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KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS TYPHOID FEVER PREVENTION AMONG PATIENTS AGED 15-50 YEARS, ADJUMANI GENERAL HOSPITAL, ADJUMANI DISTRICT. A CROSS-SECTIONAL STUDY.

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Abstract

Background:

The purpose of the study was to determine knowledge, attitude, and practices towards the prevention of typhoid fever among patients aged 15-50 years in Adjumani general hospital, Adjumani District.

Methodology:

The study employed a cross-sectional study design with both quantitative approaches. Simple random sampling was used. Data were analyzed manually by use of tally sheets and were entered in the excel computer program to generate tables, graphs, and pie charts.

Results:

The study findings revealed that the overall knowledge of the prevention of typhoid fever among the respondents was generally poor, as most (60%) of the respondents did not know anything about typhoid fever.

Regarding attitude, the majority (70%) of the respondents agreed washing hands with soap helped in preventing typhoid fever, most (60%) agreed that boiling water also helped in preventing typhoid fever, and the majority (84%) were willing to prevent typhoid fever.

In regards to practices half (50%) of the respondents did not know any of the practices that helped in the prevention of typhoid fever, more than half (56%) agreed washing hands with soap helped to minimize typhoid fever infection, the majority (70%) of the agreed on using pit latrine as a fecal disposal facility to minimize typhoid fever infection.

Conclusion:

The general knowledge, attitude, and practices of the respondents towards the prevention of typhoid fever was generally poor which in the end could lead to an increase in the spread of typhoid fever within the district.

Recommendation:

Health workers in Adjumani general hospital should promote community health-based programs to teach the community the best practices to curb the increasing typhoid fever.

Keywords: Typhoid fever, Asymptomatic carriers, Prevention, Prevalence, Health center, Submitted: 2023-07-06 Accepted: 2023-07-22

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1. Background of the study

Typhoid fever is a systemic infection caused by salmonella typhi through ingestion of contaminated foods, beverages, and water as a result of poor sanitation, hygiene, and infected carriers handling and contaminating public foods and beverages (WHO, 2018 and CDC, 2020).

It is a global public health threat that is more pronounced in developing countries like India and Africa, especially Uganda characterized by poor sanitation, unsafe water supply, and unsafe water chain. High-risk areas are the Indian subcontinent, South and South East Asia, the Middle East, Latin America, and Africa (Mogasale et al, 2014).

In the acute phase, the illness is characterized by prolonged fever, headache, nausea, loss of appetite, constipation, and sometimes diarrhea. When untreated typhoid fever progresses to delirium intestinal hemorrhage and bowel perforation which is fatal (Mogasale et al, 2014).

Transmission of typhoid fever occurs orally via foods and beverages handled by asymptomatic carriers. Consumption of food from street vendors has been implicated in salmonella Para typhi A and paratyphoid fever infection communities. Besides, hand-to-mouth occurs when hand hygiene is neglected after using contaminated toilets. However, oral transmission also occurs when individuals take sewage-contaminated water in the process of water supply and usage. This thus necessitating a safe water chain, totally led sanitation, food hygiene, and hand hygiene at all times in our communities (CDC, 2020) and (Keith et al, 2018).

Globally, estimated 21 million cases occur with 222,000 deaths annually out of which developing countries contribute a significant percentage of the total cases and deaths. It is a potentially fatal infection of multi-system infection caused primarily by salmonella enterica, a sub spices enterica serovar typhi (WHO, 2018) and (Keith et al, 2018).

The estimated burden of typhoid fever in Africa is at 762 per 100000 person-years. This review applied a modeling approach that included factors such as population density, growth in domestic production, and sanitation as predictors of disease burden (Antillon et al, 2017).

The MoH of Uganda notified the WHO of the typhoid fever outbreak which started in Kampala city at the beginning of 2015. As of March 2015, a total of 1940 suspected cases had been reported from the first epicenter in downtown Kampala, the outbreak has now spread to all divisions in the capital city and other districts within the country (WHO, 2018).

1.1. General objective

To determine knowledge, attitude, and practices towards prevention of typhoid fever among patients aged 15-50 in the community of Adjumani Hospital in Adjumani town council, Adjumani district.

1.2. Specific objectives

- To determine the knowledge towards prevention of typhoid fever among patients aged 15-50 years in Adjumani general hospital, Adjumani District
- To access the attitude towards prevention of typhoid fever among patients aged 15-50 years in Adjumani general hospital, Adjumani District.
- To find out the practices towards prevention of typhoid fever among patients aged 15-50 years in Adjumani general hospital Adjumani District.

2. METHODOLOGY

2.1. Study design.

A cross-sectional study was used to determine the knowledge, attitude, and practices towards typhoid fever among patients aged 15- 50 years in Adjumani General Hospital, Adjumani district. The study design was used because it was inexpensive and it was to be used in the shortest period possible.

2.2. Study area

The study was conducted at Adjumani General Hospital in Adjumani district. It is found in northern Uganda which is 473 kilometers from Kampala using the express highway. It is also located in the north–northwest of Kampala, the capital and the largest city of Uganda. The coordinates of the town are 3°22'38.0N, 31°47'26.0" E (Latitude: 3.377222; Longitude: 31.790556) of Adjumani Town Council sitting at an average elevation of 816 meters (2,677ft), above the sea level. The hospital has facilities like a laboratory, outpatient department, in-patient department, and maternity Ward. The study was carried out for one and a half months which will start on 15th December 2022 to 4th February 2023.

