



Psychological Well-being among Ibadan Residents in the COVID Era: Role of Psychological factors

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Abstract

The COVID-19 pandemic has affected nearly every aspect of daily living across the globe, mental health professionals and communities at large have raised concerns over the potential psychological impact of the pandemic. Relevant to the challenge the current pandemic poses on human existence, recent studies have shown that preventive and control regulations to curtail the spread of COVID-19 may exacerbate the symptoms of OCD especially among those who strictly comply with these guidelines. Therefore, our aim in this study was to understand whether psychological well-being is influenced by peoples' adherence to COVID-19 prevention and control guidelines, contamination obsession and washing compulsion among a sample of Ibadan residents. An online cross-sectional survey was conducted to sample 190 participants using purposive and snowball sampling technique to optimized data collection. In line with the objectives of the study we generated five hypotheses that were tested using appropriate inferential statistic. Our findings showed that adherence to COVID-19 prevention and control guidelines correlated positively with contamination obsession and washing compulsion.

Keywords: COVID-19, Adherence to COVID-19 prevention and control guidelines, Contamination obsession and washing compulsion, Psychological well-being



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Introduction

Measures to control the ongoing COVID-19 pandemic such as social distancing, quarantine and vaccination, as well as infodemic about the disease's spread, have had a negative impact on many people's mental and physical health (Alfawaz et al. 2020). As the COVID-19 pandemic has affected nearly every aspect of daily living across the globe, mental health professionals and communities at large raised concerns over the potential psychological impact of the pandemic. According to Galea et al. (2020) who argued that the rate at which the disease got the attention of the public through print and social media as well as the anxiety-provoking statistics and hearsay associated with the disease may likely to have heightened psychological distress with adverse effect on both physical and mental health. Evidentially, extant literature has documented similar large-scale disaster (be it natural or man-made) to have consistently impacted individuals' psychological well-being negatively (Neria et al. 2008), therefore it is instinctual for people to often equip themselves with new information from diverse sources so as to protect their well-being, some of which are generated unverified claims of conspiracy theories, adding to the already heightened fear and anxiety (Roy et al. 2020). A growing body of research has reported poorer well-being to be associated with the pandemic and measures of preventing its spread, many of these studies identified increase in the anxiety and depression as the most affected mental health (Pfefferbaum & North, 2020; Assari & Habibzadeh, 2020). The stockpiling of essential household items or panic buying, media coverage of the pandemic and emphasis on regular and thorough hand washing may explain increase in anxiety and depression during the lockdown.

It is a known fact that prevention and public health measures are of utmost importance to reducing the spread of this disease and that achieving a successful preventive strategy largely depends on public adherence and individual willingness to comply to precautionary measures recommended at all time. Despite recent discovery of the mutant variants (delta and omicron) of the infectious disease, suggesting that we are yet to get the disease under control, many continue to not comply with national, state and local guidelines for COVID-19 prevention due to lack of trust in government, inconsistency in policies and social norms, misinterpretation of information and low perceived risk (Young & Goldstein, 2021). All these reasons may put individuals at significant risk of the infectious disease. Hence, the level



of adherence to this institutionalize guidelines is yet to be empirically justified to know whether it improves psychological well-being. It is worthy to note that from the beginning of the pandemic, a number of recommendations was suggested by health agencies both locally and globally such as, social distancing, respiratory hygiene through wearing masks and hand hygiene. Hand-washing by soap or by alcohol-based sanitizer as a preventive measure of contamination is being extensively campaigned for from the onset, and considerable numbers of individual are obeying these recommendations through social enforcement policies. Although, hand washing is surely beneficial for preventing the spread of COVID-19, at the same time, there is looming notion about how this hand hygiene behavior could be a risk factor to promoting contamination obsessions and washing compulsion (a symptom of Obsession and Compulsive Disorder OCD) in the general population such that it could mask and promote these symptoms unintentionally, thereby making diagnosis and interventions towards the treatment of these symptoms difficult.

