

Home Confinement Psychological-Influence during COVID-19

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Home confinement and social distancing are two of the main public health measures to curb the spread of SARS-CoV-2, which can have harmful consequences on people's mental health. This systematic review aims to identify the best available scientific evidence on the impact that home confinement and social distancing, derived from the SARS-CoV-2 pandemic, have had on the mental health of the general population in terms of depression, stress and anxiety.

COVID-19

pandemic

home confinement

social distancing

mental health

adults

general population

anxiety

depression

stress

1. Introduction

In December 2019, the SARS-CoV-2 emerged in Wuhan, China. The World Health Organization (WHO) declared the disease caused by this virus (the COVID-19) as the sixth international public health emergency and proclaimed the situation as a pandemic on the 11th of March of 2020 ^[1]. Since the pandemic began, many countries implemented public health measures, such as social distancing or home confinement, with the aim of minimizing the spread of this virus ^{[2][3][4]}. These interventions to protect the physical health of the population altered global patterns of behaviour producing changes in the economy, way of working, social interactions or daily life ^[5], which, in turn, can lead to an increase in the prevalence of health risk behaviours and psychological disorders ^{[6][7][8][9]}.

Most studies that analyse the mental consequences in the general population of some previous epidemics and pandemics focus on symptoms related to the aftermath of the disease itself without taking into consideration the effects of social distancing or home confinement ^[10]. However, large-scale disasters have also been observed to increase the prevalence of different mental and behavioural disorders such as anxiety, depression, post-traumatic stress disorder (PTSD) or substance abuse ^{[11][12][13][14]}. We can take the Severe Acute Respiratory Syndrome (SARS) epidemic in 2002 as an example because this situation led to an increase in people with PTSD and psychological distress, and not only among people who suffered from the SARS disease but also among their relatives or health workers, symptoms that persisted for a long period of time ^[15]. Quarantine during the SARS outbreak was also associated with high rates of anxiety (28.9%) and depression (31.2%) ^[4].

The elderly and people with underlying diseases are particularly at risk for SARS-Cov-2 infection, but in terms of mental health as a result of measures to slow the spread of the virus, other factors appear to be contributing to the

development of psychological symptoms during the pandemic [5][6][7][8][9]. For example, younger age has been linked to feelings of loneliness during the COVID-19 pandemic, leading to symptoms of anxiety and depression in this group [16]. In addition to economic losses, occupational deprivation and the pandemic itself, social isolation is the main cause of psychological symptoms during the COVID-19 [16]. Home confinement and social distancing during the pandemic have already been shown to be associated with adverse psychological outcomes, even in uninfected people [16][17], such as emotional disorders, depression, anxiety, stress, irritability, insomnia, PTSD, anger and emotional exhaustion [18], or risky behaviours and increased substance abuse [19]. This situation makes even more evident the need to pay attention to and strengthen the public's mental health in order to minimize as much as possible the consequences of loneliness and social isolation due to the COVID-19. Therefore, investigation on this subject is justified to provide appropriate care, focused on the prevention and treatment of mental illnesses that will arise during and after the pandemic, as well as to establish programs and policies to support the global population during the crisis.

2. Description of the Characteristics of the Studies

The number of participants in the studies ranged between 343 and 15,308, over 18 years of age. A total of 72,056 subjects, with the female gender predominating in most of the selected studies. All the articles reviewed analysed the mental health of the adult population as a consequence of restrictive measures to stop the spread of the virus, such as home confinement and physical distancing, with the main emphasis on stress, anxiety, depression and PTSD. Sleep quality and substance abuse were not assessed in this review. Most of the studies ($n = 24$) were cross-sectional, and the other two were longitudinal designs. In terms of geographical distribution, the studies were performed in different regions and countries with very different health systems: China ($n = 6$), Spain ($n = 3$), Germany ($n = 2$), United Kingdom ($n = 2$), Saudi Arabia ($n = 1$), Brazil ($n = 1$), India ($n = 1$), South Korea ($n = 1$), Pakistan ($n = 1$), Jordan ($n = 1$), Italy ($n = 1$), Vietnam ($n = 1$), Turkey ($n = 1$), Bangladesh ($n = 1$) and the US ($n = 1$), noting that two of them were performed in several countries.

To assess the effect of home confinement and social distancing resulting from the SAR-CoV-2 pandemic on the mental health of the general population, different scales and questionnaires were used. The Beck Depression Inventory (BDI), the Short Mood and Feelings Questionnaire (SMFQ), the Patient Health Questionnaire-9 (PHQ-9), the Severity of Dependence Scale (SDS), the Centre for Epidemiologic Studies Depression Scale (CES-D), the PROMIS depression v.8a and the Patient Health Questionnaire-2 (PHQ-2) were used to measure depressive symptoms. The Beck Anxiety Inventory (BAI), the Statistical Anxiety Scale (SAS), the State-Trait Anxiety Inventory (STAI), the PROMIS anxiety v.8a and the Generalised Anxiety Disorder Assessment (GAD-7), the Short version of the Whitely Index and the Health Anxiety Inventory (HAI) for health anxiety were used to assess anxiety. PTSD symptoms were evaluated by the revised Impact of Event Scale-Revised (IES-R), the reduced civilian version of the PTSD checklist (PCL-C-2), the DSM-V PTSD checklist (PCL-5) and the International Trauma Questionnaire (ITQ). The Depression, Anxiety and Stress Scale (DASS) and the Depression, Anxiety and Stress 21-item Scale (DASS-21) were used to evaluate symptoms of anxiety, depression and stress; and the Hospital Anxiety and Depression Scale (HADS) for anxiety and depression. Anxiety, stress and depression levels were measured by the

