Journal of Refugee & Global Health

Original Research

A Comparative Analysis of the Knowledge and Stigmatizing Attitude of Ghanaians and Nigerians towards COVID-19 Survivors

Emmanuel Lamptey[1], PhD; Dorcas Serwaa[2], MSc; Maxwell Hubert Antwi[3], Mphil; Theckla Ikome[4], MSc; Nkechi Odogwu[5], PhD*

[1]Institute of Life and Earth Sciences (Including Health and Agriculture), Pan African University, University of Ibadan, Nigeria; [2]Institute of Life and Earth Sciences (Including Health and Agriculture), Pan African University, University of Ibadan, Nigeria; [3]Department of Clinical Laboratory, Nkenkaasu Government Hospital, Ghana Health Service, Offinso-North, Ghana; [4]Institute of Life and Earth Sciences (Including Health and Agriculture), Pan African University, University of Ibadan, Nigeria; [5]Institute of Life and Earth Sciences (Including Health and Agriculture), Pan African University, University of Ibadan, Nigeria

*dserwaa0327@stu.ui.edu.ng

Abstract

Introduction: In Africa, COVID-19 associated stigmatization still remains the contextual factor that poses a challenge for the mitigation and suppression of COVID-19 spread, especially among the illiterate populations. This comparative study was therefore conducted to assess the knowledge and willingness of Ghanaians and Nigerians to associate with COVID-19 survivors.

Methods: A cross-sectional study was conducted to collect information from 290 Ghanaian and 220 Nigerian nationals aged 18 years and above between 11th July-30th October 2020. An electronic-based questionnaire was developed to collect information on the public. The data were analyzed with SPSS v 22 and factors influencing knowledge and willingness to associate with COVID-19 survivors were identified using chi-square and logistic regression at p=0.05.

Results: The mean age of all participants was 26.18(SD=6.87), about 75% of the Ghanaians and 81.8% of Nigerians were within 25-34 years of age. . Ghanaians were more knowledgeable about COVID-19, 230(79.3%) compared with Nigerians 60(27.3%). High stigmatizing attitude was dominant among Nigerians 140(73.7) than Ghanaian 50 (26.3). While age significantly increased knowledge [OR: 2.83(1.461,5.495), p=0.002] and deceased stigmatizing attitude [OR: 0.35(0.182,0.684), p=0.002] in Ghana, it wasn't significant in Nigeria. In both countries, religious affiliation and education were not statistically associated with knowledge and stigmatizing attitude.

Conclusions: The overall knowledge and willingness to associate with COVID-19 survivors among these study participants were fairly adequate and welcoming for the integration of COVID-19 survivors into normal living. Stakeholders should embark on COVID-19 stigmatization campaigns through a timely online update, van mobilization and mass media broadcasting aimed at stopping and preventing further stigma surrounding infected and recovered persons.

Recommended Citation:
Lamptey, Emmanuel; Serwaa, Dorcas; Antwi, Maxwell Hubert; Ikome, Theckla; Odogwu, Nkechi (2021). "A Comparative Analysis of the Knowledge and Stigmatizing Attitude of Ghanaians and Nigerians towards COVID-19 Survivors,"*Journal of Refugee & Global Health*: Vol. 4, Iss. 1, Article 1.

Received Date: December 15, 2020

Accepted Date: January 21, 2021

Published Date: February 15, 2021

Copyright: © 2020 The author(s). This original article is brought to you for free and open access by ThinkIR: The University of Louisville's Institutional Repository. For more information, please contact thinkir@louisville.edu. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Funding Source: The author(s) received no specific funding for this work.

Conflict of Interest: All authors declared no conflict of interest in relation to the main objective of this work.

Introduction

Stigmatization or stigma is the act of discrediting someone, which reduces the person from a whole and usual to a tainted and discounted one. [1] According to Goffman, these negative viewpoints directed toward people make them feel inferior and different from others. Social distancing and the wearing of facemask among the general population were uncommon until the coronavirus outbreak. The pandemic has compelled almost everyone to change to this way of living, thus, beginning of some minor susceptible behaviors that marks social stigmatization. [2] The previous SAR-COV-1 outbreak in 2003 created similar situations and it is definite that this ongoing pandemic will lead to fear of isolation, stigmatization, discrimination, marginalization and racism. [3] Studies conducted in various disciplines including mental health indicate that such attitudes constitute a barrier and may prevent affected persons from seeking help. [4]