It is worthy to emphasize that obsessions can occur without compulsion or compulsion without obsession and as well, these two concepts can co-occur simultaneously. Therefore, according to the definition given by the current Diagnostic Statistical Manual (DSM-V) for mental and behavioural disorders, the diagnostic criteria for OCD defines obsession as "recurrent and persistent thoughts urge, or impulses that are experienced, at some time during the disturbance, as intrusive and unwanted, and that in most individuals cause marked anxiety or distress or the individual attempts to ignore or suppress such thoughts, urges, or images, or to neutralize them with some other thought or action". Likewise, compulsion is defined by the manual as "repetitive behaviors (such as hand washing, ordering, checking) or mental acts (e.g., praying, counting, repeating words silently) that the individual feels driven to perform in response to an obsession or according to rules that must be applied rigidly". Relevant to the challenge the current pandemic poses at the human race, it is possible that the regulations to curtail the spread of COVID-19 may worsen the symptoms of OCD especially among those who strictly comply with the regulation guidelines.

Evidently, recent studies supported the notion of the exacerbation of OCD symptoms due to the COVID-19 pandemic. Specifically, Benatti et al. (2020) have reported OCD symptoms to be worsened in approximately one-third of their sample in Italy, and Prestia et al. (2020) have shown in their study that the presence of contamination symptoms before the first lockdown was associated with increased OCD symptom severity during the first lockdown in 2020. With respect to these findings, it is safe to conclude based on the empirical findings that the pandemic may have strengthen functional beliefs regarding contamination obsession as people with obsessive and compulsive



symptoms especially with washing compulsion may also experience relief from stigmatization (Jelinek et al. 2020) and continue their ritual practices without feeling socially or morally guilty but finding solace in that their actions is justifiable on health grounds. It has become apparent that recommendations provided by OCD experts on how to treat fear of contamination with respect to exposure and prevention may clash with health agency advices being advertised everywhere. For instance, to curtail the spread COVID-19, the CDC site (CDC, 2020) now recommends that the general public to “clean and disinfect frequently touched surfaces daily; if soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol; and cover all surfaces of hands and rub them together until they feel dry”. This recommendation may exacerbate the symptoms of contamination obsession and compulsion not only among those clinically diagnosed with OCD but the general population who are encouraged to adhere strictly to these guidelines. Given the unprecedented contagiousness, uncontrollability in the spread and mutation of COVID-19 alongside preoccupation of the general public and explicit recommendation by health authorities, it is believed that the implication of COVID-19 for OCD and related disorder to be particularly relevant to mental and health professionals to understand whether individuals at risk for COVID-19 would be unlikely to develop OCD symptoms if not exposed to such infectious disease.

In addition, this study also brought to light the need to reflect on the diagnostic threshold for OCD as it apparently overlaps in appearance with prevention and control guidelines for COVID-19. More so, the importance of biomedical and behavioural factors to get COVID-19 under control and enhance psychological well-being of people cannot be overemphasized. It is vitally important to determine how behavioral factors associated with COVID-19 influences psychological well-being among Nigerians especially after the peak of the disease. However, most studies in the Nigerian population with respect to the pandemic have mostly focus on knowledge, attitude, risk perception and compliance to the disease recommended preventive guidelines (Adebowale et al. 2021; Olapegba et al. 2021, Nnama-Okechukwu, et al. 2020; Ilesanmi & Fagbule 2020, Ekpenyong et al. 2020) and its challenges (Ilesanmi & Fagbule, 2020). Although, some studies have identified uncertainty towards the future, financial instability and exposure to social media as the common factors that causes poorer psychological well-being during the pandemic (Li, Hafeez & Zaheer, 2021; Bao et al. 2020). Therefore, the aim of this study was to understand the influence of adherence to COVID-19 prevention and control guidelines, contamination obsession and compulsion on psychological well-being among Ibadan residents. It is in this light that this study hopes to provide empirical answers to the following research questions that serves as the working hypotheses of the study;

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- i. What would be the relationship between adherence to COVID-19 prevention and control guidelines, contamination obsession and compulsion with psychological well-being?
 - ii. To what extent would levels (High vs. Low) adherence to COVID-19 prevention and control guidelines influence psychological well-being?
 - iii. Would those with higher contamination and obsession compulsion report better psychological well-being than those with lower contamination obsession and compulsion?
 - iv. To what extent would adherence to the prevention and control guidelines with contamination obsession and washing compulsion independently and jointly predict psychological well-being?
 - v. Would those that had received first or second dose of the vaccine differ on well-being when compared to those that had yet to receive the vaccine?

