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Research Article

COVID 19 Related Social Stigma among Women of Reproductive Age in Jos, Plateau State, Nigeria

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Abstract

Introduction: Social stigma is when people are labelled, stereotyped, discriminated against, treated separately, and/or experience loss of status because of a perceived link with the disease.

Aim: This study determined the social stigma that is related to COVID-19 among women of reproductive age in Plateau State.

Setting: Four hundred women of reproductive age (15-49 years) in selected health facilities in Jos, Plateau State, Nigeria.

Methods: A cross-sectional study, structured questionnaire. Data was analysed using SPSS statistical software version 23 for descriptive and inferential statistics at 95% confidence interval and 5% level of statistical significance.

Results: High proportion (66.8%) of respondents had high risk perception of COVID-19, majority (61.3%) practiced good COVID-19 prevention measures. More than a quarter (42.8% and 36.3%) reported self-stigmatisation and public stigmatisation for COVID-19 respectively. Significant relationship between risk perception with religion (p=0.008) and level of education (p<0.001) were observed; COVID-19 preventive practice was significantly associated with religion and education (p<0.001 and p=0.033); self-stigmatisation was significantly associated with age group (p=0.029); public stigmatisation was significantly associated with education (p=0.002). Finally, there was significant association between the practice of COVID-19 prevention and risk perception (χ^2=24.482; p<0.001) and self-stigmatisation (χ^2=9.609; p=0.048).

Conclusion: significant proportion of women felt stigmatized and also stigmatize persons with COVID 19. Low risk-perception and COVID-19-associated stigma may be barriers to accessing testing and care thereby, impacting negatively on the early control of the disease. Rigorous public health education about the disease and the negative consequences of stigmatisation of persons infected should be carried out across Nigeria.

Keywords: COVID-19; Reproductive age; Social; Stigma; Self-esteem

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Introduction

The novel coronavirus, SARS-CoV-2, which was detected in Wuhan China in 2019 has infected millions of people around the world with many mortalities, regardless of race or ethnicity [1]. Generally, the most common symptoms of COVID-19 are fever, dry cough, and tiredness. Other symptoms that are less common and may affect some patients include aches and pains, nasal congestion, headache, conjunctivitis, sore throat, diarrhoea, loss of taste or smell, a rash on skin or the discoloration of fingers or toes. These symptoms are usually mild and begin gradually. Some people become infected but only have very mild symptoms [2,3]. Most people (about 80%) recover from the disease without requiring hospital treatment. One in five people who are infected with COVID-19 become seriously ill and develop breathing difficulty. Older people and those with underlying medical problems like high blood pressure, heart and lung problems, diabetes or cancer have a higher risk of developing serious illness. However, anyone can be infected with COVID-19 and become seriously ill [2]. Globally, the number of infected persons is increasing with the highest infection rate currently in America, while the Western Pacific has the lowest number of confirmed cases. Africa region and Nigeria are gradually recording steady increase in number of confirmed cases [4,5]. There are various understanding and perception of COVID 19 depending on profession and countries, however, the success or failure of preventive measures depends largely on the general public and the level of stigma attached to the disease [6]. Stigma can be considered mark of disgrace which keeps a person apart from others, it could be stigma against self (self-stigmatisation) or stigma against others (public stigmatisation),[7] Social stigma in the context of health is the negative association between a person or group of people who share certain characteristics and a specific disease [7]. For infectious diseases that could culminate into an outbreak, people can be labelled, stereotyped, discriminated against, treated separately, and/or experience loss of status because of a perceived connection to the disease. These kinds of treatment can negatively affect those with the

disease, as well as their caregivers, family, friends and communities [8]. Stigmatisation can substantially increase the suffering of those with the disease; even those at risk of contracting the infection may avoid seeking health care, making it much harder for public health authorities to control the disease. Furthermore, professionals and volunteers working in the field may also become stigmatised, leading to reduced performance of the health workforce [9,10]. It has been found that familiarity or knowing persons with a disease can be an important factor in mitigating social stigma against people with the same disease [11]. This may also be the case for COVID-19. The COVID-19 outbreak has provoked social stigma and discriminatory behaviours against persons who have or have had the disease as well as anyone perceived to have been in contact with such persons [12]. This experience of stigmatization, whether by self or others, may cause people to take all precautionary measures to avoid contracting the infection, especially when they perceive they are at risk contracting the disease. Therefore, this study was conducted to assess the risk perception, infection prevention practice of COVID-19 and social stigmatisation (self and public) among women of reproductive age in Jos, Plateau State, Nigeria.

