

Knowledge, Attitudes and Practices of Disease Prevention among Health Talk-Giving Healthcare Workers in Primary Health Centres at Osogbo

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ABSTRACT

Background: Disease prevention measures such as creating public awareness are needed to protect the vulnerable populace from acquiring diseases. Knowledgeable health care workers are pivotal to this, and it therefore becomes imperative to assess health workers in this regard. The objective of this study was to ascertain the level of knowledge, the kind of attitude towards and practices of disease prevention among health-talk giving primary health care workers in Osogbo, south western Nigeria.

Methods: A descriptive cross-sectional study done among 204 respondents from 13 primary health care centres in Osogbo selected using multi-stage sampling technique. The research instrument used was a self-administered questionnaire analysed with SPSS 23.0. Univariate, bivariate, and multivariate analyses were done as appropriate and a p-value of <0.05 was taken as statistically significant.

Results: The results of this study revealed that at least nine out of ten respondents had good knowledge (90.2%) and positive attitude (94.1%) towards disease prevention. A greater proportion of doctors (100%) had good knowledge of disease prevention compared to other health workers while nurses took the lead in having a positive attitude (97.4%). Respondents had varying responses in their practices towards disease prevention, but generally speaking, most respondents who had good knowledge and positive attitudes also exhibited good practices. The only identifiable predictor of respondent's knowledge was level of education, ($p=0.024$ $OR=0.157$).

Conclusion: The fact that about a tenth of respondents had poor knowledge and about 5% had negative attitude towards disease prevention is a major cause for concern. Since health talk-giving health workers interact directly with the populace, the potentially huge negative effects that this minority can have cannot be underestimated. Therefore, there is a need for close-monitoring and regular review of the kind of information given to clients as well as training and re-training of health workers.

Keywords: Knowledge, Attitudes, Practices, Disease, prevention, Healthcare workers.

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Connaissances, attitudes et pratiques de prévention des maladies chez les agents de santé qui parlent de santé dans les centres de santé primaires d'Osogbo

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Résumé

Contexte général de l'étude : Des mesures de prévention des maladies telles que la sensibilisation du public sont nécessaires pour protéger la population vulnérable contre l'acquisition de maladies. Des travailleurs de la santé compétents sont essentiels à cet égard, et il devient donc impératif d'évaluer les agents de santé à cet égard.

Objectif de l'étude: Connaître le niveau de connaissance, le type d'attitude envers et les pratiques des professionnels de la santé qui parlent de la santé à Osogbo, dans le sud-ouest du Nigeria.

Méthode de l'étude: Une étude transversale descriptive réalisée auprès de 204 répondants de 13 écoles primaires centres de soins de santé d'Osogbo sélectionnés à l'aide d'une technique d'échantillonnage à plusieurs degrés. L'instrument utilisé était un questionnaire auto-administré analysé avec SPSS 23.0. Un échantillon varié, des analyses bivariées et multivariées ont été effectuées selon les besoins et une valeur de $p < 0,05$ a été prise comme statistiquement significative.

Résultat de l'étude: Les résultats de cette étude ont révélé qu'au moins neuf répondants sur dix avaient de bonnes connaissances (90,2 %) et attitude positive (94,1 %) envers la prévention des maladies. Une meilleure proportion de médecins (100 %) avaient une bonne connaissance de la prévention des maladies par rapport aux autres les infirmières étaient en tête pour avoir une attitude positive (97,4 %). Les répondants avaient des réponses dans leurs pratiques en matière de prévention des maladies, mais de manière générale, la plupart des répondants qui avaient de bonnes connaissances et des attitudes positives ont également fait preuve de bonnes pratiques. Le seul identifiable des connaissances du répondant était le niveau d'éducation, ($p = 0,024$ OR = 0,157).

Conclusion : Le fait qu'environ un dixième des répondants aient une faible connaissance et environ 5 % négative à l'égard de la prévention des maladies est une cause majeure de préoccupation. Depuis les discours sur la santé les agents de santé interagissent directement avec la population, les effets négatifs potentiellement énormes que cela la minorité peut avoir ne peut pas être sous-estimée. Par conséquent, il est nécessaire de surveiller de près et de un examen régulier du type d'informations données aux clients ainsi que la formation et le recyclage des de santé.

Mots-clés: Connaissances, attitudes, pratiques, maladie, prévention, personnel de santé

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INTRODUCTION

Health workers are people whose job is to protect and improve the health of their communities. Health workers include Doctors, Nurses, Pharmacists, Dentists, Laboratory scientists, Health assistants, Public health practitioners, Community Health Officers (CHO), Physiotherapists, Community health extension workers (CHEWs), Community health attendants etc. Community health workers are essential personnel in resource-limited settings; they focused on infectious diseases and maternal and child health. However, their skills could potentially be utilized in national efforts to reduce the growing burden of non-communicable diseases (1).

