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Original Research Article

Examination of Knowledge and Perception of Personal and Environmental Hygiene in the Transmission of Communicable Diseases among Rural Dwellers in Oyo State, Nigeria

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Abstract

This study aimed to assess the personal and environmental hygiene practices, as well as the knowledge and perception of communicable diseases among respondents. A total of 300 questionnaires were administered and retrieved for analysis. The results showed that the majority (44.33%) of the respondents were between the ages of 30-39 years, (73.33%) were married, (52.33%) had senior secondary school education, and were students or self-employed. Regarding personal hygiene practices, the majority (57.33%) of the respondents washed their hands with soap and water often, (70.67%) did not use hand sanitizer, and (93.00%) brushed their teeth once per day. In terms of environmental hygiene, most (62.66%) of the respondents cleaned their houses often, (99.00%) did not disinfect high-touch surfaces regularly, (74.00%) did not separate and dispose of their wastes properly, and (54.67%) changed their beddings every two weeks. The majority (94.33%) of the respondents were vaccinated against communicable diseases, (91.00%) had heard of communicable diseases, and (92.67%) knew that personal and environmental hygiene play a role in preventing their spread. However, only a third (33.00%) of the respondents knew how to prevent the transmission of communicable diseases, and most(78.00%) did not know the symptoms of common communicable diseases. Overall, the study revealed gaps in personal and environmental hygiene practices and knowledge of communicable diseases among the respondents. This study highlights the need for educational programs on personal and environmental hygiene to promote better practices and prevent the transmission of communicable diseases.

Keywords: Communicable Diseases, Environmental Hygiene, Knowledge and Perception, Personal Hygiene

INTRODUCTION

Communicable diseases are a significant global public health challenge. They are responsible for millions of deaths every year (Pittet *et al.*, 2020). According to the World Health Organization (WHO), communicable diseases account for more than 70% of all deaths in low-income countries. Most communicable diseases are preventable, and one of the most effective ways to prevent them is through good personal and environ-

mental hygiene practices (Scott *et al*., 2017).

Personal hygiene refers to the practices that individuals carry out to maintain cleanliness and prevent the spread of infectious diseases (Tan *et al*., 2013). Personal hygiene practices include hand washing, covering the mouth and nose when coughing or sneezing, and regular bathing (Aiello *et al*., 2008). Environmental hygiene, on the other hand, refers to the measures taken to keep the surroundings clean and free from disease-causing agents. Environmental hygiene practices include cleaning and disinfecting surfaces, proper waste management, and ensuring access to safe drinking water (White *et al*., 2013).

Personal hygiene plays a significant role in preventing the transmission of communicable diseases. One of the most important personal hygiene practices is hand washing (Aiello *et al*., 2008). Hands are a common way for disease-causing agents to spread from one person to another. Washing hands with soap and water can prevent the spread of diseases such as diarrhea, influenza, and COVID-19. The WHO recommends that individuals should wash their hands with soap and water for at least 20 seconds (Lansbury *et al*., 2020). Alcohol-based hand sanitizers can also be used if soap and water are not readily available.Other personal hygiene practices that can prevent the spread of communicable diseases include covering the mouth and nose when coughing or sneezing, avoiding close contact with sick people, and staying home when feeling unwell. These practices can prevent the spread of diseases such as influenza, tuberculosis, and COVID-19 (Huang *et al*., 2020).

Environmental hygiene is equally important in preventing the transmission of communicable diseases. Disease-causing agents can survive on surfaces for several hours or even days, making it essential to keep surfaces clean and disinfected. Environmental hygiene practices such as cleaning and disinfecting surfaces, proper waste management, and ensuring access to safe drinking water can prevent the spread of diseases such as cholera, typhoid fever, and COVID-19 (Huang *et al*., 2020).

Cleaning and disinfecting surfaces are critical in preventing the spread of communicable diseases. High-touch surfaces such as doorknobs, light switches, and countertops should be cleaned and disinfected regularly. The WHO recommends the use of a bleach solution (1 part bleach to 99 parts water) or a disinfectant with at least 70% alcohol to disinfect surfaces (Mshida *et al*., 2021).

Proper waste management is another essential environmental hygiene practice. Improper disposal of waste can lead to the breeding of disease-causing agents such as mosquitoes and rodents. This can lead to the spread of diseases such as malaria and dengue fever (Ngure *et al*., 2014). Proper waste management practices such as separating waste, proper storage and disposal can prevent the spread of communicable diseases.

