the major causes of typhoid fever in Isiala Mbano LGA, Imo State.

Research Questions

Based on our research objectives, the following research questions were formulated for the study.

1. What are the level of knowledge and awareness of typhoid fever prevention and control in Isiala Mbano LGA, Imo State?
2. What are the major causes of typhoid fever in Isiala Mbano LGA, Imo State?

Research Hypotheses

Based on our research objectives and research questions, the following research hypotheses guided the study.

Ho1: The level of knowledge and awareness of typhoid fever prevention and control is not unknown in Isiala Mbano LGA, Imo State.

Ho2: The major causes of typhoid fever are not unknown in Isiala Mbano LGA, Imo State.

Nature of Typhoid Fever

Typhoid fever is one of the common illnesses reported daily in many health facilities especially in Nigeria (Asmaa, Ahmed, Safaa & Asmaa, 2020). Typhoid fever is a systemic bacterial illness of public health importance. The disease is transmitted person to person due to fecal contamination of food and water. The disease is as a result poor water supply and sanitation which is usually associated with poverty and underdevelopment resulting to high morbidity and mortality. It is a major cause of ill health in the world, and a common worldwide disease transmitted by the ingestion of food and/or water contaminated with the faeces of an infected person, especially in crowded and impoverished populations (Lyons, 2023).

It continues to be significant causes of illness and death particularly among children and adolescents in developing countries as a result of poor sanitation and unsafe food and water supply especially where the water is contaminated by human faeces and consumption of raw milk products, flavoured drinks and ice-creams (Maron, Fein, Maron, Hillel, Baghdadi & Rodenhauser, 2017). The symptoms of typhoid fever include a sudden onset of sustained fever, severe headache, nausea and severe loss of appetite, the first

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typical manifestations of which are fever, malaise, headache, abdominal pain, relative bradycardia, splenomegaly, leucopenia, constipation or diarrhea, weakness, sore throat, dizziness, and muscle pains (WHO, 2017). It is a severe systemic illness characterized by fever and abdominal pain. The bacteria are carried in the bloodstream and gastro-intestinal tract of infected persons and shed through feces. Flying insects such as flies feeding on feces may sometimes transfer the bacteria through poor hygiene habits and sanitation conditions.

Knowledge of Typhoid

Typhoid Fever (TF) is a life-threatening illness caused by the bacterium Salmonella Typhi. Typhoid fever is not common in the United States, Canada, Western Europe, Australia, or Japan, but it is common in many other countries (CDC, 2018; Asmaa, Ahmed, Safaa & Asmaa 2020). The World Health Organization (WHO) estimates that 16–33 million people are infected worldwide each year. Typhoid, or enteric, fever leads to a 200,000 deaths annually; 80% of these in Asia and the rest primarily in Africa and South America. Recent studies in Asia suggest that the incidence of enteric fever is highest in children aged, 5 years and that Young children experience similar rates of fever (McParland, Noble, Livingston & McManus, 2023). In Bilbeis district (population 664,000) in Lower Egypt the estimated incidence of typhoid fever was calculated to be 13 cases per 100,000 persons per year.

Also the results of population-based surveillance in Fayoum governate indicate that incidence of typhoid fever was 59 cases per 100,000 persons per year (Wang, Aguilar-Gaxiola, Alonso & Wells, 2017). In Assuit, incidence estimates have been derived from hospital-based syndromic surveillance, which may not represent the population with TF about 1000 patient annually (Assuit Health Affairs Directorate). Typhoid fever is an infection that causes clinical symptoms of fever, abdominal pain, body rashes, terry stool, weakness, poor appetite, headaches, generalized aches, pains, lethargy and hapatosplenomegaly will be detectable in about 50% of patients (NGPHU, 2017). It is caused by Salmonellaetyphi, Enter bacteria under Enterobacteriaceae family Gram-negative motile bacteria.