A disease is a particular abnormal condition that negatively affects the structure or function of part or all of an organism, and that it is not due to any external injury, it may be caused by external factors such as pathogens or by internal dysfunction. Preventable communicable or infectious diseases like malaria and HIV/AIDs account for millions of deaths globally especially in middle and low-income countries including Nigeria (2). Many developing countries are facing an enormous burden of infectious diseases. Nigeria is faced with a high burden of both communicable and non-communicable diseases, creating significant challenges among key health indicators (3).

Non-communicable diseases are increasingly becoming the leading causes of morbidity and mortality worldwide. They encompass a cluster of illness which includes: Diabetes mellitus, cancers, chronic respiratory diseases, cardiovascular disease and musculoskeletal disorders with greater impact on the poor countries of sub-Saharan African of which Nigeria occupy a significant position (4). Similarly, many chronic diseases are caused by preventable risky behaviours such as tobacco use and exposure to second-hand smoking, poor nutrition including diets low in fruits and vegetables and high in sodium and saturated fats, lack of physical activity, excessive alcohol use, etc (5). Stronger health systems underpinned by primary health care are crucial to effectively manage NCDs and risk factors for them.

Primary health care is often the first gateway to health services for people and plays a central and co-coordinating role in the prevention, diagnosis and long-term management of chronic diseases (2). Thus, both communicable and non-communicable diseases can be prevented through health education. The

major way through which individuals receive health information in Nigeria is through health talks given by health workers. This is especially so as Primary health care (PHC) is the first level of health care with which the general populace comes in contact, so it is not an insignificant number of the population that is taken care of at the PHC level. Although one author reported a significant decrease in the proportion of clients visiting primary health centres in a developed country (6), the situation arguably is not the same in developing countries. In previous studies, health workers have demonstrated varying degrees of knowledge regarding both communicable and non-communicable diseases (7,8).

Since health workers are traditionally the custodians of knowledge in this part of the world responsible for the dissemination of health information to clients, it is expected that the level of their knowledge should be high but this is not always the case. For instance, only 37.9% of primary healthcare workers in southwest Nigeria had good knowledge of the nature and care of sickle cell disease (9). Similarly, only 34.7% of primary health care workers have positive attitude regarding tuberculosis disease in Minna, Niger State Nigeria (10). It is generally assumed that health workers by virtue of their 'job' should have adequate knowledge about diseases and other health conditions this assumption can possibly be true for both tertiary and secondary levels but there is often inadequate knowledge among primary health care workers (11). Health care workers serve as the main asset of the health care system in achieving its goals especially those who give health talk, however, it is crucial to examine their level of knowledge, attitude and practices on disease prevention.

This study, therefore, sets out to examine the knowledge, attitude and practices of health talk-giving health care workers in primary health facilities in Osun State, Nigeria towards disease prevention.

MATERIALS AND METHODS

A descriptive cross-sectional study was carried out among 204 healthcare workers in primary health centres in Osogbo, Osun State Nigeria. There are numerous Primary Health Care centres and private hospitals providing primary care services in the state.

The sample size for the study was 204, calculated using Leslie Fischer's formula ($n = (Z^2 \cdot pq) / d^2$) for the descriptive study of populations less than 10,000 with p as 84.2.0%, being the

proportion of healthcare workers with good knowledge on infection prevention from a previous study, Z as 1.96 representing a 95% confidence interval.

A multi-stage sampling technique was used to select study participants across local governments, wards and categories of hospital workers. A purposely designed self-administered questionnaire was used to obtain data from study participants after a pre-test done outside of the study area. Involvement in risky sexual behaviour was defined as those who had casual sexual intercourse and do not use condoms. Approval for the conduct of the study was obtained from the Ethics and research committee of Osun State University. Permission was also obtained from the State Primary Health Care Board and consent was taken from each participant while participants were assured of confidentiality.

Data collected were analyzed using IBM SPSS version 23.0 software. Results were presented using tables and charts, chi-square and logistic regression analyses were generated with confidence level set at 95% and a P-value <0.05 was considered significant. There were a total of 29 questions for knowledge related statements, correct responses were scored as one and incorrect responses were scored as zero. The scores were summed up to obtain an overall score for each respondent, with a range of 0 to 29. Attitude had a total of 14 questions, correct responses were assigned one, and wrong responses assigned zero, with a total summed up scores ranging from 0 to 14. Knowledge and attitude were further categorized using the median or 50% score as the cut-off point. This was done to assess and grade the respondent's knowledge (good or poor knowledge), attitude (positive and negative attitude) towards disease prevention. Good knowledge and positive attitude were adjudged as those who scored equal or above 50% and poor knowledge and negative attitude as those that scored below it. There were 20 questions on preventive practice, correct/good response were scored as one while incorrect/poor responses were scored as zero, using the mean (9.80) as the cut-off point, good practice was adjudged as those scores who scored or above the mean and poor practice as those who scored below it.