Theoretical conceptualization

Health Belief Model (HBM)

The Health Belief Model (HBM) was developed in the early 1966 by Rosenstock (1966) who developed the model for the purpose of understanding why people fail to adopt disease prevention strategies or screening tests for the early detection of disease. Later uses of HBM were for patients' responses to symptoms and compliance with medical treatments. The HBM suggests that a person's belief in a personal threat of an illness or disease together with a person's belief in the effectiveness of the recommended health behavior or action will predict the likelihood the person will adopt the behavior. The HBM derives from psychological and behavioral theory with the foundation that the two components of health-related behavior are; first, the desire to avoid illness, or conversely get well if already ill, second is the belief that a specific health action will prevent, or cure, illness. Ultimately, an individual's course of action often depends on the person's perceptions of the benefits and barriers related to health behavior. In its relation to the current study, the Health Belief Model proposes that people are most likely to take preventive action (social distancing, respiratory hygiene through wearing masks and hand hygiene) if they perceive the threat of a health risk to be serious (risk of getting infected), if they feel they are personally susceptible and if there are fewer costs than benefits to engaging in it. Therefore, a central aspect of the Health Belief Model is that behavioral change interventions are more effective if they address an individual's specific perceptions about susceptibility, benefits, barriers, and self-efficacy.

Method and Measures

Design & Sampling



A cross-sectional design that sampled 190 participants was adopted for this study to identify how adherence to the recommended COVID-19 preventive measures, contamination obsession and washing compulsion could impact psychological well-being. For optimized data collection within a limited time frame while limiting social distancing, the purposive and snowball sampling technique were adopted. The developed e-questionnaire through Google Forms was circulated across different social media networks and groups to potential participants. Thereafter, participants on their will were asked to share the questionnaire with other potential participants within their reach.

Measures

The 12-item General Health Questionnaire developed by Goldberg (1972) was used to measure psychological well-being of the participants. The GHQ is a well-known and widely used screening tool for assessment of mental health. The GHQ-12 was described by Rompell et al (2013) as the most recognized among the multiple versions of the scale due to its simplicity, while others believe it has satisfactory reliability (Alicia et al. 2012), sensitivity and specificity (Daradkeh et al. 2001). Rather than the bi-modal scoring method (0-0-1-1) popularly used in the clinical setting, we used the recommended research scoring Likert method (0-1-2-3) as a response format to questions such as; "Been able to concentrate on whatever you are doing" "Lost much sleep over worry" "Felt constantly under strain" and "Been losing self-confidence in yourself". Higher composite score is indicative of a better psychological well-being and lower score is indicative of poorer psychological well-being. An internal consistency score of 0.78 which demonstrate an acceptable level of internal inconsistency was generated for this study.

Adherence to COVID-19 prevention and control guidelines was assessed with the 10-item question adapted from Dikemena et al. (2021). The 10-item questions were based on the recommendation and control guidelines recommended by WHO and local health authorities. Responses were categorized into Yes/No format to questions that assess the use of face mask, physical distancing, hand-hygiene and disinfection of touchable household materials. Each item was scored 1 if participant confirmed that s/he adhered to the measure in question or otherwise scored 0. A total obtainable score ranges from 0 to 10 where higher score indicates adequate adherence to the COVID-19 prevention and control guidelines and low scores are considered inadequate adherence. This study reported a Cronbach alpha of 0.82 indicating that the measure is highly internally consistent.