Diagnosis of typhoid fever is made when the Salmonella bacteria is detected with blood culture or stool culture. Besides this, several other tests were also performed for early diagnosis of typhoid fever like immunochromatographic assay (Mohammed, Jibril, Isah & Beida, 2015). Contaminated water or ice, flooding, food and drinks purchased from street vendors, raw fruits and vegetables grown in fields fertilized with sewage, ill household contacts, lack hand washing and toilet access, and evidence of prior Helicobacter Pylori infection, were the most commonly reported risk factors (Rajagopal, Rehill & Godfrey,

2024). Complications of typhoid disease include typhoid meningitis, encephalomyelitis, cranial or periphera neuritis, and psychotic symptoms.

Other serious complications documented with typhoid fever include hemorrhages (causing rapid death in some patients), Hepatitis, myocarditis, pneumonia, disseminated intravascular coagulation, thrombocytopenia and hemolytic uremic syndrome (Monleón Moscardó, Rojo Moreno& García Merita, 2021). Prevention and control sanitation and hygiene are important to prevent typhoid. Careful food preparation and washing of hands are crucial to prevent typhoid. To maintain rural health, water-borne diseases can be reduced by introducing health interventions like proper water and sanitation facilities. The role of community health nurse (CHN) to promote health is to improve the self-care of patient and care giver and this may be achieved through health education (WHO, 2022). CHN educate patient and care giver about health and wellbeing, which can be expected to increase their self-care abilities and promote health such as increase nutritional food choice, physical activity and regular sleep habits.

Typhoid is widely prevalent in all parts of the world but its incidence has considerably declined in developed counters due to improvement in sanitation economic factors and quality of life. In 2015, it resulted in about 149,000 deaths worldwide (Global Burden of Disease, 2016). Supportive measures are important in the management of typhoid fever, such as oral or intravenous hydration, the use of antipyretics, and appropriate nutrition and blood transfusions if indicated (Wang et al, 2017). More than 90% of patients can be managed at home with oral antibiotics, reliable care and close medical follow-up for complications or failure to respond to therapy.

However, patients with persistent vomiting, severe diarrhoea and abdominal distension may require hospitalization and parenteral antibiotic therapy (WHO, 2015). Both outpatients and inpatients with typhoid fever should be closely monitored for the development of complications. Timely intervention can prevent or reduce morbidity and mortality. The parenteral fluoroquinolones are probably the antibiotics of choice for severe infections but there have been no randomized antibiotic trials. In severe typhoid the fluoroquinolones are given for a minimum of 10 days (Ishaq, 2022).

Typhoid fever patients with changes in mental status, characterized by delirium, obtundation and stupor, should be immediately evaluated for meningitis by examination of the cerebrospinal fluid (Asmaa et al, 2020). If the findings are normal and typhoid meningitis is suspected, adults and children should immediately be treated with high-dose intravenous dexamethasone in addition to antimicrobials. If dexamethasone is given in an initial dose of 3 mg/kg by slow i.v (Oyedeji-Amusa, 2023). infusion over 30 minutes and if, after six hours, 1 mg/kg is administered and subsequently repeated at six-hourly intervals

on seven further occasions, mortality can be reduced by some 8090% in these high-risk patients. Hydrocortisone in a lower dose is not effective.

Prevention of typhoid fever

The major routes of transmission of typhoid fever are through drinking water or eating food contaminated with Salmonella typhi (Ishaq, 2022). Prevention is based on ensuring access to safe water and by promoting safe food handling practices. Health education is paramount to raise public awareness and induce behaviour change.