Research Methods and Design

Study design

It was a descriptive, cross sectional study design conducted among women of reproductive age in the selected units where they attend clinic activities.

Setting

This study was carried out in Plateau state, North Central Nigeria with an estimated land area of approximately 26,890sq.km lying between latitude 80° 22' and 100° 20'North and longitude 80° 32' and 100° 38'East and its capital is Jos. It has seventeen local government areas and shares boundaries with Kaduna State (North West), Bauchi State (North East), Nasarawa State (South West) and Taraba State (South East). The state has a projected population of 4,131,870 (2,060,436 males and 2,071,434 females) [13]. The study was carried out in the Family Health Clinic (FHC) and Antenatal Clinic (ANC) of the Jos University Teaching Hospital (JUTH) and the Plateau State Epidemiological Unit (Immunisation unit). The FHC and the Epidemiological unit are clinics where immunisation activities are conducted especially for children under the age of five years but also other members of the family are attended to for their health needs. The ANC in a clinic for the routine care of pregnant women.

Study population and sampling strategy

The study population consisted of women of reproductive age (aged 15-49 years) who gave consent and excluded those women of reproductive age group who themselves or their children were very sick at the time of data collection.Sample size was determined using the Cochrane formula for sample size determination for cross sectional studies. A minimum sample size of 400 was obtained after adjusting for 10% non-response. A proportion to size allocation was done to determine the number of women to be selected in each of the clinics based on the estimated number of women in the register who are being attended to in those clinics on a monthly basis, these formed the sampling frame. A systematic sampling technique was thereafter employed after calculating the sampling interval to select study participants. Simple random sampling, by balloting was carried out to select the first woman in each clinic and subsequently, every 2nd, 3rd and 3rd woman in the FHC, ANC clinic and Epidemiologic unit respectively were selected. If there was any client that didn't meet the inclusion criteria the next eligible woman was picked, however the sampling interval was maintained. This was done until the sample size was met.

Data collection

Data was collected using a structured, interviewer-administered questionnaire which was adapted from previous studies that have already been validated [7,12,14]. The assessment instrument had four distinct sections. The first section- sought for information on socio-demographic characteristics of the women, section two asked questions on perception, the third section covered issues regarding stigma (self and public), while section four assessed the respondent's safety practices in the prevention of COVID-19 infection. The perception, social stigma and practice of prevention sections were measured on a five-point Likert scale (where 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree and 1 = strongly disagree). Negative questions were reverse-scored to ensure the direction was consistent for all items and higher scores represented a more positive score. Personal protective Equipment (PPE) such as facemask and hand sanitisers was used by all the respondents and the research assistants.

Statistical analysis

After collection, the responses were appropriately coded, entered into a spreadsheet i.e. Microsoft excel software and cleaned; thereafter, the data was exported to IBM Statistical Package for the Social Sciences (SPSS) version 23 for analysis.The background characteristics of the women was assessed and reported using simple frequency table and the proportion of perception, social stigmatisation and practice of prevention of COVID-19 was assessed by scoring of more appropriate responses on Likert scale with higher scores (A Likert type item is on an ordinal scale). Scores of ≥80% = High risk perception/No stigma/Good practice; ≥60% to <80% = Moderate risk perception/Low stigma/Fair practice; <60% = Low risk perception/ High stigma/Poor practice). Chi-square test was then used to test for associations. A p-value of ≤0.05 was considered statistically significant.

Ethical consideration

Ethical clearance was obtained from the Jos University Teaching Hospital (JUTH), Human and Research Ethics Committee with permission number and permission obtained from the Plateau State ministry of health. The objective of the study was also explained to the respondents, and informed consent was obtained before the administration of the questionnaire. Confidentiality and anonymity were ensured and maintained.