Access to safe drinking water is also critical in preventing the spread of communicable diseases. Contaminated water can lead to the spread of diseases such as cholera and typhoid fever (Hasanain *et al*., 2022). This study was therefore aimed at assessing the knowledge and perception of personal and environmental hygiene in the transmission of communicable disease.

RESEARCH METHODOLOGY

Research Design

A cross-sectional survey design was employed for this study. This design is appropriate for collecting data at a single point in time (Omole *et al.,* 2023), providing a snapshot of the current state of personal and environmental hygiene practices and their association with the transmission of communicable diseases. The target population for this study was individuals aged 18 years and above residing in Surulere local government area of Oyo State, Nigeria. The study involved administering questionnaires to three hundred (300) participants. The questionnaire was developed based on the objectives of the study. It consisted of closed-ended questions, which were easy to understand and answer. The questionnaire was reviewed and validated by experts in the field of epidemiology and hygiene.

A multi-stage cluster sampling technique was employed to select the participants. The study area was first divided into sub-regions, followed by the random selection of neighborhoods within these sub-regions. Households were then randomly chosen within the selected neighborhoods, and one eligible adult per household was invited to participate in the study. Trained enumerators visited the selected households to administer the questionnaires. The enumerators ensured that all questions were answered and provided clarification when needed. Data collection was carried out between September and December 2022, and enumerators were closely supervised to ensure data quality.

Data Analysis

Data were entered into a statistical software package (SPSS), and descriptive statistics were computed to summarize the participants' demographic characteristics, personal and environmental hygiene practices, and communicable disease experience.

Ethical Consideration

The research was conducted in accordance with ethical principles, including informed consent, confidentiality, and

data protection. Participants were informed of the purpose of the research and had the option to withdraw at any time without any consequences.

Limitations of Study

The study is limited by the sample size, which may not be representative of the entire population. The study is also limited by the self-reporting nature of the questionnaire, which may be subject to social desirability bias.

RESULTS

A total of three hundred (300) questionnaires were administered to respondents. They were all retrieved and analysed for the study. The results for the demographic distribution of the respondents as presented in Table 1 revealed that 133 representing 44.33% of the respondents were between the age categories of 30-39 years, 80 (26.67%) of the respondents were between the ages of 40 and 49years, 34 (11.33 %) of the respondents were between the ages of 20 and 29years, and the least age category was 3.67% of the respondents (below 20years). The majority of the respondents (73.33%) were married while 64 (21.33%) of the respondents were separated, divorced or widowed. The majority (52.33%) of the respondents has senior secondary school as their highest level of education, while only 79 (26.33%) of the respondents had tertiary education. According to the occupation of the respondents, 128 (42.67%) were students, 99 (33.00 %) were self-employed, 69 (23.00%) were civil servants and only 4 (1.33%) said they were unemployed. It can be seen that 140 (46.67%) were Muslims, 129 (43.00%) were Christians, and 31 (10.33%) chose others as their religion.

The participants' response on personal hygiene is presented in table 2. It showed that 172 (57.33%) of the respondents said they washed their hands with soap and water often**,** 29.67% and 13.00% sometimes and rarely washed their hands with soap and water respectively. Only 88 (29.33%) of the respondents used hand sanitizer while 212 (70.67%) did not use hand sanitizer. Out of the 88 participants that used hand sanitizer, only 26 (29.54%) used it often. The results also showed that majority (93.00%) of the respondents brushed their teeth once per day while only 19 (6.33%) brushed their teeth twice per day. The majority (75.67%) of the respondents said they covered their mouth and nose when they cough or sneezed. Majority (59.33%) of the respondents said they changed their clothes every two days, 21.67% said they changed their clothes every day, 4.33% changed their clothes twice per day and 12.33% said they changed their clothes every three days. When asked how often do they wash their towel**,** 103 (34.33%) of the respondents said once in two weeks, 129 (43.00%) of them said they washed their towel once in a month, 59 (19.67%) of them washed their towel once in a week. Furthermore, 117 (39.00%) said they cleaned their ears once in two weeks, 94 (31.33%) said they cleaned their ears once in a month while 78 (26.00%) said they cleaned their ears once in a week. When asked how often they cut/cleaned your nails, 46 (15.33%) of the respondents said twice in a week, 211 (70.33%) said once in a week, 37 (12.33%) said once in two weeks while 6 (2.00%) said they cut/cleaned their nails once in a month. Only 72 (24.00%) said the used tissue when blowing their nostrils. When asked how often do they take your bath, 245 (81.67%) said once daily while 55 (18.33%) said they took their bath twice a day.