2.3. Study population:

The study involved a population of patients aged 15- 50 years from within the community of Adjumani seeking medical Assistance on typhoid fever and related illnesses in Adjumani general hospital.

2.4. Sample size determination

Sample size determination technique that was used was the QR/T (Button ,1965) Where:

Q= Total number of days spent in the data collection R= Maximum of the respondents per day

T= Maximum time taken by the interviewer Therefore,

Q= 20 days

R= 5 respondents T= $\frac{1}{2}$ hours QR/T = 20X5/1/2

100/1/2 = 200 respondents

Since the resources were limited, the researcher used 50 respondents.

2.5. Sampling technique

The Simple Random sampling technique was used.

2.6. Inclusion criteria

Patients diagnosed with typhoid fever who were aged 15-50 years and health workers were involved in the study.

2.7. Study variables

Knowledge, attitude, and practices were the independent variables whereas typhoid fever was the dependent variable.

2.8. Data collection method

A questionnaire was used as a research instrument to collect the primary data. It Involved several questions cutting through individual, community, and health facilities. The questionnaire had closed-ended questions that the respondents were asked to fill in upon being informed about the study.

2.9. Pre-testing the questionnaire

The researcher pre-tested the questionnaire before giving it to the participants. The pre-test was done at 10 marine Health Centre III. After data collection, went ahead as planned at Adjumani general hospital.

2.10. Ethical considerations

The proposal was approved by the KSHS research committee thereafter the researcher was given an introductory letter that was handed over to the Medical Supretendant, Adjumani general hospital. Once granted the permission to obtain the required data, the researcher obtained consent forms from respondents before collecting data, confidentiality was observed as well as allowing only the researcher to access the information.

2.11. Data collection procedure

The researcher introduced himself to the ward in charge who later identified patients infected with typhoid fever who got involved in the study. Written consent was obtained from respondents before being given a questionnaire of which they were directed on how to fill it clearly by the researcher to ensure it was not misused. Then the questionnaires were handed over to respondents to get the data.

2.12. Data management

The whole process of data collection was closely inspected and the questionnaires were checked for any errors. Data was only accessed by the researcher.

2.12.1. Data analysis and interpretation

The collected data were counted manually using a pen and sheets of paper. The results were entered into a windows program. Which are presented in the form of frequency distribution tables, bar graphs, and pie charts.

3. STUDY FINDINGS

3.1. Demographic data.

From table 1 (a), most (34%) of the respondents were within the age bracket of 25-35 years of age whereas the least (18%) of them were within the age bracket of 46-50 years of age.

From table 1 (a), Half (50%) of the respondents were married whereas the minority (6%) were divorced. The majority (70%) of the respondents were female and the smallest (30%) were males.

From table 1 (b), half (50%) of the respondents were having professions while the least (10%) were dealing in business.

From table 1 (b), Half (50%) of the respondents were catholic while the least (3%) were Anglican.

From table 1 (b), most (30%) of the respondents were uneducated whereas the least (20%) had attained a Secondary level.

3.2. Knowledge towards prevention of typhoid fever among patients aged 15-50 years.

From the figure 1, most (35%) of the respondents knew that typhoid fever was transmitted through drinking un boiled water, whereas the least (5%) of the respondents knew that typhoid fever was got through taking unsafe drinks.

From figure 2, most (60%) of the respondents had never heard about typhoid fever, whereas the least (40%) of the respondents had ever heard about typhoid fever.

From figure 3, most (40%) of the respondents knew that typhoid fever was caused by the virus whereas the least (22%) of the respondents knew that typhoid fever was caused by fungi.

From table 2, more than a half (56%) of the respondents obtained information about the prevention of typhoid fever from hospital whereas the least (4%) obtained information from drug shop.

3.3. Attitude towards the prevention of typhoid fever among patients aged 15-50 years.

From figure 4 , majority (70%) of the respondents agreed with the statement "washing hands with soap helped to prevent typhoid fever", whereas the least (10%) of the respondents did not know.

From figure 5, most (60%) of the respondents agreed that boiling water helped in the prevention of typhoid fever, whereas the least (5%) of the respondents did not know.

From figure 6, most (60%) of the respondents had good attitude towards prevention of typhoid fever, whereas the least (40%) of the respondents had bad attitude.

From table 3, majority (84%) of the respondents were willing to prevent typhoid fever through hygiene whereas least (16%) of the respondents were not willing to prevent typhoid fever through hygiene.

3.4. Practices towards the prevention of typhoid fever among patients aged 15-50 years.

From figure 7, half (50%) of the respondents did not know any of the practices that helped in the prevention of typhoid fever, whereas the least (5%) of the respondents knew vaccination as a way of preventing typhoid fever.

From figure 8, more than a half (56%) of the respondents agreed washing hands with soap helped to prevent typhoid fever, whereas the least (44%) of the respondents disagreed.

From figure 9, majority (70%) of the respondents agreed on using fecal disposal facilities as a way of preventing typhoid fever, whereas the least (30%) did not agree.

