



The incidence of psychosocial disturbances during the coronavirus disease-19 pandemic in an Iranian sample

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Abstract

The spreading of the Corona Virus Disease 2019 (COVID-19) pandemic could be associated with psychosocial implications. This study, therefore, aimed to investigate the psychosocial disturbances before and during the COVID-19 pandemic. The cross-sectional study included 20,885 participants (12,343 females and 8,542 males) with psychosocial trauma who were selected by the census sampling method from Fars province, Iran. The mean age of participants in this study was 35.76 (7.52). The results showed that the incidence rate for psychosocial disturbances was 150.86 and 273.69 per 100,000 cases prior to and during the COVID-19 pandemic, respectively. Analysis showed that reports of spousal abuse, child abuse, elderly abuse, disability abuse, the violence of other relatives, child labor, divorce petition, acute family dispute, unemployment/financial problems, substance abuse, and health questions about COVID-19 increased significantly during the COVID-19 pandemic. This study shows that the COVID-19 pandemic influences the increase of psychopathology and social pathology. Therefore, recommends a comprehensive assessment to prevent and address the psychosocial consequences associated with COVID-19.

Keywords Psychosocial disturbances · Coronavirus · COVID-19 · Pandemic

Introduction

A pandemic is the worldwide spread of a new disease, often infectious, affecting a large number of people on several continents (Morens et al., 2009; Singer et al., 2021). Throughout human history, there have been many cases of pandemics of diseases such as tuberculosis, smallpox, plague, etc., which caused many deaths (Rosenwald, 2020). A newfangled strain of coronavirus (SARS-CoV-2) causes the coronavirus disease 2019 (Huang et al., 2020; Huang et al., 2020; Lu et al., 2020; Pan et al., 2020; Stawicki et al., 2020). The causative factor was known from throat swab samples collected by the Chinese Center for Disease Control and Prevention (CCDC).

The disease was termed COVID-19 by the World Health Organization (WHO, 2020a; Pan et al., 2020). Similar to other coronaviral pneumonia such as SARS-CoV, MERS-CoV, and COVID-19 can lead to acute respiratory disturbances syndrome (ARDS) in the human (Graham et al., 2013; Huang et al., 2020; Pan et al., 2020). Patients with COVID-19 specifically showed clinical symptoms of dry cough, dyspnea, fever, and bilateral lung infiltrates on imaging (Lu et al., 2020), and severity of infection and disease transmissibility have been found to increase the pandemic potential of COVID-19 and along with it the death toll (Jung et al., 2020). The elderly and those with underlying medical problems more likely to develop acute symptoms of COVID-19 (Figuroa-Parra et al., 2020; Ganatra et al., 2020; Guan et al., 2020; WHO, 2020b).

The COVID-19 virus is shake out mainly through saliva droplets or nasal discharge when a person coughs or sneezes, however, airborne transmission (while talking to an infected person) has also been reported. Therefore, the health guidelines for the prevention of COVID-19 include protective measures such as coughing in a bent elbow, maintaining a physical distance between 1 to 2 m, and use of a facial mask (Bahl et al., 2020; Center for Disease Control & Prevention, 2021; European Centre for Disease Prevention and Control,

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2021). Other methods of the prevention include observing personal hygiene tips such as regular hand washing, avoiding contact, and disinfection of frequently touched surfaces (Fathizadeh et al., 2020). The contemporary clampdown policy, includes strict population-wide social estrangement, home seclusion of cases, and household confinement, that was undertaken by countries during the COVID-19 pandemic, but such practice brings with it substantial psychological, social, and economic upshots (Ferguson et al., 2020). In these frantic situations, societies are continually run into to the risk of the pandemic and may immersion high levels of psychosocial troubles (Liu et al., 2020).

