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Assessment of Hygeine Knowledge and Practices among the Working Population, Post Covid in Ariaria Market, Aba, Abia State, Nigeria

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Abstract

This study assessed the hygiene knowledge and practices among the working population in Ariaria Market, Aba, Abia State, Nigeria, in the post-COVID-19 era. The objectives of the study were to assess the level of hygiene knowledge among the working population, to determine the hygiene practices adopted by the population post COVID 19 and to assess the factors influencing the practice of proper hygiene almond the working population in Aba Abia State. The research adopted a descriptive cross-sectional survey design. A sample size of 384 respondents was selected using a multi-stage sampling technique.The findings revealed that the majority of respondents (72.4%) had good knowledge

of hygiene practices, while 68.2% demonstrated adequate hygiene practices. Factors such as age, educational level, and occupation were found to significantly influence hygiene practices ($p<0.05$). The study concluded that while the working population has reasonable knowledge of hygiene practices, there is a need for continuous health education to bridge the gap between knowledge and practice.

Keywords: Hygiene knowledge, Hygiene practices, COVID-19, Working population, Market environment.

Introduction

Hygiene refers to the practices and conditions that help maintain health and prevent the spread of diseases. It encompasses a wide range of behaviors and practices that individuals and communities adopt to protect themselves and others from illness and disease transmission [1]. Good hygiene practices are fundamental to public health and play a crucial role in preventing infectious diseases, particularly in densely populated areas such as markets.The outbreak of COVID-19, caused by the SARS-CoV-2, significantly altered public health behaviors worldwide. Governments, health organizations such as the World Health Organization, and local authorities implemented various preventive measures including hand hygiene, use of face masks, respiratory etiquette, and social distancing to reduce transmission [2-3].During the pandemic, there was a substantial increase in public awareness regarding personal and environmental hygiene. Practices such as regular handwashing with soap, use of alcohol-based sanitizers, and surface disinfection became widely promoted and adopted. These interventions not only aimed to control the spread of COVID-19 but also contributed to the prevention of other infectious diseases [4].

Ariaria International Market, one of the largest and busiest markets in West Africa, serves as a major hub for trade and human interaction. The high density of traders, buyers, and transporters within the market creates conditions that can facilitate the spread of infectious diseases if proper hygiene practices are not maintained. During the COVID-19 pandemic, various hygiene interventions were introduced in the market, including the provision of handwashing stations, enforcement of mask usage, and increased public health awareness campaigns.Despite these efforts, there is growing concern about the extent to which these hygiene practices have been sustained in the post-pandemic period. As the perceived threat of COVID-19 declines, individuals may revert to pre-pandemic behaviors, potentially increasing the risk of disease transmission. Furthermore, while awareness of hygiene practices may have improved during the pandemic, the level of retained knowledge and its translation into consistent practice remains uncertain.This study therefore aims to assess the level of hygiene knowledge and practices among traders and customers in Ariaria International Market in the post-COVID-19 era. By identifying existing gaps between knowledge and practice, the findings will provide valuable insights for public health authorities and policymakers in designing targeted interventions to promote sustained hygiene behaviors and improve health outcomes within the market community.

Methods

This study adopted a descriptive cross-sectional survey design.The cross-sectional design is appropriate for assessing the prevalence of behaviors and identifying associations between variables.

Study Area

Ariaria International Market is one of the largest and most prominent commercial markets in West Africa, located in Aba, Abia State, Nigeria. It is widely known as a major hub for trade, manufacturing, and distribution of goods, especially locally made products.The market is particularly famous for its leatherworks—such as shoes, bags, and belts—as well as clothing and textiles. Many of these items are produced by

local artisans and small-scale manufacturers, giving Ariaria a reputation as a center for indigenous entrepreneurship and creativity. It attracts traders and buyers from across Nigeria and neighboring countries.Due to its size and daily influx of thousands of people, Ariaria International Market is often densely populated, with a high level of human interaction. This makes it economically vibrant but also presents public health challenges, especially in terms of sanitation, waste management, and hygiene practices.In the context of public health—especially after the COVID-19 pandemic—the market is an important setting for assessing hygiene knowledge and behaviors. The crowded environment increases the risk of disease transmission if proper hygiene measures, such as handwashing, waste disposal, and environmental cleanliness, are not consistently practiced.

Population of the Study

The target population for this study comprised all adults (18 years and above) engaged in commercial activities (occupation) in Ariaria Market, Aba. This included traders, artisans, shop attendants, porters, and other service providers working in the market. According to the Ariaria Market Traders Association, the estimated working population in the market is approximately 50,000 individuals.