RESULTS

A total of 204 respondents comprising of 41(20.1%) males and 163 (79.9%) females participated in this study. The mean age was 35.6

± 8.9 years. Almost a fifth of the respondents were nurses/ midwives while 6.4% were doctors and the remaining 75% of the respondents were CHEWs, CHO, Pharmacists, Lab scientists etc. Majority of the respondents (44.6%) had 1-5 years of working experience, 22.5% had 6-10 years of practice while 32.9% had been practising for more than 11 years.

In general, majority (90.2%) of the respondents have good knowledge of disease prevention. Similarly, for attitude, 94.1% of the respondents had positive attitude towards disease prevention (Figure).

In Table 2, more respondents who had a university degree and higher qualifications had good knowledge (97.6%) compared to those with diploma (85.1%) as their qualification $p=0.003$. Of the 204 participants, thirteen were doctors and all (100%) of them had good knowledge of disease prevention compared to 94.7% of nurses/midwives and 88.2% of other health workers. More of the respondents with one to five years and those with eleven years and above of working experience had good knowledge on disease prevention (91.2% and 91.0% respectively) compared to those with six to ten years working experience (87.0%).

Respondents whose qualifications were university degrees and higher (96.4%) had positive attitude compared to those whose qualifications were diplomas (92.6%). In terms of their designation, more Nurses/Midwives (97.4%) were found to have positive attitude compared to Doctors (92.3%) and other health workers (93.5%). Respondents who have been working for 1 to 5 years as health workers had more (96.7%) positive attitude compared to (91.3%) of those working for 6-10 years and (92.5%) of those working for 11 years and above.

In table 3a, of all the 204 respondents 184 (90.2%) always washes their hands before eating and after using the toilet, about three quarters (70.6%) exercise regularly, only 40 (19.6%) eats junk foods every day. About two-thirds (63.2%) take sugary drinks sometimes or few times a week, more than three-quarters (76.0%) take vegetables regularly. Only less than half (45.1%) of the respondents were found to have been involved in risky sexual behaviour i.e. have had casual sex and does not use condoms). Similarly, majority (90.7%) washed their vegetables thoroughly when cooking. Only 7.8% take alcohol, while only 2.0% smokes. In the last year, only (24.0%) have not had a blood pressure check. Only 27.0% of the respondent shares personal things like towel, combs and slippers,

about a sixth (17.2%) of the respondents said their superior insisted they come to work even when sick. Only (12.7%) of the respondents said they rarely do a medical check-up, less than one-sixth (14.2%) had contracted hospital-acquired infections before (Table 3a). Out of the 41 male respondents, only 13 (31.7%) had done prostate cancer screening before (Table 3b), Among 163 female participants, more than two-thirds (71.8%) do Breast Self-Examination while only 24.5% had done cervical cancer screening using pap smear before (Table 3c). Overall, there were good practices towards disease prevention among health talk giving primary healthcare workers at Osogbo.

When relating the preventive practices of respondents against their knowledge and attitude towards disease prevention, respondents who regularly washed their hands regularly before eating and after using the toilet were found to have 167(90.8%), 167(90.8) good knowledge and 172(93.5%), 173(94.0) positive attitude respectively. Those who exercise regularly have more good knowledge (91.0%) and positive attitude (93.8%). Similarly, respondents that rarely eat junk have more good knowledge (95.7%) $p=0.004$ and 100.0% positive attitude towards disease prevention $p=0.032$. majority of the respondents take sugary drinks and fruits few times a week and were found to have more good knowledge 118(91.5%) and 123(93.9%) and 125(96.9%) and 123(93.9%) positive attitude towards disease prevention respectively. More of the respondents that sometimes takes vegetable was found to have 140(90.3%) good knowledge and 145(93.5%) favourable attitude, Likewise, majority of the respondents who do not involve in risky sexual behaviour were found to have good knowledge (92.0%) and attitude (96.4%) towards disease prevention. In terms of the preventive practice of washing vegetables thoroughly when cooking at home, more of the respondents that normally washed vegetables thoroughly had good knowledge 166 (89.7%) and positive attitude 173(93.5%). Most of the respondents does not or had never taken alcohol and have more good knowledge (91.4%) and (98.9%) positive attitude $p=0.0007$, correspondingly, majority of the respondents had never smoked before and were found to have more good knowledge and positive attitude (92.0%) and (96.4%) respectively.

Regarding the practice of blood pressure, most of those that have checked their blood pressure in the past year also have more of good knowledge (91.0%) and a significant (96.8%)

positive attitude $p=0.012$. Although most of the health workers does share personal things, those who share had more good knowledge (90.9%) compared to those who does not, while more of the respondents that do not share their personal things had more of favourable attitude (96.6%) $p=0.029$. those who cultivated the habit of always covering their mouth and nostrils when sneezing or coughing had more good knowledge (91.3%) and positive attitude (94.4%) towards disease prevention. Respondents that do not go to work and those who sometimes do as insisted by their superior had more good knowledge on disease prevention, while those who rarely go when sick have a significant positive attitude (100.0%) towards disease prevention. $p<0.001$.

