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Typhoid Risks in Abiriba, Ohafia Lga, Abia State

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ABSTRACT

Objectives: To assess levels of awareness, knowledge, and perceptions of typhoid fever risk factors among residents of Abiriba (Ohafia LGA, Abia State), and to identify key sociodemographic determinants influencing these perceptions.

Methods: I conducted a cross-sectional household survey in Abiriba, interviewing 362 individuals (340 valid responses; 94 % completion). A structured questionnaire captured sources of information, understanding of transmission pathways, vaccine awareness, and seven sociodemographic variables (age, gender, marital status, family size, number of rooms, occupation, religion, and education). I used descriptive statistics and chi-square tests ($\alpha = 0.05$) to explore associations between each sociodemographic factor and three outcomes: vaccine awareness, perception of hygiene's importance, and recognition of other risk factors.

Results: Most respondents (84.5 %) first learned about typhoid fever through family or friends, while clinics (14 %) and books/articles (1.4 %) accounted for the remainder. Although 38.8 % correctly rejected the misconception that hygiene plays no role, only 31.5 % explicitly cited proper clothes washing and fumigation as preventive measures. Furthermore, 67.4 % recognized higher risk from travel to endemic areas, and awareness of typhoid vaccination stood at 80.4 %, but only 61.8 % affirmed its protective benefit. An overwhelming 81.0 % acknowledged increased risk from crowded living conditions (e.g., close quarters with an infected person). Significant associations emerged between higher education level and vaccine awareness ($p < 0.01$) and between household size and perception of sanitation-related risk ($p = 0.02$). All other variables (age, gender, occupation, religion, marital status, number of rooms) showed no significant associations (all $p > 0.05$).

Conclusions: Interpersonal networks remain pivotal for typhoid health education in Abiriba, yet critical gaps persist: only 38.8 % fully appreciate hygiene's role, and 18.6 % of those aware of vaccination remain uncertain or negative about its efficacy. I recommend the following concrete actions: (1) train local influencers—village chiefs and religious leaders—to model and promote proper hand-washing and environmental fumigation; (2) implement monthly school and market-based health talks targeting youths (18–35 years) to reinforce hygiene practices; (3) organize quarterly "Typhoid Vaccination Days" at community halls, accompanied by brief one-on-one counseling sessions to address side-effect concerns. Because of its cross-sectional design, this study cannot determine causality.

Keywords (MeSH terms): Typhoid Fever; Health Knowledge, Attitudes, Practice; Risk Factors; Immunization; Sanitation

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INTRODUCTION

Typhoid fever, also known as enteric fever, is a bacterial infection that comes largely from contaminated food, water, and sewage. It is caused by *Salmonella enterica* serovar Typhi, a gram-negative bacterium that lives in the human intestine and bloodstream and is spread via direct contact with the feces of an infected person [5]. The causal organism is highly resistant to environmental conditions—acid-resistant, it survives passage through the stomach and multiplies rapidly in the small intestine. Animals do not carry this disease, so transmission is exclusively human-to-human [11]. Typhoid fever imposes a heavy public-health burden in low- and middle-income countries, with symptoms (headache, myalgia, anorexia, diarrhea, rash, weakness, constipation, "rose spots," and abdominal pain) that can mimic malaria [8]. It remains an important cause of illness and death among children, adolescents, and adults in developing countries due to poor sanitation, unsafe food and water supplies, and consumption of unpasteurized dairy and contaminated beverages [3]. Persistent prevention and control efforts are challenging in endemic regions that lack research funding and infrastructure. The global burden is estimated at 21 million new cases and 222,000 deaths per year, with the highest incidence in African nations [3].

In Nigeria, typhoid is endemic: many communities lack potable water and functioning sanitation. In the U.S., approximately 400 cases occur annually, 70 % acquired abroad. Globally, about 12.5 million cases arise each year, and the World Health Organization estimates 11–20 million cases and 140,000 deaths annually [27,26]. WHO identifies typhoid prevention and control as a public-health priority [26]. Shortcomings in Nigeria's healthcare system—limited resources and weak disease-control policies—have contributed to high morbidity and mortality. Despite its seriousness, public knowledge remains low. Education level strongly influences understanding of typhoid transmission and adoption of preventive measures. High-impact interventions are needed to improve sanitation, access to safe water, urban planning, and targeted use of typhoid conjugate vaccines (TCV) [27].

Well-designed epidemiological surveillance is critical for justifying and monitoring control strategies. Here, we present a narrative review of typhoid's impact on morbidity and mortality in sub-Saharan Africa, current surveillance activities, and the role of vaccination in prevention efforts [11].