Results

A total of 400 respondents completed and returned the study questionnaire giving a response rate of 100%.Out of the 400 respondents who participated in the study, majority (83.2 %) were in the age group ≤ 35 years whilst the remaining (16.8%) are in the age group ≥ 36 years with a mean age of 28.8± 6.9 years and age range of 15-49 years. More than half (57.2%) had tertiary education. Sixty one percent (61%) are employed while 39% are unemployed (Table 1).

In this study, 66.8% of respondents had high risk perception. About Forty three percent had high self-stigma about covid-19 while 36.3% had high public stigma. Majority (61.3%) had good COVID-19 prevention practice (Table 2).

Characteristics	Frequency	Percentage (%)
Age group		
≤35	333	83.2
≥36	67	16.8
Total	400	100.0
	Mean age ± SD	Range
Mean Age	28.8 ± 6.9 years	(15 – 49) years
Ethnicity		
Plateau indigenous	189	47.3
Plateau non-indigenous	211	52.7
Total	400	100.0
Religion		
Christianity	260	65.0
Islam	140	35.0
Total	400	100.0
Residence		
Urban	385	96.2
Rural	15	3.8
Total	400	100.0
Marital status		
Unmarried	88	22.0
Married	312	78.0
Total	400	100.0
Level of education		
Primary	32	8.0
Secondary	139	34.8
Tertiary	229	57.2
Total	400	100.0
Employment status		
Employed	244	61.0
Unemployed	156	39.0
Total	400	100.0
SD = Standard deviation		

Table 1: Socio-demographics.

Characteristics	Frequency	Percentage (%)
Risk perception		
High risk perception	267	66.8
Moderate risk perception	78	19.5
Low risk perception	55	13.7
Total	400	100.0
Average perception percentage score	81.2%	
Self-stigmatisation		
High rate stigma	171	42.8
Low rate stigma	126	31.5
No stigma	103	25.7
Total	400	100
Average self-stigma percentage score	64.6%	
Public stigmatisation (towards others)		
High rate stigma	145	36.3
Low rate stigma	206	51.5
No stigma	49	12.2
Total	400	100
Average public stigma percentage score	61.6%	
Practice of COVID-19 prevention		
Good	245	61.3
Fair	110	27.4
Poor	45	11.3
Total	400	100
Average practice percentage score	78.5%	

Table 2: Risk perception, stigmatization (self and public) and practice on COVID-19 prevention.

Religion (p=0.008) and level of education (p=0.001) had a statistically significant relationship with respondents' risk perception to covid-19.There was no statistically significant association with other socio-demographic variables (Table 3).

	Risk Perception					
	High risk perception	Moderate risk perception	Low risk perception			
Characteristics	**Freq (%)**	**Freq (%)**	**Freq (%)**	**Total**	**χ2**	**P-value**
Age group						
≤35	218(65.5)	69(20.7)	46(13.6)	333	2.017	0.365
≥36	49(73.1)	9(13.4)	9(13.4)	67		
Total	267	78	55	400		
Ethnicity						
Plateau indigenous	126 (66.7)	41 (21.7)	22 (11.6)	189	2.044	0.360
Plateau non-indigenous	141 (66.8)	37 (17.5)	33 (15.6)	211		
Total	267	78	55	400		
Religion						
Christianity	187 (71.9)	45 (17.3)	28 (10.8)	260	9.609	0.008
Islam	80 (57.1)	33 (23.6)	27 (19.3)	140		
Total	267	78	55	400		
Residence						

Urban	259 (67.3)	76 (19.7)	50 (13.0)	385		0.092*
Rural	8 (53.3)	2 (13.3)	5 (33.3)	15		
Total	267	78	55	400		
Marital status						
Unmarried	67 (76.1)	14 (15.9)	7 (8.0)	88	4.991	0.082
Married	200 (64.1)	64 (20.5)	48 (15.4)	312		
Total	267	78	55	400		
Level of education						
Primary	11 (34.4)	5 (15.6)	16 (50.0)	32		<0.001*
Secondary	80 (57.6)	35 (25.2)	24 (17.3)	139	???	
Tertiary	176 (76.9)	38 (16.6)	15 (6.6)	229		
Total	267	78	55	400		
Employment status						
Employed	167 (68.4)	44 (18.0)	33 (13.5)	244	0.982	0.616
Unemployed	100 (64.1)	34 (21.8)	22 (14.1)	156		
Total	267	78	55	400		
*= Fisher's exact						

Table 3: Relationship between sociodemographic characteristics of the respondents and Risk perception to COVID-19.