Health workers that do regular medical check-up have more good knowledge (95.8) while those who do it sometimes were found to have more of positive attitude (96.3%). This finding shows a significant-good knowledge (93.5%) $p=0.008$ and positive attitude (97.6%) $p<0.001$ among those who had never contracted hospital-acquired infection (Table 4a).

In table 4b: Male respondents who have done prostate cancer screening have 100.0% good knowledge while those who have never done it have 100.0% positive attitude. (Table 4b) Female health workers that normally do Breast Self-Examination have significant-good knowledge (91.5%) on disease prevention $p=0.048$ and positive attitude (95.7%). Likewise, those who had done cervical cancer screening had more good knowledge (95.0%) while more of those who had never done the screening have a more favourable attitude (94.3%) towards disease prevention (Table 4c). Overall, more than four-fifths (88.7%) had good practices of diseases prevention.

DISCUSSION

Although many studies had previously looked into the knowledge, attitude and practices of health workers related to the prevention of specific diseases, this study is distinctive because it examined the knowledge, attitude and practices of diseases prevention generally among health talk-giving primary health care workers. In this study, quantitative data were collected from 204 primary health workers in selected PHCs in Osogbo, Osun State and significant findings which will contribute to evidence-based knowledge and interventions on diseases prevention are hereby discussed.

This study revealed that the majority of the health workers had good knowledge, about

nine out of ten of the respondents had good knowledge, and this finding is similar to a previous study on rabies where the majority of the respondents had good knowledge (14). The overall knowledge of this study is however slightly lower than that of another study on infection prevention (12) but contrary to another study where only 20.3% of the respondents had good knowledge (15). It is actually not unexpected that health workers, in general, should demonstrate a good knowledge regarding diseases and their prevention and/or control, since it is their domain. Theoretically and practically, they often have been 'exposed' to various disease conditions because they are often involved in the management of such, even at the primary care level. So the norm is to expect virtually all health workers to be knowledgeable about diseases, thus, it is however surprising that about a tenth of health workers were classified as having poor knowledge. The proportion with poor knowledge may appear small however the potential negative effects are quite significant, especially in terms of the misinformation this set of health workers can pass to the general populace when they give health talks during health education sessions. Such misinformation is not likely to be limited to the primary contacts of the health workers as these recipients can be secondary transmitters of the false information received from the health workers to others within and outside of their neighbourhoods. In this environment, information received from health workers are usually considered as factual and sacrosanct and clients (patients and patients' relatives) are likely to take such hook, line and sinker and act based on the information received from such health workers.

More of the males' respondents had good knowledge compared to females regarding diseases and their prevention and control which is in tandem with a study on Lassa fever (11) but against another Nigerian study on tuberculosis where more females had good knowledge (16). A possible lesson to draw from these varying scenarios is that the level of knowledge is independent of sex, and is perhaps a reflection of individual learning abilities and capacities. The higher number of males having good knowledge here may also be explained by the fact that most health workers at the primary health care level are females and a dilution effect may take place between females who are on the extreme sides of good and poor knowledge, with the larger number of females possibly contributing to the fact that more females will be at the 'negative' end of poor knowledge.

More respondents who have a university degree and higher qualifications had good knowledge on disease prevention and this was statistically significant, ($p < 0.05$), this should probably be expected, as they are likely to have more knowledge and experience during the course of their study than those who have diploma qualification. More doctors had good knowledge than others and this finding is similar to that of another study on Lassa fever (17) and could be attributed to experience in their course of study and with higher training and exposure related to their qualification though this was not statistically significant.

In this study, the overall attitude of the health workers towards disease prevention was favourable as 94.1% have positive attitude towards disease prevention, this is similar to other studies (18) and (19) which showed that a greater percentage of primary care workers had a positive attitude towards infectious disease prevention and another study on health promotion and prevention (20) but contrary to another Nigerian study where many primary health care workers had negative attitude regarding the management of an infectious disease (10). The positive attitude of respondents in this study is higher compared to another study on infection prevention among healthcare workers where the overall attitude was poor (15). However, the study conducted in Guinea on Ebola virus Disease reported low attitude compared to this study (21).

Workers attitudes are vital indicators to the willingness to learn and consequently improve themselves, thus the high level of positive attitude seen among health workers is commendable and shows the willingness of workers to further understand disease processes and prevention. Although not statistically significant, younger respondents, those with higher education and in terms of profession, nurses made up the larger number of those with positive attitude when compared to their counterparts. This may be due to the enterprising nature of the young and their readiness to learn and those with higher qualifications have possibly being placed at an advantageous position in terms of an attitude than those who have diploma qualification by virtue of detailed academic processes they went through. More nurses/midwives had a positive attitude towards disease prevention than others including medical doctors. It is possible that some doctors who are more knowledgeable as shown in this study exercised a high degree of contentment with their level of knowledge and their attitudes towards

disease prevention may be compromised because of their high level of knowledge, as they may feel that there is nothing new to learn about disease prevention. This study revealed that there was no gap between knowledge and practices which is in line with the study on Tuberculosis (16) and another Ethiopian study on infection prevention among health care workers (12). However, slightly more than one-sixth of the respondents who were involved in the preventive practice of regular exercise have poor knowledge of disease prevention. The overall good practices could be ascribed to the respondents' better knowledge reciprocated on their preventive practices.

