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Nosophobia, hypochondriasis, and willingness of people to seek healthcare amidst the COVID-19 pandemic in Calabar Metropolis of Cross River State, Nigeria

Abstract

Aim: This study investigated the prevalence of nosophobia, hypochondriasis, and willingness of people to seek healthcare amidst the COVID-19 pandemic in Calabar Metropolis of Cross River State, Nigeria. **Methods:** A cross-sectional descriptive survey design and questionnaire was used to collect data from 200 respondents randomly sampled. Data were sorted, cleaned, coded, and analysed using Statistical Package for the Social Sciences (SPSS) version 20 software, and hypotheses tested using Chi-square test, significant at 95% confidence interval (CI) (0.05). **Results:** One hundred and eighty two (91%) respondents presented with nosophobia and hypochondriasis, slightly more in women (92 [46%]) as compared to men (90 [45%]), and these had increased with age. Phobia was attributed more to the coronavirus disease 2019 (COVID-19) (48 [24%]), and human immunodeficiency virus and acquired immuno-deficiency syndrome (HIV/AIDS) (40 [20%]) as compared to other diseases, that also, instilled fear and anxiety on respondents. One hundred and fifty seven (78.5%) displayed poor willingness to seek healthcare. **Conclusions:** Nosophobia and hypochondriasis were found to be associated with age and healthcare seeking behaviour. Gender and education did not play significant role. Fear varied according to the type of diseases. Therefore, public sensitisation is necessary.

Keywords: Diseases. Illness. Phobia. Anxiety.

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INTRODUCTION

Nosophobia is the extreme or irrational fear of developing or having a specific disease. This is otherwise known as disease phobia. It is sometimes referred to as medical students' disease. This is because it is assumed that nosophobia tends to mostly affect medical students surrounded by information about different diseases.[1,2] Nosophobia involves the fear of developing a specific disease, while hypochondria involves more general worries about illness. In other words, nosophobia is fear of diseases while hypochondriasis is the fear of illness or illness anxiety disorder.[3] The fear of contracting a particular disease has over time influenced healthcare seeking behaviour. On the other hand, this fear has also, prevented people from willingly accessing healthcare for routine health checks due to the fear of being diagnosed of such ailments with the reason that 'it is better not to know than, to know and, live in continuous fear of dying of it'. These diseases range from the coronavirus disease 2019 (COVID-19), human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS), tuberculosis (TB), sexually transmitted infections (STIs) to cancers of different types, and many non-communicable diseases (NCDs).[1-3]

Hypochondriasis is a preoccupation with having a serious disease based on a misinterpretation of bodily symptoms.[4] The diagnosis of hypochondriasis in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) includes "four symptoms: preoccupation with or fears of having a serious disease, preoccupation or fears persist after medical reassurance, preoccupation or fears interfere significantly with functioning", and the symptoms last more than six months.[1-4] The DSM-5 replaced hypochondriasis with illness anxiety disorder, which broadens the description of hypochondriac symptoms to include behavioural and distress symptoms, and are more reliable and clinically useful in identifying hypochondriasis as well as nosophobia.[1-4]

"In seven cross-sectional studies involving 6,217 respondents, the pooled prevalence of hypochondriac symptoms among the respondents was 28.0% (95% confidence interval [CI]=19.0%–38.0%) and the symptoms were a little more common in females (30.0%, 95% CI=19.0%–42.0%) than in males (29.0%, 95% CI=16.0%–42.0%), but the difference was not found significant".[4]

"Previously done studies have examined barriers to health care utilization, with the majority conducted in the context of specific populations and diseases".[4,5] "Less research has

focused on why people avoid seeking medical care, even when they suspect they should go".[5] To get more insight on this, national data was used through qualitative research to know why people avoid medical care. Data were collected from 1,369 participants (40% male and mean age=48.9 years). Responses were coded using a general inductive approach. The study showed that a total of 58.4% of the participants gave their reason to avoiding healthcare as fear of being diagnosed of diseases other than the signs they presented.[5]