4. DISCUSSION.

4.1. Knowledge of the prevention of typhoid fever among patients aged 15-50 years.

From the study finding, most (60%) of the respondents had never heard about typhoid fever and this showed that most of them were not aware of typhoid fever. This is not in line with the study

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Variables	Frequency(f)	Percentage (%)
Age		
15-24 years	14	28
25-35 years	17	34
36-45 years	10	20
46-50 years	9	18
Total	50	100
Marital status		
Single	17	34
Married	25	50
Divorced	5	10
Widowed	3	6
Total	50	100
Sex		

Table 1(a): Shows distribution of respondents according to demographic information
(N=50)

Male	15	30
Female	35	70
Occupation		
Public Servant	10	20
Professional	25	50
Business	5	10
Peasant	10	20
Total	50	100
Religions		
Catholic	28	56
Born again	8	16
Muslims	6	12
Anglican	3	3
SDAS	5	5
Total	50	100
Education level		
Tertiary	13	26
Secondary	10	20
Primary	12	24
Uneducated	15	30
Total	50	100
Place of Residence		

Table 1(b): Shows distribution of respondents according to demographic information
(N=50)

Village	28	56
Town	15	30
Estate	7	14
Total	50	100
Salary		
50,000-100,000	16	32
100,000-200,000	20	40
200,0000-500,000	9	18
500,000 and above	5	10
Total	50	100

Table 1(c): Shows distribution of respondents according to demographic information
(N=50)

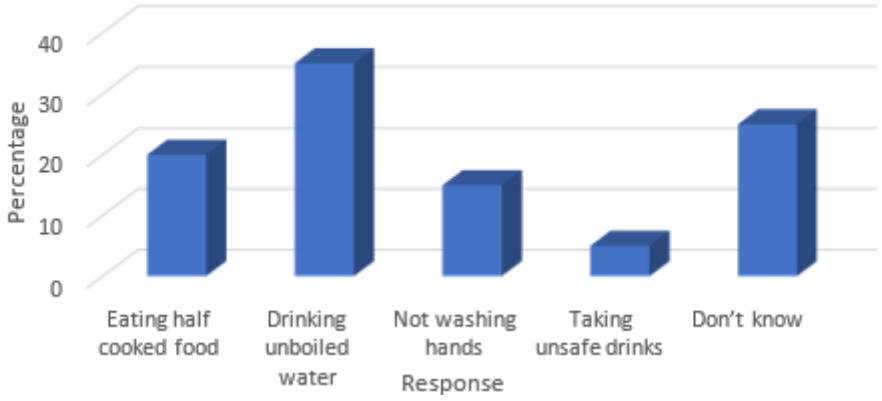

Figure 1: **Shows the distribution of the respondents according to whether they knew how typhoid fever was transmitted. N=50**

Response	**Frequency (f)**	**Percentage (%)**
Hospital	28	56
Pharmacy	15	30
Drug shop	2	04
Friends	5	10
Total	**50**	**100**

Table 2: shows distribution of respondents according to where they obtained information about the prevention of typhoid fever.**N=50**