The novel coronavirus pandemic is highly contagious, therefore, preventive measures, quarantine and isolation of confirmed cases remain integral to control the pandemic[5]. Confirmed positive case patients are admitted in isolation centers or

general hospitals where treatment takes place until the individual is discharged or fully recovered as confirmed by at least one negative PCR test. In the process of providing care, quarantine and isolation of cases, infected individuals face fears, ethical dilemmas and potential stigmatization issues. Such stigmatizing attitudes within the general population undermine the capacity and efforts made to control the propagation of the virus, as suspected persons will delay in seeking of medical care and hold back essential medical history needed for timely intervention. [3]

All these stigmas, social rejections, discounting surrounding the pandemic are attributive to knowledge deficit, biased attitude and discriminatory behaviors exhibited by the general public. Therefore, the World Health Organization (WHO) recommended proper health education that is aimed at exploring and targeting COVID-19 knowledge, attitude and associated discriminatory behaviors to tackle stigmas. It is therefore necessary to explore the knowledge of COVID-19, attitudes toward and willingness to associate with COVID-19 survivors among Ghanaians and Nigerians, the two most closely related countries in the West African sub region. Also, this study sought to determine the socio-demographic predictors of knowledge and willingness of the two countries to associate with COVID-19 survivors. It is worth mentioning that, to the best of our knowledge no comparative study has been conducted among these two West African countries and in Sub-Saharan Africa at large.

Methods

Participant and Target Population

The survey reached out to Ghanaian and Nigerian nationals aged 18 years and above. The participants required smart phones with internet to access the distributed survey link The participants required smart phones with internet access to obtain the distributed survey link. Six hundred (600) respondents had access to the survey link and after data cleansing the final sample size was reduced to 510. The study adopted no method of sample size calculation due to the wide distribution of the survey link and also whether participants would show interest in completing the survey was a considerable factor that may determine the final sample respondents.

Study Design

The study employed a quantitative cross-sectional online survey method. The study questionnaire used in this survey was developed from previous literature on COVID-19 pandemic knowledge and stigmatization behaviors described as attitude and willingness to associate with COVID-19 survivors. [6-8] The study questionnaire comprised three sections (A B and C). Section A inquired about the socio-demographic characteristic of the participants and section B explored the knowledge about COVID-19, with true or false or no idea statements. The section C portrayed scenarios that described how the respondents would behave and/or associate with COVID-19 survivors and these were measured on 2-points Likert scale (0= Disagree and 1= Agree). A disagreement or neutral response to a particular statement signified a belief in stigmatization whereas agreeing was rated as a normative stigmatization response.

Validity and Reliability of the Study Questionnaire

Internal consistency of the knowledge and stigmatization measures were tested using a reliability test where the Cronbach alpha coefficient aided in determining the reliability of the variables. The results showed that the Cronbach alpha for knowledge questions was 0.60 and Cronbach alpha for stigma questions was 0.74. The result added credibility where, according to Griethuijsen, the range of Cronbach alpha within 0.6 to 0.7 is considered adequate and reliable. [9]

Data Analysis

The data collected were analyzed with the Statistical Package for Social Sciences (SPSS v 22). For descriptive statistics or data frequencies, percentages, mean, standard deviation and median were explored. We used chi-square test to examine the difference in categorical variables between the two countries then bivariate and multivariate logistic regression analyses were conducted to identify factors influencing knowledge and willingness to associate with COVID-19 at $p=0.05$.

Ethical Considerations

This study followed strictly “Declaration of Helsinki-Ethical Principles for Medical Research. [10] Under the current Ghana Health Service Ethics Review Committee (GHS-ERC) guidelines/standard operating procedures amidst COVID-19 pandemic, this study is exempted. [11] However, ethical review and approval was not obtained for the study in Nigeria due to the prevailing COVID-19 pandemic lockdown. Participants aged below 18 years were excluded because of their vulnerability as minors. Participants were briefed on the purpose of study and assured of data confidentiality prior to participation. Participants were made to understand that, by clicking the link the participants had consented to participate in the study. However, participation in this online survey was totally voluntary.

Results

Demographic Characteristics of the Participants

The demographic characteristics showed that, 290 (56.8%) of the participants were Ghanaians and 220 (43.3%) Nigerians. The mean age of all participants was 26.18(SD=6.87), about 75% of the Ghanaians and 81.8% of Nigerians were within 25-34 years of age. More of the Ghanaian participants were males (55.2%) while the majority (77.3%) of the Nigerians were female. Over 90% of participants in both countries had religious affiliations such as Christianity, Islam and traditional worshippers. Also, 280 (96.6%) of the Ghanaians had tertiary education compared with 200 (90.9%) observed in Nigerians. There was statistically significant difference in the age, gender, religious affiliation and educational status between the two countries (**Table 1**).

