



# **Psychosocial Distress and Coping Strategies in Response to COVID-19 Adopted among Adults in South-West Nigeria**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. Author RAJ conceived the study. All authors participated in the data collection. Author RAJ performed the statistical analysis. All authors participated in writing the first draft, authors RAJ and OK proofread the draft. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Pandemics such as the SARS-cov-2 are known to cause psychosocial distress posing threats to mental health especially among South-west residents who have been disproportionately hit by the virus in Nigeria

**Aims:** To assess the level of psychosocial distress among selected adult residents in South-west Nigeria and determine the strategies adopted by them to cope.

**Study Design:** Descriptive cross-sectional design was used to sample 393 adults from the region. The DASS-21 scale and Brief-COPE questionnaires were used to assess levels of psychosocial distress and coping respectively.

**Place and Duration of Study:** Southwest Nigeria, between May 2020 and June 2020.

**Methodology:** Participants were recruited using Snowballing sampling technique. Data were collected using an online self-administered questionnaire. Information retrieved were coded and entered into the Statistical Package for Social Sciences (SPSS version 20.0). Descriptive statistics of mean, frequency, and percentages were used to summarize data and Chi-square analysis was used to test the hypotheses with an Alpha level set at  $P=0.05$ .

**Results:** Pathologic scores for all three psychosocial distress indicators measured in this study were recorded in 8.1% of the participants. The three leading sources of psychological distress identified included; the general uncertainty associated with the pandemic, lack of confidence in the government's ability to handle the situation, and the fear of robbery attacks that were rampant in the region during the period of lockdown. Most of the participants coped by adopting the use of humor (62.8%) and religion (53.9%). State of residence was found to influence coping strategy and there was a relationship between sex and use of religion in coping at  $p= 0.01$ .

**Conclusion:** The COVID-19 pandemic was a significant stressor in the study. Improved strategies to combat the spread of the virus to help accelerate lifting of the lockdown will be beneficial to the coping capacities of the residents.

*Keywords: COVID-19; psychosocial distress; coping strategies; South-West Nigeria.*

## 1. INTRODUCTION

The mental health effect of pandemics such as the SARS-CoV-2 has already been established from cross-sectional reports during similar outbreaks of epidemics such as the 1918-1919 influenza pandemic, severe acute respiratory syndrome (SARS) epidemic in Hong Kong, the Zika virus and Ebola virus in Africa [1,2]. In comparison, however, the novel COVID-19 virus has had a wider global effect resulting in the shutdown of economies around the world, and has accounted for higher mortality rates compared to previous pandemics [1].

Psychological distress is a state of emotional suffering typically characterized by symptoms of depression and anxiety [3]. Studies carried out in various parts of the world including Nigeria reported increasing levels of anxiety, sleep disturbances, anger, fear, and depression [4] among various studied cohorts. These symptoms are either directly related or exacerbated by fear, self-isolation, and physical distancing [2,5] resulting from the outbreak and are especially significant among vulnerable groups such as people living with mental health challenges [6]. Among the younger population, the interrupted school system and the emanating boredom and reduced activity is also a contributor [6] to these symptoms.

Furthermore, the potential and actual loss of livelihood and dwindling income for individuals

and families also challenge mental health. The social-economic realities of the virus are worse among low and middle-income countries such as Nigeria with poorly structured health delivery services and inadequate economic palliatives for the citizens who are majorly employed in the informal sector of the economy [7]. Although Nigeria recorded her first case of the Sars-Cov-2 on 27<sup>th</sup> February 2020 [8] majority of the population had been sensitized to the occurrence of the virus with over fifty thousand infected cases reported overseas at that time [9].