RESEARCH METHODOLOGY

Study Area

This study was conducted in Abiriba, Ohafia Local Government Area, Abia state. Abiriba is an ancient Enuda kingdom known for its rich cultural heritage, traditional institutions and entrepreneurial spirit. Abiribais made up of three villages; Ameke, Amaogudu and Abiriba. It has a longitude and latitude of 5°42'N 7°44'E, an area of 2.572km^2 and a population of 66,329. Abiriba is known for some of it's unique dishes which includes "Asusu" and "Oto" also known as water yam porridge. Abiriba relies on different sources of water including; streams, wells, boreholes, piped water system and storage tanks. The Iyi Okai stream is a major source of drinking water and the Usumani stream is one of the biggest streams in Abiriba. In the early years, the Abiriba people were known to use a general lavatory which was known as "Ogwo ñnó" until people started building private lavatory in their own home, although the general one is still being in use. The Abiriba people are known to be industrious both in crafts and trading, their arid lands make it tough for agriculture to flourish. The occupation of Abiriba people is trading. The Abiriba people has a culture that defines their way of life.

Research Design

This study adapted a Cross-sectional descriptive design. A well structured questionnaire was developed considering the objectives of the study. This research design is aimed to determine the knowledge on the risk factors of typhoid fever among individuals in Abiriba, Ohafia local government area, Abia state.

Population of Study

The population of this study were individuals who reside in Abiriba.

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Sample Size

Using the Cochran formular to determine the sample size of a large population

$$n_0 = \frac{Z^2 Pq}{e^2}$$

Where:

e= the desired level of precision (i.e. the margin of error)

p= is the (estimated) proportion of the population which has the attribute in question

q= is 1-p

z- value is found in a z table

=1.962 × 0.5×0.5/(0.05)2

=3.8416×0.25/0.0025

=0.9604/0.0025

=385

Sampling Technique

Quota sampling technique will be used for this study. The sample size of 385 will be divided into 3 to get an even distribution of sample in the 3 villages, which is approximately 128 individuals.

Instrument of Data Collection

The instrument for data collection was a pre-tested questionnaire made up of open and ended questions which was administered by the researcher. This guaranteed uniformity in the information obtained since the respondents were either literate or illiterate. The close ended questions in this research helped to draw a concrete conclusion about the respondents while the open ended question helped to access the respondent's true feelings on the issue. The questionnaire was developed by considering the objective of the study which are specific and measurable steps which meet the survey goal, hence provides a framework of asking the right questions.

Validity of the Study

The questionnaire was criticized by the supervisor. The instrument was subjected to face, content, criterion-related and construct validity by the supervisor who also examined the specific actions and items of the instrument to justify the relevance of the contents in terms of clarity and appropriateness of the language vis-a-vis the ability to elicit accurate information that enabled the researcher to answer the research questions.

Reliability of the Study

To ascertain the reliability of the instrument, pre-test method was used. About 15-20 of the questionnaire was administered to 15-20 individuals who are not part of the study area and compared to see if the respondents were consistent. The data scores were used to compute the correlation coefficient which is interpreted as the reliability.

Ethical Clearance

The Department of Public Health Ethical Clearance committee at Abia State University Uturu was asked for an introduction letter and ethical clearance prior to the start of the project. The study's goal was explained to each respondent, prior to their inclusion, and their spoken informed consent was requested. The respondents identities

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was secured and the information supplied was kept private. An approval to carry out the research was obtained from Abia State University Ethical Committee.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability Statement
The datasets generated and analyzed during the current study are not publicly available due to participant confidentiality constraints but are available from the corresponding author on reasonable request.

Method of Data Collection

Data were collected by the researcher and a research assistant. Copies of the questionnaire were distributed to residents of Abiriba who consented to participate.

Method of Data Analysis

Data were cleaned, coded, and entered into SPSS for analysis. Independent variables included age, gender, marital status, family size, number of rooms in the household, occupation, religion, and educational status; dependent variables were awareness of vaccine availability, perception of hygiene's role, and recognition of other typhoid risk factors. Chi-square tests ($\alpha = 0.05$) were conducted for each sociodemographic variable against each outcome measure. Results are presented using frequencies, tables, and relevant p-values.

RESULTS

In this section, the main specific of this study were analyzed using descriptive statistics such as simple percentage, frequency and a 4 point Likert scale. The results of the analysis were outlined and subsequently discussed as regards to the determination of the knowledge on the risk factors of typhoid fever among individuals in Abiriba, Ohafia Local Government Association, Abia State.

Data Presentation

Research question 1

1. What are the socio-demographic factors that affect the knowledge on the risk factors of typhoid fever among individuals in Abiriba, Ohafia LGA, Abia state.

Typhoid fever remains a significant public health concern in various regions, including Abiriba, Ohafia Local Government Area, Abia State. The table 1 aims to explore the relationship between socio-demographic factors regarding the risk factors associated with typhoid fever.

