

# COVID-19-Induced Anxiety and Covid-19 Precautionary Measures as Predictors of Mental Wellbeing of Nigerians

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## Abstract

**Introduction:** The present study investigated the COVID-19-induced anxiety and Covid-19 precautionary measures as predictors of mental wellbeing of Nigerians during the COVID-19 pandemic.

**Method:** By using a cross-sectional design methodology, 340 participants (58.2% males and 41.8% females) were selected through the snowball sampling technique. Their age ranged from 15 to 56 years (M=26.66; SD=6.485). Participants responded to the COVID-19-Induced Anxiety Questionnaire (C-19-IAQ), COVID-19 Precautionary Measures Questionnaire (C-19PMQ), and the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS).

**Results:** Standard multiple regression analyses indicated that COVID-19 induced-anxiety and COVID-19 precautionary measures significantly predicted mental wellbeing. However, only COVID-19 induced-anxiety independently predicted mental wellbeing.

**Conclusion:** Based on these findings, the researchers recommended that mental wellbeing in the era of COVID-19 should be prioritized and given necessary attention by governments and other stakeholders. Information on COVID-19 should be structured in a manner that promotes health knowledge of the pandemic rather than inducing fear and anxiety. Individuals are also urged to engage in anxiety-reducing techniques which may help curb the rise of anxiety in these times of the COVID-19.

**Keywords:** Mental Wellbeing, COVID-19-induced Anxiety, COVID-19 Precautionary Measures, Nigerians

## Introduction

The outbreak of the novel Coronavirus disease officially known as COVID-19 has affected the whole world as over 200 countries have currently reported infections [1]. This novel Coronavirus was first identified in late December 2019 in Wuhan, China, and on 30th January 2020, the World Health Organization (WHO) declared it a public health emergency of international concern [2]. This pandemic has drastically affected people worldwide and as of 11th September 2020, over 28 million people had been infected with the disease while more than 900,000 people had died due to the disease. In Nigeria specifically, as of 11th September 2020, the Nigerian Centre for Diseases Control reported that 56,017 people had been confirmed positive while 1,076 individuals had died due to the pandemic. The widespread of the COVID-19 pandemic is impacting negatively on individuals, changing the way people interact with others as well as the environment, and creating anxiety all across the globe. This disease is having a very deep effect on all the aspects of the society and may

have adverse mental health consequences, negatively impacting on mental wellbeing and the health of individuals [3-4].

Mental wellbeing refers to the positive mental state with which individuals think, reason and feel positive about life, maintain good relationships with others [5], as well as the environment [6], live and work productively, adapting to any condition and coping with the daily stresses of life. It consists of an individual's psychological functioning, a good relationship with others, and the ability to develop and maintain mutually beneficial relationships [7]. Mental wellbeing entails how people think, feel, and cope with the ups and downs of their lives. It is generally seen as the capacity to strive in all areas of life despite daily challenges one may encounter in the environment. Simply put, mental wellbeing is a positive state of psychological and mental health in which an individual can function well, cognitively and emotionally. Many factors have been linked to mental wellbeing such as stress [8], substance misuse [9], physical environment [10], especially climate change [11], etc. Due to the highly unprecedented nature of the COVID-19 and the numerous stress inducing changes and disruptions in daily life activities it comes with, it is expected that the COVID-19 or its induced psychopathologies, may be negatively influencing mental wellbeing. This study therefore examined whether COVID-19 induced-anxiety and COVID-19 precautionary measures would jointly and independently impact on mental wellbeing and in which direction it may do this.

Anxiety is an unpleasant state of excessive and constant fear as well as worry about daily happenings in the environment. It may be instrumental when it enables individuals to take precaution against danger but in extreme cases has been associated with poor physical health, decreased psychological wellbeing as well as other behavioral problems [12-13]. Anxiety increases the risk of suicidal ideation, suicides, and other deaths [14]. In United States, the new National Poll released by the American Psychiatric Association (APA) on 25 March 2020 emphasized that nearly half of Americans (48%) were anxious about the tendency of getting infected with COVID-19, 40% were anxious about getting seriously sick and dying from the COVID-19, while 62% were afraid that they will lose their loved ones as a result of the pandemic [15]. The APA president Bruce Schwartz further asserted that anxiety caused by the pandemic may have an impact on mental wellbeing [15]. In Nigeria, a survey revealed that 66.9% of respondents were anxious that individuals in Nigeria would contract the disease, however, only 17% thought they were likely to contract the disease [16]. The result of a survey carried out by the Office for National Statistics in the UK from 17<sup>th</sup> April to 27<sup>th</sup> April found that people were more worried about their mental wellbeing than their general health during the peak of the pandemic [17]. The existence of COVID-19 has caused millions of people to become unemployed, work from home, physically isolate and practice physical distancing and in general, experience a lot of change in their lifestyles, thus causing anxiety which may adversely impact mental wellbeing. The pandemic has placed