Table 1. Demographic characteristics of the participants from Ghana and Nigeria (N=510)

Factors	Total N = 510	Ghanaians N=290	Nigerians N=220	χ2 test	P-value
	N (%)	N (%)	N (%)		
Age (SD)	26.18±6.87	28.17±4.95	26.23±3.36		
15-24	100(19.6)	60 (20.7)	40(18.2)		
25-34	380(74.5)	200(69.0)	180(81.8)	25.93	<0.001
35-44	30(5.9)	30(10.3)	0(0.0)		
Gender					
Male	210(41.2)	160(55.2)	50(22.7)	54.37	<0.001
Female	300(58.8)	130(44.8)	170(77.3)		
Reigious Affiliations					
Yes	460(90.2)	270(93.1)	190(86.4)	15.49	<0.001
No	50(9.8)	20(6.9)	30(13.6)		
Education					
Senior High	30 (5.9)	10 (3.4)	20 (9.1)	7.19	0.007
Tertiary	480 (94.1)	280 (96.6)	200 (90.9)		

*Fisher's exact test

Knowledge of the participants in relation to COVID-19

There was a statistically significant gap in the proportion of participants with adequate COVID-19 knowledge in Ghana (79.3%) compared to 72.7% in Nigeria (**Table 2**). About 96.6% of the respondents from Ghana correctly agreed that fever, fatigue, dry cough, tiredness and muscle pain were the main symptoms of COVID-19 compared with 77.3% from Nigeria. Also, 65.5% of the Ghanaians claimed that common cold symptom such as, stuffy and/or runny nose, sneezing was less common with COVID-19 compared with 72.7% observed in Nigeria. Over 90% of the Ghanaian participants agreed that only treatment for COVID-19 is supportive care while 40.9% of Nigerian participants agreed to the same statement (**Table 3**).

Table 2. Overall knowledge and attitude of stigmatization of the participants

Factors	Total N = 510	Ghanaians N=290	Nigerians N=220	χ2 test	P-value
Knowledge					
Adequate	290 (56.9)	230 (79.3)	60 (27.3)	138.10	<0.001
Inadequate	220 (43.1)	60 (20.7)	160 (72.7)		
Stigmatizing Attitude					
High stigmatizing Attitude	190 (37.3)	50 (26.3)	140 (73.7)	115.19	<0.001
Low stigmatizing Attitude	320 (62.7)	240 (75.0)	80 (25.0)		

Table 3. Knowledge of the Participants from the two countries in relation to COVID-19

Factors	Total N = 510	Ghanaians N=290	Nigerians N=220	χ2 test	P-value
The main symptoms of COVID-19 are fever, fatigue, dry cough, tiredness and muscle pain.					
True[a]	450(88.2%)	280(96.6)	170(77.3%)		
False	30(5.9)	10(3.4%)	20(9.1%)	51.59	<0.001
No Idea	30(5.9%)	0(0.0%)	30(13.6%)		
Common Cold, stuffy and runny nose, sneezing are less common with persons infected with COVID-19.					
True[a]	240(47.1)	190(65.5%)	50(22.7%)		
False	260(51.0	100(34.5%)	160(72.7%)	102.19	<0.001*
No Idea	10(2.0%)	0(0.00)	10(4.5%)		
No cure for COVID-19 except for supportive Treatment					
True[a]	370(72.5%)	280(96.6%)	90(40.9%)		
False	90(17.6%)	0(0.00)	90(40.9%)	199.72	<0.001
No Idea	50(9.8%)	10(3.4%)	40(18.2%)		
Not all Persons with COVID-19 will develop symptoms					
True[a]	440(86.3%)	270(93.1%)	170(77.3%)		
False	50(9.8%)	10(3.4%)	40(18.2%)	31.72	<0.001
No Idea	20(3.9%)	10(3.4%)	10(4.5%)		
COVID-19 spread through respiratory droplet					
True[a]	410(80.4%)	260(89.7%)	150(68.2%)		
False	20(4.0%)	10(3.4%)	10(4.5%)	40.67	<0.001
No Idea	80(15.7%)	10(3.4%)	60(27.3%)		
Persons with COVID-19 cannot infect others when fever or fluid-like symptoms are not present					
True	100(19.6%)	60(20.7%)	40(18.2%)		
False[a]	370(72.5%)	220(75.9%)	150(68.2%)	17.97	<0.001
No Idea	40(7.8%)	10(3.4%)	30(13.6%)		

[a]correct answers *Fisher's exact test

Stigmatizing attitude of the study participants

Table 4 summarizes the attitude and willingness of respondents to associate with COVID-19 survivors among the two countries. All the respondents from Ghana believed that it was acceptable to stand in a social distant or queue with COVID-19 survivors compared to 54.5% from Nigeria. More than two-third of the both participants from Ghana (89.7%) and Nigeria (72.7%) expressed the view that it was acceptable to work in the same place with COVID-19 survivors. More than a third of Ghanaian participants agreed to permit teachers who survived from COVID-19 to associate with their children, relatives and younger people as compared to about half of the participants from Nigeria (54.4%). There was a statistically significant gap in the proportion of participants with high stigmatizing attitude in Nigeria (73.7%) compared to 26.3% in Ghana (**Table 2**).