It is no doubt that singles and youths get more worried about STIs dues to their life style while the elderly get more worried about NCDs.[4,5] This may be a reflection of the fact that this fear varies according to the type of diseases in question. A particular study found out that age is not significant in terms of nosophobia as it varies depending on the diseases in question.[6] Ageing is often associated with deteriorating body and psychological health, and the essence for prolonged care, creating the phobia of getting old. To be detailed, similar study investigated what people fear most in terms of disabling chronic diseases and their concerns regarding having long-term illnesses. Data from 518 respondents, collected through convenience sampling, were analysed using chi-square tests and multinomial logistic regression. Results revealed that, "of the most dreaded diseases, heart disease and cancer are life-threatening; however, dementia, diabetes, and hypertension persisted and have a disabling effect for a long time".[6] While there were variations in the diseases feared most across gender, ethnicity, and place of residence, the biggest worry for all respondents with regard to having a long-term illness was that they would become a burden to their family, a concern that superseded fear of dying. It was recommended that there is need to provide motivation for people to adopt a healthy lifestyle and remain healthy.[6]

Rheumatic diseases and inflammatory joint disease (e.g. arthritis) where found to be most feared by the aged, and translates to the fear of death which, by extension makes the elderly scared of accessing healthcare.[7] Further, it has been found that poor healthcare seeking behaviour was associated with the fear of being diagnosed of heart diseases and other NCDs.[8] Recently an investigation found a good proportion of men who were scared of being diagnosed of infertility, and accepting vasectomy as a family planning method which as such, prevented them from willingly seeking healthcare.[9] The fear of HIV/AIDS is not different which still lingers till today where people hardly give themselves for voluntary testing to know their status.[10] According to some group of researchers, the fear of testing positive to HIV/AIDS has affected healthcare seeking behaviour in Nigeria.[11]

In March 2014, the outbreak of Ebola was reported by World Health Organization (WHO) and was later reported in Nigeria in August 2014. The fear of this outbreak awakened proper hygiene practices amongst citizens globally, and Nigeria in particular. It increased consciousness on self-hygiene but, did not increase healthcare seeking behaviour. According to studies, Ebola conjured palpable fear on Nigerians and triggered better self-hygiene, but did not really solve the problem of better healthcare seeking behaviour.[12] In a research article on "Long shadow of fear in an epidemic: fearonomic effects of Ebola on the private sector in Nigeria", researchers highlighted that Ebola was worsened by a fear of contagion that aggravated the health crisis.[13] The study findings reveal that the fearonomic effects of Ebola included health service outages and reduced healthcare usage as a result of misinformation and aversion behaviour by both patients and healthcare providers.

This is not different from the current COVID-19 pandemic where globally, people are scared of the pandemic and has triggered better personal hygiene and healthy social behaviours but, rather worsens people access to healthcare because of the fear of being diagnosed of COVID-19, isolation, stigmatisation, etc.[11-13] On 27 February, 2020, the first official case of COVID-19 in Nigeria was confirmed. The patient was an Italian citizen, who had then arrived in Lagos from Europe and who, a few days later, tested positive for the disease.[14] Ever since, Nigerian States have been recording an upsurge in the number of COVID-19 cases, and this has instilled fear on both healthcare teams and the public. This fear has affected mental health and healthcare seeking behaviour of Nigerians. Therefore, there is need in tackling such mental health issues.[15] However, since then, till the time this study was completed, Cross River State, as one of the States in Nigeria, has been the only State in Nigeria that has not recorded any case of COVID-19. Though, Cross River State has not recorded any case, her citizens are scared, and this has resulted to poor and decline in healthcare seeking behaviour in the people and has aggravated the practice of self-medication. It was based on this background that this study was instigated.

