Effects of COVID -19 on women's mental health: A systematic review

Efectos del COVID-19 en la salud mental de las mujeres: una revisión sistemática

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SUMMARY

Women are part of the first line of care not only in the healthcare field but also in the care economy, which is why they tend to be more susceptible to distress due to infection amid a pandemic, triggering mental health consequences that could extend into the long term, even after the end of the pandemic. To present findings on the mental health effects on women during the period of the COVID-19 pandemic, a systematic review is presented that shows an increase in symptoms associated with depression, anxiety, and post-traumatic stress in women, as well as problems of insomnia and stress in female healthcare professionals due to direct contact with suspected or confirmed cases of COVID-19. Identifying vulnerable groups amid the pandemic and investing efforts in improving the physical and psychological well-being of this population would reduce chronic mental health problems in the general population, given that women tend to be the support of families and society.

Keywords: Mental health, COVID-19, women.

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RESUMEN

Las mujeres forman parte de la primera línea de atención no sólo en el ámbito sanitario, sino también en la economía asistencial, por lo que suelen ser más susceptibles a la angustia por contagio en medio de una pandemia, desencadenando consecuencias en la salud mental que podrían extenderse a largo plazo, incluso después del fin de la pandemia. Para presentar los resultados sobre los efectos en la salud mental de las mujeres en el período de la pandemia de COVID-19, se presenta una revisión sistemática que muestra un aumento de los síntomas asociados a la depresión, la ansiedad y el estrés postraumático en las mujeres, así como problemas de insomnio y estrés en las profesionales sanitarias debido al contacto directo con casos sospechosos o confirmados de COVID-19. Identificar los grupos vulnerables en medio de la pandemia e invertir esfuerzos en mejorar el bienestar físico y psicológico de esta población reduciría los problemas crónicos de salud mental en la población general, dado que las mujeres suelen ser el soporte de las familias y de la sociedad.

Palabras clave: Salud mental, COVID-19, mujeres.

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INTRODUCTION

The COVID-19 pandemic has resulted in many mental health issues, which is why this article focuses on the most relevant effects on women during the pandemic. These effects are mentioned in the two sections in which this article is developed; in this regard, since the beginning of the pandemic there has been a need to understand its effects on mental health; the rates of depression, anxiety, and stress were higher during the first week of lockdowns (1), which allows visualizing that much of the population needs to strengthen their mental health, being women who have a greater re-experiencing, negative alterations in cognition or mood and a prevalence of hyperactivity (2), as well as severe distress that can be related to post-traumatic stress disorder (PTSD) (3).

This population is the most susceptible to experience mental distress as a consequence of their economic situation, having as incident factors the decrease in income, change of social status, unemployment, and those who express higher levels of mental distress as a consequence of their economic situation, having as incident factors the decrease of income, change of social status, unemployment, and those who express higher levels of mental distress (4,5). And those who express higher levels of stress, "higher levels of worry about the virus", a higher rate of anxiety about the virus (5), and a higher rate of post-traumatic stress disorder (PTSD) (6).

METHODOLOGY

A documentary review was carried out using as a search tool the databases Science Direct, PubMed, Apa PsycNet, and Elsevier in the period from January 2020 to January 2022, using keywords: COVID-19 and Mental Health with the AND and OR operators; which allowed identifying scientific articles in Spanish and English focused on the effects on the mental health of the general population during the COVID-19 pandemic that had within their results differentiation by gender to select those corresponding to women. Initially, around 80 articles were obtained from the search in the

databases; excluding those that were theoretical reviews, articles that were not within the range between the years 2020, 2021, and 2022 and those that did not have women as a sample, finally, 21 articles were included, from which 10 articles extracted from Science Direct, 4 articles from PubMed, 3 from Elsevier and 4 from Apa PsycNet were selected (Table 1).