Table 4. Participants' willingness to associate with COVID-19 Survivors

Factors	Total N = 510	Ghanaians N=290	Nigerians N=220	χ2 test	P-value
I would be okay to stand in a social distant or queue with a COVID-19					
Agree	410(80.4%)	290(100%)	120(54.5%)		
Neutral	40(7.8%)	0(0.00)	40(18.2%)	163.97	<0.001
Disagree	60(11.8%)	0(0.00)	60(27.3%)		
I can be able to work with a COVID-19 Survivor in the same setting and facility					
Agree	420(82.4%)	260(89.7%)	160(72.7%)		
Neutral	30(5.9%)	20(6.9%)	10(4.5%)	45.05	<0.001
Disagree	60(11.8%)	10(3.4%)	50(22.7%)		
Will you permit teachers who survived from COVID-19 to associate with of their children, relatives and younger people?.					
Agree	370(72.5%)	250(86.2%)	120(54.4%)		
Neutral	60(11.8%)	0(0.00)	60(27.3%)	97.91	<0.001
Disagree	80(15.7%)	40(13.8%)	40(18.7%)		
It is well okay with me for a COVID-19 Survivor to marry from my family					
Agree	430(84.3%)	260(89.7%)	170(77.3%)		
Neutral	30(5.9%)	10(3.4%)	30(13.6%)	14.84	0.001
Disagree	50(9.8%)	20(6.9%)	20(9.1%)		
Recovery from COVID-19 mean return to Normal life					
Agree	450(88.2%)	280(96.6%)	170(77.3%)		
Neutral	40(7.8%)	0(0.00)	0(0.00)	58.38	<0.001
Disagree	20(3.9%)	10(3.4%)	10(4.5%)		
COVID-19 survivors should be allowed to vote					
Agree	460(90.2%)	280(96.6%)	180(81.8%)		
Neutral	40(7.8%)	10(3.4%)	30(13.6%)	33.59	<0.001*
Disagree	10(2.0%)	0(0.00)	10(4.5%)		
COVID-19 survivors have the right to non-discrimination and equal treatment					
Agree	500(98.0%)	290(100%)	210(95.5%)		
Neutral	0(0.00)	0(0.00)	0(0.00)	-	<0.001*
Disagree	10(2.0%)	0(0.00)	10(4.5%)		

Association between knowledge and sociodemographic characteristics of respondents

There were statistically significant associations between level of knowledge about COVID-19 measured by age and religious affiliation in the Ghanaian study group compared with gender, religious affiliation and education in the Nigerian population (**Table 5**).

Table 5. Association between knowledge and sociodemographic characteristics of respondents

Factors	Ghana N	Adequate	Inadequate	P-value	Nigerian N	Adequate	Inadequate	P-value
Age								
15-24	60(20.7)	40(17.4)	20(33.3)		40(18.2)	10(16.7)	30(18.8)	
25-34	30(50.0)	170(73.9)	30(50.0)	0.002	180(81.8)	50(83.3)	130(81.3)	0.721
35-44	10(16.7)	20(8.7)	10(16.7)		0(0.0)	0(0.0)	0(0.0)	
Gender								
Male	160(55.2)	120(52.2)	40(66.7)	0.058	50(22.7)	30(50.0)	20(12.5)	<0.001
Female	130(44.8)	110(47.8)	20(33.3)		170(77.3)	30(50.0)	140(87.5)	
Religious Affiliation								
Yes	270(93.1)	210(91.3)	60(100.0)	0.018*	190(86.4)	60(100.0)	30(18.8)	<0.001
No	20(6.9)	20(8.7)	0(0.0)		30(13.6)	0(0.0)	130(81.3)	
Education								
Senior High	10(3.4)	10(4.3)	0(0.0)	0.129	20(9.1)	0(0.0)	20(12.5)	0.004
Tertiary	280(96.6)	220(95.7)	60(100.0)		200(90.9)	60(100.0)	140(87.5)	

*Fisher's exact test

Association between stigmatizing attitude and sociodemographic characteristics

Similarly, the analysis of participants' level of stigmatizing attitude and socio-demographic characteristics revealed that among the Ghanaian population age, religious affiliation and education were significantly associated while only religious affiliation was significantly associated with stigmatizing attitude in the Nigerian participants (**Table 6**).

