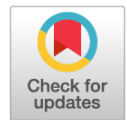


УДК 616.988:159.9

DOI: <https://doi.org/10.17816/PAVLOVJ97131>

Отличительные особенности влияния пандемии COVID-19 на психологическое здоровье населения разных стран: результаты поперечного онлайн-исследования в Албании, Индии, Иране и Нигерии

E. Dashi¹, B. Vahdani², A. Chepure³, N. Hayatudeen⁴, P. Kumari⁵, S. Farhang⁶, R. Ramalho⁷,
I. Patil⁸, M. Majidi², R. Ransing⁵, E. Metaj¹, U. Baba Musami^{8,9}, A. Fisayo¹⁰, I. Metu¹⁰,
A. Ungratwar³, S. Rehman¹¹, V. Alikaj^{1,12}, T.-W. Numbere¹³, F. Adiukwu^{10,14}

¹ University Hospital Center "Mother Theresa", Tirana, Albania;

² Qazvin University of Medical Sciences, Qazvin, Iran;

³ Vilasrao Deshmukh Government Institute of Medical Sciences, Latur, Maharashtra, India;

⁴ Federal Neuropsychiatric Hospital, Kaduna, Kaduna State, Nigeria;

⁵ BKL Walawalkar Rural Medical College, Ratnagiri, Maharashtra, India;

⁶ Tabriz University of Medical Sciences, Tabriz, Iran;

⁷ School of Population Health, University of Auckland, Auckland, New Zealand;

⁸ Federal Neuro-Psychiatric Hospital Maiduguri, Maiduguri, Borno State, Nigeria;

⁹ University of Maiduguri, Maiduguri, Borno State, Nigeria;

¹⁰ University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria;

¹¹ Lady Hardinge Medical College, New Delhi, India;

¹² Tirana Medical University, Tirana, Albania;

¹³ Department of Public Health, Rivers State Ministry of Health, Port Harcourt, Rivers State, Nigeria;

¹⁴ University of Port Harcourt, Port Harcourt, Rivers State, Nigeria

АННОТАЦИЯ

Обоснование. Коронавирусная инфекция 2019 г. (COVID-19) оказала неоспоримое влияние на психологическое здоровье людей во всем мире. Это воздействие обусловлено сложной взаимосвязью социальных, культурных, экономических и связанных с COVID-19 факторов. Однако недостаточное количество данных по сопоставлению показателей психологического здоровья населения в различных странах ограничивает наше понимание этих взаимосвязей.

Цель. Оценить и сравнить частоту нарушений психологического здоровья (общие проблемы и проблемы, связанные с COVID-19) и их корреляции в четырех странах: Албании, Индии, Иране и Нигерии.

Материалы и методы. В настоящем исследовании изучались проблемы психологического здоровья населения четырех стран (Албании, Индии, Ирана и Нигерии). Участники отбирались в период с 07 июля по 13 ноября 2020 гг. В исследовании для оценки степени депрессии, тревоги и бессонницы использовался перекрестный анонимный онлайн-опрос, который включал «Анкету здоровья пациента» (англ.: *Patient Health Questionnaire*, PHQ-9), анкету «Генерализованное тревожное расстройство» 7 (англ.: *Generalized Anxiety Disorder 7*, GAD-7) и Индекс тяжести бессонницы (англ.: *Insomnia Severity Index*, ISI). Для оценки проблем психологического здоровья, связанных с COVID-19, опрос включал шкалу тревоги, связанной с коронавирусной инфекцией (англ.: *Corona Anxiety Scale*, CAS), Шкалу навязчивой идеи COVID-19 (англ.: *Obsession with COVID-19 Scale*, OCS) и шкалу страха перед COVID-19 (англ.: *Fear of COVID-19 Scale*, FCV-19S). Для анализа данных использовались тесты χ^2 , Краскела–Уоллиса и множественная линейная регрессия.

Результаты. В целом, распространенность генерализованной тревоги, депрессии, бессонницы и тревоги, вызванной COVID-19, была выше среди населения Ирана, по сравнению с другими тремя странами. Факторами риска повышенной тревожности по поводу новой коронавирусной инфекции были страх, депрессия, беспокойство и возраст; однако эти факторы в четырех обследованных странах были различны. Самый высокий показатель, 47%, был среди албанского населения, самый низкий, 20%, — в Индии.

Вывод. Настоящее исследование показывает, что изменения в распространенности нарушений психологического здоровья во время продолжающейся пандемии, включая проблемы, связанные с COVID-19, отличаются в разных странах. Поэтому политика и мероприятия в области здравоохранения, принимаемые в каждой стране, должны быть адаптированы к конкретным потребностям страны, а не основываться на универсальных глобальных мерах реагирования.

Ключевые слова: COVID-19; тревога; депрессия; бессонница; психологическое здоровье

Для цитирования:

Dashi E., Vahdani B., Chepure A., Hayatudeen N., Kumari P., Farhang S., Ramalho R., Patil I., Majidi M., Ransing R., Metaj E., Baba Musami U., Fisayo A., Metu I., Ungratwar A., Rehman S., Alikaj V., Numbere T.-W., Adiukwu F. Отличительные особенности влияния пандемии COVID-19 на психологическое здоровье населения разных стран: результаты поперечного онлайн-исследования в Албании, Индии, Иране и Нигерии // Российский медико-биологический вестник имени академика И.П. Павлова. 2022. Т. 30, № 3. С. 335–344. DOI: <https://doi.org/10.17816/PAVLOVJ97131>

DOI: <https://doi.org/10.17816/PAVLOVJ97131>

Characteristic Features of Impact of COVID-19 Pandemics on Mental Health of Population of Different Countries: Results of Cross-Sectional Online Studies in Albania, India, Iran and Nigeria

E. Dashi¹, B. Vahdani², A. Chepure³, N. Hayatudeen⁴, P. Kumari⁵, S. Farhang⁶, R. Ramalho⁷, I. Patil⁵, M. Majidi², R. Ransing^{5✉}, E. Metaj¹, U. Baba Musami^{8, 9}, A. Fisayo¹⁰, I. Metu¹⁰, A. Ungratwar³, S. Rehman¹¹, V. Alikaj^{1, 12}, T.-W. Numbere¹³, F. Adiukwu^{10, 14}

¹ University Hospital Center "Mother Theresa", Tirana, Albania;

² Qazvin University of Medical Sciences, Qazvin, Iran;

³ Vilasrao Deshmukh Government Institute of Medical Sciences, Latur, Maharashtra, India;

⁴ Federal Neuropsychiatric Hospital, Kaduna, Kaduna State, Nigeria;

⁵ BKL Walawalkar Rural Medical College, Ratnagiri, Maharashtra, India;

⁶ Tabriz University of Medical Sciences, Tabriz, Iran;

⁷ School of Population Health, University of Auckland, Auckland, New Zealand;

⁸ Federal Neuro-Psychiatric Hospital Maiduguri, Maiduguri, Borno State, Nigeria;

⁹ University of Maiduguri, Maiduguri, Borno State, Nigeria;

¹⁰ University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria;

¹¹ Lady Hardinge Medical College, New Delhi, India;

¹² Tirana Medical University, Tirana, Albania;

¹³ Department of Public Health, Rivers State Ministry of Health, Port Harcourt, Rivers State, Nigeria;

¹⁴ University of Port Harcourt, Port Harcourt, Rivers State, Nigeria

ABSTRACT

BACKGROUND: The coronavirus infection of 2019 (COVID-19) produced an incontestable impact on the mental health of people around the world. This impact is conditioned by a complex interrelation of social, cultural, economic and COVID-19-associated factors. However, insufficient data on comparison of parameters of mental health of the population in different countries limits our understanding of these interrelations.

AIM: To evaluate and compare the frequency of mental health disorders (general problems and problems related to COVID-19) and their correlations in four countries: Albania, India, Iran and Nigeria.