DASS-21 or DASS in nearly half of the studies ($n = 10$), and PTSD was mostly evaluated with IES-R ($n = 8$). GAD-7 and PHQ-9 were also used in numerous studies to evaluate symptoms of anxiety and depression, respectively.

Regarding the statistical analysis, most studies used univariate tests to analyse the effect of sociodemographic and COVID-19-related variables on the main result of the study and multivariate tests to simultaneously analyse various study variables.

When assessing the methodological quality and risk of bias of the studies, most of them obtained high average scores, always above the set cut-off score ([Table 1](#) and [Table 2](#)).

Table 1. The results of the quality assessment of quasi-experimental studies.

Study	JB1	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Panchuelo-Gómez et al. [20]	7/9	+	+	–	–	+	+	+	+	+
Wang et al. [21]	7/9	+	+	–	–	+	+	+	+	+

Table 2. The results of the quality assessment of cross-sectional quantitative studies.

Study	JB1	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Ahmed et al. [22]	6/8	+	+	+	+	–	–	+	+
Alkhamees et al. [23]	8/8	+	+	+	+	+	+	+	+
Ammar et al. [24]	7/8	+	+	+	+	+	–	+	+
Benke et al. [25]	8/8	+	+	+	+	+	+	+	+
Chen et al. [26]	8/8	+	+	+	+	+	+	+	+
Dean et al. [27]	8/8	+	+	+	+	+	+	+	+
González-Sanguino et al. [28]	8/8	+	+	+	+	+	+	+	+
Goularte et al. [29]	8/8	+	+	+	+	+	+	+	+
Hazarika et al. [30]	6/8	+	+	+	+	–	–	+	+
Huang et al. [31]	7/8	+	+	+	+	+	–	+	+
Lal et al. [32]	6/8	+	+	+	+	–	–	+	+
Lee et al. [33]	6/8	+	+	+	+	–	–	+	+

Study	JB1	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Lei et al. [34]	8/8	+	+	+	+	+	+	+	+
Massad et al. [35]	8/8	+	+	+	+	+	+	+	+
Mazza et al. [36]	8/8	+	+	+	+	+	+	+	+
Ngoc Cong Duong et al. [37]	8/8	+	+	+	+	+	+	+	+
Özdin et al. [38]	8/8	+	+	+	+	+	+	+	+
Ripon et al. [39]	6/8	+	+	+	+	–	–	+	+
Rodríguez-Rey et al. [40]	7/8	+	+	+	+	+	–	+	+
Schweda et al. [41]	8/8	+	+	+	+	+	+	+	+
Sherman et al. [42]	8/8	+	+	+	+	+	+	+	+
Shevlin et al. [43]	8/8	+	+	+	+	+	+	+	+
Smith et al. [44]	8/8	+	+	+	+	+	+	+	+
Wang et al. [45]	8/8	+	+	+	+	+	+	+	+

3.1. Anxiety Symptoms and Associated Factors

Anxiety symptoms were evaluated in 24 of the 26 studies [22][23][25][26][27][28][29][30][31][32][33][34][35][36][37][38][39][40][41][42][43][44][45][21]. Prevalence differed from 8.3% to 45.1% [22][23][25][29][30][31][33][34][35][36][37][38][20][40][43][45] with the exception of the research conducted by Goularte et al. [29], where 81.1% of the sample reported high levels of anxiety. This variability may be due to the lack of unanimity between the different studies regarding the definition of anxiety or the established cut-off point. In Massad et al.'s study [35], mild anxiety was reported in 21.5%, moderate anxiety in 10.9% and severe anxiety in 6% of participants; Özdin et al. [38] found symptoms of anxiety, in general, in 45.1% of the sample. Benke et al. [25] demonstrated a prevalence of 29.4% for anxiety and 21.1% of the sample obtained above cut-off point levels of anxiety disorder.