Table 6. Association between stigmatizing attitude and sociodemographic characteristics of respondents

Factors	Ghana N	High	Low	P-value	Nigerian N	High	Low	P-value
Age								
15-24	60(20.7)	20(40.0)	40(16.7)		40(18.2)	30(21.4)	10(12.5)	
25-34	200(69.0)	30(60.0)	170(70.8)	<0.001	180(81.8)	110(78.6)	70(87.5)	0.099
35-44	30(10.3)	0(0.0)	30(12.5)		0(0.0)	0(0.0)	0(0.0)	
Gender								
Male	160(55.2)	20(40.0)	140(58.3)	0.018	50(22.7)	30(21.4)	20(25.0)	0.543
Female	130(44.8)	30(60.0)	100(41.7)		170(77.3)	110(78.6)	60(75.0)	
Religious Affiliation								
Yes	270(93.1)	40(80.0)	230(95.8)	<0.001*	190(86.4)	110(78.6)	80(100)	<0.001
No	20(6.9)	10(20.0)	10(4.2)		30(13.6)	30(21.4)	0(0.0)	
Education								
Senior High	10(3.4)	10(20.0)	0(0.0)	<0.001*	20(9.1)	10(7.1)	10(12.5)	0.184
Tertiary	280(96.6)	40(80.0)	240(100.0)		200(90.9)	130(92.9)	70(87.5)	

*Fisher's exact test

Predictors of adequate knowledge and high stigmatizing attitude in Ghana and Nigeria

The logistic regression analysis to determine the relationship between the independent predictors of adequate knowledge about COVID-19 showed that, female participants were twice more likely to be knowledgeable on COVID-19 against inadequate knowledge in their male counterparts (OR=1.83, 95% CI = 1.010-3.327). However, in Nigeria, female participants were 86% less likely to have adequate knowledge against inadequate knowledge as compared to males (OR=0. 14, 95% CI = 0.072-0.285). Also, Ghanaian participants aged 25-34 years were twice more likely to have high knowledge on COVID-19 relative those who were 15-24 years (OR=2.83, 95% CI =1.461-5.495).

The odds of high stigmatizing attitude among Ghanaian participants against low level of stigmatizing attitude was less among 25–34 years-old participants compared to those aged 15-24 years (OR = 0.35, 95% CI = 0.182-0.684). Females from Ghana were twice more likely to have a high stigmatizing attitude compared to males (OR = 2.1, 95% CI = 1.128–3.909). Religious Ghanaians had less likelihood of exhibiting high stigmatizing attitude compared with the non-religious (OR = 0.17, 95% CI = 0.068-0.445). No statistically significant association was found between high stigmatizing attitude and age, gender, religious affiliation, and education among the Nigerian participants (**Table 7**).

Table 7. Predictors of adequate knowledge and high stigmatizing attitude in Ghana and Nigeria

Factors	Knowledge				Stigmatizing Attitude			
Age	Ghana OR (95% CI)	P-value	Nigeria OR (95% CI)	P-value	Ghana OR (95% CI)	P-value	Nigeria OR (95% CI)	P-value
15-24	1		1		1		1	
25-34	2.83(1.461,5.495)	0.002	1.15(0.526,2.533)	0.721	0.35(0.182,0.684)	0.002	0.52(0.241,1.138)	0.102
35-44	1.00(0.395,2.534)	1.000	Nil	Nil	nil	Nil	nil	nil
Gender								
Male	1		1		1		1	
Female	1.83(1.010,3.327)	0.046	0.14(0.072,0.285)	<0.001	2.1(1.128,3.909)	0.019	1.22(0.640,2.335)	0.543
Religious Affiliation								
Yes	1		1		1		1	
No	Nil	nil	Nil	Nil	0.17(0.068,0.445)	<0.001	nil	nil
Education								
Senior High	1		1		1		1	
Tertiary	Nil	nil	Nil	Nil	nil		1.86(0.214,1.356)	0.189

Discussion

The negative effects of the psycho-social behavior the COVID 19 pandemic has brought to the world cannot be undermined especially among survivors and their reintegrating into society. Our study analyzed the knowledge and the willingness to associate with COVID 19 survivors in Ghana and Nigeria utilizing sociodemographic variables such as age, gender, religious affiliation and educational status between the two countries.