Burns (1995) developed The Padua Inventory-Washington State Revision (PIWS-R) that was used to assess contamination obsessions and washing compulsions in this study. The scale is a well-validated screening and clinical assessment tool for obsessive-compulsive symptoms. It is a self-reported full scale that consist of 39 items divided into five domains that measures: contamination obsessions and washing compulsions, obsessional thoughts of harm to self and others, dressing/grooming compulsions, checking compulsions, obsessional thoughts of harm to self and others, and obsessional impulses to harm self and others. In line with the scope of the study we adapted the 10-item domain that assesses contamination obsessions and the washing compulsions subscale. Five-point Likert response format ranging from *not at all* to *very much* was used to answer questions like "I feel my hands are dirty when I touch money," "I think even slight contact with bodily secretions (perspirations, saliva, urine, etc.) may contaminate my clothes or harm me," and "I wash my hands more often and for longer than necessary." High scores indicate higher contamination obsessions and washing compulsions, while low scores indicate lower contamination obsessions and washing compulsions. The scale generated a very strong internal consistency score of 0.86.

Procedure

After receiving ethical approval, we conducted an online cross-sectional survey between April 4th and January 16th, 2022 that included participants residing in Ibadan who varies by geopolitical zones in Nigeria. The online survey, which was created using Google Forms, was shared on social media platforms such as Facebook and WhatsApp. This method for developing and disseminating the questionnaire was chosen due to the need to maintain social distance as well as easy accessibility of the participants. Participant who were willing to participate in the study as long as they met the inclusion criteria (being a Nigerian, 18 years or older, resides in Ibadan, being able to read and write, and having a functional email address) were asked to provide their functional email address as a means of consenting to participate in the study after reading the introductory information of the questionnaire thoroughly. This is done to ensure that participation is voluntary as well as to reduce the possibility of multiple responses from participants. In order to increase participation in this study, participants were also asked to share the form link with other potential participants who may not have been contacted by the researchers on their own. In the end, 190 responses were received and subjected to statistical analysis.

Statistical analysis

A total of five hypotheses were generated and tested using SPSS version 26 in order to meet the objectives of this study. The first hypothesis was tested using Pearson product moment correlation, the second and third hypotheses were tested using t-tests for independent samples, and the fourth and fifth hypotheses were tested using multiple linear regression and one-way analysis of variance respectively at 0.05 level of significance. Meanwhile, basic descriptive statistic measures such as mean and standard deviation were used to test the demographic characteristics of the participants.

Results

Table 1 shows the distribution of the participants' characteristics across specified demographic variables.

Variables	Category	n(190)	n%	Mean	SD	p
Sex	Male	81	42.6	21.44	5.37	>.05
	Female	109	57.4	20.76	6.46	
Age	18-56		28.42	7.02		
Educational qualification						
	Secondary	10	5.3	23.00	8.19	>.05
	Tertiary	126	66.3	20.62	5.77	
	Postgraduate	54	28.4	21.68	6.01	
Marital Status	Single	128	67.4	20.82	5.98	
	Legally married	61	32.1	21.39	6.05	
	Divorced/Separated	01	0.5	30.00		†
Occupation	Unemployed/Student	67	35.5	19.70	5.96	<.05
	Self-employed	46	24.2	21.06	6.02	
	Work for a private company	50	26.3	23.38	5.52	
	Work for the government	27	14.2	20.07	6.06	
Religion	Christianity	95	50.0	22.66	6.11	<.05
	Islam	93	48.9	19.46	5.56	
	Traditional	02	1.1	18.50	.70	
Ethnic Affiliation	Yoruba	148	77.9	21.12	6.06	>.05
	Igbo	12	6.3	24.00	3.93	
	Hausa	06	3.2	20.83	4.16	
	Others	24	12.6	19.17	6.57	
Geopolitical zone	North Central	18	9.5	17.61	8.00	>.05
	North East	04	2.1	21.50	5.06	
	North West	02	1.1	18.50	3.53	
	South East	07	3.7	23.29	2.49	
	South South	05	2.6	19.20	6.22	
	South West	154	81.1	21.43	5.81	
Dose of COVID-19 vaccine received						
	First dose	14	7.4	19.00	4.41	>.05
	Second dose	29	15.3	19.28	3.69	
	None	147	77.4	21.60	6.42	



Table 2 presents the summary of Pearson correlation showing the relationship among adherence to COVID-19 prevention and control guidelines, contamination obsessions and washing compulsion and psychological well-being.