MATERIALS AND METHODS: In this study, the problems of mental health of the population of four countries (Albania, India, Iran and Nigeria) were investigated. The participants were selected in the period from July 07, 2020 to November 13, 2020. The study used a cross-check anonymous online questioning to assess the degree of depression, anxiety and insomnia, which included "Patient Health Questionnaire" (PHQ-9), "Generalized Anxiety Disorder" 7 (GAD-7) questionnaire and Insomnia Severity Index (ISI). To assess the mental health problems associated with COVID-19, the survey included Corona Anxiety Scale (CAS), Obsession with COVID-19 Scale (OCS) and Fear of COVID-19 Scale (FCV-19S). To analyze the data, χ^2 , Kruskal-Wallis tests and multiple linear regression were used.

RESULTS: In general, the prevalence of general anxiety, depression, insomnia and COVID-19-associated anxiety, was higher among the Iranian population compared to the other three countries. Risk factors for increased anxiety about the new coronavirus infection were fear, depression, trouble and age; however, these factors were different in the four studied countries. The parameter was highest (47%) in the Albanian population and lowest (20%) in India.

CONCLUSIONS: This study shows different prevalence of psychological health disorders during the ongoing pandemics, including problems associated with COVID-19, in different countries. Therefore, healthcare policy and measures adopted in different countries, should be adapted to specific needs of the country rather than be based on the universal global responsive measures.

Keywords: COVID-19; anxiety; depression; insomnia; mental health

For citation:

Dashi E, Vahdani B, Chepure A, Hayatudeen N, Kumari P, Farhang S, Ramalho R, Patil I, Majidi M, Ransing R, Metaj E, Baba Musami U, Fisayo A, Metu I, Ungratwar A, Rehman S, Alikaj V, Numbere T-W, Adiukwu F. Characteristic Features of Impact of COVID-19 Pandemics on Mental Health of Population of Different Countries: Results of Cross-Sectional Online Studies in Albania, India, Iran and Nigeria. *I.P. Pavlov Russian Medical Biological Herald*. 2022;30(3):335–344. DOI: <https://doi.org/10.17816/PAVLOVJ97131>

Received: 22.01.2022

Accepted: 19.04.2022

Published: 30.09.2022

LIST OF ABBREVIATIONS

CAS — Corona Anxiety Scale
CI — Confidence Interval
COVID-19 — COronaVirus Disease 2019
FCV-19 — Fear of COVID-19 Scale
GAD-7 — Generalized Anxiety Disorder 7
ISI — Insomnia Severity Index
OCS — Obsession with COVID-19 Scale
OR — Odds Ratio
PHQ-9 — Patient Health Questionnaire
VIF — Variation Inflation Factor

BACKGROUND

The coronavirus disease 2019 (COVID-19) pandemic has affected the mental health of people across the world [1]. Despite existing reports of an increased prevalence of mental health issues during the pandemic, the majority of these issues have remained unrecognized and untreated [2–5]. This is likely due to the need to focus health efforts on controlling the pandemic. However, this necessary focus has opened a gap that requires further attention, and the full extent of these issues remains unknown.

Most studies about the impact of the pandemic and its mitigation strategies on people's mental health have focused on common mental health issues, such as *anxiety* and *depression*, among *specific populations*, e. g., health care workers [6–9]. This literature is heterogeneous in methodology (e. g., tools or scales, duration of data collection), often devoid of scales that assess COVID-19 related mental health issues, and commonly lacking in cross-country comparisons [10, 11]. However, some studies have also explored COVID-19 related mental health issues, and they have reported an increased mental health burden associated with these issues [12–14]. Moreover, it has been reported that coronavirus anxiety has had harmful effects on people's mental health and wellbeing across the world [15].

Although COVID-19 infection is a global issue, as it moves across borders, cultures, and socio-political environments, its impact on people's mental health is framed by these structures. Thus, the rise in mental health issues is also likely framed by country-specific characteristics, such as differences in mitigation strategies, coping responses between different populations, religion and other socio-cultural factors, and pre-existing mental and physical illnesses. Cross-country studies using validated scales and homogenous methods are needed to examine and compare the psychological effects of COVID-19 on individuals in different countries.

The **aim** of the study to estimate and compare the epidemiology of mental health issues (common mental health issues and COVID-19 related mental health issues) and their correlates across four countries, viz., Albania, India, Iran, and Nigeria.

MATERIALS AND METHODS

A cross-sectional anonymous online survey was conducted across four countries, i.e., Albania, India, Iran, Nigeria, after the approval from Institutional ethical committees, and the study was conducted according to the principle of the Declaration of Helsinki.

For the online survey, a Google® form that contained information about the study and the tools used in study was first prepared in English and then translated into the included countries' local languages, i.e., Albanian, Marathi, Hausa, and Persian. The survey included socio-demographic information and the translated and validated versions of the Patient Health Questionnaire (PHQ-9) [16], the Generalized Anxiety Disorder 7 (GAD-7) [17], and the Insomnia Severity Index (ISI) [18]. The survey also included three COVID-19 related mental health assessment tools, the Corona Anxiety Scale (CAS) [19], the Obsession with COVID-19 Scale (OCS) [20], and the Fear of COVID-19 Scale (FCV-19S) [21]. Prior to the study, these three COVID-19 related mental health assessment tools were translated into the included countries' local languages, after obtaining permission from the original authors, as per the standard protocol set up by the World Health Organization [22].

Study tools:

Corona Anxiety Scale (CAS): CAS is a self-report mental health screener of dysfunctional anxiety associated with the coronavirus. It is a brief, Likert-type, seven-item scale with good psychometric properties (validity, internal consistency, and reliability). A total score of five or more indicates the presence of coronavirus anxiety [19].

Obsession with COVID-19 Scale (OCS): OCS is a self-report mental health screener of obsessive thinking about COVID-19 with good psychometric properties. A total score of seven or more indicates persistent and dysfunctional thinking about COVID-19 [20].

Fear of COVID-19 Scale (FCV-19S): The FCV-19S is a seven-item scale that assesses people's fear of COVID-19 [21]. Participants are asked to rate their agreement with each of the seven statements on a 5-point scale (strongly disagree to strongly agree). Higher scores indicate greater fear of COVID-19.

Patient Health Questionnaire (PHQ-9): PHQ-9 is a Likert-type scale that assesses symptoms of depression in the previous two weeks. The total score is interpreted as suggesting mild (5–9), moderate (10–14), moderately severe (15–19), or severe (20–27) depression. A total score of 10 or more indicates a possible diagnosis of depressive disorder [16].

Generalized Anxiety Disorder 7 (GAD-7): GAD-7 was designed to assess anxiety symptoms of the generalized anxiety disorder from the DSM-IV [17]. It comprises seven items, each scored from 0 to 3, with total scores ranging from 0 to 21. Higher scores indicate greater self-reported anxiety symptom severity. A total score of 10 or more indicates the presence of anxiety.

Insomnia Severity Index (ISI): The ISI is a self-rated questionnaire with seven questions evaluating usual sleep habits during the previous two weeks. Possible scores range from 0–28, and they are interpreted as indicating the absence of insomnia (0–7), or a sub-threshold (8–14), moderate (15–21) or severe (22–28) insomnia [18, 23]. A total score of 15 or more indicates the presence of insomnia.

Participant's recruitment. The online survey developed using Google® form was distributed to potential participants via email and the instant messaging application (WhatsApp®). The form included information about the study, explaining that participation was voluntary and that

the survey was anonymous. Participants aged 18 years and above who consented to participate were included in the study. Data collection took place between 07th July 2020 to 13th November 2020.

Table 1 depicts the socio-demographic characteristics of the study participants. A total of 1787 participants were included in the final analysis (excluding duplicates = 43, non-response = 98 and incomplete response = 23). A significant difference was observed among the study populations across the four countries regarding age, gender, occupation, and marital status. The Indian study population was younger (age: 30.69 ± 10.67 years), predominantly male, and unmarried compared to other countries.

The number of participants who had been infected with COVID-19 was higher in the group from Iran (9.02%) and lower in the group from Nigeria (2.73%), versus Albania (5.97%) and India (5.88%). The number of participants who reported that one or more family members had been infected with COVID-19 was also higher in the group from Iran (51.98%), closely followed by the group from Albania (49.24%), versus India (23.52%) and Nigeria (21.3%). Similarly, the number of participants who reported living with a family member who had been infected with COVID-19 was higher in the group from Iran (6.46%), versus Albania (4.90%), India (2.48%), and Nigeria (1.26%).