This study revealed that the majority of the respondents who had practised a healthy diet has significant good knowledge and a positive attitude towards the prevention of diseases $p=0.004$ and $p=0.032$ respectively. This could be attributed to the fact that the more one practices an act, the more knowledge acquired., respondents who rarely do medical check-up were found to have a greater proportion of poor knowledge on diseases prevention compared to those who do it sometimes and regularly. This could be attributed to the frequent check-up and therefore greater comprehension of diseases preventive practices. Respondents who have done various screening/tests and check-up before such as males that had done prostate cancer and females that have done BSE and cervical cancer screening were found to have good knowledge and a positive attitude towards disease prevention this might be due to awareness and health education.

The majority of the respondents practices preventive measure including a thorough washing of vegetables, hand washing before and after eating and after using the toilet, abstinence from risky sexual behaviour, covering of nostril when sneezing or coughing and were found to have good knowledge and positive attitude towards disease prevention. The result of this study revealed that there is a significant positive association between attitude and preventive practice of diseases prevention, the better knowledge and favourable attitude could be attributed to their consistent preventive practices which may be due to their awareness of the associated health risks of poor practices and thereby having better knowledge on diseases prevention. However, more than three quarters of respondents who do not share personal things have positive attitude towards disease prevention and was statistically significant $P=0.029$. Similarly, respondents who rarely go to work when sick was found to have more positive

attitudes compared to others and also statistically significant $p<0.001$. A significant positive attitude was shown towards the preventive practices of Alcohol consumption, as well as blood pressure check $p=0.007$ and $p=0.129$ respectively.

Although a good number of respondents had good knowledge and positive attitudes, the few workers who do not have cannot be said to be negligible because of the nature of work that health workers do, wrong information can be easily disseminated to the populace causing adverse effects. This thus emphasizes the reason why primary health care workers should have adequate diseases prevention knowledge coupled with a favourable attitude as well as practices. Further studies may look at this research topic at state, geopolitical zone or on rural and urban comparison context. Similarly, further study may assess this topic on communicable and non-communicable context.

CONCLUSION

This study revealed that the majority of the respondents had good knowledge of disease prevention. Similarly, about nine out of ten of the respondents have positive attitude towards disease prevention. A number of factors were associated with knowledge on diseases prevention in this study including the level of education, there was no significant identifiable predictor of respondents' attitude towards disease prevention. This study also revealed that both the knowledge and attitude of the respondents were found to influence their practices towards disease prevention. When respondents' knowledge and attitude were related to their practices towards diseases prevention, most respondents who had good knowledge and positive attitudes also exhibited overall good practices.

The findings of this study which although revealed a distinctively high level of knowledge and positive attitude also demonstrated a significant relationship between knowledge and attitude of health workers towards their diseases preventive practices. Training and retraining of primary health care workers especially those whose qualifications were below university degree on disease prevention and health promotion generally, sufficient training of new intakes among primary health care workers as well as periodic re-training after few years of practices, for instance at four to five years' intervals to enhance good knowledge and positive attitudes are recommended.

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Conflict of interest: None

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Table 1: Frequency distribution of socio-demographic characteristics (n=204)

Variable	Frequency	Percentage
Age Group		
[Mean age 35.6 (8.9) years, Minimum=20, Maximum=59]		
20-39 years (Young Adults)	121	59.3
40-59 years (Middle-aged)	83	40.7
Sex		
Male	41	20.1
Female	163	79.9
Marital Status		
Currently Married	133	65.2
Not Currently Married	71	34.8
Religion		
Christianity	125	61.3
Islam	79	38.7
Ethnicity		
Yoruba	195	95.6
Non-Yoruba	9	4.4
Level Of Education		
Diploma	121	59.3
University degree and higher	83	40.7
Profession		
Doctor	13	6.4
Nurse/midwife	38	18.6
Other health workers*	153	75.0
Years Of Practice		
1-5 years	91	44.6
6-10 years	46	22.5
11 years and above.	67	32.9
Other Health Workers		

*CHEW (40.9%), CHO (40.9%), Health Assistant (3.9%) Pharmacist (10.3%), Lab scientist/technician (5.4%), Physiotherapists (0.5%) Medical Record (0.5%)

Table 2: Knowledge and Attitude of respondents on disease prevention related to their socio-demographic characteristics