Coping mechanisms are classified into problem-focused or emotion-focused. The behavioral dimension of coping responses has also been explained [10], the coping mechanisms adopted by a person could have both-short term and long-term consequences. As of April, 23 2020, the South-west region in Nigeria had the highest number of infected persons. Lagos, a state in this region had over 50% of infected persons in Nigeria [8,11]. The impetus for the study was therefore to determine the level of psychosocial distress among this population and understand the ways in which they are coping as the virus continues to threaten the social and economic security of the world. Additionally, despite the recognized impacts of the unfavorable mental health outcomes of the virus, limited works have been carried out on the psychosocial distress and coping strategies adopted in past pandemics and to our knowledge, none has been carried out as it relates to the novel coronavirus among the

study population, the study, therefore, attempted to fill this gap in literature while also providing objective measures of psychosocial distress to support designs for mental health promotion and other mental illness mitigation efforts in response to COVID-19 by concerned stakeholders for the population under study.

## 2. MATERIALS AND METHODS

### 2.1 Design

A cross-sectional research study involving residents of all six South-western Nigeria states (Ekiti, Lagos, Ogun, Ondo, Osun, Oyo) who experienced the first lockdown of the country was carried out between May and June 2020.

### 2.2 Participants

A total of 395 participants were recruited into the study through two major online media platforms; WhatsApp and Facebook using a sample size calculation for an unknown population using a stress prevalence rate of 51.95% reported in a study from the same country [12]. All six participants were sent the link to the electronic questionnaire either personally or through group platforms and voluntarily partook in the survey after reading the disclosure page preceding the questionnaire itself.

2 responses were eliminated due to incompleteness of data thus only 393 questionnaires were used for the final analysis.

### 2.3 Study Setting

At just over 200 million inhabitants, Nigeria is Africa's most populous country. It is one of the most diverse, with a large number of groups from different linguistic and ethnic backgrounds, divided across six geopolitical zones (Fig 1). Southwest Nigeria comprises of six states (Fig 2), of the 36 states and the federal capital territory that make up Nigeria and is inhabited by the Yoruba ethnic group who are majorly Christians. The political history of the country positioned it to be the region with the most human and capital development with many of its inhabitants having at least a secondary education while also having the highest rate of internet penetration in the country [13].

Lagos is the most urbanized state in Nigeria with a population size of >20 million and contributes to about 25% of Nigeria gross domestic

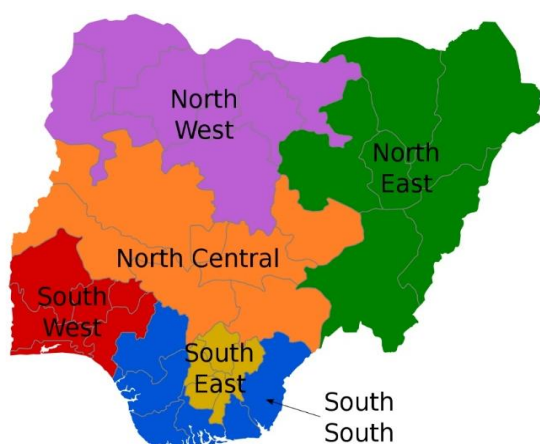
production (GDP) in 2018 [13], cost of living however, is also very high. Other states in the region are a mix of urban and rural settlements; Ibadan and Ogun rank after Lagos in terms of economic activities. Many of the rural settlers like other parts of Nigeria are subsistence farmers [14]. Lagos was also the entry for the index case of COVID-19 in Nigeria and its very busy airports and water ports contributed to the high disproportionate rates of infections and psychosocial distress in the state. Most of our respondents lived in the urban cities of these states and the lockdown directly impacted their jobs and leisure activities.

### 2.4 Survey Questionnaire

The research instrument was divided into four (4) sections with a total of fifty-one (51) questions. No modification was made to the validated questionnaire used in the study. The first section included nine (9) questions and elicited information on sociodemographic characteristics of the respondents, Section two included 21 questions of the validated depression, anxiety and stress scale-21 (DASS-21) to assess the level of psychosocial distress. Cronbach's alpha values ranging from 0.81-0.89 and 0.78 for the subscales have been reported for the instrument [15,16]. The third section evaluated sources of psychosocial stressors using seven (7) researchers-structured questions based on common findings in the literature [7,17]., items in this section were independently reported. The last section used the fourteen (14) question-Brief COPE questionnaire to evaluate coping strategies adopted by the respondents. A reliability score of 0.72 had been reported for the Brief COPE questionnaire in a Nigerian population [18].