Statement of problem

It is no doubt that government, educators, and researchers are making tangible efforts to increase awareness on the need for better healthcare seeking behaviour but, the fear of being positive for certain diseases has prevented people from constantly presenting themselves for health screenings. It is a common belief that it is better to live without knowing your status of any diseases especially the ones without symptoms and those without found cure than knowing it, then continue to live in fear of dying from it one day. This fear has been displayed by respondents in the area of HIV/AIDS, certain cancers, TB, STIs, Ebola, COVID-19, and many others. The researchers observed that the fear of these diseases has over time, negatively affected healthcare seeking behaviour, coupled with the current global outbreak of COVID-19 pandemic which has currently made every Nigerian and Cross Riverians in particular, to refrain from willingly seeking healthcare.[14,15] There is really a gap in knowledge about these diseases and trust on healthcare providers which has to be bridged. It was based on this observed problem, the researchers were interested in the study.

Objectives

This study investigated the prevalence of nosophobia, hypochondriasis, and peoples' willingness to seek healthcare amidst the COVID-19 pandemic in Calabar Metropolis of Cross River State, Nigeria.

Hypotheses

The following hypotheses were tested:

H_1

There is no association between demographic variables (gender, age, and education) and nosophobia/hypochondriasis.

H_2

There is no association between nosophobia/hypochondriasis and healthcare seeking behaviour.

METHODS

The study adopted a cross-sectional descriptive survey design. Calabar Metropolis is the capital of Cross River State with an area of 406 km^2 and population of 461,796. Administratively, it is divided into Calabar Municipal and Calabar South Local Government Areas, and lies between Latitude $4^0$48 North and Longitude $8^0$17 East. Bounded to the North by Odukpani and Akamkpa Local Government Areas, Great Kwa River to the East, and to the South is the Calabar River. There are a total of 137 healthcare facilities (44 private, 16 public, and 77 primary healthcare centers [PHC]). National population commission (2015) revealed that, there are about 74,580 households in the metropolis as projected, and there are 11 wards in Calabar Municipality Local Government Area and 13 wards in Calabar South Local Government Area. The study area has one federal university, one state university, one private university, one college of health technology, and various secondary and primary schools. The main dwellers are the Efiks, the Efuts, and the Quas whose major, widely, and common spoken language is Efik and Ejagam. They as well use English as means of communication.

Multi-stage sampling technique was used in the study. Formula used for sample size calculation was:

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

Where: n = sample size

Z = Z-score: standard normal deviation at 95% level of confidence (1.96)

p = prevalence (50% = 0.5) [50% was estimated since there was no known prevalence]

d = margin of error (7% = 0.07)

$n = (Z^2pq)/d^2 = (1.96^2 \times 0.5 \times 0.5)/0.07^2 = (3.8416 \times 0.5 \times 0.5)/0.0049 = 0.9604/0.0049 = 196$

Calculating for two per cent non response rate (two per cent based on authors' discretion) = 196 x 2/100 = 196 x 0.02 = 3.92

Adding 3.92 of non-response to the calculated sample = 3.92 + 196 = 199.92

Therefore, n = 200

Systematic sampling techniques was used to sample streets and households following the sequence first, third, fifth, seventh, ninth, 11th, etc. till a total of 200 (100 males and 100 females) respondents were sampled from 100 households in 15 wards. Two respondents each were sampled from each household through simple random sampling technique. The choice of 200 sample size was done conveniently not by scientific calculation in order to help the researchers conveniently carry out the study within their limited resources. Respondents who were on a brief visit to the metropolis were excluded from the study. This was to allow the researchers collect data from only those who are fully residents of the study area. This was also to allow for better discussion of the findings in line with the characteristic of the respondents in the study area. Instrument used for data collection was questionnaire designed by the researchers. The questionnaire had two parts: part A focused on respondents consent while part B focused on respondents' sociodemographic characteristics and assessment of nosophobia/hypochondriasis and healthcare seeking behaviour. Respondents were to provide responses based on five Likert scale on the scale one, two, three, four, and five.