Socio-demographic variables and their categories		Knowledge of diseases prevention (n=204)		Statistics	Attitude towards diseases prevention (n=204)		Statistics
		Poor (%) N=20	Good (%) N=184		Negative (%) N=12	Positive (%) N=192	
Sex	Male	1(2.4)	4(97.6)	$\chi^2=2.191$	2 (4.9)	39 (95.1)	$\chi^2 < 0.001$
	Female	19(11.7)	114(88.3)	$p=0.139$	10 (6.1)	153 (93.9)	$p=1.000$
Marital status	Currently Married	13 (9.8)	120 (90.2)	$\chi^2 < 0.001$	7 (5.3)	126 (94.7)	$\chi^2 = 0.041$
	Not currently married	7 (9.9)	64 (90.1)	$p=0.985$	5 (7.0)	66 (93.0)	$p=0.840$
Age	Young Adult	11(9.1)	110(90.9)	$\chi^2=0.171$	6 (5.0)	115 (95.0)	$\chi^2 = 0.140$
	Middle aged	9 (10.8)	74 (89.2)	$p=0.679$	6 (7.2)	77 (92.8)	$p=0.708$
Religion	Christianity	13 (10.4)	112(89.6)	$\chi^2=0.130$	6 (4.8)	119 (95.2)	$\chi^2 = 0.271$
	Islam	7(8.9)	72(91.1)	$p=0.719$	6 (7.6)	73 (92.4)	$p=0.602$
Ethnicity	Yoruba	18(9.2)	117(90.8)	$\chi^2=0.501$	11 (5.6)	184 (94.4)	$\chi^2 < 0.001$
	Non-Yoruba	2(2.2)	7(77.8)	$p=0.479$	1 (11.1)	8 (88.9)	$p=1.000$
Level of education	Diploma	18 (14.9)	103(85.1)	$\chi^2=8.652$	9 (7.4)	112 (92.6)	$\chi^2 = 0.701$
	University Degree and Higher	2(2.4)	81(97.6)	$p=0.003^*$	3 (3.6)	80 (96.4)	$p=0.402$
Profession	Doctor	0(0.0)	13(100.0)	$\chi^2=4.360$	1 (7.7)	12 (92.3)	$\chi^2 = 1.089\#$
	Midwife	2(5.3)	36(94.7)	$p=0.113\#$	1 (2.6)	37 (97.4)	
	Other health workers	18(11.8)	135(88.2)		10 (6.5)	143 (93.5)	$p=0.580$
Duration of practice	1-5 years	8 (8.8)	83(91.2)	$\chi^2=0.665$	3 (3.3)	88 (96.7)	$\chi^2 = 2.153$
	6-10 years	6 (13.0)	40 (87.0)	$p=0.717\#$	4 (8.7)	42 (91.3)	
	11 & above	6(9.0)	61(91.0)		5 (7.5)	62 (92.5)	$p=0.341$

#= Likelihood Ratio * Statistically Significant

Table 3a: Frequency distribution of respondents’ practices on disease prevention (n=204)

Variable	Sub-Categories	Frequency	Percentage
Do you wash your hands before eating	Always	184	90.2
	Sometimes	18	8.8
	Rarely/Not at all	2	1.0
Hand washing after using the toilet	Always	184	90.2
	Sometimes	16	7.8
	Rarely/Not at all	4	2.0
Exercise at least thirty minutes at least five days a week.	Yes	144	70.6
	No	60	29.4
Eating of junks in the past 7 days	None/Rarely	47	23.0
	Sometimes/Few times a week	117	57.4
	Once Daily	40	19.6
Taking of Sugary drinks	None/Rarely	31	15.2
	Sometimes/Few times a week	129	63.2
	Once Daily	44	21.6
Taking of fruit	None/Rarely	18	8.8
	Sometimes/Few times a week	131	64.2
	Once Daily	55	27.0
Involvement in risky behaviour	No	112	54.9
	Yes	92	45.1
Thorough washing of vegetables when cooking at home	Yes	185	90.7
	No	9	4.4
	Not sure	10	4.9
Do you still take alcohol?	Yes	16	7.8
	No	95	46.6
	Never taken	93	45.6
Do you still smoke?	Yes	4	2.0
	No	63	30.9
	Never taken	137	67.2
Do you share personal things like combs, towel etc.?	Yes	55	27.0
	No	149	73.0
Do you cover your nostrils/mouth with tissue or handkerchief when sneezing or coughing?	Yes, Always	161	78.9
	Sometimes	25	12.3
	Rarely	18	8.8
When you are sick, do you or your boss/superior usually insist that you come to work instead of staying at home?	Yes, Always	35	17.2
	Sometimes	52	25.5
	Rarely	117	57.4
Frequency of medical check-up	Regularly	71	34.8
	Sometimes	107	52.5
	Rarely	26	12.7
Have ever had a hospital-acquired infection?	Yes	29	14.2
	No	168	82.4
	I don’t know	7	3.4

Table 3b: Frequency distribution of female respondents’ practices on disease prevention (n=163)

Breast cancer self-examination	Yes	117	71.8
	No	46	28.2
Cervical cancer screening using pap smear	Yes	40	24.5
	No	123	75.5

Table 3c: Frequency distribution of male respondents’ practices on disease prevention (n=41)

Prostatic cancer screening using PSA	Yes	13	31.7
	No	28	68.3

Table 4a: Respondents' preventive practices against the development of diseases related to their level of knowledge and Attitude towards disease prevention.