### 2.5 Statistical Analysis

Statistical analysis of the data was performed using IBM SPSS 20. Pearson chi-square was used to test for association between the studied sociodemographic variables and level of psychosocial distress and the adopted coping strategies as well as the association between level of psychosocial distress and coping strategies. Descriptive statistics were used to present the data collected from the survey and included the frequencies, mean and standard deviation (SD) of the data collected for all the sections. A P-value<0.05 was considered to be statistically significant.



**Fig. 1. geopolitical zones of Nigeria**



**Fig. 2. states in Southwest Nigeria**

Source: Wikipedia, 2021

### 2.5.1 Level of psychosocial distress

The three indicators of psychosocial distress; depression, anxiety, and stress were measured using seven (7) questions each from the 21 questions of the DASS-21 questionnaire. Respondents were asked to score each item on a scale from 0 (did not apply to me at all) to 3 (applied to me very much). Sum scores are computed by adding up the scores on the items per (sub) scale and multiplying them by a factor of 2. Sum scores for the total DASS-total scale thus range between 0 and 126, and those for each of the subscales may range between 0 and 42. Scores were dichotomized into "normal" and "pathologic" using cutoff marks as described elsewhere [15,16].

#### 2.5.1.1 Classification of the DASS score

	Depression	Anxiety	Stress	DASS total
Normal scores	0-9	0-7	0-14	≤60
Pathologic scores	11-42	8-42	15-42	>60

### 2.5.2 Sources of psychosocial distress

Each stressor were reported using percentages and frequencies.

### 2.5.3 Coping strategies

Coping strategies were determined using ratings on a 4- point Likert scale, ranging from 1 - "I haven't been doing this at all" to 4 - "I've been doing this a lot." Analysis was carried out in steps as recommended in previous studies [19,20].

There are 14 scales

1. Active Coping
2. Planning
3. Positive Reframing
4. Acceptance
5. Humor
6. Religion

7. Using Emotional Support
8. Using Instrumental Support
9. Self-Distraction
10. Denial
11. Venting
12. Substance Use
13. Behavioral Disengagement
14. Self-Blame
- 15. Step 1: Categorization of questions into a scale**

Each scale is measured using two (2) questions and the scores are summed; total scores on each scale thus range from 2 (minimum) to 8 (maximum). Higher scores on a particular subscale indicate increased utilization of that specific coping strategy.

- No items are reverse scored.
- There is no overall total score, only total scores for each of the scales.

### 2.5.3.1 Classification of the brief COPE questionnaire

Scale	Question
Self-distraction	1 ,19
Active coping;	2 ,7
Denial;	3,8
Substance use	4,11
Use of emotional support;	5,15
Use of instrumental support;	10,23
Behavioral disengagement;	6,16
Venting;	9,21
Positive reframing;	12,17
Planning;	14,25
Humour;	18,28
Acceptance;	20,24
Religion;	22,27
Self-blame;	13,26

### Step 2: Categorization of scales into subscales

The scales were then further reclassified into two subscales; avoidant coping and approach coping by adding the sum scores of scales under each subscale

### 2.5.3.2 Subclassification of the brief COPE questionnaire

Avoidant coping	Approach coping
Denial	Active coping
Substance use	Positive reframing
Venting	Planning
Behavioral disengagement	acceptance
Self-distraction	Emotional support
Self-blame	Information support

\* Use of humor and religion are reported independently and not placed in any subscale

### Step 3: Determination of coping strategy for each respondent

The predominant coping strategy used by each respondent was then determined by the higher score between avoidant and approach coping strategies and reported as “equal usage” where there was a tie in the score of the two subscales. Use of humor and religion were reported separately.

depression scores, overall DASS scores, however, showed 8.1% pathology.