From a psychological perspective, health psychology (Cassileth et al., 1984; Johnston, 1994) helps to recognize the effect of COVID-19 pandemic on the psychosocial disturbances. Since someone who gets seriously sick can have psychological problems (Cassileth et al., 1984); and the patient's mental health is severely reduced (Freedland et al., 2020; Lander & Graham-Pole, 2008). In the categorical model of health psychology, different chronic diseases are associated with diverse aggravating factors, and the onset of the disease, the course of the disease, the consequences of the disease, and the disability caused by the disease determine the patient's and family's problems (Rolland, 1987, 2013; Ziarko et al., 2014). According to the categorical model of health psychology, the COVID-19 pandemic can have wide range of psychosocial problems; and be accompanied by an increase in reports of mental disturbances such as substance abuse, violence and domestic violence such as spousal abuse, child abuse, and elderly abuse (Chandan et al., 2020; Czeisler et al., 2020; Devi, 2020; Freedland et al., 2020; Makaroun et al., 2020; Raganvan et al., 2020; Roesch et al., 2020). Similarly, according to the biopsychosocial model in health psychology (Engel, 1977, 1978); immune system diseases due to infection can induce psychopathology and cause psychosocial problems after COVID-19 infection (Mazza et al., 2020). Therefore, given the alarming impact of COVID-19 infection on mental health, studies have shown that COVID-19 patients often suffer from psychological problems such as fear, post-traumatic stress disorder (PTSD), depression, anxiety, insomnia, panic, suicide, obsessive–compulsive disorder and psychosis (Bao et al., 2020; Mazza et al., 2020; Taylor et al., 2020; Wu et al., 2020; Yildirim & Arslan, 2020). Also, research shows that fear of getting COVID-19 is an important factor in increasing the level of general anxiety and depression that is seen around the world (Ahorsu et al., 2020; Lee & Crunk, 2020; Lee et al., 2020).

From a socio-cultural perspective, governments have reduced social and economic activities to maintain public health during the COVID-19 pandemic. Physical distancing guidelines, home quarantine, and travel restrictions have caused reduced workforce across all economic sectors and

consequently the loss of many jobs (Nicola et al., 2020). And a drop in gross domestic product (GDP) countries putting more jobs at risk (Fernandes, 2020). Study shows that the COVID-19 pandemic drastically reduced the financial revenue of local and national governments; and poor people with low per capita income faced serious economic and social problems (Bonaccorsi et al., 2020). Thus, the psychological and economic damage caused by the COVID-19 pandemic can cause other types of social damage such as spousal abuse, child abuse, elderly and disabled adult abuse, acute family conflicts, divorce, and drug abuse (Griffith, 2020; Knipe et al., 2020; Prime et al., 2020; Smyth et al., 2020; Usher et al., 2020).

Totally, the results show that psychiatric disorders and social issues are very common during the COVID-19 pandemic (Freedland et al., 2020; Li & Wang, 2020; McKnight-Eily et al., 2021; Nemani et al., 2021; van der Meer et al., 2020; Wang et al., 2021). Otherwise, keep on at home because of COVID-19 has increased the rate of psychosocial disturbances such as domestic violence, emotional abuse and non-medical neglect of children, substance abuse (Agüero, 2021; Buttell & Ferreira, 2020; Campbell, 2020; Griffith, 2020; Holmes et al., 2020; Horeh & Brown, 2020; Hsu & Henke, 2021; Lawson et al., 2020; Sharma et al., 2021; Usher et al., 2020). Furthermore, studies have noted that these challenging times may affect divorce rates, but it is too early to assess the impact of COVID-19 on divorce rates (Pieh et al., 2020). Also, school closures significantly affect the lives of students and their families and can affect children's health (Golberstein et al., 2020). Altogether reports from several different countries indicate that all kinds of social harm and violence including intimate partner violence (IPV), child abuse, elderly abuse, and sexual violence, during the COVID-19 pandemic are increasing alarmingly, because around the world communities have gone into lockdown to stop the spread of coronavirus (Bradbury-Jones & Isham, 2020; New Zealand Family Violence Clearinghouse-NZFVC, 2020).

Since the spread of the COVID 19 pandemic has been led to the occurrence of closure and physical and social distancing, this study is essential to understand how it may influence the incidence of psychological disturbances in comparison to the pre-pandemic period. In terms of psychological and sociocultural perspectives, this study suggests that the COVID-19 pandemic as a life-threatening disease with adverse socio-economic and cultural consequences can increase the incidence of psychosocial disturbances. Meanwhile during the COVID-19 pandemic and as a result of epidemic suppression measures such as home quarantine; stress and related risk factors such as unemployment, lower family income, limited resources and less social support, it appears that the incidence of different types of psychosocial disturbances will increase Finally, studies have demonstrated

an increase in psychosocial issues during the COVID-19 pandemic in many countries but there is a lack of systematic evidence about its effect on the incidence of different psychosocial disturbances in Iran. Hence, the purpose of this study is to compare the incidence rate of psychosocial disturbances before and during the COVID-19 pandemic in an Iranian sample. The main hypothesis of this study is that the COVID-19 pandemic would have significant effect on the incidence of psychosocial disturbances in adults.