This study involved a youthful population as evidenced by the mean age of all participants. There was statistically significant difference in the age, gender, religious affiliation and educational status between the two countries. The overall knowledge of the studied participants regarding COVID-19 was fairly adequate (56.9%). Ghanaian respondents had significantly adequate knowledge (79.3%) compared to the Nigerian participants (27.3%). This finding in the Ghanaian populace is consistent with a knowledge-based study on COVID-19 outbreak by Serwaa et al., among the Ghanaian who reported higher overall knowledge on the pandemic. [8] However, the findings among the Nigerian participants was contrary to a current finding by Adesegun et al., in their knowledge, attitude and perception-based study on COVID-19 among Nigerians that reported significant proportion of the respondents (78.7%) had adequate knowledge. [7] The Ghanaian population is almost 32 million, smaller in size than the Nigeria which is over 200 million, hence dissemination of information in a smaller populous country will go wider than a bigger population hence the significant gap in the knowledge seen in this study. [12,13]

Almost all of the respondents from Ghana gave correct answers to the main symptoms of COVID-19 and less common symptoms of the pandemic compared to the Nigerian respondents. The current study was inconsistent with the study done by Adesegun et al., who reported most of the Nigerian respondents being knowledgeable about the signs and symptoms of the virus. [7] There exist a vast array of unverified, malicious and fabricated information concerning the symptoms associated with COVID-19 on social media hence that might have possibly had a direct correlation to the answers provided on the survey among the Nigerian participants in the study. Almost all of the Ghanaian respondents agreed that supportive care is the only treatment for the disease unlike the Nigerian participants. Serwaa et al., study from Ghana reported many of the study participants gave accurate knowledge that COVID-19 has no first line cure but attributed intervention to vaccine's availability. [8] However, Adesegun et al., reported greater number of Nigerian respondents were aware that there is no cure for the disease which again was inconsistent with the current study. [7] The

plausible explanation for this inconsistency is that, Nigeria is vast and diverse, mainly over 200 million populations, over 250 ethnic groups with over 500 languages as compared to Ghana with almost 32 million populations, 70 ethnic groups and about 50 languages and therefore the characteristics of the study participants in their research are entirely different from those of this current study. [12,13]

The knowledge of respondents regarding the mode of transmission of the pandemic was significantly adequate. This was again consistent with study by Serwaa et al., who reported Ghanaian respondents had good knowledge regarding the high infectivity of the COVID-19 virus through invisible respiratory droplets and Adesegun et al., in Nigeria where respondents gave in-depth knowledge on the symptoms including mode of transmission. [7,8] The level of education had significant influence on the adequacy of the knowledge on the pandemic among the Ghanaian participants, while the level of education did not significantly influence the knowledge of the disease among the Nigerians respondents. This was consistent with a knowledge-based study by Serwaa et al that also revealed a strong associated between knowledge of COVID-19 and level of participant's education, but was again inconsistent with Adesegun et al., studies. [7] This could be due to social media providing awareness of symptoms of COVID-19 and prevention methods.

According to this study, all respondents from Ghana believed that it was acceptable to stand together in a queue while maintaining a social distance with a COVID-19 survivor compared to less than half of the respondents from Nigeria. The response from the Nigerian's participants in this study showed a comparatively low willingness to associate with survivors. A study done by Agusi et al., in Nigeria contradicted the current findings of participant's low willingness to associate with survivors. [14] The study reported incompliance with directives to observe religious and social gathering and social distancing by many failing to adhere to directives, either due to ignorance or complete defiance.

More than half of participants in both countries were comfortable and agreed to have COVID-19 survivors marry from their families. Recovery from COVID-19 meant returning to normal life to almost all the participants and this speaks very well of survivors' integration into the society for continuous normal living. All Ghanaian respondents and majority of Nigerian participants agreed to the fact that COVID-19 survivors have the right to non-discrimination and equal treatment and hence should be given fair treatment in every endeavors of their lives.

Significant number of participants from both countries expressed it was acceptable to work in the same place with COVID-19 survivors. Agusi et al., reported in their study that the cause of adherence to directives concerning social distancing and gatherings was as a result of the fact that most Nigerian citizens compared to Ghanaians work daily, hence their higher acceptance to working in the same environment with survivors. [14] The majority of Ghanaians also work daily which could have contributed to high acceptance to working in the same place with COVID-19 survivors. More Ghanaian participants compared to Nigerians respondents agreed to permit teachers who survived from COVID-19 to associate with their children, relatives and younger people. This observation is possible because some Ghanaians question the existence of the pandemic and therefore the disease largely goes ignored. This observation could have contributed to the statistically significant gap in the proportion of participants with high stigmatizing attitude in Nigeria compared to Ghana. If there is doubt of something's existence, there will surely be no behavior for its related negative influence hence high stigmatizing attitude in Nigeria compared to the Ghanaian participants. Numerous studies conducted over time have contributed to in-depth knowledge and how to adapt with the current pandemic, therefore educating Ghanaian participants to be comfortable associating with survivors.