Also as shown in (Table 4), there was no statistically significant association (p=0.216) between self-stigmatization and risk perception to covid-19 among respondents whereas, there is a statistically significant association between public stigmatization (towards others) and practice of covid-19 prevention (p= 0.018 and < 0.001 respectively) to risk perception to covid-19 amongst respondents (Table 4).

Only age had a statistically significant relationship with the respondents' level of self-stigmatization whereas, religion (p=0.714) and other sociodemographic had no statistically significant relationship (Table 5).

It was observed that age (p=0.025) and level of education (p= 0.002) had a statistically significant association with respondents' level of public-stigmatization whilst, marital status (p= 0.636) and other socio-demographics had no statistically significant relationship (Table 6).

Findings in this study depicts that only religion and level of education (p= < 0.001 and 0.033 respectively) had a significant relationship with respondents' practice of covid-19 prevention whereas, residence (p= 0.456) and other socio-demographics showed no statistically signification relationship (Table 7).

	Self-stigmatisation					
	High rate stigma	**Low rate stigma**	**No stigma**			
Characteristics	**Freq (%)**	**Freq (%)**	**Freq (%)**	**Total**	**χ2**	**P-value**
Age group						
≤35	150 (45.0)	96 (28.8)	87 (26.1)	333	7.062	0.029
≥36	21 (31.3)	30 (44.8)	16 (23.9)	67		
Total	171	126	103	400		
Ethnicity						
Plateau indigenous	75 (39.7)	63 (33.3)	51 (27.0)	189	1.383	0.501
Plateau non-indigenous	96 (45.5)	63 (29.9)	52 (24.6)	211		
Total	171	126	103	400		
Religion						
Christianity	111 (42.87	79 (30.4)	70 (26.9)	260	0.691	0.714
Islam	60 (42.9)	47 (33.6)	33 (23.6)	140		
Total	171	126	103	400		
Residence						
Urban	166 (43.1)	122 (31.7)	97 (25.2)	385		0.449*
Rural	5 (33.3)	4 (26.7)	6 (40.0)	15		

Total	171	126	103	400		
Marital status						
Unmarried	44 (50.0)	29 (33.0)	15 (17.0)	88	4.783	0.092
Married	127 (40.7)	97 (31.1)	88 (28.2)	312		
Total	171	126	103	400		
Level of education						
Primary	11 (34.4)	12 (37.5)	9 (28.1)	32	5.121	0.277
Secondary	68 (48.9)	43 (30.9)	28 (20.1)	139		
Tertiary	92 (40.2)	71 (31.0)	66 (28.8)	229		
Total	171	126	103	400		
Employment status						
Employed	97 (39.8)	85 (34.8)	62 (25.4)	244	3.552	0.071
Unemployed	74 (47.4)	41 (26.3)	41 (26.3)	156		
Total	177	126	103	400		

Table 4: Relationship between characteristics of the respondents and level of self-stigmatization.