Respondents' verbal and written consent were sought before data was collected. Confidentiality of respondents was assured and freedom to participate or withdraw from the study was guaranteed. Data were collected from respondents in their place of residence and it spanned through three months. Data collected were sorted, cleaned, coded, and analysed using Statistical Package for the Social Sciences (SPSS) version 20 software, and hypotheses were tested and cross-tabulated using Chi-square test. Results were significant at 95% CI (0.05). Results are presented using descriptive statistics like frequencies, percentages, charts, tables, and inferential statistics for easy interpretation and comprehension.

RESULTS

Data were collected from 200 respondents (100 males and 100 females). Majority (65 [32.5%]) were aged 50 years and above while a few (11 [5.5%]) were below 18 years. Most of the respondents had tertiary education (64 [32.5%]) while the least proportion (40 [20.0%]) had no formal education (Table 1).

Table 1: Demographic data of respondents

Variables	Frequency (%)
Gender	
Males	100 (50.0)
Females	100 (50.0)
Age	
Below 18 years	11 (5.5)
18-25 years	12 (7.0)
26-33 years	24 (12.0)
34-41 years	31 (15.5)
42-49 years	55 (27.5)
50 years and beyond	65 (32.5)
Education	
No formal education	40 (20.0)
Primary education	45 (22.5)
Secondary education	51 (25.5)
Tertiary education	64 (32.5)

A total of 182 (91.0%) admitted to have fear of illness and infections while only 18 (9.0%) boldly said they have no fear for any diseases. The diseases which exerted most fear on the residents were COVID-19 (48 [24.0%]), followed by HIV/AIDS (40 [20.0%]) and STIs (32 [16.0%]) while the least feared disease was Ebola (seven [3.5%]) as shown in Figure 1.

A greater proportion of the respondents (64 [32.0%]) reported fear of death as a major reason to their phobia while 50 (25.0%) said fear of stigmatisation and 46 (23.0%) said disease that has no found cure triggers more fear in them (Figure 2). Randomly, 157 (78.5%) would never want to seek healthcare for routine checks except very ill while only 43 (21.5%) admitted being ever ready to seek healthcare (visiting health facilities) even when they show no signs or symptoms for any disease.

Hypothesis one (H_1)

There is no association between demographic variables (gender, age, and education) and nosophobia or hypochondriasis. Though, there is a slight difference in the prevalence of nosophobia or hypochondriasis among females (92 [46.0%]) than men (90 [45.0%]), analysis using Chi-square test showed that the association was not statistically significant (P=0.62; degree of freedom [df]=1; Chi-square=0.24). The null hypothesis was therefore not rejected and then concluded that there is no statistically significant association between gender of an individual and nosophobia or hypochondriasis in the study area.

The next sociodemographic variable tested was age. The analysis showed that nosophobia or hypochondriasis is associated with age where older persons showed more symptoms, and analysis using Chi-square test showed that the association was statistically significant (P=0.001; df=5; Chi-square=20.08). Therefore, the null hypothesis was rejected to imply that there is association between age and nosophobia or hypochondriasis in the study area.

The third sociodemographic variable tested was education. Although the prevalence of nosophobia or hypochondriasis was more among people with tertiary education, the analysis on education was not found significant (P=0.15; df=3; Chi-square=5.32). Therefore, the researchers