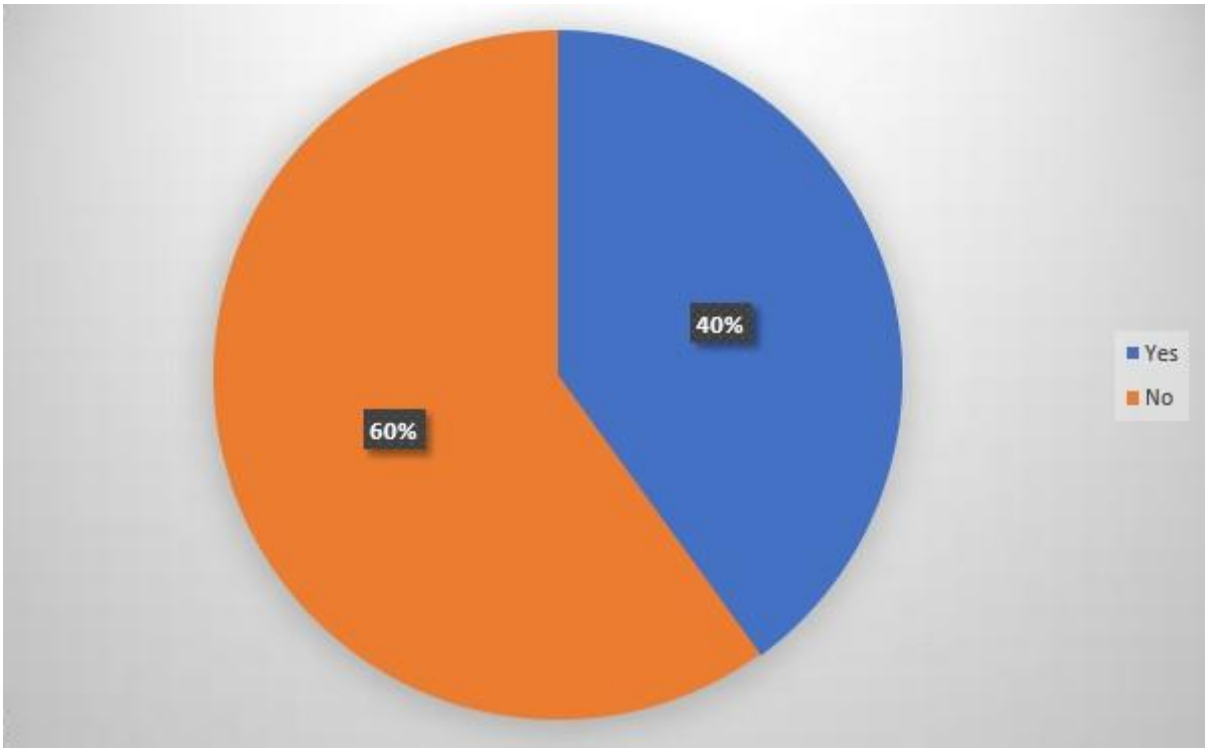

Figure 2: **Shows distribution of the respondents according to whether they had ever heard about typhoid fever.N=50**

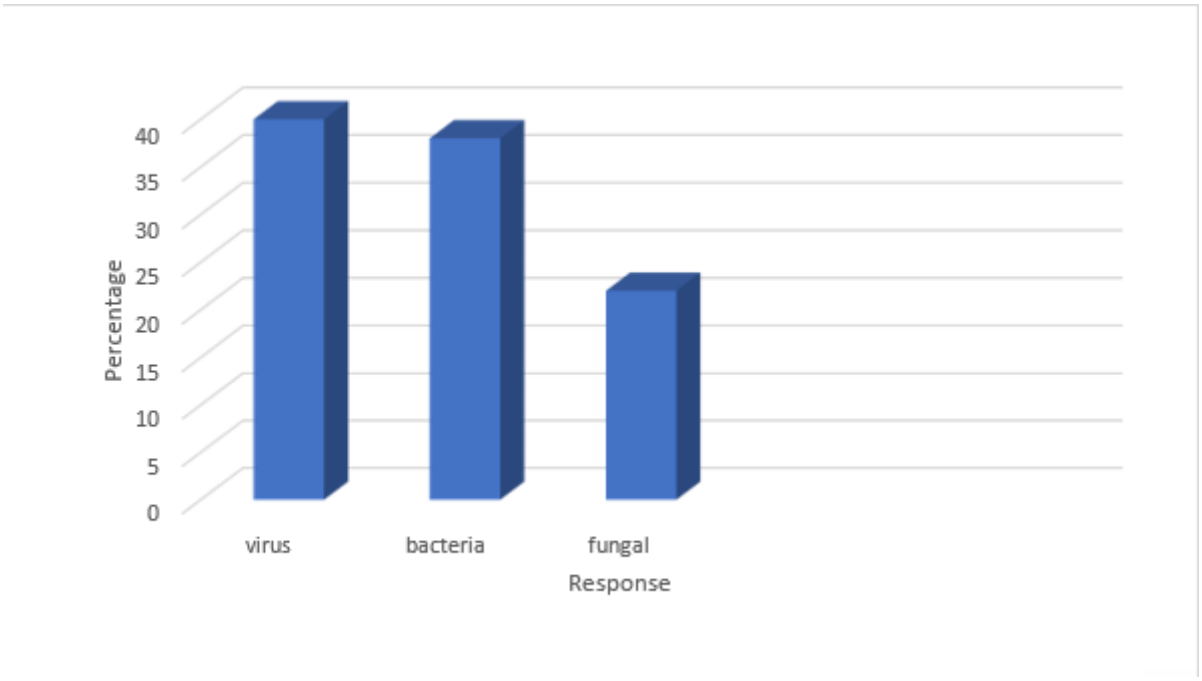

Figure 3: **Shows the distributions of respondents according to whether they knew the micro-organism that caused typhoid fever.N=50**