Female participants in both countries were more likely to be more knowledgeable about COVID-19 compared to inadequate knowledge in their male counterparts. Women are generally curious and passionate to know and to be known [15], [16], and their curiosity might have translated into knowing the pandemic compared to men who are generally reluctant and wait for things to be in natural happenings as observed. Also, Ghanaian participants aged 25 – 34 years were more likely to have high knowledge on COVID-19 compared to those who are 14-24 years. Adolescents have access to social media and other platforms, hence the plausible explanation to this current observation.

The odds of high stigmatizing attitude among Ghanaian participants against low level of stigmatizing attitude was less among 25–34 year-old participants compared to those aged 15-24 years. This is probably because individuals within this age category 25-34 maybe considered to be bit matured and can handle matters of relevant importance than 15-24 to portray stigma[17]. Female Ghanaians were twice more likely to have a high stigmatizing attitude compared to Ghanaian males. The COVID-19 is a novel pandemic which continues to infect and kill people all over the world, thus making people more fearful and socially conservative [18]. Abdelrahman [19] reported that, women are more likely to avoid crowds and physical contact with others to avoid the respiratory pandemic disease, since they are mostly naturally fearful, making them tend to be probably overly cautious about their association with the survivors and results in stigmatization. Ghanaians participants who are religious had less likelihood of exhibiting high stigmatizing attitude compared with the non-religious. This is because religion teaches moral standards and acceptance into the society.

Religion frowns on stigmatization hence it's positive effect on less likelihood of exhibiting high stigmatizing attitude.

Limitations

The overall response to the knowledge and willingness of the studied participants to associate with COVID-19 survivors were fairly adequate and welcoming for their integration into normal living. Ghanaian respondents had significantly adequate knowledge and were highly willing to welcome or associate with COVID-19 survivors comparatively to the Nigerian participants who exhibited high stigmatizing attitude in their response.

Conclusion

The overall knowledge and willingness to associate with COVID-19 survivors among these study participants were fairly adequate and welcoming for the integration of COVID-19 survivors into normal living. Ghanaian respondents had significantly adequate knowledge and were highly willing to welcome or associate with COVID-19 survivors comparatively to the Nigerian participants who exhibited high stigmatizing attitude in their response. The stigma associated with the coronavirus can hinder people from seeking health care immediately, restrain them from adopting healthy behaviors, may deter at-risk individuals from properly seeking medical support in a timely manner and this could raise the community transmission risk, and delay treatment for patients in severe physical conditions. The government of Ghana and Nigeria, the ministry of health and information, the media, key influencers and communities should embark on measures aimed at preventing further stigma surrounding infected and recovered persons including their families if indeed we hope to overcome the disease and its impact on the socioeconomic life of Ghanaians and Nigerians.

Author Contributions

This work was carried out in collaboration between all authors. Author EL conceived and designed the study. Authors EL, SD, MHA and TI participated in the data collection. Authors EL and SD analysed and interpreted the data. Authors EL, MHA and TI, wrote the first draft of the manuscript. All authors critically reviewed, revised and approved the final manuscript.

Acknowledgements

We are grateful for the immense contributions of Abdul Rasheed Mohammed and not forgetting our participants.

