

THE IMPACT OF THE COVID-19 PANDEMIC ON MENTAL HEALTH IN EL SALVADOR IN 2020

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ABSTRACT

Studying the impact of the COVID-19 pandemic on mental health grants knowledge of the current state of an essential aspect of the health of the Salvadoran population. The study is descriptive, quantitative, and cross-sectional. The probability sampling is of simple random type. The sample is constituted by 363 users of the general outpatient service of the Hospital Nacional Psiquiátrico (hereinafter National Psychiatric Hospital), from a population of 6,484 individuals. The participants were administered the DASS-21 questionnaire. The highest frequency of psychiatric disorder was depression, with a severity intensity ranging from moderate to very severe in 12.12% of the total users, followed by anxiety, with 9.64% experiencing moderate to very severe intensity, and 9.09% had levels of stress ranging from moderate to very severe. The demographic variables present in the different affective scales are: for depression, women (13.60%), informal work (13.40%), widowed (17.15%), from San Salvador (12.00%), urban areas (12.29%) and individuals with a secondary education level (18.29%), the highest incidence. Anxiety related findings were: women (9.86%), unemployed (15.68%), in a domestic partnership (13.56%), from San Salvador (15.38%), rural areas (15.38%) and individuals with a secondary education level (14.64%). Stress related findings were: women (10.20%), unemployed individuals (17.64%), single individuals (11.44%), from San Salvador (23.08%), urban areas (9.14%) and Individuals with a university education level (17.15%). The users exhibited a higher percentage of impact on the depression scale. The severity intensity in all three affective scales was predominantly moderate to very severe. There is a multifactorial cause that triggers the presence of depression, anxiety, and stress, such as social, family, and economic factors which contribute to generating personal vulnerability.

Keywords: depression, anxiety, stress, DASS-21 scale, El Salvador.

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EL IMPACTO DE LA PANDEMIA POR COVID-19 SOBRE LA SALUD MENTAL EN EL SALVADOR EN 2020

RESUMEN

Estudiar el impacto de la pandemia por covid-19 sobre la salud mental permite conocer el estado actual de un aspecto esencial de la salud de la población salvadoreña. El estudio es descriptivo, cuantitativo y transversal. El muestreo es de carácter probabilístico, aleatorio simple. A partir de una población de 6,484 individuos, se obtuvo una muestra de 363 usuarios de la consulta externa general del Hospital Nacional Psiquiátrico, a quienes se les aplicó la escala DASS-21. La mayor frecuencia de alteración psiquiátrica fue la depresión, con una intensidad, de gravedad de moderado a muy severa en un 12.12 % del total de usuarios, seguida de la ansiedad, donde un 9.64 % fue de moderada a muy severa intensidad y el 9.09 % tenía niveles de estrés de moderados a muy severos. En cuanto a las variables demográficas presentes en las diferentes dimensiones afectivas, son: en la depresión fueron las mujeres (13.60 %), trabajo informal (13.40 %), viudos (17.15 %), de San Salvador (12.00 %), área urbana (12.29 %) y nivel de secundaria (18.29 %), la incidencia mayor. En la ansiedad el comportamiento fue: en mujeres (9.86 %), desempleados (15.68 %), acompañadas (13.56 %), provenientes de San Salvador (15.38 %), área rural (15.38 %) y de secundaria (14.64 %). Mientras que, en la dimensión del estrés fueron las mujeres (10.20 %), desempleados (17.64 %), solteros (11.44 %), de San Salvador (23.08 %), del área urbana (9.14 %) y estudio universitario (17.15 %). Los usuarios presentaron mayor impacto porcentual en la dimensión de la depresión. La intensidad de la gravedad en las tres dimensiones afectivas fue predominantemente de moderada a muy severa. Existe una causal multifactorial que desencadena la presencia de depresión, ansiedad y estrés; como son los factores sociales, familiares y económicos, que generan una vulnerabilidad personal.

Palabras clave: depresión, ansiedad, estrés, escala DASS-21, El Salvador.