Variables	Mean	SD	1	2	3
Adherence to COVID-19 Prevention and Control Guidelines	6.08	2.90	1		
Contamination Obsessions and Washing Compulsion	18.33	8.46	.46**	1	
Psychological Well-being	21.05	6.01	.14	.08	1

** . Correlation is significant at the 0.01 level (2-tailed).

The relationship among adherence to COVID-19 prevention and control guidelines, contamination obsessions and washing compulsion and psychological well-being is presented in table 2. The outcome shows a significant positive relationship between adherence to COVID-19 prevention and control guidelines, and contamination obsessions and washing compulsion ($r=.46$, $p<.01$), this relationship simply implies that the more the participants adhere to prevention and control guidelines recommended by relevant government agencies, the higher the tendencies of contamination obsessions and washing compulsion. However, psychological well-being has no significant relationship with adherence to COVID-19 prevention and control guidelines ($r=.14$, $p>.05$), and contamination obsessions and washing compulsion ($r=.08$, $p>.05$). This relationship implies that increase or decrease in adherence to COVID-19 prevention and control guidelines, and contamination obsessions and washing compulsion neither increases nor decreases the psychological well-being of the participants.

Table 3 shows the summary of t-test of independent samples showing differences in the level of adherence to COVID-19 prevention and control guidelines on psychological well-being.

Variables	Adherence to COVID-19 Prevention and Control Guidelines	N	Mean	SD	t	df	p
Psychological Well-being	High Adherence (≥ 6.08)	89	22.02	5.43	2.10	188	$<.05$
	Low Adherence (<6.08)	101	20.20	6.40			

Result from table 3 shows that there is significant difference ($t=2.10$, $df=188$, $p<.05$) between those that reported higher adherence to COVID-19 prevention and control guidelines (Mean=22.02, SD=5.43) and those with lower adherence (Mean=20.20, SD=6.40) on psychological well-being. This implies that those with higher

adherence to the recommended prevention and control guidelines for COVID-19 significantly reported a better psychological well-being than those with lower adherence to these guidelines.

Table 4 shows the summary of t-test of independent samples showing differences in the level of contamination obsessions and washing compulsion on psychological well-being.

Variables	Contamination Obsessions and Washing Compulsion	N	Mean	SD	t	df	p
Psychological Well-being	High Obsession/Compulsion (≥ 18.33)	98	21.35	6.00	.72	188	>.05
	Low Obsession/Compulsion (<18.33)	92	20.72	6.04			

We examined whether those who had higher contamination obsessions and washing compulsion would report better psychological well-being when compared to those who had lower contamination obsessions and washing compulsion. The result of t-test for independent samples conducted for this hypothesis revealed in table 4 that there is no significant difference in psychological well-being ($t=.72$, $df=188$, $p>.05$) between those that reported higher obsessions and washing compulsion (Mean=21.35, SD=6.00) and those with lower contamination obsessions and washing compulsion (Mean=20.72, SD=6.04).

Table 5 presents the summary of multiple regression showing the independent and joint influence of Adherence to COVID-19 prevention and control guidelines and Contamination obsession and washing compulsion on Psychological well-being.

Model	B	t	Sig	R	R ²	F	p
Adherence to COVID-19 prevention and control guidelines	.12	1.52	>.05	.14	.02	2.73	>.05
Contamination obsession and washing compulsion	.03	.31	>.05				

Table 5 presents the summary of the multiple regression analysis showing that there was no significant joint influence of adherence to COVID-19 prevention and control guidelines, and Contamination obsessions and washing compulsion on psychological well-being [$F_{(2,187)}=1.79$, $R=.14$, $R^2=.02$, $p>.05$]. This implies that the models' variables insignificantly jointly accounted for 2% of the total variance



observed in psychological well-being. In addition, no significant independent influence of adherence to COVID-19 prevention and control guidelines ($\beta = .12$, $t = 1.52$, $p > .05$), and contamination obsessions and washing compulsion ($\beta = .03$, $t = .31$, $p > .05$) on psychological well-being.