Method

Design and Participants

This research was a cross-sectional study with the aim of assessing psychosocial trauma before and during the COVID-19 pandemic. The sample of this study was cases of psychosocial disturbances registered in the health system of Social Emergency Centers of Fars Province (SECFP) on a monthly basis to the provincial social emergency center. All they called emergency centres for receiving help from mental health professionals at SECFP. Participants selected using a purposive sampling method. The mean age of participants in this study was 35.76 (7.52). Among the participants 12,343 (59.1%) were female and 8,542 (40.9%) were male. According to the education variable, 934 (4.47%) were pre-school age, 996 (4.77%) illiterate, 10,286 (49.25%) under diploma, 4,611 (22.08%) high school diploma, 3,989 (19.1%) bachelor's degree, and 52 (0.25%) had a master's and doctoral degree.

Measures

In this study, psychosocial disturbances were recorded using a call registration checklist created by the Social Emergency Center in collaboration with the Social Injuries Office of the General Bureau Welfare (SIOGBW) and the Psychology and Counseling Organization of Iran (PCOIR). This checklist consists of two parts: (1) caller ID information (includes information on age, gender and education), and (2) types of reportable social disturbances (includes items of spousal abuse, child abuse, elder abuse, disability abuse, violence of other relatives, suicidal ideations, child labor, illegal sex, divorce petition, escape from home, gender identity equity and violence, acute family dispute, unemployment/financial problems, substance abuse; and additional item health questions about COVID-19. Checklist questions were answered as “Yes” or “No”. However, the basic elements questions of checklist are short, obvious, and understandable. The method used to calculate the validity of the measure was the judgment of mental health professionals that confirmed by 10 mental health professors in a pilot study prior to project

administration. In a pilot study of 50 people, the test–retest reliability or stability coefficient of the checklist was 0.80 for two weeks. In addition, the reliability of the checklist data in this study was evaluated based on two main criteria: (1) Member check (the reports recorded in the checklist were evaluated by the research team), and (2) Prolonged engagement. The member check, also known as informant feedback or respondent validation, is a technique used by researchers to help improve the accuracy, credibility, validity, and transferability (Creswell, 1994). Prolonged engagement means commitment with the data and spending enough time collecting, reviewing and analyzing it, and resulting in a deep and genuine understanding and confidence in the data. prolonged engagement is investing sufficient time to become familiar with the setting and context, to test for misinformation, to build trust, and to get to know the data to get rich data (Korstjens & Moser, 2018). In other words, prolonged engagement refers to spending extended time with respondents in their native culture and everyday world in order to gain a better understanding of behavior, values, and social relationships in a social context (Given, 2008). In full description of method; the researcher tried to provide a detailed description of the participants, sampling method, time and place of data collection, phenomenon of psychosocial disturbances, and all stages of the work to allow other researchers to follow the research path. Interpretive description of method would be amenable to retroactive reflective, to cross-sectional reporting, or to longitudinal follow-up over time; and given that recognizing that the act of rendering experience into narrative for the purpose of communicating it to a researcher may prompt further sense-making and interpretation, it can add to the global knowledge about a phenomenon (Beck, 2013).

Procedure

From February 20 to May 21, 2019 (before the COVID-19 pandemic) and from February 20 to May 21, 2020 (during the COVID-19 Pandemic), a total of 20,885 calls related to psychosocial disturbances were recorded by the SECFP which 7,319 of them were before and 13,566 during the COVID-19 pandemic. Sampling and recording of psychosocial disturbances in this study was performed by the admissions officers of social emergency centers who were graduates of psychology and social work and were knowledgeable with the telephone diagnostic interview. Also, all recorded reports of psychosocial trauma were included in this study by census sampling method. Census sampling is one of the popular approaches that statisticians use in collecting primary data. Under the census or complete enumeration method, the statistician collects the data for each and every unit of the population. This population is a complete set of items which are of interest in any situation (Berkman et al.,

2014; Rothman et al., 2008). Sampling mostly begins with a defined objective in mind and the sample is thus selected to include suitable individuals and rule out those who do not fit the criteria (Ghadampour et al., 2020; Given, 2008; Tongco, 2007). In this study, the principle of confidentiality and respect for individual freedom in the registration of information was considered respectable, and the registration of callers' information was done only with their consent.