Symptoms of stress and insomnia during the COVID-19 pandemic

Liu et al. (2), conducted a study that sought to know the prevalence and predictors of posttraumatic stress symptoms in China during the outbreak of COVID-19 among 300 residents of Wuhan and surrounding cities, as a result of this research women respondents had statistically significant higher PCL-5 scores than male respondents, in terms of the prevalence of symptoms has shown a higher prevalence of symptoms in women, who had a higher reexperiencing, negative alterations in cognition or mood and a prevalence of hyperactivity. On the other hand, this article establishes a relationship between sleep quality, early awakenings, and post-traumatic stress disorders, expressing those participants with better sleep quality or lower frequency of early awakenings reported lower post-traumatic stress symptoms.

PTSD has also affected female health professionals, in the study on PTSD Symptoms in Greek health professionals where 270 people participated, peritraumatic distress, presence of PTSD, perception of Health, Depression, Insomnia, and negative perceptions of COVID-19 were measured, and it was found that women presented higher scores in all the instruments applied compared to men, highlighting severe distress that can be related to a post-traumatic stress disorder, however, there were no significant differences between men and women in terms of insomnia since in general deterioration in sleep quality was reported (3).

In Israel, a study was conducted to identify the influence of socioeconomic inequalities on the development of mental distress during the pandemic in which 273 people, aged between 20 and 68 years, participated. These variables were measured through the Center for Epidemiological

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Table 1

Studies on the effects of the COVID-19 pandemic on women's mental health

Database	Country	Authors	Sample	Results
Sciencedirect	China	Liu et al. (2020) (2).	300 residents of Wuhan and surrounding cities	"Women reported significantly higher PTSD."
Sciencedirect	Spain	Puertas-González et al. (2021) (7).	200 pregnant women, with an average age of 33.1 years.	"The group of women who were pregnant during the pandemic showed higher levels of perceived stress, insomnia increased depressive symptoms and stress."
Sciencedirect	United States	Marroquín et al. (2020). (8).	National online sample of 435 U.S. adults.	"Women reported more intrusive thoughts, more GAD symptoms, and greater social support."
Sciencedirect	Saudi Arabia	Alfawaz et al. (2021) (9).	A total of 1542 respondents participated: 726 men and 816 women.	"Women with the highest quartile of family bonding showed 47% and 75% lower risk of anxiety and depression."
Sciencedirect	Spain	Fernández-Abascal and Martín-Díaz (2021) (10).	The participants were 647 students	"There are no differences between men and women on measures of affect, depression, physical and mental health within each period assessed".
Sciencedirect	Spain	González-Sanguino et al. (2020) (11).	The online survey of 3 480 people	Female gender, previous diagnoses of mental health problems or neurological disorders, having symptoms associated with the virus, or having a close family member infected were associated with greater symptomatology of depression, anxiety, and PTSD.
Sciencedirect	Austria	Pieh et al. (2020) (12).	Online survey with 1 005 participants	"The highest mental health problems were located in adults under 35 years of age, women, people out of work, and low income."
Pubmed	United Kingdom	United Kingdom Gray et al. (2020) (13).	A total of 12 989 people participated.	"Clinically significant psychological distress was found in about 50% of the population (men = 47.4% , women = 58.6%)."
Pubmed	United Kingdom	United Kingdom Pierce et al. (2020) (14).	53 351 participants	"GHQ score increases were greatest in people aged 18 to 24 years female and people living with young children".
Elsevier	China	Zhao et al. (2021) (6).	The final sample size was 29 118 people.	"PTSD due to COVID-19 was higher for women than for men."
Sciencedirect	Netherlands	Vloo et al. (2021) (15).	167 729 people living in the north of the Netherlands.	"Significant gender differences were found in mental health during lockdowns; women experienced more depressive symptoms and disorders than men."
Sciencedirect	Peru, Vietnam Ethiopia, and India	Hossain (2021) (16).	The longitudinal survey involving 12 000 young people	"Young women who faced economic hardship through job or income loss were more likely to report anxiety".
Pubmed	Israel	Refaeli and Krumer-New (2021) (4).	The sample consisted of 273 participants, ranging in age from 20 to 68 years.	"The findings indicated that groups vulnerable to mental distress in routine times (e.g., women, people with economic hardship) showed the same pattern during the pandemic."
Pubmed	Israel	Horesh et al. (2020) (5).	A total of 204 participants	"Female sex, younger age, coronavirus-related loneliness, and preexisting chronic illness were associated with higher levels of psychological distress and lower levels of quality of life."
Apa PsycNet	Greece	Blekas et al. (2020) (3).	In total, 270 health professionals.	"Women scored higher on all clinical scales of depression, anxiety, PTSD, and insomnia."
Apa PsycNet	China	Lai et al. (2020) (17).	A cross-sectional study of 1257 health care workers in 34 hospitals.	"Chinese healthcare workers exposed to COVID-19, women, nurses, people in Wuhan, and frontline healthcare workers are at high risk of developing unfavorable mental health outcomes."
Sciencedirect	Spain	Awad-Sirhan et al. (2021) (18).	695 pregnant women	"The results indicate that during the first wave of the pandemic, a medium level of prenatal stress and an elevated level of anxiety were observed."
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Database	Country	Authors	Sample	Results
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Elsevier	Spain	Erquicia et al. (2020) (19).	(2020) (19). A total of 395 workers were included.	Risk factors associated with greater psychological distress were being a female or young male."
Apa PsycNet	United States	Hernández et al. (2021) (20).	A total of 298 participants	"Front-line nurses who provided care during the initial COVID-19 surgereported high levels of traumatic stress and demonstrated risk of developing PTSD as measured by the TSQ."
Apa PsycNet	United Kingdom	Jia et al. (2020) (21).	3 097 participants, the cohort was predominantly female ($n = 2618$); the mean age was 44 years.	"Being younger, female, living alone, and being in a recognized risk group for COVID-19 were independently and significantly associated with higher levels of depression and anxiety".
Elsevier	An international study with 30	Eisenbeck et al. (2022) (22).	A total of 11 227 people from 30 countries on all continents participated in the study.	"Relative to men, women reported significantly lower physical and mental well-being, along with higher levels of distress".

