

# Effect of Stigmatization and Discrimination on COVID-19 patients in Africa

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## ABSTRACT

Within a short time, COVID-19 has caused a huge economic crisis and dramatically impacted the world of work (WHO, 2020). Millions have lost their jobs and livelihoods due to lockdown and closure of economic activities. As recovery plans are made, it will be important to ensure that those who were affected by COVID-19 face no stigma in resuming their jobs or economic activities. The aim of the study is to describe the effect of stigmatization and discrimination of Covid-19 patients in Africa. Questionnaire was administered online and responses were obtained from different countries in Africa. From the result, 495 responses from 13 African countries were surveyed and 83.8%, 2.2%, 4.6%, 8.1%, and 1.2% responses were obtained from West Africa, Central Africa region, Southern Africa, East Africa, and North Africa respectively. Frequency distribution, correlation, cross tabulations and confirmatory factor analysis were used to analyze the survey questions. From the research carried out, we deduced that respondents agreed that Covid-19 patients do not want public declaration, they may and may not be able to work with or live with a recovered Covid-19 patient, and that if they have Covid-19, they may or may not be able to discuss it.

**Keyword:** Covid-19, stigmatization discrimination, Africa, Confirmatory factor analysis

## I. INTRODUCTION

Stigma means discrimination against an identifiable group of people, a place, or a nation. Stigma is associated with a lack of knowledge about how COVID-19 spreads, a need to blame someone, fears about disease and death, and gossip that spreads rumors and myths (Ramaci, T. et al, 2020). Stigma hurts everyone by creating more fear or anger toward ordinary people instead of focusing on the disease that is causing the problem (Jiménez-Pavón, D. et al, 2020). Stigma can also make people more likely to hide symptoms or illness, keep them

from seeking health care immediately, and prevent individuals from adopting healthy behaviors (Sohrabi, C. et al, 2020). This means that stigma can make it more difficult to control the spread of an outbreak. The aim of this study is to describe the effect of stigmatization and discrimination of Covid-19 patients in Africa. The rest of the paper is structured as materials and methods, methodology, coverage and limitation, discussion of results and conclusion.

## II. MATERIALS AND METHOD

### 2.1 Data Description

The data is collected via an electronic questionnaire. The data was sent to different countries in Africa and responses were collected through electronic means. The questions were subdivided into demographic, discrimination and stigmatization sections. Discrimination questions were coded on a five-point Likert scale.

### 2.2 Methodology

Frequency distribution, correlation, cross tabulations and confirmatory factor analysis were used to analyze the survey questions.

### 2.3 Coverage and Limitation

In this study, we receive 495 responses from 13 African countries. We received 83.8%, 2.2%, 4.6%, 8.1%, and 1.2% responses from West Africa, Central Africa region, Southern Africa, East Africa, and North Africa respectively. The majority of our respondents (88.2%) have a tertiary education, 9.5% Secondary/high school/form 4/5 education, 1.6% of Primary/Basic education, 0.6% of persons without formal education. Also, the age distribution shows that (10.9%), (64.8%), (16.2%) and (8.1%) are between the ages of 0 and 18 years, 19 and 45 years, 46 and 69 years, and 70 years and above respectively. Majority of the respondents are from Nigeria (80.2%), 0.4% are from Cameroon, 7.3% from Ghana, 6.9% Kenya, 3.2% from South Africa, 0.4% each from Malawi and Uganda, 0.2%

each from Seychelles, Eswatini, Madagascar, Togo,

Zambia and Cote d'Ivoire.

**Table 1: Question module.**

Participant response per item	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Type = "Periodical Score" Item	4	4	1	0	0
	Promotes discrimination about Covid-19	agrees	Neither	Does not discriminate about Covid-19	promotes discrimination about Covid-19

Table 1 shows responses of a five-point Likert scale. Response options for all questions were “strongly agree”, “agree”, “neutral”, “disagree” and “strongly disagree”. The data aims to examine how discrimination and stigmatization affect COVID-19 patients in Africa. Thus, strongly agree or agree and strongly disagree or disagree to the discrimination contents. We assume being “neutral” as undecided and could go either way. We score each response on a scale of 4, 4, 1, 0, and 0 respectively. That is, the score of ‘4’ implies that the item promotes stigmatization of Covid-19, score of ‘0’ implies the item does not promote stigmatization of Covid-19, and the score of ‘1’ implies that the item neither.