Statistical Analysis

In this study, SPSS software version 19 was used for statistical analysis. In this way, Chi-square test (95% confidence interval) was used to calculate the likelihood ratios of increasing psychosocial disturbances before and during the COVID-19 pandemic.

Results

As already noted a total of 20,885 individuals have called with Social Emergency Centers of Fars Province due to psychosocial disturbances that 7,319 of them were before and 13,566 during the COVID-19 pandemic. With regard to the most recent provincial census population estimates (4,851,274 people), the results from analysis of the main hypothesis showed that the incidence rate of psychological disturbances was 430.5 per 100,000 people during February 20 to May 21, 2019 to February 20 to May 21, 2020. Figure 1 shows that the incidence rates of psychosocial disturbances varied before and during the COVID-19 pandemic.

The results indicated that the number of different types of psychosocial trauma reported to the Social Emergency Center of Fars Province on before the COVID-19 pandemic shows a 29.91% increase (Table 1). Altogether, after evaluating the difference in the incidence of psychosocial disturbances before and during the COVID-19 pandemic using Chi-square test, it was shown that some types of trauma increased while others didn't change significantly (Tables 1 and 2).

In addition, the Phi index shows a significant fitness of the model in the present study (Table 3). The phi index is a measurement of the strength of an association between two categorical variables in a 2×2 contingency table. It is computed by the chi-square value, it diverges between 0 and 1 without any negative values (Akoglu, 2018). Also, Cramer's V is a substitute to phi in tables bigger than 2×2 tabulation. Cramer's V fluctuates between 0 and 1 without any negative values. Like to Pearson's r, a value nearby to 0 means no association. However, a value superior than 0.25 is called as a very robust relationship for the Cramer's V (Akoglu, 2018).

Discussion

The results from the Chi-squared calculation in the main hypothesis showed that there is a significant difference between the frequency of psychosocial trauma before the COVID-19 pandemic and during the pandemic. Findings in this study revealed that the incidence rate for psychosocial disturbances was 150.86

Fig. 1 The incidence rate: estimation of psychosocial disturbances and its trend in general population covered by social emergency center of fars province before and during the COVID-19 pandemic

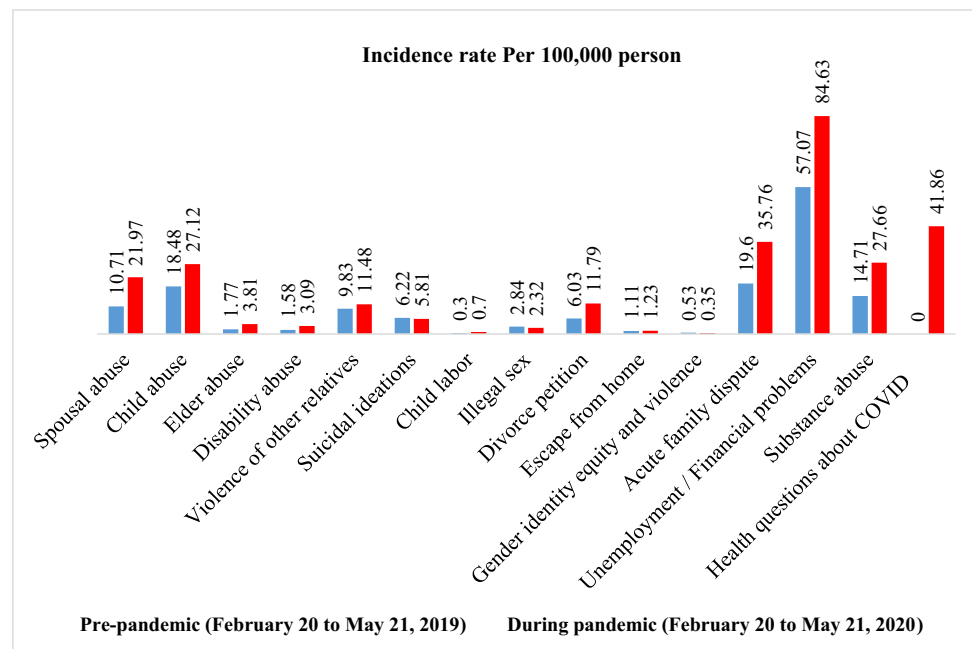


Table 1 Frequency of psychosocial disturbances before and during the COVID-19 pandemic