millions of people under psychological pressure which will eventually result to fear and anxiety and negatively impact mental wellbeing [17]. Mental health problems have become obvious due to COVID-19-induced anxiety [18]. Studies conducted in previous years showed that anxiety may likely have a significant inverse relationship with mental wellbeing [19-22].

Mental wellbeing may also be affected by COVID-19 precautionary measures. Precautionary measures refer to steps taken by people to stay safe. They are actions carried out by individuals to prevent harm, disease, or something unwanted from taking place. At early stages of an infectious disease outbreak, precautionary measures are needed to curb the spread of infections [23]. The Emergency Committee on the novel coronavirus under the International Health Regulations (IHR 2005) on 30 January, emphasized the necessity for strong precautionary measures [2]. In response to this outbreak, organizations and governments all over the world implemented various precautionary measures such as travel restrictions, lockdowns, mass home-confinement directives (stay-at-home orders), work from home policies, physical distancing, closures of schools and other public gatherings among others. The Nigerian government, like other governments all around the world, put in place these restrictions to curb any further spread of the disease. It is however worthy of note that public health emergencies may affect the mental wellbeing of individuals and communities [24]. The precautionary measures due to the coronavirus pandemic may be linked with adverse mental health [25]. Additionally, while these measures may be necessary to prevent the further spread of the disease, they may have both short and long term negative impacts on mental health and wellbeing [26]. Coupled with these possibilities and the dearth of literature available in this area, the present study attempted to provide empirical support for the relationships that may exist between COVID-19 induced-anxiety, precautionary measures, and wellbeing of Nigerians. It was hypothesized that COVID-19 induced-anxiety and COVID-19 precautionary measures will have a significant joint and independent prediction on mental wellbeing of Nigerians.

## Method

Participants were 340 Nigerians (58.2% males and 41.8% females) with an age range of 15 to 56 years ( $M=26.66$ ;  $SD=6.485$ ). A web-based cross-sectional study utilizing snowballing sampling technique was adopted because it was extremely difficult to physically access the potential participants at the time of data collection due to the COVID-19 precautionary measures (lockdown, restriction of movement and compulsory stay at home). The participants were recruited via social media outlets like WhatsApp, Facebook and email using google form from 1<sup>st</sup> to 8<sup>th</sup> April, 2020 and the participants were also encouraged to forward the online survey to their contacts as many as possible to partake in the study. Appended with the questionnaires was a consent form which participants had to read, understand and click the "Yes"

button to the statement (After being informed I accept to participate in the study) on the form before having access to the survey.

Three instruments consisting of COVID-19-Induced Anxiety Questionnaire (C-19-IAQ), COVID-19 Precautionary Measures Questionnaire (C-19PMQ), and the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) were employed in this study.

#### COVID-19-Induced Anxiety

COVID-19-induced anxiety was measured using the COVID-19-Induced Anxiety Questionnaire (C-19-IAQ), an 11-item questionnaire developed by the researchers. Items were specifically tailored to tap respondents' levels of COVID-19-induced anxiety. The researchers conducted a pilot study using 99 participants and got a coefficient of internal consistency of .81. Two items were deleted from the original 13 items because of their inconsistency with the construct. The remaining items were scored directly (apart from the 11<sup>th</sup> item that was reverse-scored) on a 5-point Likert format ranging from *strongly agree (5)* to *strongly disagree (1)*. Sample items include, "I fear that many may not survive this corona virus" and "the fear of corona virus has kept me in my room constantly". The researchers also carried out a split-half reliability analysis and obtained a Guttman coefficient of .79. To test its validity, the instrument was correlated with a COVID-19 precautionary measures questionnaire developed by the researchers, and an above-average concurrent validity coefficient of .64 was obtained. The norm for the scale was set at 39.5 implying that participants with scores below this cut off have low levels of COVID-19 induced anxiety and vice versa.