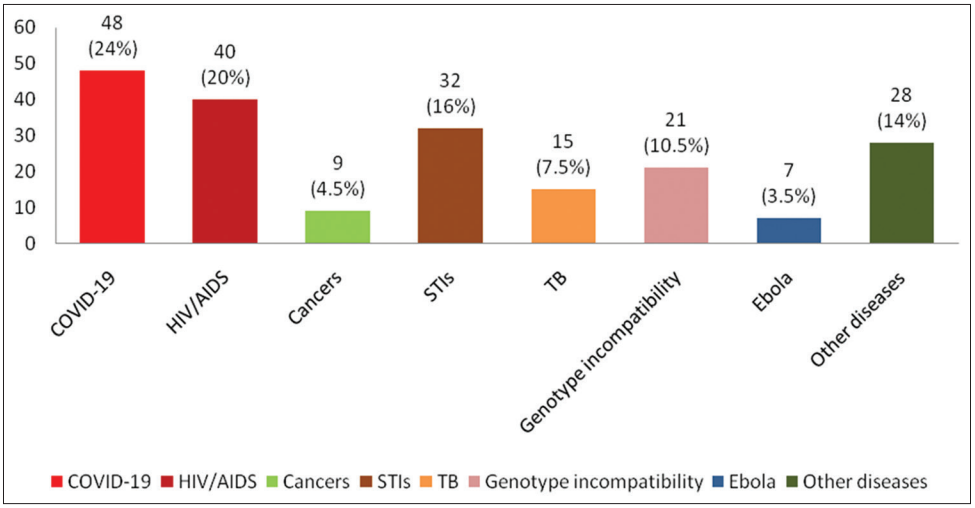


Figure 1: The reported most feared diseases/illnesses by respondents. COVID-19: Coronavirus disease 2019; HIV/AIDS: Human immunodeficiency virus/acquired immunodeficiency syndrome; STIs: Sexually transmitted infections; TB: Tuberculosis.

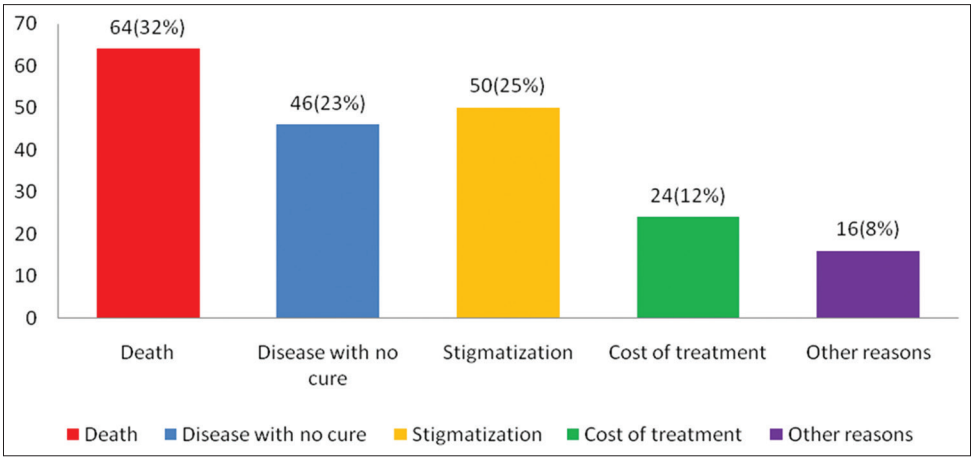


Figure 2: Respondents' reasons behind nosophobia/hypochondriasis.

failed to reject the null hypothesis by concluding that there is no association between education and nosophobia or hypochondriasis in the study area (Table 2).

Hypothesis two (H_2)

There is no association between nosophobia or hypochondriasis and healthcare seeking behaviour (willingness to visit health facilities). Of all the 182 (91.0%) respondents who display nosophobia or hypochondriasis, only 38 (19.0%) admitted having better healthcare seeking behaviour while 144 (72.0%) would not want to seek healthcare except in critical conditions. Analysis using Chi-square test showed that the association was statistically significant (P=0.001; df=1; Chi-square=7.82). Based on this, the researchers rejected the null hypothesis thereby concluding that there is association between nosophobia or hypochondriasis and healthcare seeking behaviour among residents in the study area (Table 3).