Studies Depression Scale (CES-D) in addition to the evaluation of socio-demographic and economic factors; The results suggest that women are more susceptible to experience mental distress as a consequence of their economic situation and that the decrease in income, change of social status and unemployment may be factors that affect these results (4). Another research conducted in the same country sought to identify risk factors for psychological distress during the COVID-19 pandemic taking into account loneliness, age, gender, and health status; 204 participants were evaluated who filled out selfreport questionnaires 71.1 % (145) were women and 28.9 % (59) were men, the results showed that women reported higher levels of stress, as well as "higher levels of worry about the virus", in addition, variables such as younger age, loneliness and chronic illnesses corresponded with "high levels of psychological distress and low levels of quality of life" (5).

Zhao et al. (6) raise in their article the record of posttraumatic stress and posttraumatic growth of the general population in China during the first wave of COVID-19 through an online survey, applied to 29 118 people finding that posttraumatic stress disorder was higher in women because of COVID-19.

In the United States, traumatic stress was evaluated among front-line American nurses during the COVID-19 pandemic, where about 298 women participated, the Trauma Screening Questionnaire (TSQ) was used, and of the total scores obtained 185 (58.7 %) were positive for the diagnosis of a possible post-traumatic stress disorder, the symptomatology associated with these results was marked by involuntary mental content of the events that have generated emotional impact, irritability, sleep problems and fear of the possible dangers to which they are exposed (20).

Anxiety and depression during the COVID-19 pandemic

Puertas-González et al. (7), assesset the psychological effects caused by the COVID-19 pandemic in 200 pregnant women, divided into two groups: 100 women evaluated with psychological evaluation instruments during

the pandemic, and a second group called prepandemic, made up of 100 women evaluated before the pandemic, In this research, perceived stress, prenatal concerns, and psychopathological symptoms were evaluated and compared. The results showed that women who were part of group 1 scored higher in depression, phobic anxiety, and stress than women who were in the pre-pandemic group. This leads to the conclusion that the COVID-19 pandemic could produce an increase in psychopathological symptoms, which negatively affects the mental health of pregnant women.