#### COVID-19 Precautionary Measures

COVID-19 precautionary measures were measured using the COVID-19 Precautionary Measures Questionnaire (C-19PMQ), a 12-item questionnaire developed by the researchers. It measures individuals' levels of practice/engagement in COVID-19 precautionary measures. The researchers conducted a pilot study using 99 participants and got a coefficient of internal consistency of .84. Two items were deleted from the original 14 items because of their inconsistency with the construct. The remaining 12 items were scored directly on a 5-point Likert format ranging from *strongly agree (5)* to *strongly disagree (1)*. Sample item included; "I avoid hand shaking", and "I am forced to always wear facemask and gloves". The researchers also carried out a split-half reliability study and obtained a Guttman coefficient of .80. To test its validity, the instrument was correlated with the COVID-19 induced-anxiety questionnaire developed by the researchers, and an above-average concurrent validity coefficient of .64 was obtained. The norm for the scale was 45.38.

#### Mental wellbeing

Mental wellbeing was measured using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), which was developed by researchers at Warwick and Edinburgh University [27]. The WEMWBS measures levels of mental wellbeing and covers subjective wellbeing as well as psychological functioning. It consists of 14 items all directly scored on a 5-point Likert format ranging from "none of the time (1)" to "all the time (5)". Tennant et al. reported a Cronbach's alpha coefficient of .89 for the student data sample and .91 for the population sample. Test-retest reliability at one-week in the student sample was .83. The WEMWBS has a good face and content validity. Nine scales were utilized to validate the WEMWBS. The WEMWBS was correlated with the Euroqol Health Status Visual Analogue Scale (EQ-5D VAS), Positive and Negative Affect Scale-positive subscale (PANAS-PA), Positive and Negative Affect Scale-positive subscale (ANAS-NA), Scales of Psychological Well-Being (SPWB), Short Depression Happiness scale (SDHS), WHO-FIVE Wellbeing Index (WHO-5), Satisfaction With Life Scale (SWLS), Global Life Satisfaction (GLS) and Emotional intelligence Scale (EIS). A correlation coefficient of .42, .73, -.55, .73, .76, .77, .72, .55, .51 were obtained when WEMWBS was correlated with the nine scales which indicated that WEMWBS is valid. A pilot study was conducted using 100 participants and a Cronbach's alpha reliability coefficient of .85 as well as a Guttman split-half coefficient of .87 were obtained, indicating the reliability of the scale within the Nigerian context. The norm for this scale is 49.01. Those above the norm have high mental wellbeing while those below the norm have low mental wellbeing. The questionnaire includes items such as: "I have been optimistic about the future", and "I have been feeling useful".

The data was analyzed using (statistical packages for the social sciences) SPSS 21.0. Descriptive statistics such as frequency, mean and standard deviation were performed to describe the participants' information. Pearson Product Moment Correlation and Multiple Linear Regression were employed for the inferential statistical analysis.

## Result

The results of the present study have been presented in the tables below.

Table 2 revealed that COVID-19 induced-anxiety and COVID-19 precautionary measures jointly predicted mental wellbeing [ $R = .082$ ;  $R^2 = .077$ ;  $F(2,337) = 15.096$ ,  $P < .05$ ]. This indicated that 7.7% of the variance observed in mental wellbeing can be explained by a combination of causal factors (anxiety and engagement in precautionary behaviors). However, only COVID-19 induced-anxiety [ $B = -.25$ ,  $t(339) = -3.94$ ,  $P < .05$ ] independently and negatively predicted mental wellbeing.

**Table 1.** Means, Standard Deviations, and Intercorrelations of Study Variables (n = 340)

Variables	Mean	SD	1	2
1.Mental wellbeing	48.84	9.91	–	–
2.COVID-19-induced anxiety	39.28	6.98	-.28*	–
3.COVID-19 Precautionary measures	44.78	7.99	-.20*	.58**

\*\*P < 0.01; \* P < 0.05;

**Table 2. Significant Prediction of Mental Wellbeing using Linear Regression**

Variables	R	R2	F	Sig.	Beta	T	Sig.
COVID-19-induced Anxiety	.082	.077	15,096***	.0001	-.253	3.939	.0001
COVID-19 Precautionary Measures					-.053	.831	-.407