1. **Safe water:** Typhoid fever is a waterborne disease and the main preventive measure is to ensure access to safe water. The water needs to be of good quality and must be sufficient to supply all the community with enough drinking water as well as for all other domestic purposes such as cooking and washing. During outbreaks the following control measures are of particular interest: In urban areas, control and treatment of the water supply systems must be strengthened from catchment to consumer. Safe drinking water should be made available to the population trough a piped system or from tanker trucks. In rural areas, wells must be checked for pathogens and treated if necessary (Benson, 2021; Ishaq, 2022). At home, a particular attention must be paid to the disinfection and the storage of the water however safe its source. Drinking-water can be made safe by boiling it for one minute or by adding a chlorine-releasing chemical. Narrow-mouthed pots with covers for storing water are helpful in reducing secondary transmission of typhoid fever. Chlorine is ineffective when water is stored in metallic containers. In some situations, such as poor rural areas in developing countries or refugee camps, fuel for boiling water and storage containers may have to be supplied.
2. **Food safety:** Contaminated food is another important vehicle for typhoid fever transmission. Appropriate food handling and processing is paramount and the following basic hygiene measures must be implemented or reinforced during epidemics: washing hands with soap before preparing or eating food; avoiding raw food, shellfish, ice; eating only cooked and still hot food or re-heating it (Ishaq, 2022). During outbreaks, food safety inspections must be reinforced in restaurants and for street food vendors activities. Typhoid can be transmitted by chronic carriers who do not apply satisfactory food-related hygiene practices. These carriers should be excluded from any activities involving food preparation and serving. They should not resume their duties until they have had three negative stool cultures at least one month apart.

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3. **Sanitation:** Proper sanitation contributes to reducing the risk of transmission of all diarrhoeal pathogens including Salmonella typhi. Appropriate facilities for human waste disposal must be available for all the community. In an emergency, pit latrines can be quickly built (Asmaa et al, 2020). Collection and treatment of sewage, especially during the rainy season, must be implemented in areas where typhoid fever is known to be present, the use of human excreta as fertilisers must be discouraged.
4. **Vaccination:** The old parenteral killed whole-cell vaccine was effective but produced strong side-effects because of LPS. Two safe and effective vaccines are now licensed and available (Asmaa et al, 2020). One is based on defined subunit antigens, the other on whole-cell live attenuated bacteria. The first of these vaccines, containing Vi polysaccharide, is given in a single dose subcutaneous (s.c.) or i.m. Protection begins seven days after injection, maximum protection being reached 28 days after injection when the highest antibody concentration is obtained.

Contagion Theory

Contagion theory is the idea that some diseases can spread through contact with an infected person, object or air and that quarantine is the best way to prevent the spread. Contagion theory of disease states that when the normal functioning of a living organism, whether a living plant or animal becomes impaired which in turn causes signs or symptoms. The resulting impairment in function can happen as the result of infectious microorganisms or genetic disorders among others. Most diseases are caused by contagious diseases, with occasional exceptions, such as typhoid fever. The spread of non-contagious communicable diseases is changed either very little or not at all by medical isolation of ill persons or medical quarantine for exposed persons.

Thus, a "contagious disease" is sometimes defined in practical terms as a disease for which isolation or quarantine is useful public health responses. Some locations are better suited for the research into the contagious pathogens due to the reduced risk of transmission afforded by a remote or isolated location. Negative room pressure is a technique in health care facilities based on aerobiological designs. In 1762, the Austrian physician Marcus Antonius von Plenciz (1705–1786) published a book titled "Opera medico-physica". It outlined a theory of contagion stating that specific animalcules in the soil and the air were responsible for causing specific diseases.

Health Belief Theory

The HBT was first developed in the 1950s by social psychologists, Hoch Baum, Rosenstock and Kegels working in the U.S. Public Health Services. According to Glanz (2002), The

Health Belief Theory (HBT) is a psychological model that attempts to explain and predict health behaviours. This is done by focusing on the attitudes and beliefs of individuals. The HBT has been adapted to explore a variety of long- and short-term health behaviours, including typhoid fever, and sexual risk behaviours. The core assumptions and assessment of the theory which states that a person will take a health-related action if the individual -

1. feels that a negative health condition can be avoided,
2. Has a positive expectation that by taking a recommended action, she/he will avoid a negative health condition.
3. Believes that she/he can successfully take a recommended health action.

Empirical Studies

Ibeakuzie (2024) studied high rate of typhoid in Nigeria: causes and solution. The work used survey through regression method, through questionnaire and data were analyzed using ANOVA. It found that poor environment, based on poor food and water are the major cause.