## 3. RESULTS AND DISCUSSION

### 3.1 Sociodemographic Data

393 responses were utilized in the final analysis, 201 were male and 99.7% of the participants accessed the survey through the online WhatsApp platform, other sociodemographic information are listed in Table 1.

### 3.2 Level of Psychosocial Stressors

43.8% of the respondents recorded pathologic scores for anxiety and 110 had pathologic

### 3.3 Sources of Psychosocial Stressors

More respondents ranked the general uncertainty associated with the pandemic (n=273) and a lack of confidence in the government (n=249) as being higher sources of psychosocial distress while some (n=135) reported that fear resulting from the daily news on social media, television, radio, and other media outlets accounted for the psychosocial distress they experienced during the compulsory lockdown.

### 3.3 Coping Strategies

88% of the participants tended to use the approach coping strategy more.

Using mean scores, 62.8% of the respondent rated the use of humor below the mean while 53.9% rated use of religion above the mean in the study.

**Table 1. Demographic characteristics of respondents (n=393)**

<b>Variable</b>	<b>Category</b>	<b>Frequency(%)</b>
Platform	Facebook	1(0.3)
	Whatsapp	392(99.7)
Sex	Male	201(51.1)
	Female	192(48.9)
Age(years)	18-20	40(10.2)
	21-30	227(75.8)
	30-50	64(16.3)
	>50	62(15.8)
Years of formal education	Secondary	51(13.0)
	Tertiary	249(63.4)
	Post-graduate	93(23.7)
Occupation	Artisan	7(1.8)
	Civil servants	83(21.1)
	Private employees	71(18.1)
	Students	190(48.3)
	Traders	8(2.0)
	Unemployed	34(8.7)
	Ethnic group	Yoruba
	Non-Yoruba	51(23.0)
Religion	Christianity	317(80.7)
	Islam	73(18.6)
	Atheism	2(0.5)
Marital status	All	1(0.3)
	Divorced	1(0.3)
	Married	107(27.2)
	Single	282(71.8)
	Widowed	3(0.8)
Monthly income( N)	< 20 000	136(34.6)
	>20 000 – 50 000	113(28.8)
	>50 000 – 150 000	80(20.4)
	>150 000 -500 000	47(12.0)
	>500 000	17(4.3)

**Table 2. Categorization of psychosocial distress among respondents (n=393)**

<b>Category</b>	<b>Frequency (%)</b>
<b>Depression</b>	
Normal	283(72)
pathologic	110(28)
<b>Anxiety</b>	
Normal	221(56.2)
pathologic	172(43.8)
<b>Stress</b>	
Normal	339(86.3)
pathologic	54(13.7)
<b>Total DASS Score</b>	
Normal	361(91.9)
pathologic	32(8.1)