Marroquín et al. (8), conducted a study with 435 American adults applying instruments such as the Center for Epidemiological Studies Depression Scale (CES-D), The GAD-7, The Experience of Intrusions Scale (EIS), The Insomnia Severity Index (ISI), The Stress Overload Scale-Short Form (SOS-S), Perceived social support was measured with the Social Provisions Scale; said the study shows that women presented greater intrusive thoughts, more symptoms of generalized anxiety and greater social support.

A study conducted on 647 undergraduate students before and during the confinement by COVID-19 sought to know the evolution and effects on affect, psychological well-being, depression, and mental and physical health, during the pandemic, finding significant differences between men and women in some of the scales of psychological well-being, having in women a higher measure than men, in aspects such as depression no significant differences are found between the two genders (10).

Likewise, in the United Kingdom, the researchers sought to identify the mental health sequelae of the COVID-19 pandemic. For this purpose, we applied the 9-item Patient Health Questionnaire (PHQ-9), the Generalized Anxiety Disorder Scale (GAD-7), the Perceived Stress Scale (PSS-4), as well as sociodemographic variables: age, gender, ethnicity, worker status, living alone, positive mood, concern about getting COVID-19, perceived loneliness, and risk of COVID-19 in 3097 adults, in the period from April 3,2020, to April 30,2020. The results were marked by a trend in the participation of women with 84.5 %, as well as high scores compared to men in the 3 instruments applied, highlighting

a higher score in young women aged 18 to 24 years (Mean PHQ-9:11.24; GAD-7:9.02; PSS-4: 8.13 compared to the other age groups); when performing a multivariate analysis it was evident that being young, female, living alone, belonging to a group at risk of infection was associated with higher levels of depression, anxiety, and stress (21).

González-Sanguino et al. (11), in their study, evaluated the presence of depression, anxiety, and post-traumatic stress disorder in 3 480 people, obtaining as a result that women, previous diagnoses of mental health problems or neurological disorders, symptoms associated with the virus or having a close relative infected were associated with greater symptoms of depression, anxiety, and Post Traumatic Stress Disorder, which allows us to know the impact on mental health caused by the COVID-19 pandemic.

In Austria, a study was conducted through online surveys applied to 1 005 individuals of which 53 % were female, in this study variables such as depressive symptoms, anxiety symptoms, and clinical insomnia was measured; obtained as a result that women were more burdened than men, the tests showed the highest mental health problems in adults under 35 years, women, unemployed people, and low-income individual (12).

Gray et al. (13) showed the results of data collected through an online survey of 12 989 people, these data were compared with those of April 2018 and March 2019, in which well-being showed a large decrease with respect to the levels of 2019. Regarding psychological distress, it is evident that women present clinically significant psychological distress with a percentage of 58.6 %, 20.9 % present severe effects, with the most affected being women, young people, and inhabitants of not so favored areas, thus showing the detrimental effects of the pandemic on mental health.

Pierce et al. (14), analyzed mental health as assessed by the 12-item general health questionnaire in UK households in which they found that women had an increased score on the general health questionnaire.

Lai et al. (17), conducted a cross-sectional study of 1 257 health care workers in 34 hospitals

in China where symptoms of depression, anxiety, insomnia, and distress were measured, the participants had an age range between 26 and 40 years and 76.7 % were women, within the results obtained it is highlighted that women (5.8 %) obtained severe anxiety scores compared to men (3.4 %), likewise nursing professionals, women, first-line doctors and workers in Wuhan obtained high scores on the depression, anxiety, insomnia and distress scales compared to men, doctors from other areas, or workers outside Wuhan.