Table 6 presents the summary of one-way analysis of variance showing the descriptive and differences in the categories of vaccination on psychological well-being.

Descriptive	First dose	Second dose	Yet to receive the vaccine		
N	14	29	147		
Mean	19.00	19.28	21.60		
Standard Deviation	4.31	3.69	6.42		
Source	Sum of Squares	df	Mean Square	F	P
Between Groups	194.36	2	97.18	2.73	>.05
Within Groups	6649.11	187	35.56		
Total	6843.47				

To test the hypothesis that those who had received first or second dose of the COVID-19 vaccine would differ on psychological well-being when compared to those that are yet to receive the vaccine, we performed a one-way analysis of variance to compare mean differences of these three categories (recipient of first dose, second dose and those yet to be vaccinated) on psychological well-being. The result revealed no significant statistical difference in the mean score of these categories on psychological well-being ($F_{(2, 187)} = 2.73$, $p > .05$). In other words, the psychological well-being of those that had received the first or second dose of the COVID-19 vaccine differs not with those who were yet to receive the vaccine.

Discussion

The main goal of this study was to see how adherence to COVID-19 prevention and control guidelines, as well as contamination obsessions and washing compulsions, influenced the psychological well-being of 190 Nigerian Ibadan residents. First, we looked at the link between adherence to COVID-19 prevention and control guidelines, contamination obsessions, and washing compulsions, and psychological well-being. We discovered that compliance with COVID-19 prevention and control guidelines was linked to



contamination obsessions and washing compulsion, implying that those who adhere to COVID-19 prevention and control guidelines were more likely to have contamination obsessions and washing compulsion. This result matched that of Loosen et al. (2021), who found that seeking information about the pandemic increases compliance with government preventive and control regulations, as well as obsessive and compulsive symptoms in non-clinical samples. Furthermore, we discovered that adherence to these regulatory guidelines, as well as contamination obsessions and washing compulsions, had no significant influence on the participants' psychological well-being. This finding contradicted previous studies that found linkage between exacerbated OCD symptoms and health anxiety in pandemics such as Ebola virus (Blakey et al. 2015), H1N1 influenza (Brand et al. 2013), and Zika virus (Blakey & Abramowitz, 2017).

Second, we hypothesized that those who adhered more strictly to the COVID-19 prevention control guidelines, such as frequent hand washing, wearing a face mask, and maintaining physical distance, would have a better psychological well-being than those who adhered less strictly. Our findings supported the hypothesis that those who strictly follow these regulatory guidelines have a better psychological well-being than those who follow them less strictly, implying that prioritizing one's health by taking precautionary measures against COVID-19 infection helped improve psychological well-being. Our finding found support from previous studies that have linked compliance with COVID-19 preventive and control guidelines to improved mental health and well-being (Harper et al. 2020; Krekel et al. 2020). Although, some studies believed the effect of COVID-19 regulatory measures may be bidirectional as these rules especially social distancing may itself leads to poorer mental health and psychological well-being (Brooks et al. 2020).

We also examined if people with higher contamination obsessions and washing compulsions had better psychological well-being than people with lower contamination obsessions and washing compulsions. There was no significant difference in psychological well-being between these two groups based on our finding. Those with higher contamination obsessions and washing compulsions, on the other hand, scored slightly (but not significantly) higher on psychological well-being measures. This means that psychological well-being is unaffected by contamination obsessions and washing compulsion levels. In this regard, our findings contradict the findings of a study by David et al. (2020), which found worsening symptoms, particularly in relation to contamination type of OCD, among patients with an existing diagnosis of OCD after six weeks in lockdown. Similar to this finding, French and Lyne (2020) discovered that access to media coverage of the pandemic causes OCD symptoms related to



contamination to worsen significantly. These findings, on the other hand, suggest that the pandemic exacerbates OCD symptoms in already diagnosed patients. This indicates that the patients' psychological well-being deteriorates as the pandemic exacerbates their symptoms.