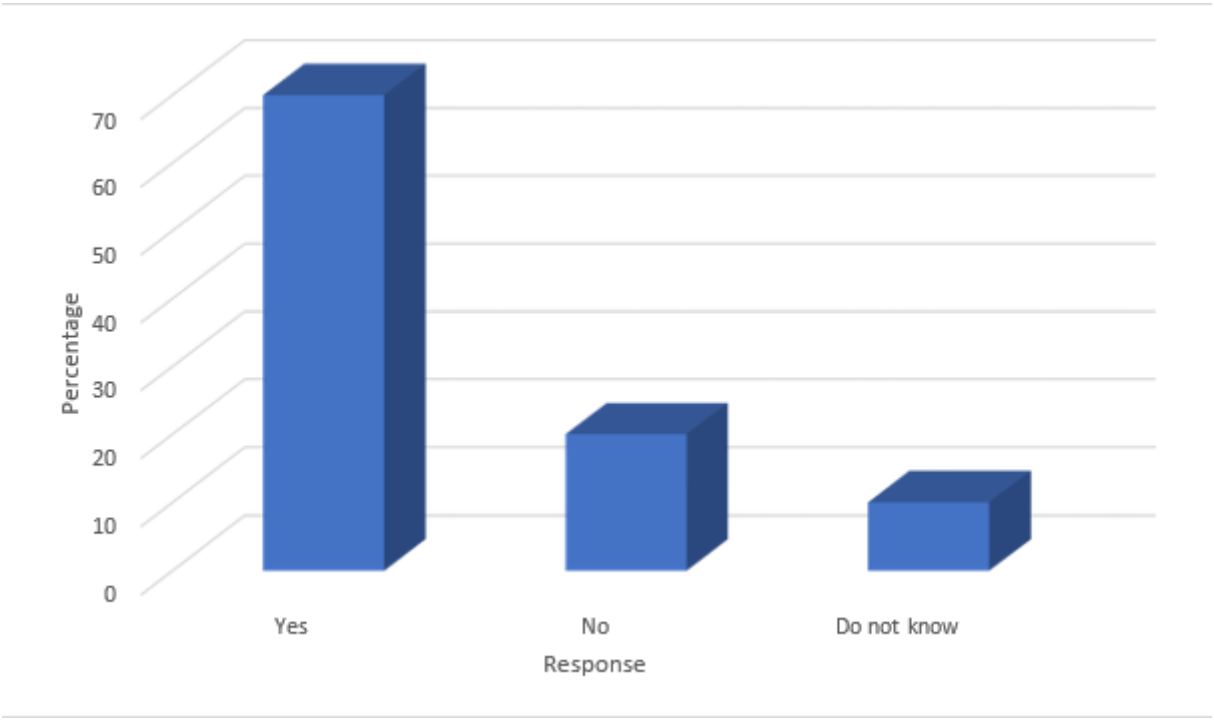

Figure 4: **Shows the distribution of respondents by whether they considered washing hands with soap aided in the prevention of typhoid fever. N=50**

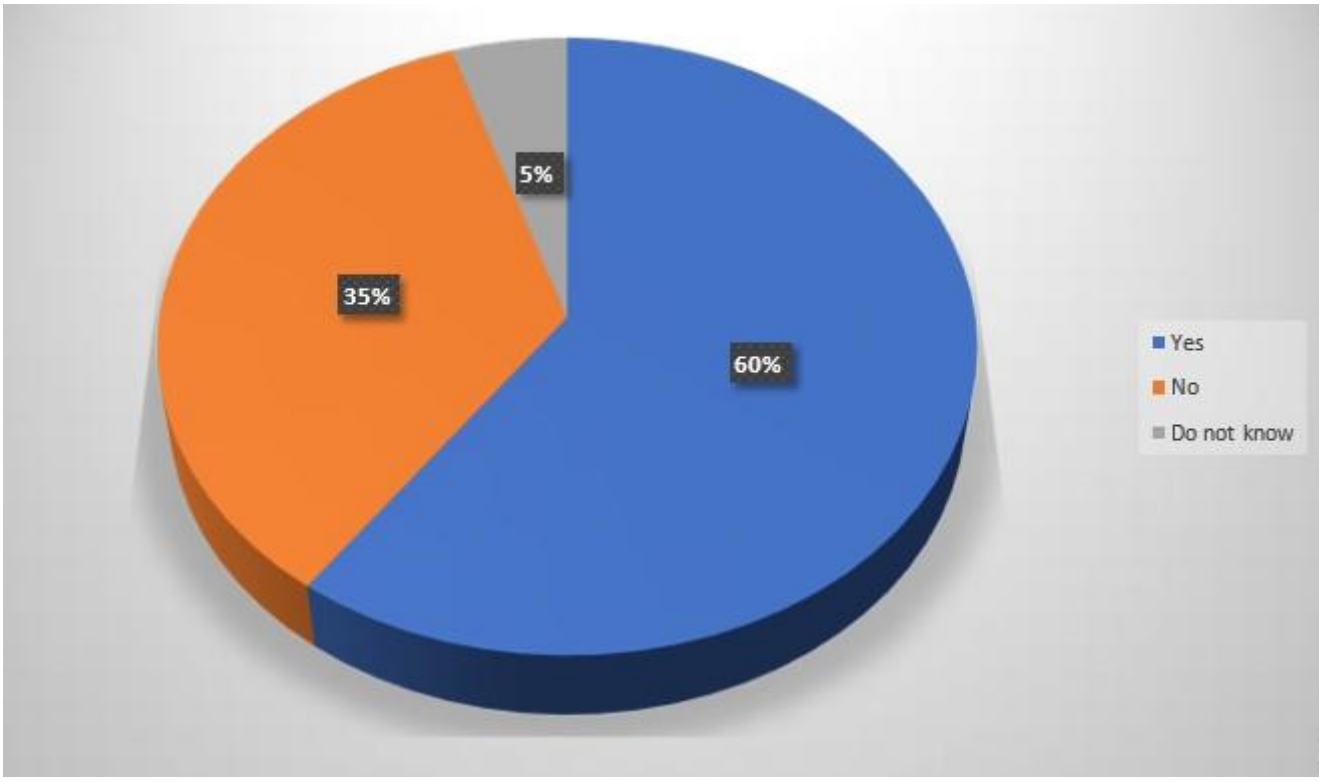

Figure 5: **Shows the distribution of respondents by whether they considered boiling water as a way of preventing typhoid fever. N=50**