INTRODUCTION

The present study provides data on the impact of the COVID-19 pandemic on the mental health of patients receiving care at the outpatient department of the National Psychiatric Hospital, during the period from September to October

2020. The purpose is to determine the frequency and severity of the main symptoms that indicate the presence of mental health destabilization among users, at a time when positive cases of COVID-19 continue to be reported throughout our country.



The general objective of the research is to describe the impact of the COVID-19 pandemic on the mental health of the population that uses the general consultation service of the National Psychiatric Hospital "Dr. José Molina Martínez".

The specific objectives considered were: determining the frequency of mental health problems (depression, anxiety, and stress), identifying the severity intensity of these dimensions, and describing the psychosocial factors and aspects related to COVID-19, according to psychiatric dimensions. The presence and intensity of affective states of depression, anxiety, and stress are assessed using the DASS-21 scale, which utilizes a Likert-type scale consisting of 21 items and each affective area is evaluated through a total of seven questions.

In studies conducted in China and Spain, the authors Wang et al and colleagues found that moderate to severe cases of depression were present in 16.5%; (1) a result similar to the findings of Etxebarria and colleagues, who reported moderate to extremely severe depressive episodes in 13.3% of cases. In a study in Spain, the level of depression as a state was most represented with low levels (19.79%), moderate levels (36.54%), and high levels (13.70%). 12.20% of individuals exhibited depression as a trait at a moderate level (2).

In a study in Spain, the stress level results were: 66.49% of individuals showed disturbance in the scales of borderline (35.02%), excessive stress (25.38%), and too much stress (6.09%), while

33.50% showed normal levels; the study of suicidal ideation found it was present in 1.52% and absent in 98.47% (2).

In the 2017 report on depression and other mental disorders by the Pan American Health Organization (PAHO) and the WHO (3), it was estimated that in 2015, approximately 4.4% of the global population suffered from depression, that prevalence rates vary by age, reaching its peak in older age, exceeding 7.5% in women aged 55 to 74 years and over 5.5% in men. The WHO has determined that in emergency situations, 1 in 5 people experiences depression and anxiety, and that the treatment for these conditions has a very low cost, but on average, only 3% of the government's health budget is allocated to mental health (3).

The report on depression and other common mental disorders, based on global health estimates by the PAHO and the WHO in 2017 (3), determined that in 2015, a total of 264 million people worldwide were suffering from anxiety disorder, and the proportion of the global population suffering this condition was 3.6%. In addition, the report established that it is more frequent in women (4.6%), in contrast to men (2.6%). It was considered that in 2015 there were 57.22 million people in the American continent with this diagnosis, which represented 21% of the total cases worldwide (3).



METHODOLOGY

The present research was conducted using a quantitative approach and has a descriptive scope.

The units of analysis were the users who attended the general outpatient department of the National Psychiatric Hospital. The study population consisted of the users who sought consultation in the general area of the hospital. Patients who sought consultation in the psychiatry area and who suffered from a psychiatric pathology were excluded from the study.

The probability sampling method used was of simple random type, with a population delimited by all patients who sought consultation in the general area of the hospital between the ages of

19 and 70 years, during the period from August to November 2020.

From January 1st to July 31st, 2020, a total of 7,072 users were provided assistance in the psychiatry and general area of the National Psychiatric Hospital (4) (see Table 1). However, the study population considered for the research consisted of patients who sought consultation in the general area, emergency unit, and outpatient department, which represents a total of 6,484 individuals. Patients who sought consultation in the psychiatry area were excluded, since the research aimed to describe the impact of the COVID-19 pandemic on the mental health of the population without a history of psychiatric disorders.

Table 1. Total consultations performed at the National Psychiatric Hospital, from January 1st to July 31st, 2020.