In relation to the previous study, similar research was conducted in Spain with the participation of 395 health professionals from a hospital in Barcelona; the measurement was made between March and April 2020; and for this purpose, the DASS-21 (Depression Anxiety Stress Scales), Hamilton Anxiety Rating Scale (HARS) and the Montgomery-Asberg Depression Rating Scale (MADRS) were used to measure the levels of anxiety and depression.

In addition, a questionnaire of 18 symptoms associated with acute stress disorder and a survey of sociodemographic data were designed, within the results of the study, it was evidenced that 73.6 % of the participants were women, "The level of emotional distress was more severe in women than in men", the associated risk factors for this indicator were: being a woman, working on the front line, not having had a PCR test, feeling of not wearing the required personal protective equipment (PPE) and the death of someone close to them from COVID-19 (19). In a study of 167 729 people living in the northern Netherlands, significant differences in gender and mental health during confinement were found to exist, with women experiencing greater depressive symptoms and disorders stemming from COVID-19 confinement making evident the difference in mental health effects among women (15).

Likewise, in research conducted by Hossain (16), which involved young people aged 17-29 years from 4 countries, distributed in 1 029 and 1 459 from Ethiopia, 829 and 1 759 from India, 745 and 1 401 from Peru, and 1 581 and 2015 from Vietnam; which sought to identify gender differences based on the economic and mental health effects of COVID-19, it was found that young women are more likely to experience

anxiety as a result of the economic effects of the pandemic, as well as the affectation in their well-being generated by the difficulties presented in that period, and there were no significant differences between the economic level of the participating women since in cases of rich and poor women had similar chances of developing anxiety.

Alfawaz et al. (9) in their research carried out in Saudi Arabia, in which 1 542 respondents participated, of which 816 were female, found that most of those evaluated stated that they had suffered anxiety (58.1 %), depression (50.2 %) and insomnia (32.2 %) during the lockdowns. On average, 65.3 % of the respondents agreed that the family bond was strengthened during the confinement due to the pandemic, as relevant data in this study, it is concluded that no significant differences were observed in the responses between men and women.

In a quantitative study conducted by Awad-Sirhan et al. (18), with 695 confined pregnant women between the age range of 21 and 47 years, where they sought to describe the levels of prenatal stress and anxiety and their association with obstetric factors, perception of health care and concern provoked by the COVID-19 sociohealth situation, the results indicated that "during the first wave of the pandemic demonstrated a mean level of prenatal stress of 16.98 (SD = 25.20) and an elevated level of anxiety (M =25, 20/DS = 11.07)"; in addition, the factors that correlated positively with anxiety and prenatal stress were concern associated with COVID-19 and mental health history, however, the presence of anxiety was also marked in women who had more than one child and as a protective factor the perception of health care and planned pregnancy were identified.

Finally, in a study conducted in 30 countries across continents, the following were measured: "psychological distress (depression, stress, and anxiety), loneliness, well-being, and physical health, along with measures of problem-focused and emotion-focused attention, focused coping, and a measure called the Meaning-Centered Coping Scale (MCCS)", the participants were in total 11 227 people, where 69.9 % were women who reported high levels of distress and low levels of physical and mental well-being, however,

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women and older people scored higher on the sense of life (22,23).

CONCLUSIONS

According to the results obtained in the systematic review, it is evident that women belong to the risk groups that have suffered the mental health effects of the COVID-19 pandemic, highlighting an increase in stress, anxiety, depression, and health problems. Most of the studies examined evaluated women with heterogeneous characteristics based on sociodemographic variables that allowed us to understand that the pandemic can affect specific groups the most, especially young women that live alone and that have a history of mental disorders, and healthcare workers with high exposure to the virus; It is also important to note that in most studies a trend was observed in the samples, which exceeded more than 50 % of female participants; it was also shown that advanced age favored the sense of life and well-being since high levels of anxiety, depression or stress were not reported in these age groups for most of the studies reviewed.

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