	Public stigmatisation					
	High rate stigma	**Low rate stigma**	**No stigma**			
Characteristics	Freq (%)	Freq (%)	Freq (%)	Total	$\chi 2$	P-value
Age group						
≤35	125 (37.5)	168 (50.5)	40 (12.0)	333	1.426	0.510
≥36	20 (29.9)	38 (56.7)	9 (13.4)	67		
Total	145	206	49	400		
Ethnicity						
Plateau indigenous	64 (33.9)	93 (49.2)	32 (16.9)	189	7.399	**0.025**
Plateau non-indigenous	81 (38.4)	113 (53.6)	17 (8.1)	211		
Total	145	206	49	400		
Religion						
Christianity	95 (36.5)	129 (49.6)	36 (13.8)	260	2.074	0.359
Islam	50 (35.7)	77 (55.0)	13 (9.3)	140		
Total	145	206	49	400		
Residence						
Urban	136 (35.3)	201 (52.2)	48 (12.5)	385		0.122*
Rural	9 (60.0)	5 (33.3)	1 (6.7)	15		
Total	145	206	49	400		
Marital status						
Unmarried	30 (34.1)	49 (55.7)	9 (10.2)	88	0.905	0.636
Married	115 (36.9)	157 (50.3)	40 (12.8)	312		
Total	145	206	49	400		
Level of education						
Primary	16 (50.0)	14 (43.8)	2 (6.3)	32		0.002
Secondary	62 (44.6)	68 (48.9)	9 (6.5)	139		
Tertiary	67 (29.3)	124 (54.1)	38 (16.6)	229		
Total	145	206	49	400		
Employment status						
Employed	91 (37.3)	120 (49.2)	33 (13.5)	244	1.672	0.433
Unemployed	54 (34.6)	86 (55.1)	16 (10.3)	156		
Total	145	206	49	400		
*=Fisher's exact						

Table 5: Relationship between characteristics of the respondents and level of public-stigmatization.

Practice of COVID-19 prevention						
	Good	Fair	Poor			
Characteristics	**Freq (%)**	**Freq (%)**	**Freq (%)**	**Total**	**χ2**	**P-value**
Age group						
≤35	205 (61.6)	86 (25.8)	42 (12.6)	333	5.339	0.069
≥36	40 (59.7)	24 (35.7)	3 (4.5)	67		
Total	245	110	45	400		
Ethnicity						
Plateau indigenous	106 (56.1)	61 (32.1)	22 (11.6)	189	4.580	**0.101**
Plateau non-indigenous	139 (65.9)	49 (23.2)	23 (10.9)	211		
Total	245	110	45	400		
Religion						
Christianity	139 (53.5)	88 (33.8)	33 (12.7)	260	19.610	<0.001
Islam	106 (75.7)	22 (15.7)	12 (8.6)	140		
Total	245	110	45	400		
Residence						
Urban	234 (60.8)	108 (28.1)	43 (11.2)	385		0.456*
Rural	11 (73.3)	2 (13.3)	2 (13.3)	15		
Total	245	110	45	400		
Marital status						
Unmarried	45 (51.1)	30 (34.1)	13 (14.8)	88	4.911	0.086
Married	200 (64.1)	80 (25.6)	32 (10.3)	312		
Total	245	110	45	400		
Level of education						
Primary	15 (46.9)	12 (37.5)	5 (15.6)	32		0.033*
Secondary	98 (70.5)	26 (18.7)	15 (10.8)	139		
Tertiary	132 (57.6)	72 (31.4)	25 (10.9)	229		
Total	245	110	45	400		
Employment status						
Employed	142 (58.2)	76 (31.1)	26 (10.7)	244	4.176	0.1243
Unemployed	103 (66.0)	34 (21.8)	19 (12.2)	156		
Total	245	110	45	400		
*=Fisher's exact						

Table 6: Relationship between characteristics of the respondents and practice of COVID-19 prevention.

Risk Perception						
	High risk perception	Moderate risk perception	Low risk perception			
Characteristics	**Freq (%)**	**Freq (%)**	**Freq (%)**	**Total**	**χ2**	**P-value**
Self-stigmatisation						
High rate stigma	116 (61.1)	29 (17.0)	26 (15.2)	171	5.780	0216
Low rate stigma	77 (61.1)	33 (26.2)	16 (12.7)	126		
No stigma	74 (71.8)	16 (15.5)	13 (12.6)	103		
Total		267	78	55	400	
Public stigmatisation (towards others)						
High rate stigma	88 (60.7)	27 (18.6)	30 (20.7)	145	11.974	0.018
Low rate stigma	140 (68.0)	43 (20.9)	23 (11.2)	206		
No stigma	39 (79.6)	8 (16.3)	2 (4.1)	49		
Total	267	78	55	400		

Practice of COVID-19 prevention						
Good	174 (71.0)	48 (19.6)	23 (9.4)	245	24.482	<0.001
Fair	68 (61.8)	26 (23.6)	16 (14.5)	110		
Poor	25 (55.6)	4 (8.9)	16 (35.6)	45		
Total	267	78	55	400		

Table 7: Relationship between stigma and practice of COVID-19 prevention among respondents and Risk perception to COVID-19.