Groups of causes	Male consultations	Female consultations	Total consultations
Injury, poisoning and certain other consequences of external causes (S00-T98)	676	515	1,191
Pregnancy, childbirth and the puerperium (O00-O99)	0	877	877
Codes for special purposes (U00-U97)	402	420	822
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	361	362	723
Diseases of the respiratory system (J00-J99)	311	345	656
Mental and behavioural disorders (F00-F99)	366	222	588
Diseases of the digestive system (K00-K93)	158	209	367
Certain infectious and parasitic diseases (A00-B99)	160	172	332
Endocrine, nutritional and metabolic diseases (E00-E90)	132	191	323
Factors influencing health status and contact with health services (Z00-Z99)	37	209	246
Other causes	417	530	947
Totals	3,020	4,052	7,072

Sources: SIMMOW, National Psychiatric Hospital, January 1st to July 31st, 2020



The study sample was determined using the statistical software Epi Info, taking into account a confidence level of 95% to obtain the sample of patients to whom the questionnaire was administered. The sample consisted of 363 consulting patients from the total population of 6,484. Ethical considerations: the hospital's Ethics Committee and the Evangelical University of El Salvador were requested to review and verify the content, and they granted their approval; this was done to ensure compliance with data collection and analysis processes while ensuring the confidentiality and anonymity of the users.

Participation was voluntary, and the identity of the participants was treated with confidentiality. Each questionnaire was identified by a coding number or clinical record. Consulting users had the autonomy to choose to stop participating when they decided. The ethical principle applied to ensure reliability and protection of identity, following the CIOMS standard, was based on the following criteria (5):

1. Individuals capable of giving informed consent.
2. Modifications and waivers of informed consent.
3. Collection, storage, and use of data in health related research

A questionnaire was the instrument used for data collection, which was administered to patients between the ages of 19 and 70 who visited the general area of the National Psychiatric Hospital.

The questionnaire was structured with questions that explored the following factors: sociodemographic aspects (age, sex, occupation, marital sta-

tus, place of origin), COVID-19-related aspects (testing, presence or absence of symptoms, family members with COVID-19 infection, living with COVID-19+ individuals, psychoactive substance use), fears related to the pandemic, and manifestations related to stress (stress, anxiety, and depression), using pre-designed or dichotomous response options and Likert scales to measure the level of intensity or severity of symptoms), using the DASS-21 scale. The instrument was validated by five mental health professionals: one psychologist and four psychiatrists.

Interpretation of DASS-21 scores

A Likert scale was used, consisting of 21 questions, with seven questions for each affective area and four response options, scored from zero to three. The scores are interpreted as follows: 0 = Has not happened to me, 1 = Has happened to me a little, or part of the time, 2 = Has happened to me quite a bit, or a good part of the time, 3 = Has happened to me a lot, or most of the time. The score obtained for each affective area ranges from 0 to 21 points; the scores allow the affective findings to be classified as normal or as mild, moderate, severe, and very severe disorders.

Depression score	Anxiety score	Stress score
normal 0-4	normal 0-3	normal 0-7
mild 5-6	mild 4-5	Mild 8-9
moderate 7-10	moderate 6-7	moderate 10-12
severe 11-13	severe 8-9	severe 13-16
very severe ≥ 14	very severe ≥ 10	very severe ≥ 17



The items related to depression symptoms are 3, 5, 10, 13, 16, 17, 21. The items related to anxiety disorder are 2, 4, 7, 9, 15, 19, 20. The items related to stress are 1, 6, 8, 11, 12, 14, 18 (6).

RESULTS

The data collected using the questionnaire was entered into a Microsoft Excel sheet, where it was organized into the respective categories with their specific coding. The variables of depression, anxiety, and stress were further subdivided into results labeled as normal, mild, moderate, severe, and very severe, based on the obtained scores, which allows to determine the level of severity according to the results.

The Excel spreadsheet's filter and automatic count function were used to determine absolute frequencies, while the percentages were calculated using the rule of three. The SUM function

(=SUM) was used to establish the scores that allowed determining the severity levels of the depression, anxiety, and stress variables. To provide detailed results, a breakdown was made in correspondence with the objectives, determining the frequency and intensity of affective dimensions and psychosocial factors, as well as the covid-19 aspects that could be associated with the psychiatric disorder.

Frequency and intensity of mental health problems (depression, anxiety, and stress) in the face of the COVID-19 pandemic.