Table 1. Socio-Demographic Characteristics of Participants across four countries

| Variable | | India | Nigeria | Albania | Iran | Significance |
|--|---------------------------------------|----------------------------|---------------------------|---------------------------|---------------------------|---|
| Study population, n | | 442 | 474 | 469 | 402 | – |
| Duration of Data Collection | | 12.07.2020– August 2020 | 07.07.2020– 13.11.2020 | 24.08.2020– 17.09.2020 | 07.09.2020– 17.09.2020 | – |
| Language | | Marathi | English + Hausa | Albanian | Persian | – |
| Age, years | | 30.69 ± 10.67 | 35.15 ± 7.86 | 32.64 ± 9.94 | 34.52 ± 10.14 | F (3, 1783) = 19.36, p < 0.001 |
| Sex, n (%) | Female | 165 (37.33) | 256 (54.00) | 377 (80.38) | 318 (79.10) | $\chi^2 = 256.3$, df = 6, p < 0.001 |
| | Male | 277 (62.66) | 216 (45.56) | 88 (18.76) | 84 (20.89) | |
| | Prefer not to say | 0 | 2 (0.40) | 4 (0.85) | 0 | |
| Occupation, n (%) | Health Care worker | 169 (38.23) | 222 (46.83) | 183 (39.01) | 212 (52.73) | $\chi^2 = 24.68$, df = 6, p < 0.001 |
| | Others | 273(61.74) | 252 (53.14) | 286 (60.98) | 190 (47.26) | |
| Marital status, n (%) | Never Married | 246 (55.65) | 142 (29.95) | 127 (27.07) | 163 (40.54) | $\chi^2 = 223.4$, df = 18, p < 0.001 |
| | Married, or in a domestic partnership | 188 (42.53) | 290 (61.48) | 267 (56.92) | 223 (55.74) | |
| | Widowed | 6 (1.35) | 7 (1.47) | 8 (1.70) | 7 (1.74) | |
| | Separated | 1 (0.22) | 4 (0.84) | 2 (0.42) | 0 | |
| | In a relationship | 1 (0.22) | 14 (2.95) | 58 (12.36) | 0 | |
| | Divorced | 0 | 8 (1.68) | 6 (1.27) | 9 (2.23) | |
| | Other | 0 | 9 (1.89) | 1 (0.27) | 0 | |
| COVID-19 (Infected, Current and Past), n (%) | Yes | 26 (5.88) | 11 (2.73) | 28 (5.97) | 37 (9.02) | $\chi^2 = 19.32$, df = 3, p = 0.0002 |
| | No | 416 (94.11) | 463 (97.67) | 441 (94.02) | 365 (90.76) | |
| COVID-19 Infected (Current and Past): Family member, n (%) | No | 338 (76.47) | 373 (78.69) | 238 (50.74) | 193 (48.00) | $\chi^2 = 157.3$, df = 6, p < 0.001 |
| | Yes, but not living together | 93 (21.04%) | 95(20.04%) | 208 (44.34) | 183 (45.52) | |
| | Yes and living together | 11 (2.48) | 6 (1.26) | 23 (4.90) | 26 (6.46) | |

Statistical analysis was performed with Statistical Package for Social Sciences (SPSS v21, Chicago, IL, USA). Descriptive parameters were expressed in terms of mean, standard deviation, or percentage. The categorical variables in the study were tested by the chi-square test of association. The Kruskal–Wallis test was used to determine the differences between two or more groups. A posthoc Dunn's multiple comparisons test was used to compare the difference in the sum of ranks between two groups. Multiple linear regression analyses were also performed to evaluate the substantial determinants of coronavirus anxiety across the four countries. To test for collinearity, correlation coefficients and variation inflation factor (VIF) were examined.

RESULTS

Table 2 shows the results of the tools used to assess common mental health issues and COVID-19 related mental health issues. The number of participants who scored five or more in the CAS, indicating the presence of coronavirus anxiety, was higher among the group from Iran (11.69%), followed by the group from India (7.01%), Albania (6.60%), and Nigeria (5.90%). The number of participants who scored seven or more in the OCS, indicating dysfunctional COVID-19 thought patterns, was also higher in the group from Iran (14.42%). However, this number was here followed by the group from Albania (9.32%), Nigeria (9.07%), and lastly, India (4.75%). While the fear of COVID-19 infection was higher among the Iranian and Nigerian populations compared to the Indian and Albanian populations.

Table 2. COVID-19 specific mental health issues and common mental health issues across the four countries

| Variable | | India | Nigeria | Albania | Iran | Significance |
|-------------------------|-----------------------------------|-------------|-------------|-------------|-------------|---------------------------------|
| Obsession with COVID-19 | | 21 (4.75) | 43 (9.07) | 44 (9.32) | 58 (14.42) | $\chi^2 = 23.4, 2, p < 0.0001$ |
| Coronavirus Anxiety | | 31 (7.01) | 28 (5.90) | 31 (6.60) | 47 (11.69) | $\chi^2 = 10.56, 2, p = 0.0051$ |
| PHQ-9 (Depression) | Mild (5–9), n (%) | 58 (13.12) | 84 (17.72) | 77 (16.24) | 131 (32.58) | $\chi^2 = 265.8, 9, p < 0.0001$ |
| | Moderate (10–14), n (%) | 21 (4.75) | 50 (10.54) | 40 (8.52) | 67 (16.66) | |
| | Severe (15–27), n (%) | 15 (3.38) | 12 (4.74) | 15 (5.04) | 71 (17.65) | |
| GAD-7 (Anxiety) | Mild (5–9), n (%) | 55 (12.44) | 113 (23.83) | 61 (13.00) | 132 (32.83) | $\chi^2 = 152.9, 6, p < 0.0001$ |
| | Moderate (10–14), n (%) | 22 (4.97) | 17 (3.58) | 43 (9.16) | 60 (14.92) | |
| | Severe (>15), n (%) | 1 (0.22) | 20 (4.21) | 16 (3.41) | 30 (7.46) | |
| ISI (Insomnia) | Subthreshold (8–14), n (%) | 112 (25.33) | 151 (31.85) | 149 (31.76) | 180 (44.77) | $\chi^2 = 214.5, 6, p < 0.0001$ |
| | Clinical (moderate, 15–21), n (%) | 31 (7.01) | 68 (14.34) | 49 (10.44) | 100 (24.87) | |
| | Clinical (severe, 22–28), n (%) | 3 (0.67) | 12 (2.53) | 14 (2.98) | 33 (8.20) | |

Notes: PHQ-9 — Patient Health Questionnaire, GAD-7 — Generalized Anxiety Disorder 7, ISI — Insomnia Severity Index

Table 2 also shows the results from the scales used to assess the potential presence of three mental disorders, i. e., *depression*, *anxiety*, and *insomnia*. The number of participants who scored ten and more in the PHQ-9, indicating a possible diagnosis of depression, was highest among the Iranian group of participants (34.31%), followed by the Nigerian (15.28%), Albanian (13.56%), and Indian (8.13%) groups (Figure 1). Similarly, the number of participants who scored ten or more in the GAD-7, indicating a possible diagnosis of generalized anxiety disorder, was highest among the Iranian group of participants (22.38%), followed by the Albanian (12.57%), Nigerian (7.79%), and Indian groups (5.19%). The number of participants who scored 15 or more in the ISI, indicating the presence of insomnia, was higher among the Iranian group of participants (33.07%), followed by the Nigerian (16.87%), Albanian (13.42%), and Indian (7.68%).

Based on the Kruskal–Wallis test, we observed a significant difference among the participants from the

four included countries in terms of mental health issues (Table 3). Post-hoc analysis using Dunn's multiple comparisons revealed no significant differences among the Nigerian and Iranian participants in terms of fear of COVID-19 ($K = -47.38$) and coronavirus anxiety ($K = -54.63$). Also, the difference was insignificant for depression among the Indian and Nigerian participants ($K = -73.08$).