\*\*\*P < 0.01; Dependent variable: Mental Wellbeing

## Discussion

The present study investigated the COVID-19-induced anxiety and COVID-19 precautionary measures as predictors of mental wellbeing of Nigerians. Considering the results of this study, COVID-19-induced anxiety and COVID-19 precautionary measures had a significant joint prediction on mental well-being. However, COVID-19-induced anxiety independently and negatively predicted mental wellbeing. This implies that as scores on COVID-19-induced anxiety increased, mental wellbeing decreased. Thus, COVID-19-induced anxiety is associated with reduced levels of mental wellbeing among Nigerians. This mirrored previous findings which had reported inverse relationships between anxiety and wellbeing [19, 17, 21-22]. A more recent review of studies on the psychological effects of COVID-19 and its association with anxiety reported that COVID-19 has in less than a year, had several psychological impacts on individuals, including increased levels of anxiety [28]. This may be more than many other sources of mental distress. Sources of information and the many conspiracy theories surrounding the origin, nature, and purpose of COVID-19 have surrounded the phenomenon with so many uncertainties, which are also fueled by perceptions formed around the disease. For instance, it is likely that the more Nigerians and individuals, in general, perceive it to be a bio weapon [16], or to be associated with the 5G technology [29] the more the anxiety it brews in them. Also, because a lot of predictions had been made concerning when the pandemic would come to an end [16], many individuals are increasingly worried as those dates have been passed and yet the end seems not in sight. Other findings revealed that COVID-19 precautionary measures were linked with poor mental health and wellbeing [26, 30]. This implies that COVID-19 precautionary measures could be used to explain mental wellbeing. Some of these measures such as blocking of traffics and lockdown of villages have no scientific evidence and could result in civil unrest [31], which may negatively impact mental wellbeing. For example, the result of a study conducted in Italy found that COVID-19 lockdown measures in Italy have had a high negative mental health impact on the Italian general population [32]. Just like the Italians, the Nigerians are more likely to be mentally affected by this lockdown because they are highly social and collective in nature. The practice of social distancing in the COVID-19 pandemic could also have mental health implications [33].

The findings of this study have far-reaching implications. Firstly, the COVID-19 pandemic has caused most people in different parts of the world to be excessively worried, scared, and anxious. According to the report published on May 8<sup>th</sup>, 2020 by the Well Being Trust, and the Washington, D.C.-based Robert Graham Center for Policy Studies in Family Medicine and Primary Care,

during this coronavirus pandemic some people have resorted to suicides, substance use, and abuse as a means of escape [34]. More so, besides the immediate mental and physical health consequences of the pandemic, there are possible long term implications for mental and physical health as well [35]. This pandemic will be eventually eradicated but the negative impact it has on peoples' mental wellbeing and health may be long-lasting. It is therefore recommended that the governments of over 200 countries affected by this pandemic should not only focus on eradicating this pandemic, but also look for ways to improve the mental wellbeing of their citizens. Efforts should be made to drastically reduce the anxiety that people experience during this COVID-19. Governments could attempt to censor information online to prevent misinformation about this disease as well as work hand in hand with the mental health practitioners to promote people's mental wellbeing and health in this pandemic. Individuals could engage more in activities which will lessen levels of anxiety and boost wellbeing. Some of these include channeling emotions and energy into creativity (drawing, painting, and poetry), engaging more in physical exercises (such as running, cycling and walking) as well as practicing mindfulness exercises. The constant news about COVID-19 may induce anxiety which could bring about adverse mental wellbeing. It is further suggested that individuals should be deliberate about the kind of information they absorb in these times as well as the sources. To reduce COVID-19 anxiety, people should focus more on positive thoughts, get enough sleep as well as make connections with others via texts, email, etc. People could make efforts to get help when they start to experience severe worry and fear.

This study is not without limitations, first, being a cross-sectional survey; extraneous variables were not properly controlled. Secondly, the sample size is relatively small thus generalizations should be made with caution. Again the use of the snowballing sampling technique made sampling bias difficult to eliminate. Researchers should put these factors into consideration for further studies.

## Conclusion

COVID-19-induced anxiety can be motivating at the mild stage as it will make people abide by the COVID-19 precautionary measures such as hand hygiene and mask-wearing. However, at severe stages, it can adversely impact on individuals' mental wellbeing.

## Conflict of interest

The authors have no known conflicts of interest to disclose.

## Ethical Approval

The study complied with the Declaration of Helsinki and

its later addenda. All applicable protocols regarding the ethical use of human volunteers were followed during the research; informed consent was obtained from participants and participation was voluntary and anonymous. The potential participants were assured that participation in the study was absolutely voluntary and they could withdraw at any point from the study without consequences.

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