		Pre-pandemic (February 20 to May 21, 2019)			During pandemic (February 20 to May 21, 2020)		
		Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
Valid	Spousal abuse	520	7.1	7.1	1066	7.9	7.9
	Child abuse	897	12.3	19.4	1316	9.7	17.6
	Elder abuse	86	1.2	20.5	185	1.4	18.9
	Disability abuse	77	1.1	21.6	150	1.1	20.0
	Violence of other relatives	477	6.5	28.1	557	4.1	24.1
	Suicidal ideations	302	4.2	32.2	282	2.1	26.2
	Child labor	15	0.2	32.4	34	0.3	26.5
	Illegal sex	138	1.9	34.3	113	0.8	27.3
	Divorce petition	293	4.0	38.3	572	4.2	31.5
	Escape from home	54	0.7	39.1	60	0.4	32.0
	Gender identity equity and violence	26	0.4	39.4	17	0.1	32.1
	Acute family dispute	951	13.0	52.4	1735	12.8	44.9
	Unemployment / Financial problems	2769	37.8	90.2	4106	30.3	75.1
	Substance abuse	714	9.8	100.0	1342	9.9	85.0
	Health questions about COVID-19	0	0		2031	15.0	100.0
	Total		7319	100.0		13,566	100.0

and 273.69 per 100,000 people prior to and during the COVID-19 pandemic, respectively. The results showed that the incidence rate of psychosocial disturbances increased by 55.12% during the COVID-19 pandemic in this sample. These findings showed that the incidence of spousal abuse, child abuse, elder abuse, disability abuse, violence of other relatives, child labor, divorce petition, acute family dispute, unemployment/financial problems, substance abuse, and health questions about COVID-19 coronavirus increased significantly during the COVID-19 pandemic. These results support the main hypothesis and show the effect of COVID-19 pandemic on increase of some psychosocial disturbances in this study. Overall, these results are consistent with the predictions and basic assumptions of COVID-19 pandemic-related psychopathology theories in psychosocial trauma (Agüero, 2021; Bao et al., 2020; Bonaccorsi et al., 2020; Bradbury-Jones & Isham, 2020; Campbell, 2020; Golberstein et al., 2020; Horesh & Brown, 2020; Hsu & Henke, 2021; Mazza et al., 2020; McKnight-Eily et al., 2021; Nemani et al., 2021; NZFVC, 2020; Prime et al., 2020; Usher et al., 2020).

Consistent with the results of this research, extensive studies in worldwide show that the COVID-19 pandemic has negative health consequences way beyond those caused by the virus per se including significant psychological problems, and domestic violence (Bradbury-Jones & Isham, 2020; NZFVC, 2020; Usher et al., 2020). Long

term complications specific to COVID-19 disease is not yet available. But, follow-up studies will clarify on the extent of psychological/social effects (Vittori et al., 2020). In line with the current knowledge in psychopathology factors, the alarming impact of COVID-19 infection on mental health issue such as fear, panic, PTSD, major depression, anxiety, insomnia, OCD, is well established. Resulting decrease per capita income of people; increase the risk of psychosocial harms such as spousal abuse, child abuse, elder abuse, disability abuse, violence of other relatives, child labor, divorce petition, acute family dispute, unemployment/financial problems, and substance abuse (Agüero, 2021; Bao et al., 2020; Bonaccorsi et al., 2020; Campbell, 2020; Hsu & Henke, 2021; Lawson et al., 2020; Mazza et al., 2020; McKnight-Eily et al., 2021; Nemani et al., 2021; Taylor et al., 2020; Wu et al., 2020; Yildirim & Arslan, 2020). However, the results from this study didn't show a significant change for decrease or increase of suicidal ideations, illegal sex, escape from home, and gender identity equity-related violence during pandemic. However, there is a lack of evidence on the potential role of the COVID-19 pandemic in the reduction of mental health problems. This study is suggesting that social isolation in homes, being with family members, and sense of physical insecurity in out-door social settings may influence these issues during the COVID-19 pandemic. Social isolation can prevent the incidence of COVID-19 and certain risk behaviors. Being at home and the presence of