Multiple linear regression findings indicated that, for the participants from India, males had 0.243 times lower odds (odds ratio (OR): 0.35, 95% confidence interval (CI): 0.024–0.67, $p < 0.05$) of scoring five or more on the CAS than females in India (Table 4). For the Indian group of participants, significant determinants of a coronavirus anxiety in Indian population were fear of COVID-19 infection (OR: 0.123, 95% CI: 0.092–0.155, $p < 0.001$) and depression (OR: 0.204, 95% CI: 0.142–0.266, $p < 0.001$). This was also the case for the Iranian group of participants (fear of COVID-19 (OR: 0.237, 95% CI: 0.19–0.28, $p < 0.001$), depression (OR: 0.075, 95% CI: 0.013–0.14, $p < 0.05$).

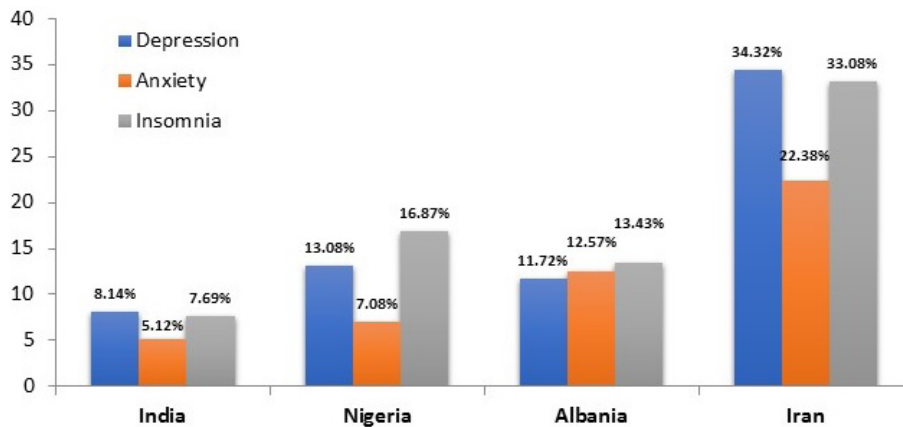


Fig. 1. Registered frequency of depression, anxiety and insomnia across four countries.

Table 3. Comparison of the results of questionnaires and scales between countries

| Variable | FCV-19S | OCS | CAS | PHQ-9 | GAD-7 | ISI |
|--------------------------|------------|-----------|-----------|-----------|-----------|-----------|
| Kruskal–Wallis statistic | 167.7*** | 97.38*** | 34.02*** | 251.2*** | 220.9*** | 204.1*** |
| India vs. Nigeria | -364.9 *** | -140.4*** | -104.5*** | -73.08 | -116.9** | -134.5*** |
| India vs. Albania | -271.7*** | -281.9*** | -92.67*** | -160.7*** | -238.9*** | -199.6*** |
| India vs. Iran | -412.3*** | -291.4*** | -159.1*** | -513.5*** | -492.8*** | -490.8*** |
| Nigeria vs. Albania | 93.18* | -141.6*** | 11.81 | -87.67* | -122*** | -65.08 |
| Nigeria vs. Iran | -47.38 | -151*** | -54.63 | -440.4*** | -375.9*** | -356.3*** |
| Albania vs. Iran | -140.6*** | -9.45 | -66.43 | -352.7*** | -254*** | -291.2*** |

Notes: Figures are mean rank difference, * — $p \leq 0.05$, ** — $p \leq 0.01$, *** — $p \leq 0.001$, FCV-19S — Fear of COVID-19 Scale, OCS — Obsession with COVID-19 Scale, CAS — Corona Anxiety Scale, PHQ-9 — Patient Health Questionnaire, GAD-7 — Generalized Anxiety Disorder 7, ISI — Insomnia Severity Index

Table 4. Predictors of Coronavirus Anxiety across the different countries

| COVID-19 anxiety | Nigeria | India | Albania | Iran |
|---------------------------------------|--------------------------|-------------------------|-------------------------|-------------------------|
| FCV-19 | 0.065 (0.035, 0.096)*** | 0.123 (0.092, 0.155)*** | 0.112 (0.083, 0.141)*** | 0.237 (0.19, 0.28)*** |
| Age | 0.021 (-0.003, 0.045)* | 0.003 (-0.012, 0.018) | 0.016 (0.001, 0.032)* | -0.001 (-0.02, 0.02) |
| Gender | 0.022 (-0.34, 0.38) | 0.35 (0.024, 0.67)* | 0.37 (0.013, 0.73)* | 0.192 (-0.367, 0.752) |
| PHQ-9 | 0.09 (0.03, 0.14)** | 0.204 (0.142, 0.266)*** | 0.053 (-0.005, 0.110) | 0.075 (0.013, 0.14)* |
| GAD-7 | 0.11 (0.05, 0.17)*** | 0.044 (-0.044, 0.131) | 0.192 (0.132, 0.253)*** | 0.020 (-0.053, 0.094) |
| ISI | -0.004 (-0.051, 0.043) | -0.026 (-0.080, 0.028) | 0.052 (0.011, 0.094)* | 0.031 (-0.02, 0.08) |
| Infected with COVID-19 | -1.275 (-2.517, -0.033)* | -0.997 (-1.67, -0.32)** | -0.061 (-0.695, 0.574) | -0.43 (-1.25, 0.39) |
| Family members infected with COVID-19 | -0.045 (-0.451, 0.361) | -0.156 (-0.48, 0.17) | -0.191 (-0.448, 0.065) | 0.013 (-0.38, 0.41) |
| Constant | 1.08 (-1.78, 3.96) | 0.082 (-1.56, 1.72) | -2.80 (-4.39, -1.21)*** | -3.35 (-5.78, -0.91)*** |
| Adjusted R ² | 0.204 | 0.379 | 0.478 | 0.333 |
| F for R ² change | 16.114 | 34.621 | 54.507 | 26.036 |

Notes: Figures are unstandardized regression coefficients, with 95% confidence intervals in parenthesis. All independent variables were entered simultaneously into the models. * — $p \leq 0.05$, ** — $p \leq 0.01$, *** — $p \leq 0.001$, FCV-19 — Fear of COVID-19 Scale, PHQ-9 — Patient Health Questionnaire, GAD-7 — Generalized Anxiety Disorder 7, ISI — Insomnia Severity Index, COVID-19 — coronavirus disease 2019

Similarly, for the Nigerian group of participants, significant determinants of a coronavirus anxiety were also fear of COVID-19 infection (OR: 0.065, 95% CI: 0.035–0.096, $p < 0.001$) and depression (OR: 0.088, 95% CI: 0.031–0.144,

$p < 0.01$), as well as anxiety (OR: 0.113, 95% CI: 0.050–0.176, $p < 0.001$). Finally, significant determinants of a coronavirus anxiety for the Albanian group of participants were, besides fear of COVID-19 (OR: 0.112, 95% CI: 0.083–0.141, $p < 0.001$),

and anxiety (OR: 0.192, 95% CI: 0.132–0.25, $p < 0.001$), insomnia (OR: 0.052, 95% CI: 0.011–0.094, $p < 0.05$), age (OR: 0.016, 95% CI: 0.001–0.032, $p < 0.05$), and gender (OR: 0.37, 95% CI: 0.013–0.73, $p < 0.05$).

Lastly, being diagnosed with COVID-19 independently and negatively predicted Coronavirus anxiety in the Nigerian (OR: 1.275, 95% CI: 2.52–0.033, $p < 0.05$) and Indian population (OR: 0.997, 95% CI: 1.67–0.32, $p < 0.01$). R^2 for the coronavirus anxiety model was (Nigeria = 0.20, India = 0.38, Albania = 0.478, Iran = 0.33) indicative of variation and effects of external factors across these countries.

DISCUSSION

Although the COVID-19 pandemic is a global affair, it has likely affected people's mental health and wellbeing differently across different countries. To the best of our knowledge, this is the first study that has assessed both COVID-19 related mental health issues and common mental health issues across countries. The four included countries, Albania, India, Iran, and Nigeria are middle to low-income countries with low mental health research capacity, yet different in terms of mitigation strategies, religion, and other socio-cultural factors. The results from the present study suggest a higher prevalence of anxiety, depression, insomnia, and coronavirus anxiety in Iran than in Albania, India, and Nigeria. Still, the prevalence of these mental health issues varied across countries, suggesting the need for locally tailored responses to the mental health needs of each country.