Depression was the most predominant psychiatric disorder with a prevalence of 12.12%, which corresponds to a moderate to very severe intensity. 9.64% of the respondents exhibited symptoms of anxiety ranging from moderate to very severe. 9.09% of the patients exhibited levels of stress ranging from moderate to very severe (see Table 2).

Table 2. Severity of depression, anxiety, and stress levels according to the DASS-21 scale results

Variable	Severity	Absolute frequency	Percentage frequency
Depression	Normal	306	84.30 %
	Mild	13	3.58 %
	Moderate	29	7.99 %
	Severe	8	2.20 %
	Very severe	7	1.93 %
	Total	363	100 %
Anxiety	Normal	299	82.37 %
	Mild	29	7.99 %
	Moderate	16	4.41 %
	Severe	6	1.65 %
	Very severe	13	3.58 %
	Total	363	100%



	Normal	311	85.67 %
	Mild	19	5.23 %
Stress	Moderate	18	4.96 %
	Severe	9	2.48 %
	Very severe	6	1.65 %
n=363	Total	363	100 %

Source: DASS-21 questionnaire administered to users consulting at the general outpatient department of the National Psychiatric Hospital "Dr. José Molina Martínez", 2020.

Psychosocial factors and aspects related to COVID-19, according to psychiatric dimensions (anxiety, depression, and stress).

Depression dimension

Female participants exhibited a higher percentage of depression symptoms, ranging from moderate to very severe, when compared to male participants, with 13.60% and 5.80% respectively. Individuals who were informally employed exhibited the highest levels of depression, 13.40% of them experiencing depression ranging from moderate to very severe, followed by the group

consisting of housewives, 12.93% of whom suffered from depression in the same severity ranges. Regarding marital status, it was observed that widowed individuals exhibited the highest levels of depression, 17.15% experiencing moderate to very severe depression, followed by married individuals (14.29%). Participants from San Salvador and urban areas were the most affected (12% and 12.29% respectively). Individuals with secondary education levels exhibited the most complicated levels of depression, 18.29% of the total (see Table 3).

Table 3. Depression levels according to sociodemographic variables

Variable	N	Depression					Total
		Normal	Mild	Moderate	Severe	Very Severe	
Sex		%	%	%	%	%	%
Male	69	91.30	2.90	2.90	1.45	1.45	100
Female	294	82.65	3.74	9.18	2.38	2.04	100
Occupation		%	%	%	%	%	%
Employee	30	90.00	3.33	6.67	0.00	0.00	100
Informal employee	97	81.44	5.15	8.25	4.12	1.03	100



Housewife	178	84.83	2.25	8.99	1.69	2.25	100
Retiree	7	85.71	0.00	14.29	0.00	0.00	100
Unemployee	51	84.31	5.88	3.92	1.96	3.92	100
Marital status	N	%	%	%	%	%	%
Married	91	84.62	1.10	9.89	3.30	1.10	100
Domestic partnership	59	89.83	1.69	3.39	1.69	3.39	100
Divorced	12	100.00	0.00	0.00	0.00	0.00	100
Widowed	35	82.86	0.00	11.43	2.86	2.86	100
Single	166	81.33	6.63	8.43	1.81	1.81	100
Place of origin	N	%	%	%	%	%	%
San Salvador	350	84.29	3.71	8.00	2.00	2.00	100
Other departments	13	84.62	0.00	7.69	7.69	0.0	100
Area	N	%	%	%	%	%	%
Urban	350	84	3.71	8.29	2.00	2.00	100
Rural	13	92.31	0.00	0.00	7.69	0.00	100
Academic level	N	%	%	%	%	%	%
No education	32	90.63	0.00	3.13	6.25	0.00	100
Primary	130	84.62	3.85	8.46	2.31	0.77	100
Secondary	82	78.05	3.66	13.41	1.22	3.66	100
High school	83	89.16	2.41	4.82	1.20	2.41	100
University	35	80.00	8.57	5.71	2.86	2.86	100
Other	1	100.00	0.00	0.00	0.00	0.00	100

n = 363. N = number of participants. % = percentage. Other departments: Sonsonate, Cabañas, Chalatenango, Cuscatlán, La Libertad, La Paz, San Miguel, Usulután.