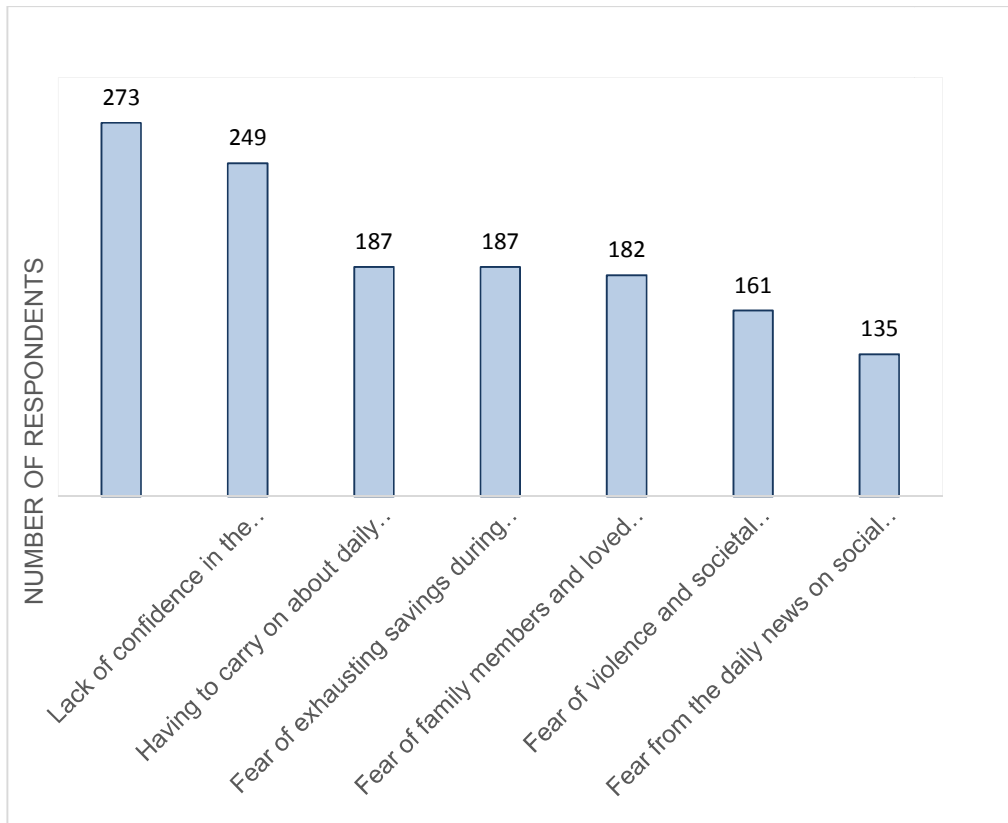


Fig. 1. Sources of psychosocial distress among respondents (n=393)

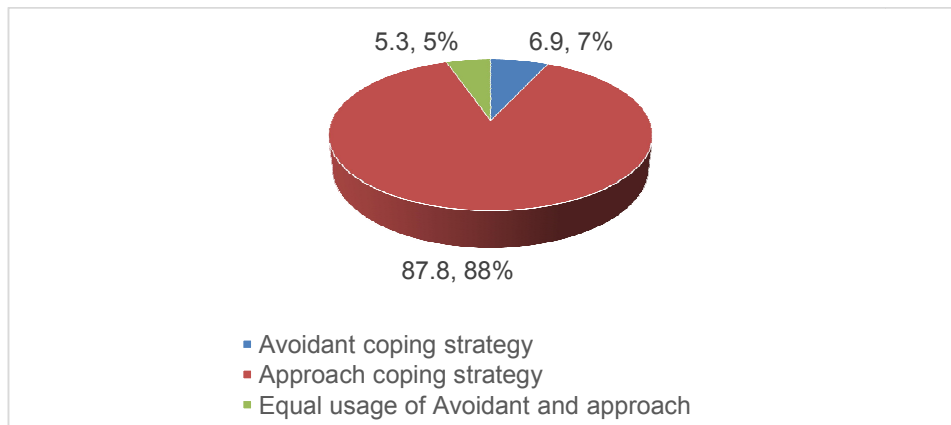


Fig. 2. Classification of coping strategies into avoidant and approach coping among respondents (n=393)

Table 3. Use of religion and humor as a coping strategy among respondents

Coping strategies	Classification	Frequency
Use of humor	< 4	247(62.8)
Mean = 3.51±1.84	≥ 4	146(37.2)
Use of Religion	< 6	181(46.1)
Mean =5.52 ±2.08	≥ 6	212(53.9)