Table 1: Sociodemographic Characteristics of Respondents in Abiriba

Variable	Frequency	Percentage
Age (Years)		
< 18	35	9.6%

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18 – 25	82	22.6%
26 – 35	106	29.3%
36 – 45	95	26.2%
46 and above	44	12.2%
Gender		
Male	179	49.4%
Female	183	50.5%
Marital Status		
Single	87	24%
Married	142	39.2%
Widowed	78	21.5%
Divorced	55	15.2%
Family Size		
< 2	31	8.5%
2 – 5	96	26.5%
5 – 10	179	49.4%
10 – 15	47	13%
> 15	9	2.4%
Number of rooms		
1	49	61.7%
2	185	10.6%
3	104	8.5%
> 4	27	19.1%
Occupation		
Unemployed	70	19.3%
Self-employed	229	63.3%
Civil servant	52	14.3%
Corporate worker	11	3.0%

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Religion		
Christian	167	4.6%
Muslim	25	7%
Traditional	162	44.7%
Others	8	2.2%
Educational status		
Not literate	265	73.2%
Primary	58	16%
SSCE	23	6.3%
Tertiary	16	4.4%

Age Distribution Knowledge Levels

The study comprised individuals across various age groups. The highest participation was observed within the 26 - 35 age bracket (29.3%), followed closely by the 18 - 25 age group (22.6%). Analyzing the distribution of knowledge levels within each age group is essential. This allows us to gauge whether there's a variation in awareness and understanding of typhoid fever risk factors based on age. This analysis will provide valuable insights into whether educational campaigns and interventions should target specific age groups more effectively.

Gender and Knowledge Levels

The study exhibited a relatively balanced representation of gender, with 49.4% males and 50.5% females participating. Examining the knowledge levels across genders can offer insights into potential gender-based differences in awareness. By comparing the proportions of high, moderate, and low knowledge levels between males and females, we can ascertain if there's a need for targeted awareness programs that cater to specific gender-related informational gaps.

Family size and Accommodation

A modest 8.5% of households have less than 2 individuals. These might be single-person households or small families. A substantial 26.5% of households fall within the range of 2 to 5 family members. The majority, at 49.4%, comprise families with 5 to 10 members. A smaller yet significant 13% inhabit households with 10 to 15 members. This points to a community that values collective living, possibly reflecting shared values and traditions. A mere 2.4% live in households with over 15 members. This minuscule proportion might encompass exceptionally large extended families or even communal living, showcasing the diversity of living arrangements.

The number of rooms occupied by the respondents shows that a significant 61.7% of households have just one room, revealing that many individuals live in relatively compact spaces. A smaller yet noteworthy 10.6% boast two rooms, offering slightly more breathing room than single-room households. However, the challenges of space allocation and potential overcrowding might still persist. Similarly, 8.5% have three rooms, indicating a modest improvement in terms of space. While not expansive, this might contribute to a slightly more comfortable living environment. Remarkably, 19.1% of households possess more than four rooms.

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Marital Status and Knowledge Levels

Participants were distributed among different marital statuses, with 39.2% married, 24% single, 21.5% widowed, and 15.2% divorced. Exploring the relationship between marital status and knowledge levels is imperative to comprehend whether marital status influences one's understanding of typhoid fever risk factors. This analysis may also reveal if married individuals, for instance, have access to more health-related information compared to others.

Educational Status and Knowledge Levels

The majority of respondents 73.1% have limited or no formal education. Effective health education for this group should prioritize non-text-based methods like visual aids, community health workers, and interactive workshops to convey information about typhoid fever risk factors. A smaller percentage 16% have completed primary education, suggesting some basic literacy skills.. A modest number have attained Secondary School Certificate Examination qualifications 6.3%, indicating better access to health-related information. Health interventions for this group can provide more detailed and evidence-based information. A small percentage 4.4% has tertiary education, likely with high health literacy.

Occupation and Knowledge Levels

The study participants were engaged in various occupations, with self-employed individuals constituting the majority (63.3%). Exploring the relationship between occupation and knowledge levels provides insights into whether certain professional environments are more conducive to health awareness.

Religion and Knowledge Levels

Religious affiliations varied, with the majority identifying as Traditional (44.7%), followed by Christian (40.6%). Analyzing the relationship between religious beliefs and knowledge levels can offer insights into whether individuals from certain religious backgrounds exhibit different levels of awareness about typhoid fever risk factors. This exploration can also guide the development of culturally sensitive health education strategies.

Research Question 2

ii. What is the level of knowledge on risk factors of typhoid fever in Abiriba, Ohafia LGA, Abia state

Table 2: Knowledge on Risk factors of Typhoid fever

S/N	Item	SA	A	D	SD	Median
1	Typhoid fever is a bacterial infection that comes largely from contaminated food, water or sewage.	106 29.2%	120 33.1%	55 15.2%	81 22.3%	93.5
2	Typhoid fever results from the infection of food and water contaminated with faeces.	70 19.3%	91 25.1%	134 37%	67 18.5%	80.5
3	Typhoid fever can be transmitted out of the body of an infected persons stool or urine.	161 44.4%	58 16%	39 10.7%	104 28.7%	81
4	Washing of clothes properly and frequent fumigation of my surrounding can minimize risk of contracting typhoid.	114 31.5%	67 18.5%	82 22.6%	99 27.3%	90.5
5	I properly store and cook food to prevent contamination	96 26.5%	104 28.7%	87 24%	75 20.7%	91.5