Participants who had undergone the COVID-19 test exhibited higher levels of depressive symptoms. Among them, 19.24% exhibited symptoms of depression ranging from moderate to very severe and from this group, 33.33% of those who tested positive for the virus exhibited moderate depressive symptoms. 27.11% of individuals who had experienced COVID-19 symptoms exhibited

more significant depressive symptoms, ranging from moderate to very severe. The group of individuals who feared that their family members would contract the disease exhibited higher levels of depression (16.03%). There was also a high incidence in the group of workers with an informal source of income (19.67%). The group of people who were afraid of being isolated as



a consequence of the COVID-19 pandemic experienced higher depressive symptoms. In this group, 19.75% exhibited moderate to very severe depressive symptoms, and as a result, 38.89% started using psychoactive substances during the pandemic, the most used substance was caffeine (36.36%) (see Table 4).

Table 4. Depression levels according to COVID-19 related variables

Variable	Depression						Total
	Normal	Mild	Moderate	Severe	Very severe		
Tested for COVID-19	N	%	%	%	%	%	%
Yes	26	76.92	3.85	11.54	3.85	3.85	100
No	337	84.87	3.56	7.72	2.08	1.78	100
Result	N	%	%	%	%	%	%
Positive	6	66.67	0.00	33.33	0.00	0.00	100
Negative	20	80.00	5.00	5.00	5.00	5.00	100
COVID SYMPTOM	N	%	%	%	%	%	%
Yes	59	64.41	8.47	16.95	5.08	5.08	100
No	304	88.16	2.63	6.25	1.64	1.32	100
Fear that a relative contracts the disease	N	%	%	%	%	%	%
Yes	237	78.90	5.06	10.13	2.95	2.95	100
No	126	94.44	0.79	3.97	0.79	0.00	100
Fear of job loss	N	%	%	%	%	%	%
Formal employee	20	85.00	5.00	10.00	0.00	0.00	100
Informal employee	61	72.13	8.20	13.11	4.92	1.64	100
Fear of isolation	N	%	%	%	%	%	%
Yes	167	77.25	2.99	13.77	2.99	2.99	100
No	196	90.31	4.08	3.06	1.53	1.02	100
Drug consumption	N	%	%	%	%	%	%
Yes	18	50.00	11.11	27.78	0.00	11.11	100
No	345	86.09	3.19	6.96	2.32	1.45	100



Consumed drug	N	%	%	%	%	%	%
Alcohol	1	0.00	0.00	100.00	0.00	0.00	100
Tobacco	3	66.67	0.00	0.00	0.00	33.33	100
Caffeine	11	45.45	18.18	27.27	0.00	9.09	100

n = 363. N = total number of participants. % = percentage.

Anxiety dimension

Female participants were more affected by anxiety, 9.86% of them experiencing moderate to very severe anxiety, while in males, it was 8.70%. Unemployed individuals had the highest levels of anxiety, 15.68% experiencing moderate to very severe anxiety, followed by the informal workers

group (11.33%). Anxiety levels in relationship to marital status results were: those who were in a domestic partnership 13.56%, single individuals 10.84%. According to the place of origin, the most affected ones were from San Salvador (15.38%) and from the rural area (15.38%). Individuals with secondary education levels (14.64%) exhibited the highest levels of anxiety. (see Table 5)

Table 5. Anxiety levels according to sociodemographic variables

Variable		Anxiety					Total
		Normal	Mild	Moderate	Severe	Very Severe	
Sex	N	%	%	%	%	%	%
Male	69	86.96	4.35	4.35	0.00	4.35	100
Female	294	81.29	8.84	4.42	2.04	3.40	100
Occupation	N	%	%	%	%	%	%
Employee	30	80.00	6.67	6.67	3.33	3.33	100
Informal employee	97	82.47	6.19	5.15	1.03	5.15	100
Housewife	178	84.83	8.89	2.81	1.69	1.69	100
Retiree	7	85.71	0.00	14.29	0.00	0.00	100
Unemployee	51	74.51	9.80	5.88	1.96	7.84	100
Marital status	N	%	%	%	%	%	%
Married	91	87.91	5.49	2.20	2.20	2.20	100
Domestic partnership	59	84.75	1.69	6.78	3.39	3.39	100
Divorced	12	91.67	8.33	0.00	0.00	0.00	100