**Table 4. Cross-tabulation of sociodemographic variable and psychosocial stressors**

Sociodemographic variables	Depression $\chi^2$ (P-value)	Anxiety $\chi^2$ (P-value)	Stress $\chi^2$ (P-value)	Total DASS score $\chi^2$ (P-value)
State of residence	6.341 <sup>a</sup> (.27)	3.703 <sup>a</sup> (.60)	6.773 <sup>a</sup> (.24)	6.307 <sup>a</sup> (.28)
Sex	0.028 <sup>a</sup> (.91)	0.380 <sup>a</sup> (.54)	4.156 <sup>a</sup> (.03)	0.380 <sup>a</sup> (.54)
Age	12.853 <sup>a</sup> (.00)	15.577 <sup>a</sup> (.01)	11.569 <sup>a</sup> (.01)	15.577 <sup>a</sup> (.01)
Level of education	14.229 <sup>a</sup> (.00)	6.234 <sup>a</sup> (.04)	4.987 <sup>a</sup> (.00)	14.229 <sup>a</sup> (.00)
Occupation	8.875 <sup>a</sup> (.11)	8.415 <sup>a</sup> (.14)	13.195 <sup>a</sup> (.53)	8.875 <sup>a</sup> (.11)
Ethnic group	18.576 <sup>a</sup> (.18)	20.520 <sup>a</sup> (.12)	4.762 <sup>a</sup> (.34)	18.576 <sup>a</sup> (.18)
Religion	5.791 <sup>a</sup> (.21)	4.549 <sup>a</sup> (.34)	0.125 <sup>a</sup> (0.13)	5.791 <sup>a</sup> (.22)
Marital status	9.676 <sup>a</sup> (.02)	14.764 <sup>a</sup> (.01)	15.626 <sup>a</sup> (0.00)	9.676 <sup>a</sup> (.02)
Monthly income	6.038 <sup>a</sup> (.20)	4.762 <sup>a</sup> (.39)	14.764 <sup>a</sup> (0.31)	6.038 <sup>a</sup> (.20)

\*= significant

**Table 5. Cross-tabulation of sociodemographic variable and coping strategy**

Sociodemographic variables	Approach vs avoidant $\chi^2$ (P-value)	Humor $\chi^2$ (P-value)	Religion $\chi^2$ (P-value)
State of residence	18.644 <sup>a</sup> (.045) *	4.683 <sup>a</sup> (.60)	2.653 <sup>a</sup> (.76)
Sex	0.665 <sup>a</sup> (.72)	13.096 <sup>a</sup> (.54)	7.390 <sup>a</sup> (.01)
Age	3.827 <sup>a</sup> (.70)	6.191 <sup>a</sup> (.01)	5.663 <sup>a</sup> (.13)
Level of education	1.901 <sup>a</sup> (.75)	1.415 <sup>a</sup> (.04)	0.355 <sup>a</sup> (.84)
Occupation	5.981 <sup>a</sup> (.82)	6.782 <sup>a</sup> (.14)	4.566 <sup>a</sup> (.42)
Ethnic group	5.862 <sup>a</sup> (1.00)	12.757 <sup>a</sup> (.12)	13.540 <sup>a</sup> (.49)
Religion	0.713 <sup>a</sup> (1.00)	5.165 <sup>a</sup> (.34)	5.028 <sup>a</sup> (0.28)
Marital status	6.074 <sup>a</sup> (.42)	7.154 <sup>a</sup> (.07)	2.102 <sup>a</sup> (0.55)
Monthly income	10.896 <sup>a</sup> (.20)	4.795 <sup>a</sup> (.31)	5.105 <sup>a</sup> (0.28)

\*= Significant

Age, level of education and, marital status were related to levels of stress, depression, anxiety and the overall Total DASS score.

There was an association between state of residence and use of either approach or avoidant coping while an association was found between age, level of education, and use of humor as well as between sex and religion.