Finally, Table 8 showed that respondents' self-stigma and risk perception had a statistically significant association (p= < 0.001 and 0.048 respectively) to practice of covid-19 prevention while public stigmatization (towards others) had no statistically significant association (p=0.066) (Table 8).

Discussion

In the wake of COVID-19 being declared a public health emergency of international concern and a pandemic, it is important to examine the response of people towards the disease. Understanding the perception of the population about their susceptibility is important in the control. It is impressive that a high proportion of the respondents in this study had high risk perception about COVID-19. This is comparable to an online cross-sectional survey carried out to assess the knowledge, risk perception and preparedness towards COVID-19 among Ghanaians where a high proportion of the study population had high risk perception towards COVID-19, Ghana and Nigeria share so many similarities in culture and way of life and so it is not surprising [15]. Similarly, the study conducted in Egypt on the knowledge perceptions and attitudes of respondents to COVID-19 revealed that 86.9% of the study's respondents were concerned about the risks of infection [16]. Outside the African continent, the findings are not much different, a study conducted among college students in China on risk perception to the disease, reported a very high risk perception, believing that healthy persons in the general population were susceptible to the disease. This may be the reason for the ease in observing preventive measures and the success recorded in the control against the disease. The study noted that females had a higher risk perception as compared to their male counterparts and this relationship between risk perception and gender was significant [17]. This is not unanticipated as females have been known and observed to demonstrate a high risk perception to diseases and other phenomena in addition to the wide public awareness about the novel virus [18,19]. The fear of the morbidity and mortality associated with the COVID 19 has been associated with stigma which is an important concern. Some evidence exists to indicate that stigma associated with COVID-19 may cause those who are sick to hide and defer seeking for treatment. A good proportion of the study population here demonstrated high level of self-stigmatisation i.e. internalised sigma if diagnosed with COVID-19 while others would stigmatize those diagnosed with COVID 19. Patients with COVID-19 have been known to experience all types of stigma including internalised stigma which is exhibited as shame and self-rejection [20]. Stigma towards persons with COVID-19 has been experienced in many parts of the world. In a study carried out among residents in a locality in Lagos Nigeria to assess perceived stigmatization of survivors of COVID-19, almost half of the respondents admitted to stigmatizing survivors [21]. A qualitative study carried out in Ghana to assess the psychological distress and mental health disorders associated with COVID-19, revealed that many survivors and those suspectedto be infected had experienced stigma from family, health workers and others due to COVID-19 [22].

	Practice of COVID-19 prevention					
	Good	**Fair**	**Poor**			
Characteristics	**Freq (%)**	**Freq (%)**	**Freq (%)**	**Total**	**χ2**	**P-value**
Risk perception						
High risk perception	174 (65.2)	68 (25.5)	25 (9.4)	267	24.482	<0.001
Moderate risk perception	48 (61.5)	26 (33.3)	4 (5.1)	78		
Low risk perception	23 (41.8)	16 (29.1)	16 (29.1)	55		
Self-stigmatisation						
High rate stigma	95 (55.6)	51 (29.8)	25 (14.6)	171	9.609	0.048
Low rate stigma	86 (68.3)	34 (27.0)	6 (4.8)	126		
No stigma	64 (62.1)	25 (24.3)	14 (13.6)	103		
Total	245	110	45	400		
Public stigmatisation (towards others)						
High rate stigma	87 (60.0	34 (23.4)	24 (16.6)	145	8.811	0.066
Low rate stigma	124 (60.2)	63 (30.6)	19 (9.2)	206		
No stigma	34 (69.4)	13 (26.5)	2 (4.1)	49		
Total	245	110	45	400		

Table 8: Relationship between stigma and risk perception among respondents and practice of COVID-19 prevention.