Preventive Practices Against the Development of Diseases		Knowledge On Disease Prevention N= 204		Statistics	Attitude Towards Diseases Prevention (N=204)		Statistics
		Poor (%) N=20	Good (%) N=184		Negative (%) N=12	Positive (%) N=192	
Do you wash your hands before eating	Always	17 (9.2)	167 (90.8)	$x^2= 1.290\#$	12(6.5)	172(93.5)	$x^2=2.556\#$
	Sometimes	3 (16.7)	15 (83.3)		0(0.0)	18(100.0)	$p=0.279$
	Rarely/Not at all	0 (0.0)	2 (100.0)	$p= 0.525$	0(0.0)	2(100.0)	
Exercise at least thirty minutes for at least five days in a week.	Yes	13 (9.0)	131 (91.0)	$x^2= 0.334$	9(6.3)	135(93.8)	$x^2<0.001$
	No	7 (11.7)	53 (88.3)	$p= 0.564$	3(5.0)	57(95.0)	$p= 0.985$
Eating of junks in the past 7 days	None/Rarely	2 (4.3)	45 (95.7)	$x^2=10.975\#$	0(0.0)	47(100.0)	$x^2=6.907\#$
	Sometimes/Few times a week	8 (6.8)	109 (93.2)	$p= 0.004^*$	8(6.8)	109(93.2)	$p=0.032^*$
	Once Daily	10 (25.0)	30 (75.0)		4(10.0)	38(90.0)	
Involvement in risky behaviour	No	9 (8.0)	103 (92.0)	$x^2= 0.878$	4(3.6)	108(96.4)	$x^2=2.396$
	Yes	11 (12.0)	81 (88.0)	$p= 0.349$	8(8.7)	84(91.3)	$p= 0.122$
Do you still take alcohol?	Yes	2 (12.5)	14 (87.5)	$x^2 = 0.335$	3(18.8)	13(81.3)	$x^2= 9.883\#$
	No	10 (10.5)	85 (89.5)	$p= 0.846$	8(8.4)	87(91.6)	$p=0.007^*$
	Never taken	8 (8.6)	85 (91.4)		1(1.1)	92(98.9)	
Had blood pressure check in the last one year	Yes	14 (9.0)	141(91.0)	$x^2= 0.147$	5(3.2)	150(96.8)	$x^2= 6.349$
	No	6 (12.2)	43 (87.8)	$p= 0.701$	7(14.3)	42(85.7)	$p= 0.012^*$
Do you share personal things like combs, towel etc.?	Yes	5 (9.1)	50 (90.9)	$x^2= 0.043$	7(12.7)	48(87.3)	$x^2=4.792$
	No	15 (10.1)	134 (89.9)	$p= 0.835$	5(3.4)	144(96.6)	$p=0.029^*$

#: Likelihood Ratio

* Statistically Significant.

Table 4b: Male respondents' preventive practice of prostate cancer screening against their knowledge and Attitude towards disease prevention

Preventive practices against the development of diseases		Knowledge of disease prevention N= 204		Statistics	Attitude towards diseases prevention (n=163)		Statistics
		Poor (%) (n=20)	Good (%) (n=184)		Negative n=2	Positive (n=39)	
Prostatic cancer screening using PSA (n=41)	Yes	0 (0.0)	13 (100.0)	$x^2< 0.001$	2(15.4)	11(84.6)	$x^2=1.820$
	No	1 (3.6)	27 (96.4)	$p= 1.000$	0(0.0)	28(100.0)	$p=0.177$

#: Likelihood Ratio

* Statistically Significant

Table 4c: Female respondents' preventive practices of breast self-examination for breast cancer and cervical cancer screening against their knowledge and Attitude towards disease prevention

Preventive Practices Against the Development of Diseases		Knowledge of Disease Prevention		Statistics	Attitude Towards Diseases Prevention (N=163)		Statistics
		N= 204			Negative N=10	Positive N=153	
		Poor (%) N=20	Good (%) N=184				
Breast Cancer Self-Examination (n=163)	Yes	10 (8.5)	107 (91.5)	$x^2=3.893$ P= 0.048*	5(4.3)	112(95.7)	$x^2=1.481$ P= 0.224
	No	9 (19.6)	37 (80.4)		5(10.9)	41(89.1)	
Cervical Cancer Screening Using Pap Smear (n=163)	Yes	2 (5.0)	38 (95.0)	$x^2=1.505$ p= 0.220	3(7.5)	37(92.5)	$x^2=0.001$ p=0.972
	No	17 (13.8)	106 (86.2)		7(5.7)	116(94.3)	

#: Likelihood Ratio * Statistically Significant

Table 5: Knowledge and Attitude of respondents on disease prevention related to their disease preventive practice.