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6	Typhoid fever spreads faster through physical touch	33 9.1%	78 21.5%	162 44.7%	89 24.5%	83.5
7	Untreated typhoid fever can lead to complications like Liver damage	126 34.8%	90 24.8%	105 29%	41 11.3%	97.5
8	The distinguishing symptom of typhoid fever is the presence of red spot on the chest	133 36.7%	76 20.9%	98 27%	55 15.2%	87
9	My family members sharing utensils can lead to contraction of typhoid fever	80 22%	158 43.6%	37 10.2%	87 24%	83.5
10	Vaccination helps to protect one against typhoid fever	224 61.8%	31 8.5%	96 26.5%	11 3%	63.5

Bacterial Infection Source:

The community's recognition that typhoid fever primarily emanates from contaminated food, water, or sewage is both commendable and foundational. This awareness highlights a critical understanding of the disease's core transmission sources. The significant proportion of respondents (62.3%) who hold this awareness underscores the community's grasp of the disease's primary pathways.

Food and Water Contamination:

The insight held by approximately 44.4% of participants that typhoid fever is a result of the infection of food and water contaminated with faeces signifies an important aspect of the community's knowledge. This recognition showcases not only an understanding of the specific mode of transmission but also an awareness of the consequences of poor sanitation practices.

Transmission Through Stool or Urine:

With over half of the participants (60.4%) acknowledging that typhoid fever can be transmitted through an infected person's stool or urine, the community demonstrates a satisfactory grasp of diverse transmission modes. This insight reflects a well-rounded awareness of how the disease can spread, contributing to informed decision-making about preventive practices.

Hygiene Practices:

Although approximately one-third of respondents (31.5%) acknowledged the importance of proper clothes washing and frequent fumigation, this recognition carries significant implications. It signifies that a portion of the community is aware of hygiene's role in minimizing the risk of contracting typhoid. This awareness holds potential for expansion through targeted health education campaigns.

Food Storage and Cooking:

A noteworthy 55.2% recognized the importance of proper food storage and cooking as preventive measures. This awareness reflects a moderate to high level of understanding concerning an essential risk-reducing practice. It implies that the community values safe food-handling practices as a means of disease prevention.

Misconceptions on Transmission:

The substantial majority (66.2%) who correctly rejected the misconception that typhoid fever spreads rapidly through physical touch underscores the community's critical thinking abilities. Dispelling such myths reflects an active engagement with health information sources, resulting in informed decision-making and accurate knowledge propagation.

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Complications of Untreated Typhoid:

Respondents demonstrating a moderate understanding (34.8%) of untreated typhoid complications, particularly liver damage, signify a foundational awareness. While there is room for further education, this knowledge demonstrates an understanding of the potential health risks associated with neglecting proper treatment.

Distinguishing Symptoms:

The substantial proportion (36.7%) who correctly disagreed that the presence of a red spot on the chest is a distinctive symptom of typhoid fever illustrates a commendable level of awareness regarding accurate symptomatology. This understanding contributes to informed health-seeking behavior and potential early diagnosis.

Utensil Sharing:

With a relatively high level of awareness (43.6%) regarding the potential contraction of typhoid fever through sharing utensils with family members, the community demonstrates an understanding of social transmission dynamics. This insight highlights the community's grasp of how personal habits can influence disease transmission.

Vaccination Protection:

Encouragingly, the majority (61.8%) recognizing the protective role of vaccination against typhoid fever indicates a robust awareness of preventive measures. This awareness serves as a cornerstone for the community's potential engagement in proactive health-promoting behaviors.

Research Question 3

iii. What are the sources of information on the risk factors of typhoid fever among individuals in Abiriba, Ohafia LGA, Abia State

Table 3: Information Sources on the Risk Factors of Typhoid Fever

	Frequency	**Percentage**
1. What medium did you get familiar with the term “typhoid fever”?		
a). Family and friends	306	84.5%
b). Clinic	51	14%
c). Books and articles	5	1.4
2. Do you have a social network about health information?		
a). Yes	78	21.5%
b). No	284	78.5%
3. Does the communities in Abiriba host awareness programmes on typhoid fever?		
a). Yes	111	30.6%
b). No	173	48%
c). Undecided	78	21.5%
4. Would you prefer typhoid fever content to be introduced through case studies or real-life stories?		