In Egypt, respondents in a opined that the disease is associated with stigma. The reason for stigma is predictable in the case of COVID-19 as the disease is novel and has been portrayed to be very infectious though not because of any moral transgressions like the case of HIV. This picture of stigmatization is however different in societies where stigma is entrenched in culture and as such more cases of stigma associated with the disease is being experienced there [23].

Self-risk perception of COVID-19 may determine how a person may be empathic towards others who are infected or affected by the disease which may determine the act of stigmatization. The practice of COVID-19 prevention may also be associated with self-risk perception and this may indirectly be associated with stigmatization. Out of fear, people who perceive to be at risk of a disease may take all precautionary measures against the disease. People who stigmatize others or detest being stigmatized against a disease may wish to avoid all ways of contracting the disease in question. Quite a number of the respondents demonstrated good preventive practice, this may be due to the fear of the morbidity and mortality of the disease in this early phase, it is hoped that the preventive practices are sustained in other to win the fight against COVID 19. In a similar study conducted among pregnant women in the south eastern region of the country, most of the respondents had poor practice of precautionary measures despite the fact that a high proportion of the respondents demonstrated good knowledge of precautionary measures [24]. The disparity in the results obtained could be due to the time the study was conducted: it was conducted at the beginning of the pandemic in the country and as such it is probable that individuals threat of susceptibility to the disease was low as compared to the present time where the population of those who have been infected has increased exponentially in the country. The study further demonstrates a significant relationship between practice of precautionary measures with religion and educational status. This is corroborated by a study in Turkey which showed a correlation between the practice of preventive measures with a higher level of education, high perception of vulnerability and the female gender among other factors. Of course education plays an important role in knowledge and subsequent practice, it is expected that those with lower education may not fully comprehend what is globally going on especially in the early phase [25]. The same results were seen in the relationship between practice of precautionary measures and stigmatization of others. Though, not many studies have elucidated this, it is plausible: fear has been demonstrated to have a significant relationship with the practice of precautionary measures and also known to be a driver of stigma towards COVID-19 [25, 26]. It may well be concluded that issues of stigmatisation should be given the utmost consideration even as the spread of the disease is being managed to prevent possible long and short-term poor mental health consequences of this pandemic.

Limitations

The cross-sectional nature of this study may not allow to a broader applicability and to demonstrate causality. Furthermore, the fact that the study was conducted in a limited area of Plateau State may not allow for internal validity and generalizability.

Further Research

An expansion of the method of data collection that would include qualitative studies and a larger population may make for a better representativeness of the general population.

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Competing Interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Author Contributions

Conceptualization, methodology, validation, formal analysis, investigation, data curation, writing-original draft preparation, writing review and editing, visualization was done by all authors. All authors have read and agreed to the publishing of this version of the manuscript.

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Data Availability

The data that support the findings of this study are available from the corresponding author, [EEA], upon reasonable request.

Disclaimer

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References

1. Whyte C (2019) Stop the spread. New Sci. 242: 22-23.
2. Q&A on coronaviruses (COVID-19) (2020). World Health Organization. WHO: 1-2.
3. Adhikari SP, Meng S, Wu YJ, Mao YP, Ye RX, et al. (2020) Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: A scoping review. Infect Dis Poverty 9: 29.
4. WHO Coronavirus Disease (COVID-19) (2020) Dashboard. World Health Organization.
5. Nigeria Centre for Disease Control (2020) An update of COVID-19 outbreak in Nigeria. COVID-19 Situation Report, Abuja.
6. Bhagavathula AS, Aldhaleei WA, Rahmani J, Mahabadi MA, Bandari DK, et al.(2020) Knowledge and Perceptions of COVID-19 Among Health Care Workers: Cross-Sectional Study. JMIR Public Heal Surveill 6: 19160.
7. Pescosolido B (2013) The Public Stigma of Mental Illness: What Do We Think; What Do We Know; What Can We Prove? J Health SocBehav 54: 1-21.
8. A guide to preventing and addressing social stigma. (2020) WHO, IFRC U: 5.
9. Santarelli L, Rapisarda V, Fago L, Vella F, Ramaci T, et al. (2019) Relation between psychosomatic disturbances and job stress in video display unit operators. Work 64: 303-310.