We also looked at the impact of contamination obsessions and washing compulsions on psychological well-being, as well as adherence to COVID-19 preventive and control guidelines. We found no evidence of these factors having a significant independent or combined impact on psychological well-being. This contradicts Tanir et al. (2020) findings that contamination obsessions and washing compulsions worsen significantly in Turkish adolescents with OCD and German adults with OCD as reported by Jelinek et al. (2021). Similarly, Hassoulas et al. (2021) found that patients with contamination-related OCD's washing and checking compulsion scores were linked to the impact of COVID-19 on daily activities and health anxiety. This finding revealed that the severity of contamination-related symptoms worsens health anxiety and daily activities in OCD patients. The fact that previous studies focused on a clinically diagnosed sample of OCD patients, as opposed to the current study, which focused on the general population who had not been clinically diagnosed with OCD, could be a plausible explanation for the discrepancy in our findings.

Finally, we wanted to see if those who had received either of the COVID-19 vaccine shots reported better psychological health than those who had not yet received the vaccine. We discovered that neither those who had received a single dose nor those who had received a double dose of the vaccine had better psychological health than those who had not yet received the vaccine. We suspected that the unequal distribution of vaccine dosages could have influenced the outcome, as more than two-thirds of the participants had yet to receive their shot, compared to the fragment that had received the shot. Nevertheless, our findings contradicted a study by Blige et al. (2022) that sought to understand the impact of the COVID-19 vaccine on Turkish adults' mental health. They found that the vaccine recipients' mental health improved in terms of life satisfaction, while anxiety, depression, hopelessness, and oversensitivity to somatic symptoms decreased significantly compared to those who were not vaccinated. In contrast, Jordan et al. (2021) in a three-month longitudinal study found that anxiety, depression, insomnia, and Post-Traumatic Stress Disorder (PTSD) were all reported to be elevated to moderate and severe threshold among health and social care workers, despite the fact that over 80% of them had received at least one shot of the COVID-19 vaccine. In addition, the authors attributed the participants' poorer psychological well-being to ineffective communication pattern of the organization with respect to COVID-19 events and trends.



Limitations

Notwithstanding, the findings of this study have some limitations, one of which is the timing of the study, which was primarily during a period when most institutions had relaxed lockdown restrictions and social activities had resumed as usual. We cannot rule out the possibility that the social desirability factor influenced our findings, particularly on measures of adherence to COVID-19 regulatory rules. Many of the respondents may not have reported their compliance with social/physical distancing, regular hand hygiene, and face mask use honestly. Furthermore, the fact that data was collected online through the use of Google forms limits this study. This method was chosen to comply with the government's policy of minimizing social contact and because it was the most effective way to reach a larger number of people. However, those who did not have access to the internet, email, or social media (WhatsApp and Facebook) as the preferred method of disseminating the online questionnaire, as well as those who could not read or write, were unable to participate in this study. This could also account for the small sample size. More importantly, because Ibadan residents come from a variety of ethnic backgrounds, this study does not adequately represent them. In addition to the aforementioned limitations, we suggest that future studies may consider other measures that assess a variety of constructs that have been empirically justified as components of psychological well-being, such as depression, anxiety, PTSD, and insomnia, rather than using a single measure as used in this study to assess psychological well-being. In the same vein, we propose that a replication of this study be conducted during the peak period of the pandemic, if one occurs in the future, to strengthen the generalization of these findings.

Conclusion

Based on the findings of this study, we concluded that compliance with government and health agency-recommended preventive and control guidelines of the pandemic is likely to exacerbate contamination obsessions and washing compulsions among Ibadan residents, and that strict adherence to COVID-19 regulatory rules improves psychological well-being. Furthermore, this study also brought to light the need to reflect on the diagnostic threshold for OCD as it apparently overlaps in appearance with prevention and control guidelines for COVID-19.

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