When comparing our findings with previous studies that also used the PHQ-9 to assess depression, we found that the prevalence of depression in the four included countries seems to be diminishing. In Albania, two previous studies conducted in March–April 2020 found a prevalence of depression of 20.44% and about 25%, respectively [24, 25] (versus 13.56% in the present study). Similarly, two previous studies in India, one conducted early in 2020 [26] and the other in April 2020 [27], found a prevalence of depression of 12.0% and 10.5%, respectively (8.13% in the present study). Likewise, a previous study conducted in March–April 2020 in Nigeria found that 35.1% of the healthcare workers and 23.5% of the general population presented with depression [28], versus 15.28% in the present study. Finally, the present study also found a prevalence of 34.31% of depression among Iranian participants. In contrast, a previous study with nurses in Iran found depression in 37.5% of their participants [7], signaling a similar prevalence or a slighter downward trend when compared with the other countries.

Regarding anxiety, there was no shared trend in all four included countries when comparing our findings with previous studies. A prior study in Nigeria from March–April 2020 found anxiety in 58.4% of healthcare workers and 49.6% of the general population [28], while we only found a prevalence of 7.79%. Similarly, a previous study from India

conducted in April 2020 reported a prevalence of about 14% of anxiety [27], versus 5.19% in the present study. Likewise, a previous study in Iran, conducted in April 2020 with nurses, found a prevalence of anxiety of 38% [7], versus 22.38% in the present study. However, a previous study in Albania found a prevalence of anxiety of about 13% [25] (reference), versus 11% in the present study, indicating a slighter shift in the prevalence of anxiety in this country. So, while it seems like the prevalence of depression and anxiety is moving down in India and Nigeria, there is a less apparent movement in the prevalence of depression in Iran and anxiety in Albania.

Fewer studies have specifically focused on exploring insomnia with validated tools such as the ISI during the COVID-19 pandemic in any of the four included countries. There is one study from Nigeria, conducted in March–April 2020, using this tool, which found that about 14% of the male and 16% of the female participants reported insomnia [29], (versus 16.87% of the Nigerian participants in the present study). A study in India, conducted in April–May 2020, found that about 15% of their participants reported insomnia using the ISI tool [30] (versus 7.68% of the Indian participants in the present study). The lower presence of insomnia in India could be related to the apparent reduction in the prevalence of depression and anxiety in that country. Still, this again signals the different ways in which the COVID-19 pandemic continues to affect people's mental health and wellbeing in different countries.

Regarding COVID-19 related mental health issues, there are even fewer studies conducted in the four included countries. A previous study conducted in India (June–July 2020) reported a prevalence of 3% of coronavirus anxiety (versus 7% in the present study), 13.4% of obsession with COVID-19 (versus 4.75% in the present study), and 47% with fear of COVID-19. A study conducted in Nigeria (April and July 2020) with pregnant women found a prevalence of 16% of coronavirus anxiety (versus 6% in the present study). Also, in the present study, contrary to our expectations, people infected with COVID-19 scored lower in the CAS, indicating less coronavirus anxiety. Plus, the lower explained variance for coronavirus anxiety indicated data with high variability and involvement of multiple external factors that were not considered in the study. These differences between studies and countries further signal how the COVID-19 pandemic has different effects in different communities, and how these communities' specific contexts frame these effects.

Despite the differences in presentation between the four included countries, the previous and current study findings support the peak phenomenon of the emotional epidemic curve, as suggested by R. Ransing, et al. [1]. During the infectious disease outbreak, the emotional epidemic curve is characterized by a steep increase in mental health issues, followed by a decline and then a surge in the prevalence of mental health issues. The present study suggests that this epidemic curve may express differently in different

countries. These differences may be due to a multitude of factors, including the presence of the “infodemic” concerning COVID-19, quarantine and lockdown measures, differences in adaptive coping mechanisms and community resilience, and the overall response of the healthcare system and health related policies. While the pandemic is undeniably a global affair, these findings suggest that all countries must consider their local needs in terms of mental health, and ensure the delivery of timely, locally relevant, culturally safe, and evidence-based strategies.

STRENGTHS AND LIMITATIONS

The present study is not without its limitations. As with most online surveys, some limitations of the present study were its snowball sampling and self-selection bias. Still, efforts were made to restrict the circulation of the survey to identified members only (random email or phone verification of about 10%). The present study also used self-report questionnaires that offer a proxy diagnosis of the underlying conditions they assess, which were not followed by face-to-face assessments. Thus, the actual prevalence of the assessed conditions may vary, despite having used validated screening tools in this study. The study also had worth mentioning strengths, including an adequate sample size and few missing data, a homogenous use of the assessment tools across countries, the administration of these tools in each country’s local language, and the involvement of countries with different socio-cultural backgrounds.

СПИСОК ИСТОЧНИКОВ

1. Ransing R., Adiuoku F., Pereira-Sanchez V., et al. Mental Health Interventions during the COVID-19 Pandemic: A Conceptual Framework by Early Career Psychiatrists // *Asian Journal of Psychiatry*. 2020. Vol. 51. P. 102085. doi: [10.1016/j.ajp.2020.102085](https://doi.org/10.1016/j.ajp.2020.102085)
2. Roy A., Singh A.K., Mishra S., et al. Mental health implications of COVID-19 pandemic and its response in India // *The International Journal of Social Psychiatry*. 2021. Vol. 67, № 5. P. 587–600. doi: [10.1177/0020764020950769](https://doi.org/10.1177/0020764020950769)
3. Hoyer C., Ebert A., Szabo K., et al. Decreased utilization of mental health emergency service during the COVID-19 pandemic // *European Archives of Psychiatry and Clinical Neuroscience*. 2021. Vol. 271, № 2. P. 377–379. doi: [10.1007/s00406-020-01151-w](https://doi.org/10.1007/s00406-020-01151-w)
4. Magamela M.R., Dzinamarira T., Hlongwa M. COVID-19 consequences on mental health: An African perspective // *The South African Journal of Psychiatry*. 2021. Vol. 27. P. 1611. doi: [10.4102/sajpsy.v27i0.1611](https://doi.org/10.4102/sajpsy.v27i0.1611)
5. Olf M., Primasari I., Qing Y., et al. Mental health responses to COVID-19 around the world // *European Journal of Psychotraumatology*. 2021. Vol. 12, № 1. P. 1929754. doi: [10.1080/20008198.2021.1929754](https://doi.org/10.1080/20008198.2021.1929754)
6. Hassannia L., Taghizadeh F., Moosazadeh M., et al. Anxiety and Depression in Health Workers and General Population During COVID-19 in IRAN: A Cross-Sectional Study // *Neuropsychopharmacology Reports*. 2021. Vol. 41, № 1. P. 40–49. doi: [10.1002/npr2.12153](https://doi.org/10.1002/npr2.12153)
7. Pouralazadeh M., Bostani Z., Maroufizadeh S., et al. Anxiety and depression and the related factors in nurses of Guilan University of Medical Sciences hospitals during COVID-19: A web-based cross-sectional study // *International Journal of Africa Nursing Sciences*. 2020. Vol. 13. P. 100233. doi: [10.1016/j.ijans.2020.100233](https://doi.org/10.1016/j.ijans.2020.100233)
8. Gupta B., Sharma V., Kumar N., et al. Anxiety and Sleep Disturbances Among Health Care Workers During the COVID-19 Pandemic in India:

CONCLUSION

The prevalence of the coronavirus disease 2019 (COVID-19) related mental health issues and common mental disorders varied across the four countries, signaling local differences in how the pandemic affects people’s mental health and wellbeing. This variation also suggests the need for each country to incorporate locally relevant and culture-sensitive interventions to support their populations’ mental health.

ADDITIONAL INFORMATION

Funding. This study was not supported by any external sources of funding.

Conflict of interests. The authors declare no conflicts of interests.