Table 3 shows the responses of the respondents on environmental hygiene. It was observed that 188 (62.66%) and 86 (28.67%) respectively cleaned their houses often and very often, while 22 (7.33%) and 4 (1.33%) sometimes and rarely cleaned their houses respectively. Almost all (99.00%) of the participants did not disinfect high-touch surfaces such as doorknobs, light switches, and countertops regularly. When asked how often did they wash/clean their bathroom, 5 (1.67%) of the respondents said daily, 78 (26.00%) said weekly, 85 (28.33%) said once in two weeks, 99 (33.00%) said once in a month and 33 (11.00%) of the respondents rarely wash/clean their bathroom. Majority (74.00%) of the participants did not separate and dispose their wastes properly. None of the respondents changed their beddings daily, 77 (25.66%) of the respondents said they changed their bedding weekly, 164 (54.67%) said once in two weeks, and 59 (19.67%) said they changed their bedding once in a month. All the respondents (100.00%) said they cleaned their kitchen daily. When asked how often did they clean their refrigerator, 1 (0.33%) of the respondents said daily, 112 (37.33%) said weekly, 108 (36.00%) said once in two weeks and 79 (26.33%) of the respondents said once in a month. Almost all (97.00%) of the respondents said they cleaned their shoes daily. The results of the study further showed that half (50.00%) of the respondents cleaned their pets regularly.

The participants' response on the knowledge and perception of communicable diseases is presented in table 4. The results showed that all the respondents have heard of communicable diseases while majority (94.33%) have been vaccinated against communicable diseases. Majority (91.00%)of the respondents said they have had a communicable disease outbreak in their community or workplace but 162 (54.00%) of the respondents did not know how communicable diseases are transmitted. Majority (92.67%) of the respondents said there is a relationship between personal and environmental hygiene in the transmission of communicable diseases. When asked if they knew how to prevent the transmission of communicable diseases, 103 (34.33%) of the respondents said yes, 99 (33.00%) said no and 98 (32.67%) said they didn't know. Majority (92.33%) of the respondents said they knew that personal and

Table 1. Demographic Distribution of Respondents

Demographic Information	Frequency (n = 300)	Percentage (%)
Age (in years)		
Below 20	11	3.67
20-29	34	11.33
30-39	133	44.33
40 – 49	80	26.67
50 – 59	25	8.33
60 and Above	17	5.67
Marital Status		
Single	16	5.33
Married	220	73.33
Separated/Divorced/Widowed	64	21.33
Level of Education		
No formal education	8	2.67
Primary	56	18.67
Secondary	157	52.33
Tertiary	79	26.33
Occupation		
Students	128	42.67
Self-Employed	99	33.00
Civil servant	69	23.00
Unemployed	4	1.33
Religion		
Islam	140	46.67
Christianity	129	43.00
Others	31	10.33

Table 2. Personal Hygiene

Variable	Frequency (n = 300)	Percentage (%)
How often do you wash your hands with soap and water?		
Very Often	51	17.00
Often	121	40.33
Sometimes	89	29.67
Rarely	39	13.00
Do you use hand sanitizer regularly?		
Yes	88	29.33
No	212	70.67
If yes, how often do you use it?		
Very Often	7	7.95
Often	19	21.59
Sometimes	45	51.14
Rarely	17	19.32
How often do you brush your teeth?		
Twice per Day	19	6.33
Once per day	279	93.00
Once in two days	2	0.67
Once in a week	00	0.00
Do you cover your mouth and nose when you cough or sneeze?		
Yes	227	75.67
No	73	24.33
How often do you change your clothes?		
Twice in a day	13	4.33
Every day	65	21.67
Every two days	178	59.33
Every three days	37	12.33
More than three days	7	2.33

Table 2. Continue

How often do you wash your towel?		
Twice in a week	9	3.00
Once in a week	59	19.67
Once in two weeks	103	34.33
Once in a month	129	43.00
How often do you clean your ears?		
Twice in a week	11	3.67
Once in a week	78	26.00
Once in two weeks	117	39.00
Once in a month	94	31.33
How often do you cut/clean your nails?		
Twice in a week	46	15.33
Once in a week	211	70.33
Once in two weeks	37	12.33
Once in a month	6	2.00
Do you use a tissue when blowing your nose?		
Yes	72	24.00
No	228	76.00
How often do you take your bath?		
Twice per Day	55	18.33
Once per day	245	81.67
Once in two days	00	0.00
Rarely	00	0.00