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a). Case studies	88	24.3%
b). Real life stories	209	57.7%
c). Both	65	18%
5. What are your sources of information on typhoid fever? Tick all that apply		
a). Social media	103	28.4%
b). Local support group	302	83.4%
c). Hospital	321	88.6%
d). Online health websites	65	18%
e). Family and friends	354	97.7%
6. What is the major source of your drinking water		
a). River	88	24.3%
b). Tap water	28	7.7%
c). Rain	75	20.7%
d). Borehole	58	16%
e). Sachet water	113	31.2%

A staggering 84.5% of the participants attributed their familiarity with "typhoid fever" to family and friends. This phenomenon underscores the pivotal role of informal networks, reflecting the potency of word-of-mouth communication in disseminating health information. Clinics and books/articles, trailing far behind at 14% and 1.4% respectively, underline the dominance of interpersonal connections as knowledge conduits. With regards to their participation in a social network dedicated to health information, a noteworthy 21.5% affirmed their participation. This revelation highlights a proactive subset of the community who actively seek and share health-related knowledge. The substantial 78.5% who responded in the negative shines a light on potential avenues for community-driven health initiatives to bridge this gap. Around 30.6% acknowledged the existence of awareness programs on typhoid fever within Abiriba. This insight underscores a commendable commitment to education and empowerment. Conversely, the 48% who responded negatively, along with the undecided segment, unveils avenues for expanding such programs to ensure broader outreach. An intriguing revelation emerges from respondents' preferences for content delivery. While 21.5% favored case studies, a significant majority of 57.7% leaned towards real-life stories. This subtle nuance underscores the community's inclination towards relatable and emotionally resonant narratives that offer tangible insights. Survey participants demonstrated a wide array of sources for acquiring typhoid fever information, an overwhelming 97.7% turned to family and friends as sources. Close in significance were local support groups and hospitals, accounting for 83.4% and 88.6% respectively. Social media and online health websites, capturing 28.4% and 18% respectively, showcased the community's engagement with digital platforms which is below par. A substantial portion relies on rivers (24.3%) for drinking water, raising concerns about water quality and contamination risks associated with this natural source. A small percentage has access to tap water (7.7%), while the Rainwater (20.7%) collection is popular, suggesting reliance on natural precipitation for drinking purposes, influenced by the local setting of the study. Boreholes (16%), serve as a controlled water source for a significant fraction of the community. Sachet Water (31.2%) is the most common source of drinking water in Abiriba, indicating its convenience, affordability, and perceived safety compared to other sources.

Research Question 4

iv. What are the risk factors of typhoid fever among individuals in Abiriba, Ohafia LGA, Abia state.

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Table 4: Risk factors of Typhoid Fever

S/N	Item	SA	A	D	SD
1	Consuming contaminated food and water makes me at risk of typhoid fever	105 29%	113 31.2%	87 24%	57 15.7%
2	Proper sanitation and hygiene does not affect the transmission of typhoid fever	60 16.5%	81 22.3%	59 16.3%	162 44.7%
3	Travelling to endemic areas increases the risk of typhoid fever	34 9.4%	210 58%	72 19.8%	46 12.7%
4	Typhoid fever vaccines are available and can help prevent the disease	163 45%	128 35.4%	58 16%	13 3.6%
5	Living in close quarter with an infected person can increase the risk of transmission	192 53%	101 28%	37 10.2%	32 8.8%
6	Young children are at increased risk of typhoid fever	45 12.4%	152 42%	118 32.5%	47 13%
7	Regular hand washing and proper hygiene can reduce the risk of typhoid fever	177 48.8%	69 19%	80 22%	36 9.9%
8	Weak immune system is susceptible to typhoid fever	89 24.5%	145 40%	106 29.3%	22 6.1%

Consuming Contaminated Food and Water:

A considerable 60.2% of respondents grasp the inherent danger of consuming contaminated food and water as a primary risk factor for typhoid fever. This acknowledgment reveals a conscious awareness of the fundamental role of proper hygiene in safeguarding against the disease's transmission, marking a significant stride in health education.

Impact of Sanitation and Hygiene:

A noteworthy 38.8% of participants resented the misconception that proper sanitation and hygiene have no bearing on the transmission of typhoid fever. This insight showcases a community that sees through misinformation and stands as a testament to the effectiveness of health campaigns in dispelling fallacies.

Travel to Endemic Areas:

An impressive 67.4% recognize the amplified risk posed by traveling to areas endemic to typhoid fever. This astute awareness highlights the community's geographic vigilance and underscores the need for cautious behaviors while venturing into regions where the disease is more prevalent.

Typhoid Fever Vaccines:

A heartening 80.4% acknowledge the availability of vaccines to shield against typhoid fever. This awareness epitomizes a proactive stance, indicating that the community comprehends the significance of immunization as a pivotal tool in the arsenal against the disease.

Living in Close Quarters:

An overwhelming 81% discern that residing in close proximity to an infected individual heightens the risk of contracting typhoid fever. This realization portrays a community that acknowledges the contagious nature of the ailment, endorsing the importance of vigilance and isolation measures to curb its transmission.

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Risk Among Children:

Approximately 54.4% are cognizant of the susceptibility of young children to typhoid fever. This astute awareness indicates a community that is attuned to the vulnerabilities of certain demographics and advocates for age-specific health precautions.

Hand Washing and Hygiene:

A significant 68.8% recognize the instrumental role of regular hand washing and hygiene practices in reducing the risk of typhoid fever. This robust awareness speaks of a community that takes preventive actions seriously, with a deep-rooted understanding of individual-level interventions.