Nduka (2023) studied public education on typhoid fever prevention and control in Enugu State, Nigeria. A descriptive cross-sectional study design was employed. Multistage sampling was used to select 400 people that completed a self administered structured questionnaire. The work found poor level of public education on the preventive mechanism for typhoid.

Nwadiaro and Ikeh (2023) investigated the role of media on typhoid fever control and prevention. The study used a descriptive cross-sectional study. A self administered structured questionnaire was used to collect data from 300 media employees. Analyses of data were done using mean and ANOVA. The work found poor performance of media on public education.

Ishaq (2022) wrote on awareness and knowledge of typhoid fever in Kano State, Nigeria. This study examined the awareness and knowledge of typhoid fever in urban and rural Kano. Questionnaire survey and focused group discussion were employed to generate data on their knowledge and awareness from the respondents in areas of high prevalence. Cross tabulations, chi-square and graphs were used to examine the awareness and knowledge of the disease. The result showed people are aware of the disease in both rural and urban Kano, however, there is a significant difference in the level of awareness between rural and urban Kano (p-value=0.000). It also showed that the people in both rural and urban Kano has the knowledge he disease. There is also significant association between variable such as symptoms, transmission and prevention and typhoid fever infection (p-value=0.000). The health seeking measures as the result showed include health facility, traditional medicine and chemist. The study recommends

frequent vaccination, provision of clean and portable water, sustained hygienic eating and drinking habits as well as hygienic practices at home and outside homes as measures for addressing the problem.

Asmaa, Ahmed, Safaa and Asmaa (2020) studied assessment of knowledge and attitude for patients and their care givers regarding to typhoid disease in outpatient clinics in fever hospitals at Assiut Governorate. The work states that the disease is transmitted person to person due to fecal contamination of food and water. Descriptive cross sectional research design used in the present study. The study was carried out in the fever hospitals of Assuit governorate, which consists from (Assuit fever hospital, Dirout fever hospital, Elshamia fever hospital). Sample was total coverage to all cases attended to the previous setting during six months, the total cases around (400) cases (232) patients and (168) caregiver. Tools of the study were to assess the knowledge of patient and caregivers about typhoid fever and their attitude reward typhoid disease. Data collection by direct interview to cases and their caregiver started from first January 2018 to the end of June 2018, data was analyzed by SPSS version 20.0 Results: It was found that satisfactory knowledge of patient and caregiver related to typhoid disease. It was found that negative attitude of patients and caregivers regarding to typhoid disease.

Oyedeji-Amusa (2023) worked on medicinal plants used in the treatment of typhoid fever in Nigeria: a systematic review. The study states that typhoid fever remains a significant public health burden, particularly in low-income regions, causing widespread morbidity and mortality due to inadequate sanitation and limited access to clean water. This study systematically reviews medicinal plants' role in treating typhoid fever in Nigeria. A comprehensive literature search in four electronic databases (PubMed, Scopus, Web of Science, and Google Scholar) yielded 249 references, ultimately narrowing it down to 122 studies that met our inclusion criteria. We found 232 plant species from 66 families used ethnobotanically to treat typhoid fever in Nigeria. Mangifera indica, Carica papaya, and Azadirachta indica were the most frequently used plants. Fabaceae was the most prevalent family. Leaves are primarily used (47.9 %). Decoction (38.7 %) is the preferred preparation method. A comprehensive 62-study review found anti-salmonella activity in 81 plant species. The Fabaceae family, the most commonly used to treat typhoid fever, have anti-salmonella properties. Cajanus cajan, Euphorbia hirta and Phyllanthus niruri show promising activity (MIC value ≤ 0.5 mg/ml), indicating potential for natural anti-salmonella drugs of natural origin.

Gap in literature

Some studies have been done in related aspects of this topic. However, the exact topic is yet to be covered. The major gap here is that the areas of this study, which is Isiala Mbano, has not been covered by previous researches.