Contribution of the authors: E. Dashi, B. Vahdani, A. Chepure, N. Hayatudeen — research concept and design, data collection, text writing; P. Kumari, I. Patil — data collection, statistical processing, editing; S. Farhang — data collection, text writing; R. Ramalho — data analysis, editing; M. Majidi, E. Metaj, U. Baba Musami, A. Fisayo, I. Metu, A. Ungratwar, S. Rehman, V. Alikaj, T.-W. Numbere — data collection, text writing, editing; R. Ransing, F. Adiuoku — research design and concept, data analysis, text writing, editing. All authors made a substantial contribution to the conception of the work, acquisition, analysis, interpretation of data for the work, drafting and revising the work, final approval of the version to be published and agree to be accountable for all aspects of the work.

Финансирование. Авторы заявляют об отсутствии внешнего финансирования при проведении исследования.

Конфликт интересов. Авторы заявляют об отсутствии конфликта интересов.

Вклад авторов: Dashi E., Vahdani B., Chepure A., Hayatudeen N. — концепция и дизайн исследования, сбор данных, написание текста; Kumari P., Patil I. — сбор данных, статистическая обработка, редактирование; Farhang S. — сбор данных, написание текста; Ramalho R. — анализ данных, редактирование; Majidi M., Metaj E., Baba Musami U., Fisayo A., Metu I., Ungratwar A., Rehman S., Alikaj V., Numbere T.-W. — сбор данных, написание текста, редактирование; Ransing R., Adiuoku F. — концепция и дизайн исследования, анализ данных, написание текста, редактирование. Авторы подтверждают соответствие своего авторства международным критериям ICMJE (все авторы внесли существенный вклад в разработку концепции и подготовку статьи, прочли и одобрили финальную версию перед публикацией).

9. Hosseinzadeh-Shanjani Z., Hajmiri K., Rostami B., et al. Stress, Anxiety, and Depression Levels Among Healthcare Staff During the COVID-19 Epidemic // *Basic and Clinical Neuroscience*. 2020. Vol. 11, № 2. P. 163–170. doi: [10.32598/bcn.11.covid19.651.4](https://doi.org/10.32598/bcn.11.covid19.651.4)
10. Xiong J., Lipsitz O., Nasri F., et al. Impact of COVID-19 pandemic on mental health in the general population: A systematic review // *Journal of Affective Disorders*. 2020. Vol. 277. P. 55–64. doi: [10.1016/j.jad.2020.08.001](https://doi.org/10.1016/j.jad.2020.08.001)
11. Luo M., Guo L., Yu M., et al. The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and general public — A systematic review and meta-analysis // *Psychiatry Research*. 2020. Vol. 291. P. 113190. doi: [10.1016/j.psychres.2020.113190](https://doi.org/10.1016/j.psychres.2020.113190)
12. Suryakumari V.B.P., Pallavi Reddy Y., Yadav S.S., et al. Assessing Fear and Anxiety of Corona Virus Among Dental Practitioners // *Disaster Medicine and Public Health Preparedness*. 2022. Vol. 16, № 2. P. 555–560. doi: [10.1017/dmp.2020.350](https://doi.org/10.1017/dmp.2020.350)
13. Lin C.-Y., Broström A., Griffiths M.D., et al. Investigating mediated effects of fear of COVID-19 and COVID-19 misunderstanding in the association between problematic social media use, psychological distress, and insomnia // *Internet Interventions*. 2020. Vol. 21. P. 100345. doi: [10.1016/j.invent.2020.100345](https://doi.org/10.1016/j.invent.2020.100345)
14. Ransing R., Ramalho R., Orsolini L., et al. Can COVID-19 related mental health issues be measured? // *Brain, Behavior, and Immunity*. 2020. Vol. 88. P. 32–34. doi: [10.1016/j.bbi.2020.05.049](https://doi.org/10.1016/j.bbi.2020.05.049)
15. Chen S.X., Ng J.C.K., Hui B.P.H., et al. Dual impacts of coronavirus anxiety on mental health in 35 societies // *Scientific Reports*. 2021. Vol. 11, № 1. P. 8925. doi: [10.1038/s41598-021-87771-1](https://doi.org/10.1038/s41598-021-87771-1)

16. Kroenke K, Spitzer R.L., Williams J.B. The PHQ-9: validity of a brief depression severity measure // *Journal of General Internal Medicine*. 2001. Vol. 16, № 9. P. 606–613. doi: [10.1046/j.1525-1497.2001.016009606.x](https://doi.org/10.1046/j.1525-1497.2001.016009606.x)
17. Spitzer R.L., Kroenke K., Williams J.B.W., et al. A brief measure for assessing generalized anxiety disorder: the GAD-7 // *Archives of Internal Medicine*. 2006. Vol. 166, № 10. P. 1092–1097. doi: [10.1001/archinte.166.10.1092](https://doi.org/10.1001/archinte.166.10.1092)
18. Morin C.M., Belleville G., Bélanger L., et al. The Insomnia Severity Index: psychometric indicators to detect insomnia cases and evaluate treatment response // *Sleep*. 2011. Vol. 34, № 5. P. 601–608. doi: [10.1093/sleep/34.5.601](https://doi.org/10.1093/sleep/34.5.601)
19. Lee S.A. Replication analysis of the coronavirus anxiety scale // *The Journal of Psychiatry and Neurological Sciences*. 2020. Vol. 33. P. 203–205. doi: [10.14744/dajpns.2020.00079](https://doi.org/10.14744/dajpns.2020.00079)
20. Lee S.A. How much “Thinking” about COVID-19 is clinically dysfunctional? // *Brain, Behavior, and Immunity*. 2020. Vol. 87. P. 97–98. doi: [10.1016/j.bbi.2020.04.067](https://doi.org/10.1016/j.bbi.2020.04.067)
21. Ahorsu D.K., Lin C.-Y., Imani V., et al. The Fear of COVID-19 Scale: Development and Initial Validation // *International Journal of Mental Health and Addiction*. 2022. Vol. 20, № 3. P. 1537–1545. doi: [10.1007/s11469-020-00270-8](https://doi.org/10.1007/s11469-020-00270-8)
22. WHO | Process of translation and adaptation of instruments [Internet]. Available at: https://www.who.int/substance_abuse/research_tools/translation/en/. Accessed: 2022 January 22.
23. Bastien C.H., Vallières A., Morin C.M. Validation of the Insomnia Severity Index as an outcome measure for insomnia research // *Sleep Medicine*. 2001. Vol. 2, № 4. P. 297–307. doi: [10.1016/s1389-9457\(00\)00065-4](https://doi.org/10.1016/s1389-9457(00)00065-4)
24. Mechili E.A., Saliaj A., Kamberi F., et al. Is the mental health of young students and their family members affected during the quarantine period? Evidence from the COVID-19 pandemic in Albania // *Journal of Psychiatric and Mental Health Nursing*. 2021. Vol. 28, № 3. P. 317–325. doi: [10.1111/jpm.12672](https://doi.org/10.1111/jpm.12672)
25. Kamberi F., Jaho J., Mechili E.A., et al. Effect of Covid-19 pandemic on mental health among Albanian people residing in the country and abroad — Implications for mental care // *Archives of Psychiatric Nursing*. 2020. Vol. 34, № 6. P. 507–512. doi: [10.1016/j.apnu.2020.08.003](https://doi.org/10.1016/j.apnu.2020.08.003)
26. Verma K. The mental health impact of the COVID-19 epidemic on college students in India // *Asian Journal of Psychiatry*. 2020. Vol. 53. P. 102398. doi: [10.1016/j.ajp.2020.102398](https://doi.org/10.1016/j.ajp.2020.102398)
27. Grover S., Sahoo S., Mehra A., et al. Psychological impact of COVID-19 lockdown: An online survey from India // *Indian Journal of Psychiatry*. 2020. Vol. 62, № 4. P. 354–362. doi: [10.4103/psychiatry.IndianJPsychiatry_427_20](https://doi.org/10.4103/psychiatry.IndianJPsychiatry_427_20)
28. Agberotimi S.F., Akinsola O.S., Oguntayo R., et al. Interactions Between Socioeconomic Status and Mental Health Outcomes in the Nigerian Context Amid COVID-19 Pandemic: A Comparative Study // *Frontiers in Psychology*. 2020. Vol. 11. P. 559819. doi: [10.3389/fpsyg.2020.559819](https://doi.org/10.3389/fpsyg.2020.559819)
29. Olaseni A.O., Akinsola O.S., Agberotimi S.F., et al. Psychological distress experiences of Nigerians during Covid-19 pandemic; the gender difference // *Social Sciences & Humanities Open*. 2020. Vol. 2, № 1. P. 100052. doi: [10.1016/j.ssaho.2020.100052](https://doi.org/10.1016/j.ssaho.2020.100052)
30. Lahiri A., Jha S.S., Acharya R., et al. Correlates of insomnia among the adults during COVID19 pandemic: evidence from an online survey in India // *Sleep Medicine*. 2021. Vol. 77. P. 66–73. doi: [10.1016/j.sleep.2020.11.020](https://doi.org/10.1016/j.sleep.2020.11.020)