Sample Size and Sampling Technique

Sample Size

The sample size for this study was determined using the Cochran formula for sample size determination in large populations:

$n = Z^2pq / d^2$

Where: n = minimum sample size;
Z = standard normal deviate at 95% confidence level (1.96);
p = proportion of population with good hygiene practices (assumed to be 0.5);
q = 1 - p (0.5);
d = margin of error (0.05)

Substituting the values: $n = (1.96)^2 \times 0.5 \times 0.5 / (0.05)^2 = 384.16$.

Therefore, the minimum sample size was 384 respondents.

To account for possible non-response, an additional 10% was added, giving a total sample size of 422 respondents.

Sampling Technique

A multi-stage sampling technique was used to select respondents for the study. In the first stage, the market was stratified into its major sections: textile section, shoe section, electronics section, and general merchandise section. In the second stage, proportional allocation was used to determine the number of respondents to be selected from each section. In the third stage, simple random sampling was used to select respondents from each section.

Table 1: Sample Size Distribution by Section

Section	Population	Proportion (%)	Sample size.
Textile	15,000	30	127
Shoe	12,500	25	105
Electronics.	10,000	20	84
General	12,500	25	106
Total	50,000	100	422

Instrument for Data Collection

Data were collected using a structured questionnaire developed by the researcher based on the research objectives and literature review. The questionnaire consisted of four sections:

Section A: Socio-demographic characteristics (age, gender, educational level, occupation, years of work experience).

Section B: Hygiene knowledge (20 items assessing knowledge of hand hygiene, respiratory hygiene, environmental sanitation, and food hygiene).

Section C: Hygiene practices (20 items assessing actual hygiene behaviors).

Section D: Factors influencing hygiene practices (10 items).

Validity

The content validity of the questionnaire was ensured through a thorough review of relevant literature and consultation with experts in nursing, public health, and research methodology.

Reliability

The reliability of the instrument was determined using the test-retest method. The questionnaire was administered to 30 respondents from a similar market (Ngwa Road Market) who were not part of the main study. After two weeks, the same questionnaire was re-administered to the same respondents. The scores from the two administrations were correlated using Pearson's correlation coefficient, yielding a reliability coefficient of 0.82 for the knowledge section and 0.85 for the practice section.

Method of Data Collection

Data were collected by the researcher with the assistance of three trained research assistants. Prior to data collection, permission was obtained from the Ariaria Market Traders Association and individual consent was obtained from each respondent. The questionnaires were administered face-to-face to respondents at their workplaces in the market.

Method of Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the demographic characteristics of respondents and their responses on hygiene knowledge and practices.Hygiene knowledge scores were categorized as follows: 0-10 points (poor knowledge), 11-15 points (moderate knowledge), and 16-20 points (good knowledge). Hygiene practice scores were categorized as: 0-10 points (poor practice), 11-15 points (moderate practice), and 16-20 points (good practice).Inferential statistics, including Chi-square test and Pearson's correlation, were used to test the hypotheses at a 0.05 level of significance.

Ethical Considerations

Ethical approval for this study was obtained from the Research Ethics Committee of the state ministry of health. Permission was gotten from the executives of the market association. The participants was assured that participation in the study was voluntary and informed consent was gotten from them. The participants was also assured of the confidentiality of any information given.

Results

Demographic Characteristics of Respondents

Table 2 presents the demographic characteristics of the 384 respondents who participated in the study. The response rate was 91% (384 out of 422 questionnaires distributed).

Table 2. Demographic Characteristics of Respondents (N=384)

Variable	Category	Frquency (n)	Percentage (%)
Gender	Male	182	47.4
	Female	202	52.6
Age (years)	18-30	68	17.7
	31-40	148	38.5
	41-50	101	26.3
	51-60	52	13.5
	Above 60	15	3.9
Education	Primary	56	14.6
	Secondary	136	35.4
	Tertiary	112	29.2
	No formal education	80	20.8
Occupation	Trader	162	42.2
	Artisan	120	31.3
	Service provider	102	26.6

The results show that the majority of respondents (52.6%) were female. The age distribution indicates that most respondents (38.5%) were in the 31-40 years age group. Regarding educational level, 35.4% of respondents had secondary education, while 29.2% had tertiary education. In terms of occupation, traders constituted the largest group (42.2%).

Responses on Hygiene Knowledge

Table 3: Distribution of Respondents by Knowledge of Hygiene Practices.

Knowledge level	Score range	Frequency (n)	Percentage (%)
Poor knowledge	0-10	27	7.0
Moderate knowledge	11-15	79	20.6
Good knowledge	16-20	278	72.4
Total		384	100

Table 3. presents the distribution of respondents by their level of hygiene knowledge. The knowledge scores ranged from 6 to 20, with a mean score of 15.8 (SD = 3.2).

The results indicate that the majority of respondents (72.4%) had good knowledge of hygiene practices, while 20.6% had moderate knowledge, and only 7.0% had poor knowledge. Further analysis revealed that 89.6% of respondents knew that handwashing with soap and water is effective in preventing disease transmission. However, only 62.5% knew the correct duration for handwashing (at least 20 seconds).