### III. RESULTS

From the result, 67.3% of the respondents know people with Covid-19 while 32.7% do not know anyone with Covid-19. 54.1% of the respondents know their Covid-19 status and 45.9% do not know their Covid-19 status. 187(37.8%) of the respondents who do not know their Covid-19 status do not also know someone infected with Covid-19 while the rest 81(16.4%) know people infected with Covid-19. 146(29.5%) of the respondents who know their Covid-19 status do not know anyone infected with Covid-19 while the rest 81(16.4%) know someone with Covid-19. 22.4% agreed to be tested of Covid-19, 33.3% says no to be tested of Covid-19, 27.5% says they may want to be tested or not and the rest 16.8% gave no response to the question. 73.9% claims Covid-19 can survive the climate conditions in Africa and 26.1% of the respondents claim that Covid-19 cannot survive.

**Table 2. Age class of the respondents Covid-19 status**

Do you know your COVID 19 status	Age Class			
	0-18	19-45	46-65	65& Above
No	28(5.7%)	175(35.4%)	46(9.3%)	19(3.8%)
Yes	26(5.3%)	146(29.5%)	34(6.9%)	21(4.2%)

**Table 3. Covid-19 status by country**

Country of Origin	Do you know your COVID 19 status	
	No	Yes
Cameroon	0(0.0%)	2(0.4%)
Cote d'Ivoire	1(0.2%)	0(0.0%)
Eswatini	0(0.0%)	1(0.2%)
Ghana	19(3.8%)	17(3.4%)
Kenya	14(2.8%)	20(4.0%)
Madagascar	1(0.2%)	0(0.0%)

<b>Malawi</b>	0(0.0%)	2(0.4%)
<b>Nigeria</b>	220(44.4%)	177(35.8%)
<b>Seychelles</b>	1(0.2%)	0(0.0%)
<b>South Africa</b>	9(1.8%)	7(1.4%)
<b>Togo</b>	1(0.2%)	0(0.0%)
<b>Uganda</b>	1(0.2%)	1(0.2%)
<b>Zambia</b>	1(0.2%)	0(0.0%)

**Table 4: Response on Discrimination of Covid-19**

Questions	Agree	Strongly Agree	Neutral	Disagree	Strongly Disagree
African are immune to COVID.19	83(16.8%)	34(6.9%)	110(22.2%)	151(30.5%)	117(23.6%)
Africans are not affected by COVID.19 due to the various vaccines they get at the time of their birth.	53(10.7%)	19(3.8%)	101(20.4%)	179(36.2%)	143(28.9%)
COVID.19 is a disease of the old not young people and children.	38(7.7%)	9(1.8%)	68(13.7%)	202(40.8%)	178(36.8%)
Would you agree that COVID.19 patients do not want public declaration?	213(43.0%)	118(23.8%)	128(25.9%)	25(5.1%)	11(2.2%)

**Table 5: Response on Stigmatization of Covid-19**

Questions	Level		
	Maybe	No	Yes
If any of your close Associates Relatives are infected would you be ready to discuss it.	168(33.9%)	86(17.4%)	241(48.7%)
Do you think religion personal belief has affected the declaration of COVID.19 status	149(30.1%)	168(33.9%)	178(36.0%)

Would you agree to work with or live with a recovered COVID.19 patient	176(35.6%)	50(10.1%)	269(54.3%)
If you are a previous COVID.19 patient will you be ready to discuss about it.	166(33.5%)	55(11.1%)	274(55.4%)

### 3.2 Analytical

In this section, a better technique is considered to examine the effect of discrimination items on Covid-19 in Africa. Hence, we used Confirmatory Factor Analysis techniques. Confirmatory Factor Analysis is a common structural equation model technique that specifies how observed variables (discrimination questions) relate to assumed latent (Covid-19 status) variable.

Item score module discussed in Table 1 was applied to the four questions under Table 4 of

response to discrimination of Covid-19 since the response category follow suite. The options were converted to numerical values using the procedure discussed and the values obtained for these four questions were used to make the correlation analysis and the confirmatory factor analysis. Table 6 represents the joint influence (correlation) of the misinformation content in promoting discrimination of Covid-19 in Africa.