References

1. E. Goffman, Stigma: Notes on the management of spoiled identity. Simon and Schuster, 2009.
2. R. Badrfam and A. Zandifar, "Stigma Over COVID-19; New Conception Beyond Individual Sense," Arch. Med. Res., 2020.
3. S. Dubey et al., "Psychosocial impact of COVID-19," Diabetes Metab. Syndr. Clin. Res. Rev., 2020.
4. M. C. Angermeyer, S. Van Der Auwera, M. G. Carta, and G. Schomerus, "Public attitudes towards psychiatry and psychiatric treatment at the beginning of the 21st century: a systematic review and meta- analysis of population surveys," World Psychiatry, vol. 16, no. 1, pp. 50–61, 2017.
5. R. P. Aacharya and A. Shah, "Ethical dimensions of stigma and discrimination in Nepal during COVID-19 pandemic," Ethics, Med. Public Heal., p. 100536, 2020.
6. R. Haghighat, "The Development of an Instrument to Measure Stigmatization: factor analysis and origin of stigmatization," Eur. J. psychiatry, vol. 19, no. 3, pp. 144–154, 2005.
7. R. A. L. F. van Griethuijsen et al., "Global patterns in students' views of science and interest in science," Res. Sci. Educ., vol. 45, no. 4, pp. 581–603, 2015.
8. G. A. of the W. M. Association, "World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects.," J. Am. Coll. Dent., vol. 81, no. 3, p. 14, 2014.
9. Ghana Health Service Ethics Review Committee. Ghana Health Service Ethics Review Committee (GHS-ERC) Guidelines/Standard Operating Procedures. 2015.
10. D. Serwaa, E. Lamptey, A. B. Appiah, E. K. Senkyire, and J. K. Ameyaw, "Knowledge, risk perception and preparedness towards coronavirus disease-2019 (COVID-19) outbreak among Ghanaians: a quick online cross-sectional survey," Pan Afr. Med. J., vol. 35, no. 44, 2020.
11. O. A. Adesegun et al., "The COVID-19 Crisis in Sub-Saharan Africa: Knowledge, Attitudes, and Practices of the Nigerian Public," Am. J. Trop. Med. Hyg., vol. 103, no. 5, pp. 1997–2004, 2020.
12. E. A. Maier, Donna J., Fage, John D., Davies, Oliver and Boateng. Ghana. p. 9.
13. T. O. Udo, Reuben Kenrick , Ajayi, J.F. Ade , Kirk-Greene, Anthony Hamilton Millard and Falola, "Nigeria." Encyclopedia Britannica, 2020.
14. E. R. Agusi, S. I. Ijoma, C. S. Nnochin, N. O. Njoku-Achu, C. I. Nwosuh, and C. A. Meseko, "The COVID-19 pandemic and social distancing in Nigeria: ignorance or defiance," Pan Afr. Med. J., vol. 35, no. 52, 2020.

15. N. Kenny, "13 Curiosity, Women, and the Social Orders," in Women and Curiosity in Early Modern England and France, Brill, 2016, pp. 233–250.
16. U. M. Staudinger, "Older and wiser? Integrating results on the relationship between age and wisdom-related performance," Int. J. Behav. Dev., vol. 23, no. 3, pp. 641–664, 1999.
17. Rosenfeld DL, Tomiyama AJ. Can a pandemic make people more socially conservative? Longitudinal evidence from COVID-19.
18. M. Abdelrahman, "Personality traits, risk perception, and protective behaviors of Arab residents of Qatar during the COVID-19 pandemic," Int. J. Ment. Health Addict., pp. 1–12, 2020.

Appendix: Questionnaires

SECTION ONE
Demographic Information

1. How old are you?

2. Gender
   a. Male
   b. Female

3. Country of Origin
   a. Ghana
   b. Nigeria

4. Do you have any Religious Affiliation?
   a. Yes
   b. No

5. Educational Status
   a. No education
   b. Primary Education
   c. Secondary Education
   d. Tertiary Education

SECTION 2
Knowledge of COVID-19
Kindly SELECT ONE BEST RESPONSE TO EACH OF THESE QUESTION

1. The Main Clinical Symptoms of COVID-19 are fever, fatigue, dry cough, tiredness and myalgia (muscle pain)?
   a. True
   b. False
   c. I don't Know

2. Common Cold, stuffy nose, runny nose, sneezing is less common with persons infected with COVID-19
   a. True
   b. False
   c. I don't Know

3. There is no cure for COVID-19 except for Supportive Treatment.
   a. True
   b. False
   c. I don't Know

4. Not all persons with COVID-19 will develop symptoms
   a. True
   b. False
   c. I don't Know

5. COVID-19 Spread through respiratory droplets
   a. True
   b. False
   c. I don't Know

6. Persons with COVID-19 cannot infect others when fever or fluid-like symptoms are not present
   a. True
   b. False
   c. I don't Know

SECTION 3
Attitude Towards and Willingness to Associate with COVID-19 Survivors (Adapted from Perceived Stigma Scale).

1. I would be happy and okay to stand in a social distant or queue with a COVID-19 Survivor?
   a. Disagree
   b. Agree
   c. Neutral (I don't Know)

2. I can be able to work with a COVID-19 Survivor in the same settings and facility?
   a. Disagree
   b. Agree
   c. Neutral (I don't Know)

3. Will you permit teachers who survived from COVID-19 to associate with of their children, relatives and younger people?
   a. Disagree
   b. Agree
   c. Neutral (I don't Know)

4. It is well okay with me for a COVID-19 Survivor to marry from my family?
   a. Disagree
   b. Agree
   c. Neutral (I don't Know)

5. Recovering from COVID-19 Means returning to Normal life?
   a. Disagree
   b. Agree
   c. Neutral (I don't Know)

6. COVID-19 Survivors be allowed to Vote?
   a. Disagree
   b. Agree
   c. Neutral (I don't Know)

7. COVID-19 Survivors have the right to non-discrimination and equal treatment?
   a. Disagree
   b. Agree
   c. Neutral (I don't Know)