REFERENCES

1. Ransing R, Adiukwu F, Pereira-Sanchez V, et al. Mental Health Interventions during the COVID-19 Pandemic: A Conceptual Framework by Early Career Psychiatrists. *Asian Journal of Psychiatry*. 2020;51:102085. doi: [10.1016/j.ajp.2020.102085](https://doi.org/10.1016/j.ajp.2020.102085)
2. Roy A, Singh AK, Mishra S, et al. Mental health implications of COVID-19 pandemic and its response in India. *The International Journal of Social Psychiatry*. 2021;67(5):587–600. doi: [10.1177/0020764020950769](https://doi.org/10.1177/0020764020950769)
3. Hoyer C, Ebert A, Szabo K, et al. Decreased utilization of mental health emergency service during the COVID-19 pandemic. *European Archives of Psychiatry and Clinical Neuroscience*. 2021;271(2):377–9. doi: [10.1007/s00406-020-01151-w](https://doi.org/10.1007/s00406-020-01151-w)
4. Magamela MR, Dzinamarira T, Hlongwa M. COVID-19 consequences on mental health: An African perspective. *The South African Journal of Psychiatry*. 2021;27:1611. doi: [10.4102/sajpsy.2021.01611](https://doi.org/10.4102/sajpsy.2021.01611)
5. Olff M, Primasari I, Qing Y, et al. Mental health responses to COVID-19 around the world. *European Journal of Psychotraumatology*. 2021;12(1):1929754. doi: [10.1080/20008198.2021.1929754](https://doi.org/10.1080/20008198.2021.1929754)
6. Hassannia L, Taghizadeh F, Moosazadeh M, et al. Anxiety and Depression in Health Workers and General Population During COVID-19 in IRAN: A Cross-Sectional Study. *Neuropsychopharmacology Reports*. 2021;41(1):40–9. doi: [10.1002/npr.2.12153](https://doi.org/10.1002/npr.2.12153)
7. Pouralizadeh M, Bostani Z, Maroufizadeh S, et al. Anxiety and depression and the related factors in nurses of Guilan University of Medical Sciences hospitals during COVID-19: A web-based cross-sectional study. *International Journal of Africa Nursing Sciences*. 2020;13:100233. doi: [10.1016/j.ijans.2020.100233](https://doi.org/10.1016/j.ijans.2020.100233)
8. Gupta B, Sharma V, Kumar N, et al. Anxiety and Sleep Disturbances Among Health Care Workers During the COVID-19 Pandemic in India: Cross-Sectional Online Survey. *JMIR Public Health and Surveillance*. 2020;6(4):e24206. doi: [10.2196/24206](https://doi.org/10.2196/24206)
9. Hosseinzadeh-Shanjani Z, Hajimiri K, Rostami B, et al. Stress, Anxiety, and Depression Levels Among Healthcare Staff During the COVID-19 Epidemic. *Basic and Clinical Neuroscience*. 2020;11(2):163–70. doi: [10.325598/bcn.11.covid19.651.4](https://doi.org/10.325598/bcn.11.covid19.651.4)
10. Xiong J, Lipsitz O, Nasri F, et al. Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*. 2020;277:55–64. doi: [10.1016/j.jad.2020.08.001](https://doi.org/10.1016/j.jad.2020.08.001)
11. Luo M, Guo L, Yu M, et al. The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and general public — A systematic review and meta-analysis. *Psychiatry Research*. 2020;291:113190. doi: [10.1016/j.psychres.2020.113190](https://doi.org/10.1016/j.psychres.2020.113190)
12. Suryakumari VBP, Pallavi Reddy Y, Yadav SS, et al. Assessing Fear and Anxiety of Corona Virus Among Dental Practitioners. *Disaster Medicine and Public Health Preparedness*. 2022;16(2):555–60. doi: [10.1017/dmp.2020.350](https://doi.org/10.1017/dmp.2020.350)
13. Lin C-Y, Broström A, Griffiths MD, et al. Investigating mediated effects of fear of COVID-19 and COVID-19 misunderstanding in the association between problematic social media use, psychological distress, and insomnia. *Internet Interventions*. 2020;21:100345. doi: [10.1016/j.invent.2020.100345](https://doi.org/10.1016/j.invent.2020.100345)
14. Ransing R, Ramalho R, Orsolini L, et al. Can COVID-19 related mental health issues be measured? *Brain, Behavior, and Immunity*. 2020;88:32–4. doi: [10.1016/j.bbi.2020.05.049](https://doi.org/10.1016/j.bbi.2020.05.049)
15. Chen SX, Ng JCK, Hui BPH, et al. Dual impacts of coronavirus anxiety on mental health in 35 societies. *Scientific Reports*. 2021;11(1):8925. doi: [10.1038/s41598-021-87771-1](https://doi.org/10.1038/s41598-021-87771-1)
16. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine*. 2001;16(9):606–13. doi: [10.1046/j.1525-1497.2001.016009606.x](https://doi.org/10.1046/j.1525-1497.2001.016009606.x)
17. Spitzer RL, Kroenke K, Williams JBW, et al. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*. 2006;166(10):1092–7. doi: [10.1001/archinte.166.10.1092](https://doi.org/10.1001/archinte.166.10.1092)
18. Morin CM, Belleville G, Bélanger L, et al. The Insomnia Severity Index: psychometric indicators to detect insomnia cases and evaluate treatment response. *Sleep*. 2011;34(5):601–8. doi: [10.1093/sleep/34.5.601](https://doi.org/10.1093/sleep/34.5.601)
19. Lee SA. Replication analysis of the coronavirus anxiety scale. *The Journal of Psychiatry and Neurological Sciences*. 2020;33:203–5. doi: [10.14744/dajpns.2020.00079](https://doi.org/10.14744/dajpns.2020.00079)
20. Lee SA. How much “Thinking” about COVID-19 is clinically dysfunctional? *Brain, Behavior, and Immunity*. 2020;87:97–8. doi: [10.1016/j.bbi.2020.04.067](https://doi.org/10.1016/j.bbi.2020.04.067)
21. Ahorsu DK, Lin C-Y, Imani V, et al. The Fear of COVID-19 Scale: Development and Initial Validation. *International Journal of Mental Health and Addiction*. 2022;20(3):1537–45. doi: [10.1007/s11469-020-00270-8](https://doi.org/10.1007/s11469-020-00270-8)
22. WHO | Process of translation and adaptation of instruments [Internet].

Available at: https://www.who.int/substance_abuse/research_tools/translation/en/. Accessed: 2022 January 22.