DISCUSSION

A good proportion of respondents (91.0%) displayed fear of illness and disease (nosophobia or hypochondriasis) and of this percent that are scared, 78.5% displayed poor willingness to want to seek healthcare (visiting health facilities) for routine checks except in critical conditions. This is a significant proportion which justifies that phobia can influence willingness to seek healthcare. This finding is corroborated by studies whose finding showed that a total of 58.4% of participants displayed fear of diseases and served as reason for avoiding health facilities to prevent being diagnosed of diseases other than the signs they presented.[5] To further support this finding, additional studies found that the most feared diseases were that of NCDs and fear of dying which caused people to avoid healthcare.[6]

The present study showed that there is no statistically significant association between gender of an individual and nosophobia or hypochondriasis in the study area. This means

Table 2: Association between demographic variables and nosophobia/hypochondriasis

Test variables	Nosophobia/hypochondriasis			Chi-square	P-value
	Not scared	Scared			
Gender			Total		
Male	10 (5.0%)	90 (45.0%)	100 (50.0%)	0.24	0.62
Female	8 (4.0%)	92 (46.0%)	100 (50.0%)		
Total	18 (9.0%)	182 (91.0%)	200 (100%)		
Age					
Below 18 year	4 (2.0%)	7 (3.5%)	11 (5.5%)	20.08	0.001*
18-25 years	4 (2.0%)	10 (5.0%)	14 (7.0%)		
26-33 years	1 (0.5%)	23 (11.5%)	24 (12.0%)		
34-41 years	1 (0.5%)	30 (15.0%)	31 (15.5%)		
42-49 years	5 (2.5%)	50 (25.0%)	55 (27.5%)		
50 years and above	3 (1.5%)	62 (31.0%)	65 (32.5%)		
Total	18 (9.0%)	182 (91.0%)	200 (100%)		
Education					
No formal education	7 (3.5%)	33 (16.5%)	40 (20.0%)	5.32	0.15
Primary education	3 (1.5%)	42 (21.0%)	45 (22.0%)		
Secondary education	5 (2.5%)	46 (23.0%)	51 (25.5%)		
Tertiary education	3 (1.5%)	61 (30.5%)	64 (32.0%)		
Total	18 (9.0%)	182 (91.0%)	200 (100%)		

*Statistically significant at *P* value<0.05 or Chi-square>Critical value (Cv). (df_{Gender}=1; Cv_{Gender}=3.84) ; (df_{Age}=5; Cv_{Age}=11.07); ($df_{Education}$=3; $Cv_{Education}$=7.81)

Table 3: Association between nosophobia/hypochondriasis and healthcare seeking behaviour of respondents

Test variables	Healthcare seeking behaviour (people willing to seek healthcare amidst the fear)			Chi-square	P-value
	Will not	Will seek			
Nosophobia/hypochondriasis			Total		
Not scared	13 (6.5%)	5 (2.5%)	18 (9.0%)	7.82	0.001*
Scared	144 (72.0%)	38 (19.0%)	182 (91.0%)		
Total	157 (78.5%)	43 (21.5%)	200 (100%)		

*Statistically significant at P value<0.05 (df=1; Critical value=3.84)

that it can be present in an individual despite the gender. This is not significant probably because individual differences can determine whether or not fear for illness or sickness is displayed, not really whether one is male or female. One's gender has nothing to do with fear for a particular disease. This is not too different from a similar research finding that the pooled prevalence of hypochondriac symptoms among respondents was a little more common in females than in males whose difference was not significant.[4]

The analysis on age showed that nosophobia or hypochondriasis is associated with age where older persons showed more symptoms, and analysis using Chi-square test showed statistically significant association. This further means that fear of diseases increases as one gets older. This may be probably because of the fear of death as one gets older.[7] The public health significance is obvious in that, as people get older, they get more skeptical about their health and feel more susceptible to morbidity and mortality; hence, there in need to focus public health intervention actions on such groups. This is in tandem with a research that found that rheumatic diseases and inflammatory joint disease (e.g. arthritis) were most feared by the aged (older groups) and translates to the fear of death which, by extension made the elderly scared of accessing healthcare.[7] Contrary to this finding, a study found out that age is not significant in terms of nosophobia.[6] This contrary finding may probably be due to differences in study area (place of residence), ethnicity, and sample size used by the researchers, as well as difference in sociodemographic characteristics of respondents used in the study.