**Table 6: Correlation analysis**

	Question1	Question2	Question3	Question4
Question1	1.00			
Question2	0.47	1.00		
Question3	0.40	0.48	1.00	
Question4	0.11	0.09	0.17	1.00

Key: Question1: African are immune to COVID.19, Question2: Africans are not affected by COVID.19 due to the various vaccines they get at the time of their birth. Question3: COVID.19 is a

disease of the old not young people and children. Question4: Would you agree that COVID.19 patients do not want public declaration?

**Table 7: Confirmatory Factor Analysis**

Items contribution.

(a) Model fitness Statistics

Value Comparative Fit Index (CFI)	0.993
Tucker-Lewis Index (TLI)	0.979
Root Mean Square Error of Approximation (RMSEA)	0.448
90% CI – RMSEA	[0.000, 0.110]
P -value RMSEA <= 0.05	0.045
Standardized Root Mean Square Residual (SRMR)	0.020

(b) Latent Variables:

Latent Variables	Estimate	Std. Err	z-value	P(> z )	Std.lv	Std. all
COVID.19						
Question1	1.021	0.081	12.556	0.000	1.021	0.628
Question2	1.019	0.071	14.273	0.000	1.019	0.736
Question3	0.765	0.059	12.906	0.000	0.765	0.649
Question4	0.271	0.081	3.357	0.001	0.271	0.176

(c) Variances:

Latent Variables	Estimate	Std. Err	z-value	P(> z )	Std.lv	Std. all
.Question1	1.599	0.141	11.301	0.000	1.599	0.606
.Question2	0.876	0.112	7.817	0.000	0.876	0.458
.Question3	0.804	0.075	10.685	0.000	0.804	0.578
.Question4	2.280	0.147	15.537	0.000	2.280	0.969
COVID.19	1.000				1.000	1.000

(d) Residual

Latent Variables	Question1	Question2	Question3	Question4
Question1	0.000			
Question2	0.014	0.000		
Question3	-0.017	0.000	0.000	
Question4	-0.002	-0.076	0.094	0.000

Key: Covid-19: Do you know your Covid-19 status; Question1: African are immune to COVID.19, Question2: Africans are not affected by COVID.19 due to the various vaccines they get at the time of their birth. Question3: COVID.19 is a disease of the old not young people and children. Question4: Would you agree that COVID.19 patients do not want public declaration?

### 3.1 Discussion of results

The result from Table 2 shows the age class of the respondents who know their Covid-19 status. The table shows that within the age group of 0-18, 28(5.7%) of the respondents do not know their Covid-19 status and 26(5.6%) know their status. Within the age group of 19-45, 175(35.4%) of the respondents do not know their Covid-19 status and 146(29.5%) of the age group know their Covid-19 status. Of the age group 46-65, 49(9.3%) of the respondents do not know their Covid-19 status and 34(6.9%) know their Covid-19 status. Of the age group 65 and above, 19(3.8%) of the respondents do not know their Covid-19 status

while 21(4.2%) of the age group know their Covid-19 status. The result from Table 3 shows the Covid-19 status of the respondents by country. The table shows that the 2(0.4%) of the respondents from Cameroon know their Covid-19 status. 1(0.2%) respondent each from Cote d'Ivoire, Togo and Zambia claim not to know their Covid-19 status. 1(0.2%) respondent from Eswatini knows the Covid-19 status. 19(3.8%) of the respondents from Ghana do not know their Covid-19 status while 17(3.4%) from Ghana do know their Covid-19 status. 14(2.8%) of the respondents from Kenya do not know their Covid-19 status while 20(4.0%) from the country do know their Covid-19 status. The only respondent from Madagascar do not know his/her Covid-19 status. 2(0.4%) respondents from Malawi know their Covid-19 status. 220(44.4%) of the respondents from Nigeria do not know their Covid-19 status while the rest 177(35.8%) do not know their status. The only respondent from Seychelles claims not to know his Covid-19 status. 9(1.8%) of the respondents from South Africa do not know their Covid-19 status while the rest