23. Bastien CH, Vallières A, Morin CM. Validation of the Insomnia Severity Index as an outcome measure for insomnia research. *Sleep Medicine*. 2001;2(4):297–307. doi: [10.1016/s1389-9457\(00\)00065-4](https://doi.org/10.1016/s1389-9457(00)00065-4)
24. Mechili EA, Saliq A, Kamberi F, et al. Is the mental health of young students and their family members affected during the quarantine period? Evidence from the COVID-19 pandemic in Albania. *Journal of Psychiatric and Mental Health Nursing*. 2021;28(3):317–25. doi: [10.1111/jpm.12672](https://doi.org/10.1111/jpm.12672)
25. Kamberi F, Jaho J, Mechili EA, et al. Effect of Covid-19 pandemic on mental health among Albanian people residing in the country and abroad — Implications for mental care. *Archives of Psychiatric Nursing*. 2020;34(6):507–12. doi: [10.1016/j.apnu.2020.08.003](https://doi.org/10.1016/j.apnu.2020.08.003)
26. Verma K. The mental health impact of the COVID-19 epidemic on college students in India. *Asian Journal of Psychiatry*. 2020;53:102398.

doi: [10.1016/j.ajp.2020.102398](https://doi.org/10.1016/j.ajp.2020.102398)

27. Grover S, Sahoo S, Mehra A, et al. Psychological impact of COVID-19 lockdown: An online survey from India. *Indian Journal of Psychiatry*. 2020;62(4):354–62. doi: [10.4103/psychiatry.IndianJPsychiatry_427_20](https://doi.org/10.4103/psychiatry.IndianJPsychiatry_427_20)
28. Agberotimi SF, Akinsola OS, Oguntayo R, et al. Interactions Between Socioeconomic Status and Mental Health Outcomes in the Nigerian Context Amid COVID-19 Pandemic: A Comparative Study. *Frontiers in Psychology*. 2020;11:559819. doi: [10.3389/fpsyg.2020.559819](https://doi.org/10.3389/fpsyg.2020.559819)
29. Olaseni AO, Akinsola OS, Agberotimi SF, et al. Psychological distress experiences of Nigerians during Covid-19 pandemic; the gender difference. *Social Sciences & Humanities Open*. 2020;2(1):100052. doi: [10.1016/j.ssa.2020.100052](https://doi.org/10.1016/j.ssa.2020.100052)
30. Lahiri A, Jha SS, Acharya R, et al. Correlates of insomnia among the adults during COVID19 pandemic: evidence from an online survey in India. *Sleep Medicine*. 2021;77:66–73. doi: [10.1016/j.sleep.2020.11.020](https://doi.org/10.1016/j.sleep.2020.11.020)

ОБ АВТОРАХ

Dashi Elona;

ORCID: <https://orcid.org/0000-0002-9280-2734>;
e-mail: elonadashi@gmail.com

Vahdani Bitā;

ORCID: <https://orcid.org/0000-0002-5727-8359>;
e-mail: bita.vahdani@gmail.com

Chepure Ashish;

ORCID: <https://orcid.org/0000-0003-2286-2050>;
e-mail: ashu.chepure@gmail.com

Hayatudeen Nafisatu;

ORCID: <https://orcid.org/0000-0002-9502-3971>;
e-mail: nhayatudeen@gmail.com

Kumari Padma;

ORCID: <https://orcid.org/0000-0002-4026-5172>;
e-mail: skpadma444@gmail.com

Farhang Sara;

ORCID: <https://orcid.org/0000-0001-8552-138X>;
e-mail: farhangs@tbzmed.ac.ir

Ramalho Rodrigo;

ORCID: <https://orcid.org/0000-0002-2372-6854>;
e-mail: r.ramalho@auckland.ac.nz

Patil Ishwar;

ORCID: <https://orcid.org/0000-0002-0426-8309>;
e-mail: ipp8507@gmail.com

Majidi Mahnaz;

ORCID: <https://orcid.org/0000-0001-7498-571X>;
e-mail: m.majidi@qums.ac.ir

*Ransing Ramdas;

ORCID: <https://orcid.org/0000-0002-5040-5570>;
e-mail: ramdas_ransing123@yahoo.co.in

Metaj Enita;

ORCID: <https://orcid.org/0000-0003-4975-8739>;
e-mail: enitametaj@gmail.com

Baba Musami Umar;

ORCID: <https://orcid.org/0000-0003-3540-4120>;
e-mail: ubmusami@gmail.com, ubmusami@unimaid.edu.ng

Fisayo Adesokun;

ORCID: <https://orcid.org/0000-0002-2849-3420>;
e-mail: adesaayo@gmail.com

Metu Izuchukwu;

ORCID: <https://orcid.org/0000-0002-4581-8741>;
e-mail: charlesizar@gmail.com

Ungratwar Apurva;

ORCID: <https://orcid.org/0000-0001-7515-6112>;
e-mail: apurvakarmveer@gmail.com

Rehman Sajjadur;

ORCID: <https://orcid.org/0000-0002-3134-5330>;
e-mail: sajjadur25@gmail.com

Alikaj Valbona;

ORCID: <https://orcid.org/0000-0001-5849-0557>;
e-mail: alikaljv@yahoo.com

Numbere Tamuno–Wari;

ORCID: <https://orcid.org/0000-0002-2836-6157>;
e-mail: warinumbere@gmail.com

Adiukwu Frances;

ORCID: <https://orcid.org/0000-0001-5543-1746>;
e-mail: Francesadiukwu@gmail.com

AUTHOR'S INFO

Elona Dashi, MD;

ORCID: <https://orcid.org/0000-0002-9280-2734>;
e-mail: elonadashi@gmail.com

Bitā Vahdani, MD;

ORCID: <https://orcid.org/0000-0002-5727-8359>;
e-mail: bita.vahdani@gmail.com

Ashish Chepure, MD, MBBS;

ORCID: <https://orcid.org/0000-0003-2286-2050>;
e-mail: ashu.chepure@gmail.com

Nafisatu Hayatudeen, MBBS, FWACP;

ORCID: <https://orcid.org/0000-0002-9502-3971>;
e-mail: nhayatudeen@gmail.com

Padma Kumari, MD, MBBS;

ORCID: <https://orcid.org/0000-0002-4026-5172>;
e-mail: skpadma444@gmail.com

Sara Farhang, MD;

ORCID: <https://orcid.org/0000-0001-8552-138X>;
e-mail: farhangs@tbzmed.ac.ir

Rodrigo Ramalho, MD, PhD;

ORCID: <https://orcid.org/0000-0002-2372-6854>;
e-mail: r.ramalho@auckland.ac.nz

Ishwar Patil, MA;

ORCID: <https://orcid.org/0000-0002-0426-8309>;
e-mail: ipp8507@gmail.com

Mahnaz Majidi, MD;

ORCID: <https://orcid.org/0000-0001-7498-571X>;
e-mail: m.majidi@qums.ac.ir

*Ramdas Ransing, MD, MBBS;

ORCID: <https://orcid.org/0000-0002-5040-5570>;
e-mail: ramdas_ransing123@yahoo.co.in

Enita Metaj, MD;

ORCID: <https://orcid.org/0000-0003-4975-8739>;
e-mail: enitametaj@gmail.com

Umar Baba Musami, MBBS, MSc GMH (UK), FWACP;

ORCID: <https://orcid.org/0000-0003-3540-4120>;
e-mail: ubmusami@gmail.com, ubmusami@unimaid.edu.ng

Adesokun Fisayo, MBBS, FWACP;

ORCID: <https://orcid.org/0000-0002-2849-3420>;
e-mail: adesaayo@gmail.com

Izuchukwu Metu, MBBS, MWACP;

ORCID: <https://orcid.org/0000-0002-4581-8741>;
e-mail: charlesizar@gmail.com

Apurva Ungratwar, MBBS, DPM, DNB;

ORCID: <https://orcid.org/0000-0001-7515-6112>;
e-mail: apurvakarmveer@gmail.com

Sajjadur Rehman, MBBS, DPM, DNB;

ORCID: <https://orcid.org/0000-0002-3134-5330>;
e-mail: sajjadur25@gmail.com

Valbona Alikaj, MD;

ORCID: <https://orcid.org/0000-0001-5849-0557>;
e-mail: alikaljv@yahoo.com

Tamuno–Wari Numbere;

ORCID: <https://orcid.org/0000-0002-2836-6157>;
e-mail: warinumbere@gmail.com

Frances Adiukwu, MBBS, FWACP;

ORCID: <https://orcid.org/0000-0001-5543-1746>;
e-mail: Francesadiukwu@gmail.com

* Автор, ответственный за переписку / Corresponding author