Many factors were associated with higher levels of anxiety during the COVID-19 pandemic. Women were more likely to develop anxiety symptoms compared to men, with the exception of data provided by Chen et al. [26] and Wang et al. [45], which indicated a higher incidence in males. Younger ages were also associated with anxiety [22][25][26][27][31][32][33][34][39][40][41][42][43][45]. The student [23][30][32], unemployed [25][32][40], housewife [30] or health worker status [30][32] reported more anxiety compared to other occupational status (worker, retired people, etc.). Some studies also associated lower income [26][28][29][32][34][42][43][44], education [25][26][29][30][43] and the perception of the information received about the pandemic [28][34] with anxious symptomatology. Participants with a history of mental illness or current or prior psychiatric treatment reported being more anxious than healthy people [25][29][30][38][41][42]. A study also associated living alone with anxiety compared to subjects living with dependents (spouse, children, family members, caregivers) [25]. Widespread linear models linked lower levels of anxiety to factors such as feeling

healthy, high incomes and a broad social network and social support [26][35]. Conversely, sociodemographic variables such as being female, young, student, divorced or widowed, having low levels of education and income, feelings of loneliness, suffering from previous psychiatric illness or having a history of mental illness and worse self-perceived health were considered the main factors that are associated with anxious symptomatology [27][28][29][34][35][36][38][40][41][42][43][44]. Regarding the variables related to the COVID-19, high concern about the pandemic, social distancing measures and perception of risk were related to anxiety [23][27][28][34][40][42].

González-Sanguino et al. [28] identified misinformation as one of the main factors that are associated with anxiety, while Lei et al. [34] demonstrated that people with more knowledge related to the COVID-19 were more likely to experience anxiety during the pandemic. The frequency of news consumption about the COVID-19 [20] and the dissemination of health information about the pandemic over radio [21] were also associated with higher scores.

Finally, taking into consideration the area of residence of the people, Özdin et al. [38] stated that living in urban areas contributed to greater anxiety, while Schweda et al. [41] found living in rural areas was associated with anxiety.

3.2. Depressive Symptoms and Associated Factors

Symptoms of depression were evaluated in 23 of the 26 studies, with a prevalence from 14.6% to 46.42% [22][23][24][25][27][29][30][31][32][33][34][36][37][38][39][40][42][43][44][45][21]. Research by Goularte et al. [29] and Ripon et al. [39] demonstrated some signs of depression in 81.9% and 85.9% of the population studied, respectively. Most studies [22][23][25][27][28][29][31][32][34][20][39][41][42][43][45] associated young age and female sex or gender with greater depressive symptoms than men, and women also reported greater symptomatology compared to men [23][25][28][29][32][33][34][20][39][41][43], except in the study of Wang et al. [45] where men were the ones who showed the worst results. A low-income level contributed significantly to worse mental health, with low- or non-income people, such as students or unemployed individuals, exhibiting the most depressive symptoms [25][28][29][30][37][39][42][43][44][45]. As for marital status, singles, divorcees or widowers, and people living alone found themselves more depressed than married people and couples [29][30][33][34][39][42].

As in the case of anxiety, people with low levels of education were more likely to develop depressive symptoms than people with higher education levels [25][28][29][30][42][43][45], except for Ripon et al. [39], who reported worse depression outcomes in people with higher educational level. Being or having been in psychiatric treatment and presenting mental health problems was also associated with the onset of depressive symptoms during home confinement and social isolation derived from the pandemic [25][28][29][30][36][37][42]. Multivariate analyses showed that the main factors related to sociodemographic variables were being a female, young, having lower levels of education and income, or student, unemployed or housewife status; being a widower, divorcer or unmarried person; having feelings of loneliness; having previous psychiatric illness and worse self-perceived health [27][28][29][34][36][37][42][43][44][45]. Pandemic-related variables such as concern for the COVID-19, lack of psychological support, risk perception and long periods of social distancing also contributed to the onset of depressive symptoms [27][28][29][34][36]. Protective factors, such as spiritual well-being [28], being over 60 and having a partner [36], were identified.

3.3. Stress Symptoms, PTSD and Associated Factors

Of the total studies, 10 analysed stress levels [23][27][30][33][36][37][20][40][45][21] and 9 PTSD-related symptoms [23][28][29][20][39][42][43][45][21]. The prevalence of stress-related symptoms and PTSD differed from 8.1% to 49.66% [23][28][29][30][33][36][37][39][42][44][45]; but Ripon et al. [39] claimed to find symptoms of PTSD in 81.8% of the participants, of whom only 20% reported a likely diagnosis of PTSD. In his longitudinal study, Wang et al. [21] observed a significant increase in PTSD levels over time. Most research associated the female gender with higher levels of stress [23][28][29][33][36][39][45], but three of the studies found greater symptomatology in men compared to women [20][42][45]. Younger people generally showed more stress [23][27][28][29][36][20][39][40][43], but Lee et al. [33] found worse results among older people. People without income, such as students, housewives or those unemployed, proved to be more susceptible to develop symptoms of PTSD and stress than those with a job and income [23][28][29][30][37][44]. In terms of educational level, most studies reported that lower levels correlated with higher stress and PTSD [28][29][30][45], but Ripon et al. [39] found greater symptomatology among people with higher educational levels. All in all, the main factors that contributed to PTSD and stress were being a female, young, having feelings of loneliness, a low level of education and income, a student or unemployed status and previous psychiatric illness [27][28][29][36][37][39][42][43][45]. Regarding pandemic-related factors, concern about the COVID-19, social distancing, perception of danger and receiving insufficient information were the main factors associated with stress and PTSD [27][28][29][43][45].

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