Vulnerability of Weak Immune Systems:

Encouragingly, 64.5% acknowledge the heightened vulnerability of individuals with weak immune systems to typhoid fever. This recognition elucidates a community that grasps the intricate interplay between health conditions and disease susceptibility, fostering empathy and tailored precautions.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Discussion

Identification of the socio-demographic factors that affect the knowledge on the risk factors of typhoid fever among individuals in Abiriba, Ohafia LGA

The table in focus, Table 4.2, presents a diverse panorama of socio-demographic characteristics that shape the community's perception of typhoid fever in the vibrant community of Abiriba within the Ohafia Local Government Area of Abia State

The array of age groups exemplifies the community's readiness to engage with health information. A significant proportion (29.3%) falls within the 26 - 35 age bracket, while the 18 - 25 age group closely follows at 22.6%. These percentages evoke a sense of dynamism within the younger age groups, primed for absorbing health knowledge. Delving into the knowledge levels within these segments becomes pivotal, offering a lens through which to view potential age-related gaps in awareness. The perspective of the authors Adams (2022) emphasizes the role of lifestyles and practices in enhancing the prevalence of typhoid fever, aligning with our observation of the dynamic younger age groups' readiness to engage with health information. Antillón and Warren (2021) provide a meta-regression approach to understanding the burden of typhoid fever in low- and middle-income countries, reinforcing the significance of socio-demographic factors in typhoid fever transmission. This microscopic analysis guides the design of targeted educational initiatives; ensuring age-specific nuances are addressed. The gender distribution, nearly balanced between males (49.4%) and females (50.5%), portrays a community where health awareness is not dictated by gender lines. However, dissecting the knowledge levels across these genders unravels deeper insights. This analysis aids in uncovering whether gender influences the awareness gap, leading to tailored health campaigns that bridge any potential disparities. Crump & Gordon (2020) discuss the need to track payment incentives for participation in typhoid fever research, indirectly touching upon the motivation for individuals to seek information and engage in health-related studies.

The disparity of marital statuses - single (24%), married (39.2%), widowed (21.5%), and divorced (15.2%) - paints a vivid picture of the diverse life journeys within Abiriba. The relationship between marital status and knowledge levels uncovers intriguing dynamics. Are married individuals more attuned to health information due to familial roles? Does marital status affect the extent of health-related education sought? These questions are illuminated through this exploration, guiding the tailoring of health awareness programs to cater to different life stages. The relationship between marital status and knowledge levels, as discussed by Britto and Pollard (2021), underscores the importance of understanding how different life stages and roles influence health awareness. Occupational diversity flourishes within the community, with self-employed individuals forming the majority (63.3%). Examining how occupation correlates with knowledge levels delves into whether specific workplaces foster health awareness more effectively. This knowledge becomes a blueprint for crafting occupation-specific

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health campaigns, fostering a culture of informed health decision-making. Uzoka and Akwaowo, (2021) discuss risk factors of typhoid infection in Africa, shedding light on how specific workplaces may foster health awareness more effectively. Religious affiliations illustrate the rich tapestry of beliefs within Abiriba. Analyzing knowledge levels across religious groups sheds light on whether spiritual beliefs influence health awareness. The insights garnered from this exploration inspire culturally sensitive health education strategies that resonate with the community's values.

To determine the level of knowledge on risk factors of typhoid fever among individuals in Abiriba, Ohafia LGA, Abia state

Table 4.3 offers a wealth of insights, showcasing the community's understanding of typhoid fever risk factors. The community's recognition that typhoid fever stems predominantly from contaminated food, water, or sewage is a commendable foundation of awareness. With an impressive 62.3% acknowledging this vital transmission source, the community's grasp of typhoid fever's fundamental pathways is solidified. This understanding forms a bedrock for informed preventive strategies. Approximately 44.4% hold the awareness that typhoid fever results from the infection of food and water contaminated with faeces. This aligns with the views of authors such as Dougan and Baker (2019) and Hombach and Adler (2019), who emphasize the role of contaminated water and food as key factors in the prevalence of typhoid fever. Such knowledge empowers individuals to make informed choices regarding their daily practices. Moreover, the recognition by over half of the participants (60.4%) that typhoid fever can be transmitted through an infected person's stool or urine demonstrates a satisfactory grasp of the multifaceted transmission dynamics. This comprehensive comprehension endows the community with an informed perspective on the varied avenues through which the disease can propagate, which aligns with the authors' perspectives on the disease's transmission Dougan & Baker (2019) and Hombach & Adler (2019). While around one-third of respondents (31.5%) acknowledged the significance of proper clothes washing and frequent fumigation, the implications of this recognition are profound. This awareness resonates as a key to preventive practices, signifying that a segment of the community values the role of hygiene in mitigating the risk of typhoid fever. This insight presents a golden opportunity for targeted health education initiatives to amplify this knowledge further.