Responses on Hygiene Practices

presents the distribution of respondents by their level of hygiene practices. The practice scores ranged from 5 to 20, with a mean score of 14.6 (SD = 3.8).

Table 4: Distribution of Respondents by Hygiene Practices.

Practice level	Score range	Frequency (n)	Percentage (%)
Poor practice	0-10	36	9.4
Moderate practice	11-15	86	22.4
Good practice	16-20	262	68.2
Total		384	100

The results show that 68.2% of respondents demonstrated good hygiene practices, 22.4% had moderate practices, and 9.4% had poor practices. While the majority had good practices, the proportion was lower than that for knowledge, suggesting a gap between knowledge and practice. Analysis revealed that 76.0% of respondents reported washing their hands after using the toilet, but only 45.3% washed hands after handling money.

Table 5: Relationship between Demographic Variables and Hygiene Knowledge

Variable	Test statistics	df	p-value	Decision
Age	18.42	8	0.005	Significant.
Gender	2.14	2	0.343	Not significant.
Education	24.36	6	<0.001	Significant
Occupation	15.28	6	0.018	significant

The results show statistically significant relationships between hygiene knowledge and age (χ^2 = 18.42, p = 0.005), educational level (χ^2 = 24.36, p < 0.001), and occupation (χ^2 = 15.28, p = 0.018). However, no significant relationship was found between gender and hygiene knowledge (χ^2 = 2.14, p = 0.343).

Table 6. Association between Demographic Variables and Hygiene Practices.

Variable	Test Statistics	df	p-value	decision
Age	14.26	8	0.027	significant
Gender	8.42	2	0,015	Significant
Education	21.48	6	<0.001	Significant.
Occupation	10.36	6	0.110	Not significant

The results indicate statistically significant relationships between hygiene practices and age (χ^2 = 14.26, p = 0.027), educational level (χ^2 = 21.48, p < 0.001), and gender (χ^2 = 8.42, p = 0.015). No significant relationship was found between occupation and hygiene practices (χ^2 = 10.36, p = 0.110).

Discussion

The finding that 72.4% of respondents had good knowledge of hygiene practices is consistent with previous studies conducted during and after the COVID-19 pandemic. A study by Al-Smadi*et al*. [21] among Jordanian university students reported similar levels of knowledge regarding COVID-19 preventive measures. The relatively high level of knowledge observed in this study may be attributed to the extensive public health campaigns conducted during the COVID-19 pandemic.However, there are still gaps in specific knowledge areas because the finding reveal sthat only 62.5% of respondents knew the correct duration for handwashing and 58.3% were aware of the importance of handwashing after handling money. This is consistent with the findings of Oloruntoba *et al.*[6], who reported that while food handlers had basic hygiene knowledge, there were gaps in specific practices.

The finding in this study shows that 68.2% of respondents demonstrated good hygiene practices. While this is encouraging, it also reveals a gap between knowledge(72.4%) and practice(68.2%). This gap is consistent with the literature, which has consistently shown that knowledge does not always translate into practice [7]. The lower proportion of respondents with good practices compared to good knowledge suggests that other factors, such as environmental constraints, time pressure, and habit, may influence hygiene behaviors.The finding that only 45.3% of respondents washed their hands after handling money is particularly concerning given that money is known to be a vector for disease transmission [8]

The significant association between educational level and both hygiene knowledge and practices is consistent with previous studies [9]. Education is known to enhance health literacy and the ability to understand and act on health information. This finding stenghtens the importance of education in promoting health behaviors.Mahbub *et al*[10] in thier study of Hygiene knowledge and practices and determinants of occupational safety among waste and sanitation workers in Bangladesh during the COVID-19 pandemic, noted that Waste and sanitation workers who received occupational training, had good knowledge about how to prevent COVID-19 such aswearing a face mask, hand washing, and maintaining social distance, than the other participants without the training. Altahe*et al*[11] in their work Assessment of awareness and hygiene practices regarding COVID-19 among adults in Gaza, Palestine noted that higher educational level did not affect the quality of personal hygiene and healthy practice behaviours during the COVID-19 outbreak. The finding that gender was significantly associated with hygiene practices but not knowledge is interesting. While both male and female respondents had similar levels of knowledge, female respondents demonstrated better practices. This is consistent with the findings of Borchgrevink *et al.*[12] and sala who reported that women generally practice better hygiene than men.

Conclusion

The findings reveal that while the majority of respondents have good knowledge of hygiene practices, there is a gap between knowledge and practice. This shows suggest that the heightened awareness of hygiene during the COVID-19 pandemic has not fully translated into sustained behavioral changes among the working population in Ariaria Market.

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