Education was not found statistically significant. This is evident because the prevalence of nosophobia or hypochondriasis was slightly higher among people with tertiary education. Therefore, the researchers concluded that there is no association between education and nosophobia or hypochondriasis in the study area. This justifies the fact that being learned or not does not really eliminate fear for that which is known. However, knowledge for a particular illness may create awareness that will trigger precautionary measures but, may not really eliminate the fear of such illness.[3,9] This further implies that, no matter what one's educational level is, one may be susceptible to nosophobia or hypochondriasis.

A total of 19.0% respondents admitted willingness to visit healthcare facilities for care at any time while 72.0% of respondents reported not being willing to seek healthcare except in critical conditions. Analysis using Chi-square test showed that the association was statistically significant. Based on this, the researchers concluded that there is association between nosophobia or hypochondriasis and healthcare seeking behaviour (willingness to seek healthcare) among residents in the study area. That is, perceived susceptibility can influence willingness to seek healthcare. This is supported by a study that poor healthcare seeking behaviour is associated with the fear of being diagnosed of a disease.[8] To further support this finding, a study by a team of researchers established that the fear of being tested positive to HIV/AIDS has affected healthcare seeking behaviour in Nigeria.[11,13,14] However, due to fear of being diagnosed of disease, people may still feel reluctant to visit health facilities.[14] It is no doubt that, even if people had health seeking behaviour, they may be scared to contract diseases in hospitals and clinics. These reasons may not really be far from the disease phobia but, as well may include fear of suffering that may be incurred by the disease and its treatment, stigmatisation, loss of time from work, becoming burden to their families, mental stress, etc.[16,17] The basic limitations of this study includes: smallness of the sample size that may not allow for generalisation of this study finding, study area (place of residence) that gives respondents unique characteristics that may be different from people in other locality, ethnicity, time of the study (timing) which took place during the COVID-19 upsurge that may have contributed to the high prevalence of disease fear among respondents, and statistical tools used in the analysis of the data collected (choice of methodology).

Conclusion

This study focused on prevalence of nosophobia and hypochondriasis as it influences healthcare seeking behaviour. This was carried amidst the COVID-19 pandemic which made people to avoid healthcare services. Respondents presented nosophobia or hypochondriasis in one way or the other, and were slightly prevalent in women as compared to men, increases with age and educational level. Respondents displayed more fear for COVID-19 and HIV/AIDS than other diseases. A significant proportion never wanted to seek healthcare for fear of illness. Looking at association of nosophobia with sociodemographics, gender and education were not statistically significant while only age was statistically significant. However, the association between nosophobia, hypochondriasis, and healthcare seeking behaviour was statistically significant. The researchers recommend the following based on the key findings from the study:

i. There is need for continuous increase in awareness creation on the essence of regular health checks by stakeholders like healthcare workers, researchers, non-governmental organisations (NGOs), government, academia, religious leaders, and health educators to prevent diseases in its primary phase.
ii. Since the prevalence of nosophobia/hypochondriasis progresses with age, intervention focus should be more on adults and the elderly for it to be more effective.
iii. Taking healthcare to where people live and work is another way forward. In other words, strengthening of PHC services is important.
iv. To contain with the COVID-19 pandemic and reduce its phobia, house to house screening or collection of samples for COVID-19 test will help in better investigation while those tested positive should be treated with dignity, privacy, and respect as this will allow people to willingly give themselves for health screenings knowing too well that, whether tested positive or negative, they will be handled with utmost confidentiality.[18] To authenticate the findings of this study, the researchers suggest a post-COVID-19 study to be conducted to investigate nosophobia and hypochondriasis, to ascertain whether it may have influence on willingness of people to seek healthcare.

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AUTHOR CONTRIBUTIONS

NOO: Conceptualisation, original draft preparation, review of the manuscript, funding of the study; JJE: Methodology, review, and editing, statistical data analysis and interpretation, revising the manuscript. All authors have read and agreed to the published version of the manuscript.

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