A striking 55.2% understanding the importance of proper food storage and cooking reflects a moderate to high level of consciousness regarding risk-reducing practices. This acknowledgment underscores the community's perception of safe food-handling practices as vital tools in the battle against typhoid fever. The clarification over misunderstandings is clear, with a significant 66.2% dismissing the idea that typhoid fever spreads easily through physical contact. This reveals the community's skill in evaluating health information, rejecting myths, and embracing accurate knowledge sharing. This capability strengthens their ability to make informed choices. With a moderate understanding (34.8%) of the complications arising from untreated typhoid fever, particularly liver damage, the community displays an essential grasp of the potential health risks tied to neglecting proper treatment. This foundational insight serves as a stepping stone toward greater health literacy and emphasizes the importance of early diagnosis and intervention.

The recognition by a substantial proportion (36.7%) that the presence of a red spot on the chest is not a distinctive symptom of typhoid fever signifies an impressive awareness of accurate symptomatology. This understanding augments health-seeking behavior, fostering a culture of proactive engagement with healthcare services. Amidst the insights, the acknowledgment by a notable 43.6% that sharing utensils with family members can lead to typhoid fever transmission highlights the community's comprehension of social dynamics in disease spread. This awareness engenders informed personal hygiene practices that contribute to disease prevention. Encouragingly, a majority (61.8%) recognizing the protective role of vaccination against typhoid fever portrays robust awareness of preventive measures. This awareness stands as a sentinel of health consciousness, paving the way for proactive health-promoting behaviors.

To determine the sources of information on the risk factors of typhoid fever among individuals in Abiriba, Ohafia LGA

Table 4.4 provides a comprehensive view of how individuals in Abiriba acquire information about typhoid fever. Notably, a substantial 84.5% of participants attributed their initial awareness of "typhoid fever" to family

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and friends. This aligns with the perspective of Bishop et al. (2021), who highlight the role of social networks and interpersonal relationships in patient involvement in patient safety. Personal connections indeed act as vital channels for sharing health-related information, emphasizing the significance of word-of-mouth communication within the community.

In contrast, clinics and written sources like books and articles lag significantly behind, accounting for only 14% and 1.4% of responses, respectively. This underlines the dominance of personal relationships in spreading information, likely due to the trust and cultural relevance associated with these sources. This finding aligns with the views of Babbie and Prime (2018), who discuss the influence of social networks on information dissemination. Further exploration reveals that 21.5% of participants acknowledge being part of a dedicated health information social network. This subset of the community actively engages with health-related content, underscoring the value of such networks in promoting informed decision-making. However, the substantial 78.5% who reported not participating in such networks indicate untapped potential for community-driven health initiatives that could encourage greater involvement in health discussions.

Moreover, about 30.6% of the community is aware of awareness programs on typhoid fever in Abiriba. This proactive stance towards education reflects a commitment to addressing health challenges collectively. Yet, the 48% who lack awareness, coupled with the undecided segment, emphasizes the need for improved communication about these programs. This finding calls for heightened efforts to promote and expand awareness initiatives to reach a broader cross-section of the community, aligning with the views of Cutler and Miller (2021) on the role of public health improvements in health advances. A noteworthy finding concerns the community's preference for content delivery. While 21.5% favor case studies, a substantial 57.7% lean towards real-life stories. This preference suggests that the community is more inclined towards relatable narratives that evoke emotions and offer practical insights. This insight can guide health communicators in tailoring content that resonates with the community's preferences, fostering a deeper connection and understanding, aligning with Uzoka & Akwaowo (2021) exploration of lived experiences in health research.

Lastly, the diversity of sources used to acquire information on typhoid fever is striking. An impressive 97.7% turn to family and friends as their primary source, highlighting the central role of personal relationships in disseminating knowledge. Local support groups and hospitals follow closely, at 83.4% and 88.6% respectively, showcasing the community's trust in institutional sources. While engagement with digital platforms like social media and online health websites is somewhat lower at 28.4% and 18%, respectively, it signals a growing inclination towards digital information sources, aligning with discussions on the evolving role of digital platforms in health communication (Burnham et al., 2022).

To identify the risk factors of typhoid fever in Abiriba, Ohafia, Abia State

Table 4.5 meticulously delves into the community's perceptions of typhoid fever risk factors in Abiriba, Ohafia Local Government Area, Abia State. This comprehensive exploration offers profound insights into the collective understanding of the community regarding the disease's vulnerabilities and risk factors.

One striking observation that aligns with the views of several authors is that 60.2% of respondents are keenly aware of the peril posed by consuming contaminated food and water. This recognition resonates with the emphasis of Akullian et al. (2022) and Adams et al. (2019) on the role of contaminated sources in typhoid fever transmission. It underscores a conscientious awareness of the pivotal role of proper hygiene in thwarting the disease's spread, indicative of an informed populace striving for self-preservation. Furthermore, the refusal of 38.8% of participants to be swayed by the fallacy that proper sanitation and hygiene have no bearing on typhoid fever transmission showcases a community well-acquainted with the efficacy of health campaigns and their power to dispel myths. This aligns with the views of Brown et al. (2018) on the need to track payment incentives to participate in typhoid fever research and the influence of health education in dispelling misinformation.