MATERIALS AND METHODS

The survey research method was adopted by the researcher to deal with the characteristics of the chosen set of people (representative sample) whose opinion, behaviour and activities are essential for the collection of information required for the study. The area of the study is Isiala Mbano Local Government Area (LGA) is one of the 27 LGAs in Imo State, Nigeria. The population of this study is made up of the entire people of Isiala Mbano LGA, Imo State, which is 275,100 as at 2022 population projection (**Source:** National Population Census, 2025).

The sample size of this study was determined using Taro Yamane's formular and the sample size is 399. The researcher used purposive sampling in selecting the sample size. The instrument used for collecting data in this study is questionnaire. To ensure the reliability of the questionnaire, the researcher conducted a pre-test using the same instrument through cronbach alpha and the research gave 0.78 indicating positive.

The data collected in this study were analyzed using Simple Percentage, Mean Statistics and Pearson Product Moment Correlation Coefficient with the aid of SPSS version 23.0.

Data Presentation, Analysis and Interpretation

It should be noted that out of 399 copies of the questionnaire distributed by the researcher, only 380 copies were properly filled and returned.

Section A: Personal Data

Table 1: Gender of the respondents.

Options	No of Responses	% of Responses
Male	160	42.1
Female	220	57.9
Total	**380**	**100**

Source: Field Survey (2025).

According to table 1 above, 42.1% of the respondents are males whereas 57.9% of the respondents are females.

Table 2: Age bracket of the respondents.

Options	No of Responses	% of Responses
Below 30yrs	120	31.6
31-40yrs	161	42.4
Above 40 yrs	99	26.1
Total	**380**	**100**

Source: Field Survey (2025).

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According to table 2, 31.6% of the respondents are below 20 years and 42.4% of the respondents are between 21-24 years while 26.1% of the respondents are above 24 years.

Table 3: Level of education of the respondents.

Options	No of Responses	% of Responses
Below first degree	226	58.7
First degree and equivalent	88	22.8
Above first degree	66	17.1
Total	**380**	**100**

Source: Field Survey (2025).

The above table has shown that 58.7% of the respondents held below first degree, 22.8% of the respondents are in second year and 17.4% of the respondents held first degree and equivalent while 17.1% of the respondents held above first degree.

Table 4: Marital status of the respondents.

Options	No of Responses	% of Responses
Single	21	5.5
Married	359	94.5
Total	**380**	**100**

Source: Field Survey (2025).

The above table has shown that 5.5% of the respondents are single and 94.5% of the respondents are married.

Table 5: Religion of the respondents.

Options	No of Responses	% of Responses
Christianity	372	97.9
Islam	3	0.8
Others	5	1.3
Total	**380**	**100**

Source: Field Survey (2025).

According to table 5, 97.9% of the respondents are Christians while 0.8% of the respondents are Islam and 1.3% of the respondents indicated others.

Section B: The Subject Matter

Research question one: What are the level of knowledge and awareness of typhoid fever prevention and control in Isiala Mbano LGA, Imo State?

Table 6: The level of knowledge and awareness of typhoid fever prevention and control in Isiala Mbano LGA, Imo State.

S/N	Questionnaire Items	SA	A	D	SD	N	∑X	X	Dec.
1	I am aware of typhoid fever disease, and I have been diagnosed of typhoid fever	150	201	6	23	380	1238	3.3	Positive
2	I have knowledge about typhoid fever prevention	161	200	8	11	380	1271	3.3	Positive
3	I know the strategies for prevention and control of typhoid fever	180	181	10	9	380	1292	3.4	Positive
4	I consult medical specialists on the best measures for typhoid fever prevention and control	120	230	9	21	380	1209	3.2	Positive
	Grand Mean							**3.3**	

Source: Field Survey (2025).

Table 6 above showed that all the items were positive. This is because item 1 had a mean of 3.3, item 2 had a mean of 3.3, item 3 had a mean of 3.4 and item 4 had a mean of 3.2; hence all the items have mean scores more than 2.5 and above. It is therefore concluded that the level of knowledge and awareness of typhoid fever prevention and control is unknown in Isiala Mbano LGA, Imo State.