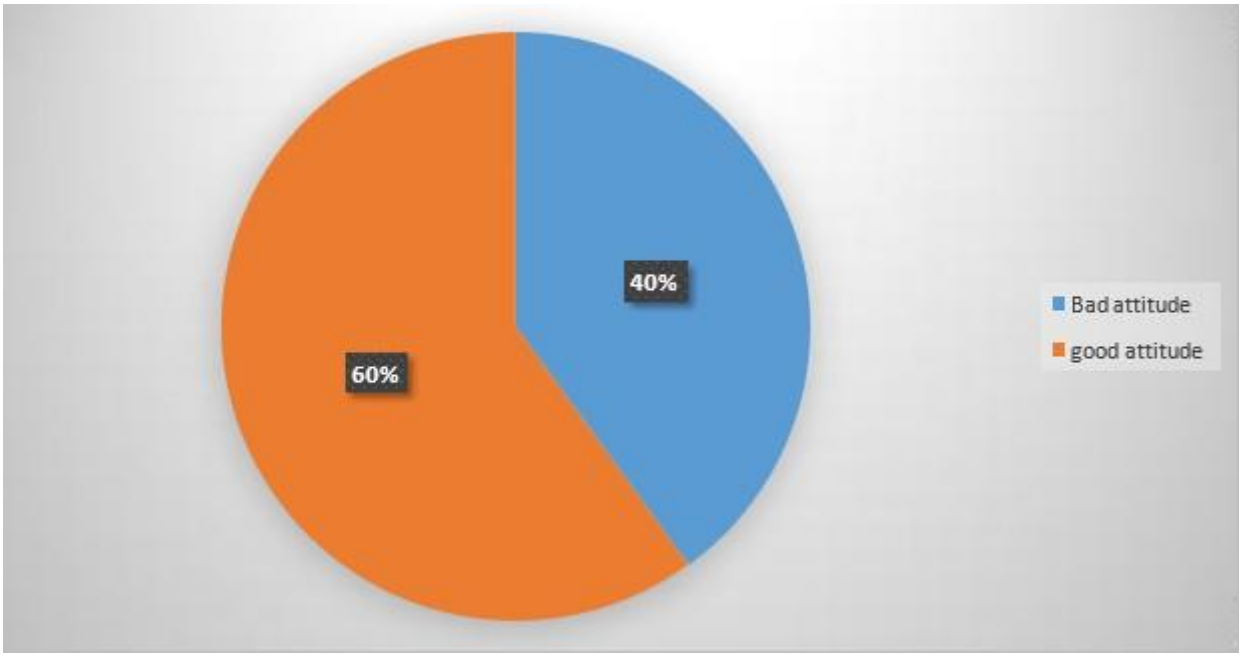

Figure 6: **Shows the distribution of the respondents' attitudes towards prevention of typhoid fever. N=50**

Response	Frequency (f)	Percentage (%)
Yes	42	84
No	8	16
Total	50	100

Table 3: Shows the distribution of respondents according to whether they were willing to prevent typhoid fever. (N=50)

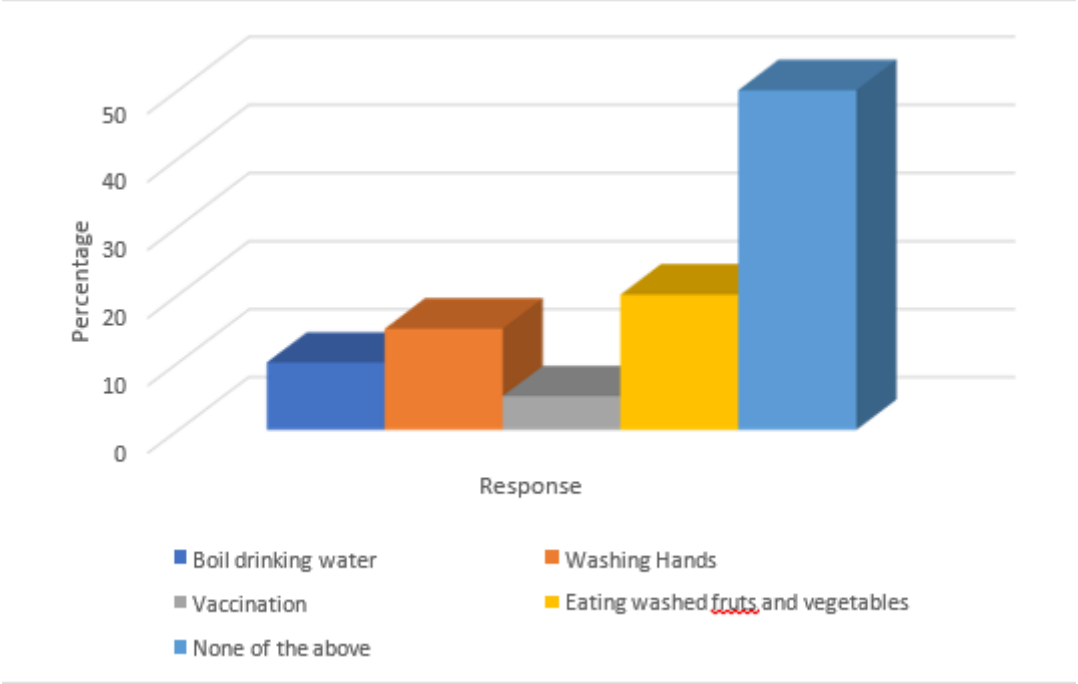

Figure 7: **Shows the distribution of respondents' practices towards the prevention of typhoid fever.(N=50)**