Table 2 Difference between psychosocial disturbances before and during the COVID-19 pandemic

		N	χ^2	Df	One sided P value	Odds ratios (ORs)
Spousal abuse	Pre-pandemic	520	6.842	8	0.001	7.879
	During pandemic	1066				
Child abuse	Pre-pandemic	897	7.428	8	0.001	7.957
	During pandemic	1316				
Elder abuse	Pre-pandemic	86	6.012	8	0.001	6.314
	During pandemic	185				
Disability abuse	Pre-pandemic	77	7.124	8	0.001	6.882
	During pandemic	150				
Violence of other relatives	Pre-pandemic	477	3.224	14	0.027	3.248
	During pandemic	557				
Suicidal ideations	Pre-pandemic	302	1.257	7	0.326	0.87
	During pandemic	282				
Child labor	Pre-pandemic	15	4.067	8	0.001	4.108
	During pandemic	34				
Illegal sex	Pre-pandemic	138	1.824	9	0.221	0.72
	During pandemic	113				
Divorce petition	Pre-pandemic	293	6.071	8	0.001	6.274
	During pandemic	572				
Escape from home	Pre-pandemic	54	1.088	14	0.524	0.81
	During pandemic	60				
Gender identity equity and violence	Pre-pandemic	26	1.011	9	0.096	1.007
	During pandemic	17				
Acute family dispute	Pre-pandemic	951	24.016	21	0.001	26.227
	During pandemic	1735				
Unemployment / Financial problems	Pre-pandemic	2769	27.516	21	0.001	29.054
	During pandemic	4106				
Substance abuse	Pre-pandemic	714	17.857	14	0.001	17.208
	During pandemic	1342				
Health questions about COVID-19	Pre-pandemic	0	68.082	1	0.000	73.374
	During pandemic	2031				

family members can increase the sense of family cohesion, in turn, to reduce the probability of suicidal ideations and home run away. Also, physical distance and living at home reduce illegal sex and violence related to gender identity among adults.

In conclusion, the present findings suggest that the COVID-19 pandemic affects the incidence of psychosocial pathology. Such findings help to guide the psychologists, sociologists,

and clinician to understand the etiology of psychosocial disturbances caused by the COVID-19 pandemic within an integrated model regarding people mental status, particularly in affected or vulnerable individuals and families. This study recommends an in-depth assessment of the psychosocial outcomes of the COVID-19 pandemic in order to ensure effective emergency intervention and rehabilitation. In addition, mental health professionals including clinical psychologists, mental health clinicians, and social workers may apply these findings to psychosocial trauma and mental disorders in clinical and non-clinical settings. Also, these results are useful for effective therapeutic and prevention purposes for mental health programs and psychosocial disturbances, particularly for family and community psychologists working in clinical and community-based levels.

Table 3 Phi coefficient and Cramer's V Correlation

		Value	Approx. Sig
Nominal by Nominal	Phi	0.564	0.000
	Cramer's V	0.564	0.000
N of Valid Cases		20,885	

a. Not assuming the null hypothesis

b. Using the asymptotic standard error assuming the null hypothesis

The limitations and future implementations

First, the present study used recorded reports of psychosocial disturbances of social emergency centers. Second, this was a retrospective cross-sectional study. Thus, reports of psychological and social harm may have increased or decreased with the onset of the second, third, and fourth waves of the COVID-19 pandemic. Third, reported cases of violence and abuse in the emergency centers may not reflect the exact or real number of cases of abuse due to lack of knowledge and/or presence of the abuser at home during the lockdown. Fourth, this study is limited because of using a simple checklist and a single self-report for assessment of psychological disturbances, phone-based data collection, and unequal sample size prior and during the COVID-19 pandemic. Future studies should apply more sophisticated quantitative and qualitative procedures to both retrospective and prospective approaches to investigate the direct and indirect impacts of the COVID-19 pandemic on psychosocial disturbances with regard to governmental policies in different cultures.

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Declarations

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Data Transparency The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Conflict of Interest Authors have not any conflict of interest in this study.

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