Categorized Preventive Practices Against the Development of Diseases	Knowledge of Disease Prevention		Statistics	Attitude Towards Diseases Prevention (N=163)		Statistics
	N= 204			Negative N=10	Positive N=153	
	Poor (%) N=20	Good (%) N=184				
Poor Practice	5 (21.7)	18 (78.3)	$x^2=2.077*$	3 (13.0)	20 (87.0)	$x^2=1.165*$
Good Practice	17 (9.4)	164 (90.6)	p = 0.149	9 (5.0)	172 (95.0)	p = 0.281

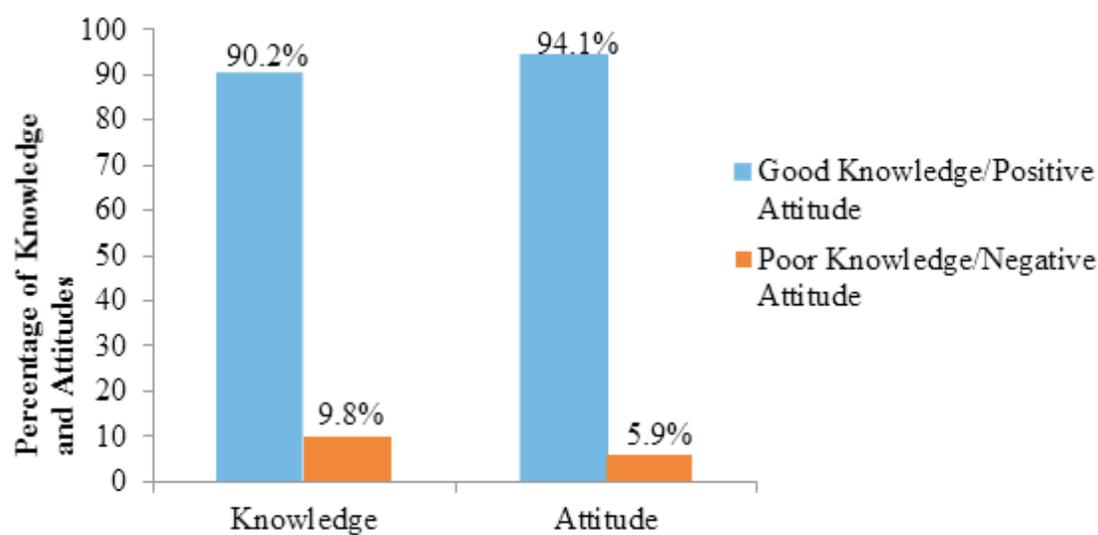
* Continuity correction.

Table 6: Binary logistic regression of the outcome variable "Respondents' level of knowledge on diseases prevention" and selected I socio-demographic predictors

Predictor Variable	Categories Variable	P-Value	Odds Ratio	95% Confidence Interval	
				Lower	Upper
Sex	Female (Reference)	0.100	5.763	0.714	46.481
Marital Status	Not Currently Married (Reference)	0.977	1.019	0.290	3.582
Age	Middle Aged (Reference)	0.265	2.202	0.549	8.838
Religion	Islam (Reference)	0.614	0.765	0.270	2.167
Ethnicity	Non-Yoruba (Reference)	0.167	4.058	0.556	29.640
Level of Education	University Degree and Higher (Reference)	0.024*	0.157	0.031	0.781
Years of Practice as Health Workers	11years And Above (Reference)	0.642			
	6-10 YEARS	0.776	0.772	0.129	4.611
	1-5 YEARS	0.381	0.525	0.124	2.217

Table 7: Binary logistic regression of the outcome variable “Respondents' Attitude towards diseases prevention” and selected socio-demographic predictors

Predictor Variable	Categories Variable	P Value	Odds Ratio	95% Confidence Interval	
				Lower	Upper
Sex	Female (Reference)	0.416	1.981	0.382	10.289
Marital Status	Not Currently Married (Reference)	0.119	3.516	0.725	17.050
Age	Middle Aged (Reference)	0.770	1.273	0.253	6.406
Religion	Islam (Reference)	0.437	1.629	0.475	5.586
Ethnicity	Non-Yoruba (Reference)	0.247	4.173	0.372	46.794
Level Of Education	University Degree and Higher (Reference)	0.458	0.569	0.128	2.522
Profession	Other Health Workers (Reference)	0.453			
	Midwife/Nurse	0.383	0.346	0.032	3.756
	Doctors	0.425	2.502	0.262	23.867
Years Of Practice as Health Workers	11 And Above (Reference)	0.173			
	6-10 YEARS	0.101	6.249	0.698	55.944
	1-5 YEARS	0.807	1.230	0.234	6.456

**Figure 2: Knowledge and Attitudes of the Respondents towards Disease Prevention**