Table 3. Environmental Hygiene

Variable	Frequency (n = 300)	Percentage (%)
How often do you clean your home or living space?		
Very Often	86	28.67
Often	188	62.66
Sometimes	22	7.33
Rarely	4	1.33
Do you disinfect high-touch surfaces such as doorknobs, light switches, and countertops regularly?		
Yes	3	1.00
No	297	99.00
How often do you wash/clean your bathroom?		
Daily	5	1.67
Weekly	78	26.00
Once in two weeks	85	28.33
Once in a month	99	33.00
Rarely	33	11.00
Do you separate and dispose of waste properly?		
Yes	222	74.00
No	78	26.00
How often do you change your bedding?		
Daily	00	0.00
Weekly	77	25.66
Once in two weeks	164	54.67
Once in a month	59	19.67
How often do you clean your kitchen?		
Daily	300	100.00
Weekly	00	0.00
Once in two weeks	00	0.00
Once in a month	00	0.00
How often do you clean your refrigerator?		
Daily	1	0.33
Weekly	112	37.33

Table 3. Continue

Once in two weeks	108	36.00
Once in a month	79	26.33
How often do you clean your shoes?		
Daily	291	97.00
Weekly	9	3.00
Once in two weeks	00	0.00
Once in a month	00	0.00
Do you clean your pets regularly?		
Yes	150	50.00
No	150	50.00

Table 4. Knowledge and Perception of Communicable Diseases

Variable	Frequency (n = 300)	Percentage (%)
Have you ever heard of communicable diseases?		
Yes	300	100.00
No	00	0.00
Have you ever had a vaccination for any communicable disease?		
Yes	283	94.33
No	17	5.67
Have you ever had a communicable disease outbreak in your community or workplace?		
Yes	273	91.00
No	27	9.00
Do you know how communicable diseases are transmitted?		
Yes	138	46.00
No	162	54.00
Do you protect yourself from communicable diseases?		
Yes	103	34.33
No	99	33.00
I don't know	98	32.67
Do you think there is a relationship between personal and environmental hygiene in the transmission of communicable diseases?		
Yes	278	92.67
No	22	7.33
I don't know	00	0.00
Do you know how to prevent the transmission of communicable diseases?		
Yes	103	34.33
No	99	33.00
I don't know	98	32.67
Do you think personal hygiene and environmental hygiene play a role in preventing the spread of communicable diseases?		
Yes	277	92.33
No	23	7.67
How effective do you think your personal and environmental hygiene practices are in preventing the spread of communicable diseases?		
Very Effective	83	27.67
Effective	187	62.33
Somehow Effective	26	8.67
Not Effective	4	1.33
Do you know the symptoms of common communicable diseases?		
Yes	66	22.00
No	234	78.00
Do you seek medical attention when you have symptoms of a communicable disease?		
Yes	182	60.67
No	118	39.33
How concerned are you about the transmission of communicable diseases?		
Very Concerned	86	28.67

Table 4. Continue

Concerned	179	59.67
Somehow Concerned	33	11.00
Not Concerned	2	0.67
Have you ever taken any course/training on personal and environmental hygiene		
Yes	49	16.33
No	251	83.67
Would you be willing to take a course/training on personal and environmental hygiene if it was offered		
Yes	295	98.33
No	5	1.67

environmental hygiene play a role in preventing the spread of communicable diseases. When asked how effective did they think that their personal and environmental hygiene practices were in preventing the spread of communicable diseases, 83 (27.67%) of the respondents said very effective, 187 (62.33%) said it was effective, 26 (8.67%) said it was somehow effective and 4 (1.33%) of the respondents said it was not effective. Majority (78.00%) of the respondents said they did not know the symptoms of common communicable diseases but 182 (60.67%) of the respondents said they sought medical attention when they had symptoms of a communicable disease. When asked how concerned they were about the transmission of communicable diseases, 86 (28.67%) of the participants said they were very concerned, 179 (59.67%) said they were concerned, 33 (11.00%) said they were somehow concerned and 2 (0.67%) of the respondents said they were not concerned. Majority (83.67%) of the participants said they've never taken any course/training on personal and environmental hygiene while 295 (98.33%) of the respondents were willing to take a course/training on personal and environmental hygiene if it was offered. Table 1 - 4

DISCUSSION

The importance of personal and environmental hygiene in preventing communicable diseases cannot be over-emphasized. Communicable diseases are contagious diseases that can spread from one person to another or from the environment to humans (Freeman *et al*., 2013). Personal hygiene refers to the practices that individuals carry out to maintain cleanliness and prevent the spread of infectious diseases. Environmental hygiene, on the other hand, refers to the measures taken to keep the surroundings clean and free from disease-causing agents (Stanton *et al*., 2018).