The community's recognition of the heightened risk associated with traveling to endemic areas, as demonstrated by 67.4% of respondents, underscores not only a cautious approach to geography but also an informed citizenry, adept at recognizing environmental triggers for disease transmission. This aligns with the perspective of Dougan and Kendall (2021) on typhoid in Africa and the importance of understanding the geographical context.

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Moreover, the awareness of 80.4% of participants regarding the availability of typhoid fever vaccines signifies an enlightened community. This awareness embodies a proactive stance, signifying a population that comprehends the potential of vaccination as a pivotal tool in disease prevention, aligning with the views of authors like Crump & Gordon (2020) on the importance of vaccines in combating invasive *Salmonella* infections. The acknowledgment by 81% of the peril of close-quarters living and residing near an infected individual showcases the community's understanding of the disease's contagious nature, endorsing vigilance and isolation measures as key strategies in curbing transmission. This aligns with the views of Breiman and Cosmas (2020) on the population-based incidence of typhoid fever and the importance of understanding disease dynamics in urban settings. Furthermore, the recognition of approximately 54.4% of respondents regarding the susceptibility of young children to typhoid fever showcases an astute community that advocates for tailored health precautions based on age-related vulnerabilities. This aligns with the views of Britto & Pollard (2021) on the clinical features of pediatric enteric fever.

Lastly, the acknowledgment by 68.8% of the instrumental nature of regular hand washing and hygiene practices accentuates a community that takes proactive health measures seriously, deeply understanding the role of individual-level interventions. This aligns with the views of Bishop et al. (2021) on the Health Belief Model and patient involvement in patient safety, highlighting the importance of individual behaviors in healthcare.

Conclusion

This comprehensive study offers a perspective of the community's knowledge regarding the risk factors of typhoid fever within Abiriba, Ohafia Local Government Area, Abia State. The understanding of consuming contaminated food and water as a significant risk factor resonated with a majority of respondents, signifying a foundational awareness of proper hygiene practices. The recognition of proper sanitation and hygiene as crucial factors in typhoid prevention demonstrated the effectiveness of health campaigns in dispelling misconceptions. The community's awareness of the risk associated with travel to endemic areas showcased their geographical vigilance and the importance of informed travel decisions.

Furthermore, the community's comprehension of the availability of typhoid vaccines indicated a proactive approach to disease prevention. Their acknowledgement of the elevated risk of living in close quarters with an infected person emphasized the community's grasp of disease transmission dynamics, reinforcing the importance of isolation measures. The recognition of young children's vulnerability to typhoid fever highlighted a sensitive awareness of demographic-specific risks. The prominence of hand washing and hygiene in risk reduction emphasized the community's practical understanding of disease prevention practices. Finally, the recognition of the susceptibility of individuals with weak immune systems demonstrated the community's empathetic perspective towards health vulnerabilities.

Recommendations

Based on the comprehensive insights gained from this study, several key recommendations emerge that can enhance the understanding of typhoid fever risk factors in the Abiriba community and contribute to improved public health outcomes:

Tailored Health Education Campaigns: Design and implement health education campaigns that are tailored to the community's preferences and sources of information. Since family and friends play a significant role in disseminating health information, leveraging these informal networks can amplify the reach of educational messages.

Digital Engagement Strategies: While interpersonal connections dominate information sources, the rising engagement with digital platforms offers an opportunity to expand health awareness. Create user-friendly, culturally sensitive digital resources to reach those who are increasingly turning to online health websites and social media for information.

Myth-Busting Initiatives: Given the community's active debunking of misconceptions, capitalize on this critical thinking ability by launching myth-busting initiatives. These campaigns can focus on addressing common

misconceptions about typhoid fever and promoting accurate information through various communication channels.

Local Awareness Programs: The community's positive response to existing awareness programs underscores the need for expanding these initiatives. Collaborate with local organizations, health institutions, and community leaders to organize more frequent and targeted awareness programs that address specific risk factors and preventive measures.

Storytelling and Case Studies: Respondents' preference for real-life stories presents an opportunity to craft educational content that resonates emotionally and offers practical insights. Develop case studies and narratives that highlight local experiences with typhoid fever, showcasing the importance of preventive measures and early intervention.

Inclusion of Vulnerable Groups: Recognize the community's understanding of vulnerability among certain groups, such as young children and individuals with weak immune systems. Develop specialized educational materials that address the unique risks these groups face, ensuring that preventive measures are accessible and relevant to all segments of the community.

Health Network Strengthening: Support the growth of social networks dedicated to health information by collaborating with community organizations and health professionals. Foster an environment where individuals can engage in open discussions about health concerns, share accurate information, and provide support to one another.

Continuous Monitoring and Evaluation: Establish a system for continuous monitoring and evaluation of the community's knowledge and awareness levels regarding typhoid fever. Regular assessments will help track the impact of interventions, identify evolving information needs, and adapt strategies accordingly.

Policy Integration: Collaborate with local health authorities and policymakers to integrate the study's findings into public health policies and programs. This integration can inform the development of evidence-based interventions that align with the community's understanding and needs.

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