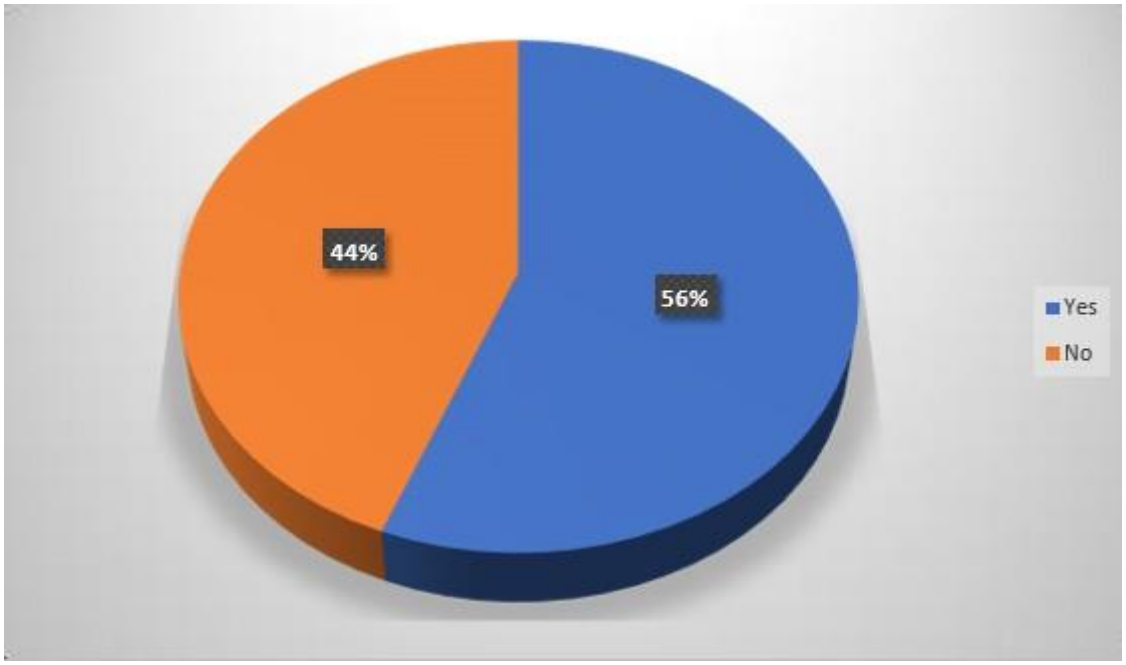

Figure 8: **Shows distribution of respondents on whether they were willing to wash hands with soap as a mean of preventing typhoid fever. N=50**

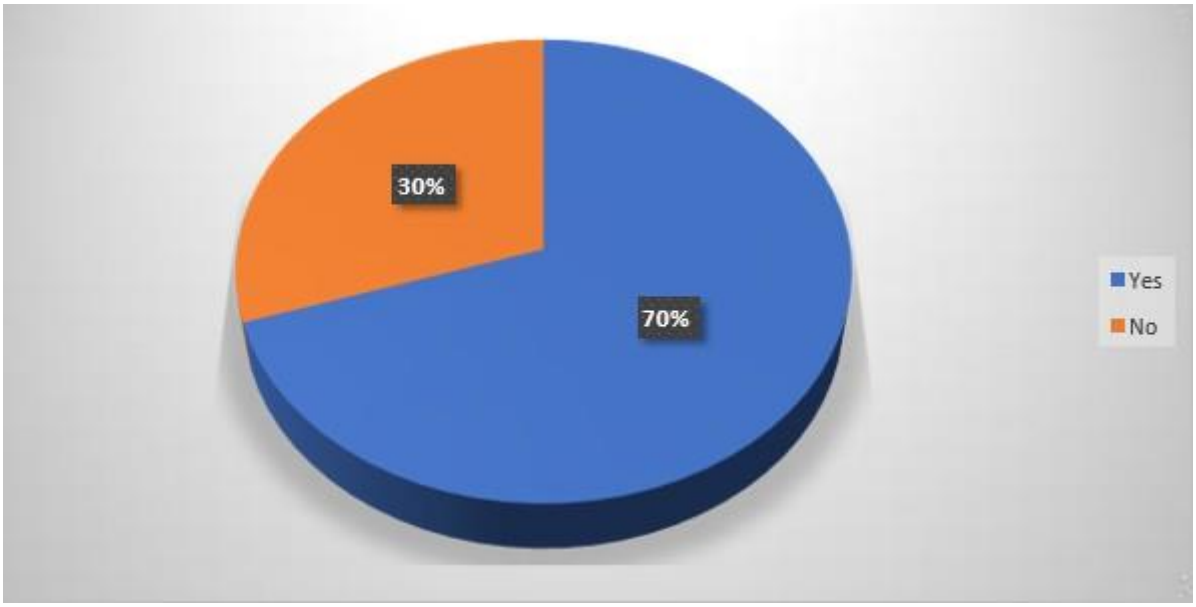

Figure 9: **Shows distribution of respondents on whether they were using fecal disposal facilities as a way of preventing typhoid fever. N=50**

findings conducted in Ethiopia by Getachew et al (2021) where 354 (52.8%) participants reported to have heard about typhoid fever.