7(1.4%) do know their Covid-19 status. 1(0.2%) respondent from Uganda claims not to know his Covid-19 status and 1(0.2%) from the same country claim to know his/her Covid-19 status. The result from Table 4 shows the responses on discrimination questions like: African are immune to Covid-19, Africans are not affected by Covid-19 due to the various vaccines they get at time of their birth, COVID.19 is a disease of the old not young people and children and Would you agree that COVID.19 patients do not want public declaration? All these questions are rated under the options of agree, disagree, neutral, strongly agree and strongly disagree. Below are the distribution of responses obtained in this research. 16.8% of the respondents agree that Africans are immune to Covid-19, 6.9% strongly agree, 22.2% are neutral to the question, 30.5% disagree that Africans are immune to Covid-19 while the rest 23.6% strongly disagree that Africans are immune to Covid-19. 10.7% agree that Africans are not affected by Covid-19 due to the various vaccines they get at the time of their birth, 3.85 strongly disagree to the statement, 20.4% are neutral, and 36.2% disagree to the statement while the rest 28.9% strongly disagree. 7.7% of the respondents agree that COVID.19 is a disease of the old not young people and children, 1.8% of them strongly agree to the statement, 13.7% are neutral, 40.8% disagree while 36.8% strongly disagree. 43.0% of the respondents agree that Covid-19 patients do not want public declaration, 23.8% strongly agree to the statement, 25.9% of them are neutral, and 5.1% disagree while the rest 2.2% disagree. The result from Table 5 below shows the responses on the stigmatization questions like: If any of your close associate relatives are infected would, would you be ready to discuss it; Do you think religion personal belief has affected the declaration of Covid-19 status; Would you agree to work with or live with a recovered COVID.19 patient and If you are a previous COVID.19 patient will you be ready to discuss about it. All these questions are rated under the options of maybe, no and yes. Below are the distribution of responses gathered in the survey. The result shows that 33.9% of the respondents may and may not be ready to discuss if any of their close associates relative are infected with Covid-19; 17.4% will not discuss it at all, while the rest 48.7% are ready to discuss it. 30.1% think that religion personal belief may and may not has affected the declaration of Covid-19; 33.9% says it does not affect, while 36.0% said it does affect declaration of Covid-19. 35.6% of the respondents said they may and may not be able to work with or live with a recovered Covid-19 patient; 10.1% said

they will not while the rest 54.3% said they will be able to work or live with Covid-19 patients. 33.5% of the respondents said if they have Covid-19, they may or may not want able to discuss it; 11.1% said will not be able to discuss it while the rest 55.4% said they will be able to discuss it.

Table 6 below shows the Confirmatory factor analysis (CFA) of the discrimination questions under Table 4. The table shows three sections: model fitness statistics, latent variables and variances. The result shows that the latent variables (Questions 1-4) are actually significant to the Covid-19 question. It could be seen from table 6 Questions 1, 2 3 and 4 returns a p-value of 0.000, 0.000, 0.000 and 0.001 respectively. This implies that the knowledge that Africans are immune to Covid-19, knowledge that Africans are not affected by Covid-19 due to various vaccines at the time of birth, knowledge that Covid-19 is a disease of the old not young people and children and also the knowledge that Covid-19 patients do not want public declaration are significant factors that contribute to making respondents determining their Covid-19 status.

#### IV. CONCLUSION

From the research carried out, we could deduce that 43.0% of the respondents agree that Covid-19 patients do not want public declaration, 23.8% strongly agree to the statement, 25.9% of them are neutral, and 5.1% disagree while the rest 2.2% disagree. It was also discovered from the research that the knowledge that Africans are immune to Covid-19, knowledge that Africans are not affected by Covid-19 due to various vaccines at the time of birth, knowledge that Covid-19 is a disease of the old not young people and children and also the knowledge that Covid-19 patients do not want public declaration are significant factors that contribute to making respondents determining their Covid-19 status.

To address the problem of social stigma and discriminatory behaviors against people of certain ethnic backgrounds, as well as against anyone perceived to have been in contact with the virus, the World Health Organization developed a guide to preventing and addressing social stigma associated with Covid-19. The guidelines highlight misconceptions, rumors and misinformation as some of the factors contributing to stigma and discrimination, which hamper response efforts.

#### Conflict of Interest

The authors have no conflict of interest to declare.

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