#### 4 DISCUSSION

Less than a tenth of the participants (8.1%, n= 32) recorded pathologic scores for all three indicators of psychosocial distress indicators measured in this study, agreeing with studies conducted in the USA by [21] and in Lebanon during the same period by [22], however, this is lower than the 25% incidence rate reported in another study done in Nigeria by [23]. This could be because this study was carried out in the early days of the virus and people were understandably more scared, however, when the population of the Southwest region of Nigeria is put into consideration, the 8.1% reported in this study is quite significant.

Almost half of the respondents (n= 172) had pathologic anxiety levels. This is similar to the studies conducted in China by [4] but is incongruent with another study in the USA [21] in which more than half of their respondents had pathologic anxiety scores.

The three leading sources of psychological distress in which more than half of our respondents were affected included; the general uncertainty associated with the pandemic which was similar to the same as the finding of [24] in an Italian population. A lack of confidence in the government's ability to handle the situation and the fear of robbery attacks that were rampant in the region during the period of lockdown which corresponds with the findings of [25] in Lebanon. Our findings only partially agrees with a study done in Turkey [24], which revealed that continuation of spread, day by day increase in death rate, and unpredictable control time as the major sources of psychological distress. This agrees with recent studies by [26] in India, [21] in the USA, [27] in sub-Saharan Africa.

In our study, respondents that were not adversely affected psychologically reported that



they made use of effective means such as the use of humor and religion to cope during the pandemic while approach coping was predominately used by respondents over avoidant coping. However some studies [21,24,27] reported that the majority of their respondents mentioned relationships with families and friends as their key coping mechanisms.

Age, level of education, and marital status of respondents were significant to whether they were psychologically distressed or not in this study and this is in total agreement with previous studies carried out in Nigeria [23,28] these two studies further supported that gender was insignificant in this association. However, this finding only partially agreed with both the findings of [24] in Italy which revealed that age, gender, and marital status were more significant and [18] which showed gender and level of education to be more significant. In agreement with [24] and [28], we found out that married couples coped better but this disagreed with [29] where it was found that couples coped less due to problems with jobs, child care, and health care. Our study also revealed that older adults coped better than younger respondents, previous studies [27,30] attributed this finding to less social media use by the former.

The state where the respondents resided affected how well they coped with psychological distress during the lockdown. Residents of Osun state represented the lowest percentage of respondents with psychosocial distress. This may be attributed to the relatively lower number of daily new infections and deaths recorded from the state and perhaps greater results from measures put in place by the decision-makers in the state to curb the spread of the virus.

Our finding corresponds with the findings of [31] in the USA and [32] in China that the use of different coping strategies reduced the level of anxiety, stress, and depression, with reduced anxiety being the major benefit of the coping strategies. The gender of the respondents contributed to the use of religion as a coping strategy corresponding with positive association reported in studies done in USA [21], Italy [24] and Nigeria [28] but contradicts the findings of a Lebanese study [25] which reported that male and females were equally psychologically distressed. This study is limited by the sample size and the lack of elucidation of the types of

relationships between variables, also, casual relationships were not explored.

## 5. CONCLUSION

The study established the occurrence of psychosocial distress among adult residents of South-west Nigeria and also revealed the use of approach coping methods and use of religion and humor as major coping mechanisms, thus supporting calls to enhance these strengths in addition to putting efforts in place through both research and policymaking in improving access to mental health services. Mental health care providers should focus on encouraging the use of these coping mechanisms in the general population. Timely release of accurate information may help reduce uncertainties associated with the pandemic and increase confidence in the government, thus reducing psychosocial distress.

## CONSENT

All authors declare that 'written informed consent was obtained from all the survey participants for publication of this cross-sectional study. A copy of the written consent is available for review by the editorial office/chief editor/editorial board members of this journal.

## ETHICAL APPROVAL

"All authors hereby declare that the study was approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki."

Permission was granted by the ethical review boards of the University of Ibadan/University college hospital Ibadan with ethical approval number NHREC/05/01/2008a. Responses were anonymized and were untraceable to respondents and participation was voluntary.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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