The study results showed that more than half (56%) of the respondents obtained their knowledge about typhoid fever in hospitals and this revealed that health workers from hospitals played an important role in disseminating information about typhoid fever to patients. Among this group, sources of health education reported were health facilities staff (44.8%), house-to-house hygiene promoters (46.5%), and the remaining percentage was done through community meetings (45.4%).

The findings, clearly showed that most (40%) of the respondents knew that typhoid fever was caused by microorganisms (viruses) and the study result is in agreement with the study conducted by Mulu et al (2021), where his study findings showed that most (44.7%) of the study participants didn't know that typhoid fever is caused by microorganisms (bacteria).

From the above study conducted by the researcher, most (35%) of the respondents knew that typhoid fever was acquired through drinking unboiled water.

4.2. Attitude towards the prevention of typhoid fever among patients aged 15-50 years.

From the study findings above, most (60%) of the respondents had a good attitude towards the prevention of typhoid fever which is not in agreement with a study conducted in Ethiopia by Chelachew et al (2021) where he stated though not significant, the prevalence of typhoid fever was higher (27.7%) in the study participants having poor attitude than those having favorable attitude (18.9%) towards the prevention of typhoid fever.

Also, the study findings by the researcher revealed that most (60%) of the respondents considered boiling water as a way of preventing typhoid fever infection. This implied that respondents had a good attitude towards the prevention of typhoid fever.

In another study's findings by the researcher revealed that the majority (70%) of the respondents considered washing hands with soap could help prevent typhoid fever infection.

From the study above, the majority (84%) of the respondents were willing to prevent typhoid fever and this implied that the respondents had a good attitude towards the prevention of typhoid fever.

4.3. Practices towards prevention of typhoid fever among patients aged 15-50 years.

From the study findings conducted by the researcher, half (50%) of the respondents didn't know any of the practices that helped in the prevention of typhoid fever which is not in line with Mulu et al (2021) who clearly stated that the majority of the respondents know the common typhoid fever prevention methods including a majority (96.6%) implemented washing hands before meals and after using the toilet (94.9%), house-made foods (95.4%) and taking piped water (76.4%).

From the study finding conducted by the researcher, more than half (56%) of the respondents considered washing hands with soap as a major practical tool in preventing typhoid fever infection. This showed that respondents had good practices towards typhoid fever prevention.

Drinking boiled water (75.7%) and washing hands before cooking (75%) followed and it was also in line with Olushayo et al (2021) where he stated that the most commonly mentioned method was washing hands with soap before eating (87.3%), drinking boiled water (74.7%) and washing hands before cooking and eating food while hot (75%).

From the study findings, the majority (70%) of the respondents considered using proper means of fecal disposal as latrines and this is in line with Candide et al (2017), where when the respondents were asked questions on what fecal disposal facilities they frequently used, the majority (88.2%) reported using pit latrine for fecal disposal and they went on and stated respectively 61.5% and 59% of the respondents reported that they always

washed their hands before eating and after using the pit latrine before the time that preventive and control means were instated.

5. CONCLUSIONS.

Regarding the knowledge of the prevention of typhoid fever among patients aged 15-50 years, most (60%) of the respondents had never heard about typhoid fever. The hospital contributed (56%) to the respondents' knowledge of the prevention of typhoid fever, most (35%) of the respondents knew that typhoid fever can be transmitted through drinking unboiled water. The majority (70%) of the respondents didn't know the causative agent of typhoid fever.

Based on attitude towards the prevention of typhoid fever, most (60%) of the participants had a positive attitude. The majority (70%) considered washing hands with soap and finally, most (60%) considered boiling water to prevent typhoid fever.

Regarding the overall practices towards the prevention of typhoid fever, the study discovered that half (50%) of the respondents did not know any of the practices to prevent typhoid. In relation to how they were handled in the prevention of typhoid fever, the majority (58%) were not impressed with the way they were handled.

Regarding washing hands, more than half (56%) of the respondents agreed that washing hands with soap minimized typhoid fever. The majority (70%) agreed that they use pit latrines for fecal disposal as a way of preventing typhoid fever.

Therefore, the researcher concluded that the general knowledge and practices were not pleasing which in the end could lead to a serious outbreak of typhoid fever and its associated outcome due to failure to know how based to comply with the knowledge, attitude, and practical orientations given to them.

6. RECOMMENDATIONS.

The government of Uganda through the Ministry of Health should recruit more health inspectors who will help in sensitization of the community about typhoid fever in case of its outbreak.

The town council should actively strategize the street vendors who sell foods and drinks to emulate good waste disposal practices to prevent outbreaks of typhoid fever.

The District Health Team through the health workers should promote community health-based programs to teach the community the best practices to curb the increasing typhoid fever.

The infectious disease control and prevention (IDC) should continue to initiate community awareness about the outbreak, and its control and prevention.

The government of Uganda through the Ministry of Health together with the related NGOs should put up studies that provide information about the prevention of typhoid fever to the communities.

7. Acknowledgement.

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8. List of abbreviations and acronyms.

CDC : Centre for Disease Control and prevention
GDB : Global Disease Burden
HIMS : Health Information Management System
KSHS : Kampala School of Health Sciences
MoH : Ministry of Health
NGO : Non-Governmental Organization
UN : United Nation
WHO : World Health Organization

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