10. Ramaci T, Barattucci M, Vella F, Senia P, Cannizzaro E, et al. (2020) Straining at Work and Its Relationship with Personality Profiles and Individual Consequences in Healthcare Workers (HCWs). Int J Environ Res Public Health 17: 610.

11. Lyndon AE, Crowe A, Wuensch KL, McCammon SL, Davis KB, et al. (2019) College students' stigmatization of people with mental illness: familiarity, implicit person theory, and attribution. J Ment Heal. 28: 255-299.

12. Ramaci T, Barattucci M, Ledda C, Rapisarda V (2020) Social Stigma during COVID-19 and its Impact on HCWs Outcomes. Sustainability 12: 3834.

13. NigeriaGalleria (2017) Plateau State of Nigeria: Nigeria Information & Guide [Internet]. Galleria Media limited.

14. Sarwar MR, Saqib A, Riaz T, Aziz H, Arafat M, et al. (2018) Attitude, perception, willingness, motivation and barriers to practice-based research: A cross-sectional survey of hospital pharmacists in Lahore, Punjab, Pakistan. PLoS One 13: 1-14.

15. Serwaa D, Lamptey E, Appiah AB, Senkyire EK, Ameyaw JK, et al.(2020) Knowledge, risk perception and preparedness towards coronavirus disease-2019 (COVID-19) outbreak among Ghanaians: a quick online cross-sectional survey. PAMJ 35: 44.

16. Abdelhafiz AS, Mohammed Z, Ibrahim ME, Ziady HH, Alorabi M, et al. (2020) Knowledge, Perceptions, and Attitude of Egyptians Towards the Novel Coronavirus Disease (COVID-19). J Community Health 45: 881-890.

17. Ding Y, Du X, Li Q, Zhang M, Zhang Q, et al. (2020) Risk perception of coronavirus disease 2019 (COVID-19) and its related factors among college students in China during quarantine. PLoS One. 15: 0237626.

18. Sychareun V, Thomsen S, Chaleunvong K, Faxelid E (2013) Risk perceptions of STIs/HIV and sexual risk behaviours among sexually experienced adolescents in the Northern part of Lao PDR. BMC Public Health. 13: 1126.

19. Susanto N, Nugroho SWP, Rizkiyah E (2018) Evaluating Risk Perception based on Gender Differences for Mountaineering Activity. E3S Web of Conferences. EDP Sciences 31: 09028.

20. World Health Organization (2020) A guide to preventing and addressing social stigma [Internet].

21. Babatunde OA, Amifofun OS, Sola ST, Besong M, Yesufu BM, et al. (2020) Scaling-up Community Self-reporting Rate for COVID-19: Implication for Assessing the Perceived Stigmatization of COVID-19 Survivors Among Residents of Agege Local Government, Lagos, Nigeria.Europe PMC.

22. Adom D, Adu-Mensah J (2020)The Psychological Distress and Mental Health Disorders from COVID-19 Stigmatization in Ghana. SSRN Electron Journal.

23. Mahmud A, Islam MR (2020) Social Stigma as a Barrier to Covid-19 Responses to Community Well-Being in Bangladesh. Int Journal of Com WB 10: 1-7.

24. Nwafor JI, Aniukwu JK, Anozie BO, Ikeotuonye AC, Okedo-Alex IN, et al. (2020)Pregnant women's knowledge and practice of preventive measures against COVID-19 in a low-resource African setting. Int J Gynecol Obstet 150: 121-123.

25. Yıldırım M, Geçer E, AkgülO (2021) The impacts of vulnerability, perceived risk, and fear on preventive behaviours against COVID-19. Psychol Health Med 26: 35-43.

26. Nigeria's COVID-19 response threatened by social stigma (2020) World Health Organization - healthnews.ng.

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