Research question two: What are the major causes of typhoid fever in Isiala Mbano LGA, Imo State?

Table 7: The major causes of typhoid fever in Isiala Mbano LGA, Imo State.

S/N	Questionnaire Items	SA	A	D	SD	N	∑X	X	Dec.
1	Salmonella typhi	123	202	43	12	380	1196	3.1	Positive
2	Unhealthy drinking water can cause typhoid fever	98	234	19	29	380	1161	3.1	Positive
3	Unclean environment can cause typhoid fever	111	186	44	39	380	1129	3.0	Positive

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S/N	Questionnaire Items	SA	A	D	SD	N	∑X	X	Dec.
4	Food vendors that are carriers	123	186	54	17	380	1229	3.2	Positive
	Grand Mean							**3.1**	

Source: Field Survey (2025).

Table 7 above showed that all the items were positive. This is because item 1 had a mean of 3.1, item 2 had a mean of 3.1, item 3 had a mean of 3.0 and item 4 had a mean of 3.2; hence all the items have mean scores more than 2.5 and above. It is therefore concluded that the major causes of typhoid fever are unknown in Isiala Mbano LGA, Imo State.

Testing of Research Hypotheses

Restatement of Hypothesis One

Ho1: The level of knowledge and awareness of typhoid fever prevention and control is not unknown in Isiala Mbano LGA, Imo State.

To test the hypothesis one, data in table 6 was used.

H1	The level of knowledge and awareness of typhoid fever prevention and control is unknown in Isiala Mbano LGA, Imo State	Pearson Correlation = 0.85 Sig = 0.05 N = 380 Grand mean = 3.3	**VALID**

From the table above, the Pearson correlation is 0.85. It means that the level of knowledge and awareness of typhoid fever prevention and control is unknown in Isiala Mbano LGA, Imo State.

Restatement of Hypothesis Two

Ho2: The major causes of typhoid fever are not unknown in Isiala Mbano LGA, Imo State.
To the test the hypothesis two above, data in table 7 was used.

H2	The major causes of typhoid fever are unknown in Isiala Mbano LGA, Imo State	Pearson Correlation = 0.81 Sig = 0.05 N = 380 Grand mean = 3.1	**VALID**

From the table above, the Pearson correlation is 0.81. It means there is significant and positive relationship. The significance result which is 0.05 is lower. This means that the major causes of typhoid fever are unknown in Isiala Mbano LGA, Imo State.

Discussions of Findings

Test of hypothesis one shows that the level of knowledge and awareness of typhoid fever prevention and control is unknown in Isiala Mbano LGA, Imo State. According to Rajagopal et al (2024), there is need for the government through the media to effectively carry out public awareness programme on the causes of typhoid fever and its prevention. Test of hypothesis two indicated that the major causes of typhoid fever are unknown in Isiala Mbano LGA, Imo State. In the view of Benson (2021), unhealthy food, water and poor environment contributes to the high rate of typhoid fever in Africa. This is also the case of Nigeria.

Conclusion

In Nigeria, typhoid fever is one of the public health challenges. One of the best ways for prevention of typhoid fever is through vaccination. This work found that the major causes include Salmonella typhi, unhealthy drinking water can cause typhoid fever, unhealthy drinking water can cause typhoid fever and food vendors that are carriers. The major symptoms of typhoid fever are I know some symptoms of typhoid fever, a sudden onset of sustained fever, and severe headache, nausea and severe loss of appetite and headache and abdominal pain. The major strategies for prevention and control include food safety, sanitation, good drinking water and vaccination. This research concludes that the issue of typhoid fever prevention and control can be achieved based on public knowledge about the causes, symptoms, and consequences of typhoid fever.

Recommendations

Based on the findings, the following recommendations were made.

1. Health professionals should carry out public awareness on all issues relating to typhoid fever so as to reduce its challenges and have a healthy society.
2. There is need for public health enlightenment and education on the causes and preventive mechanism for typhoid fever.

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