This study aimed to investigate the personal and environmental hygiene practices of the respondents and their knowledge and perception of communicable diseases. The demographic distribution revealed that the majority of respondents were between 30-39 years of age, married, and had senior secondary school education. This demographic profile suggests that the study population mainly consisted of adults who have started families and who have completed basic education.

The findings on personal hygiene indicate that the majority of respondents practiced handwashing with soap and water, but only a small proportion of them used hand sanitizer. Handwashing is a crucial aspect of personal hygiene, as it can help prevent the spread of communicable diseases. However, the low usage of hand sanitizer could be attributed to factors such as lack of awareness, affordability, or availability. Additionally, the results showed that most respondents brushed their teeth once per day, which is a positive aspect of personal hygiene. However, the frequency of other hygiene practices, such as changing clothes, washing towels, and cleaning ears, was less consistent among respondents. The varying frequencies of these practices suggest that there is room for improvement in maintaining good personal hygiene habits. These findings are similar to those reported by Ilesanmi (2016) who investigated the knowledge and practices of personal hygiene among senior secondary school students of Ambassadors' college, Ile–Ife, Osun State, Nigeria.

Regarding environmental hygiene, the results showed that the majority of respondents cleaned their houses regularly, but only a few disinfected high-touch surfaces, such as doorknobs and countertops. These findings indicate that there may be gaps in the understanding of the importance of these practices for preventing the spread of communicable diseases and maintaining a healthy living environment. This result highlights the need for more awareness on the importance of regular disinfection, as it can help prevent the spread of germs and communicable diseases. This is consistent with the study of Ardillah *et al*. (2020) who reported the association of environmental residential sanitation factors to communicable disease risk among Musi side-river household in Palembang, Indonesia. The findings of this present study indicate that proper waste disposal and bedding changing practices were not consistent among the respondents, suggesting a need for improvement in these areas as well.

The knowledge and perception of communicable diseases among the respondents showed that most of them had heard of communicable diseases and had been vaccinated against them. This is an encouraging finding, as it demonstrates awareness and preventive measures taken by the respondents. However, the study also revealed that more than half of the respondents did not know how communicable diseases are transmitted, and many were unaware of the symptoms of common communicable diseases. This lack of knowledge may hinder the respondents' ability to identify and prevent the spread of such diseases effectively. These findings suggest that there is a need for increased education and awareness regarding the transmission, prevention, and recognition of communicable diseases.

The respondents generally acknowledged the relationship between personal and environmental hygiene and the transmission of communicable diseases. Most of them believed that their hygiene practices were effective in preventing the spread of these diseases. However, the majority of respondents had not taken any course or training on personal and environmental hygiene, although most of them were willing to do so if offered. This finding implies that there is an opportunity to provide education and training on hygiene practices to enhance the respondents' knowledge and skills, which could ultimately contribute to preventing the spread of communicable diseases.

CONCLUSION

The results of this present study revealed that while the respondents have some knowledge of communicable diseases and practice certain personal and environmental hygiene habits, there are areas that need improvement. Further education and training on personal and environmental hygiene practices, along with raising awareness on the transmission and prevention of communicable diseases, could be beneficial in enhancing the respondents' ability to maintain good hygiene and minimize the spread of such diseases.

RECOMMENDATIONS

From the results of this study, we recommend that:

a. Health education programs should be implemented to increase awareness of the importance of personal and environmental hygiene practices in preventing the transmission of communicable diseases.

b. Governments and organizations should also provide resources to improve environmental hygiene practices, particularly with regard to ventilation, to prevent the spread of communicable diseases.

c. Promoting personal and environmental hygiene practices through education and awareness campaigns and improving access to clean water sources, proper sanitation facilities, and waste disposal facilities can significantly reduce the incidence of communicable diseases globally.

d. It is crucial that policymakers prioritize hygiene education and promotion and improve access to essential hygiene facilities to prevent the spread of communicable diseases.

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