Widowed	35	80.00	11.43	0.00	2.86	5.71	100
Single	166	78.31	10.84	6.02	0.60	4.22	100
Place of origin	N	%	%	%	%	%	%
San Salvador	350	82.29	8.29	4.29	1.71	3.43	100
Other departments	13	84.62	0.00	7.69	0.00	7.69	100
Area	N	%	%	%	%	%	%
Urban	350	82.57	8.00	4.29	1.71	3.43	100
Rural	13	76.92	7.69	7.69	0.00	7.69	100
Academic level	N	%	%	%	%	%	%
No education	32	87.50	9.38	3.13	0.00	0.00	100
Primary	130	86.15	6.92	1.54	0.77	4.62	100
Secondary	82	74.39	10.98	7.32	3.66	3.66	100
High school	83	85.54	4.82	6.02	2.41	1.20	100
University	35	74.29	11.43	5.71	0.00	8.57	100
Other	1	100.00	0.00	0.00	0.00	0.00	100

n = 363. N = number of participants. % = percentage. Other departments: Sonsonate, Cabañas, Chalatenango, Cuscatlán, La Libertad, La Paz, San Miguel, Usulután

Regarding anxiety levels, 19.24% of individuals who had undergone a COVID-19 test exhibited moderate to very severe anxiety levels. Those who tested negative for COVID-19 had high levels of anxiety, where 20% of them experienced severe to very severe anxiety disorders. 27.12% of the participants who had suggestive COVID-19 symptoms at some point exhibited moderate to very severe anxiety symptoms. Individuals who expressed fear that their family members would contract COVID-19 exhibited higher levels of anxiety, 12.24% of whom showed symptoms ranging from moderate to very severe. In the group of workers, it was observed that

those who had both informal and formal jobs as sources of income showed similar percentages of anxiety, ranging from moderate to very severe, in 14.76% and 15% of cases, respectively.

Participants who expressed fear of being isolated (12.58%) due to the COVID-19 pandemic were the ones who showed the most symptoms of anxiety. 27.78% of individuals who claimed to have started using drugs during the pandemic showed higher levels of anxiety, with the highest levels being for tobacco, from which 66.66% showed severe to very severe anxiety (see table 6).



Table 6. Anxiety levels according to COVID-19 related variables

Variable		Anxiety					Total
		Normal	Mild	Moderate	Severe	Very Severe	
TESTED FOR COVID-19	N	%	%	%	%	%	%
Yes	26	73.08	7.69	3.85	3.85	11.54	100
No	337	83.09	8.01	4.45	1.48	2.97	100
Result	N	%	%	%	%	%	%
Positive	6	83.33	0.00	16.67	0.00	0.00	100
Negative	20	70.00	10.00	0.00	5.00	15.00	100
COVID-19 SYMPTOMS	N	%	%	%	%	%	%
Yes	59	59.32	13.56	6.78	6.78	13.56	100
No	304	86.84	6.91	3.95	0.66	1.64	100
Fear that a relative contracts the disease	N	%	%	%	%	%	%
Yes	237	77.64	10.13	5.49	2.53	4.22	100
No	126	91.27	3.97	2.38	0.00	2.38	100
Fear of job loss	N	%	%	%	%	%	%
Formal employee	20	75.00	10.00	5.00	5.00	5.00	100
Informal employee	61	78.69	6.56	4.92	1.64	8.20	100
Fear of isolation	N	%	%	%	%	%	%
Yes	167	76.05	11.38	4.19	2.40	5.99	100
No	196	87.76	5.10	4.59	1.02	1.53	100
Drug consumption	N	%	%	%	%	%	%
Yes	18	61.11	11.11	0.00	16.67	11.11	100
No	345	83.48	7.83	4.64	0.87	3.19	100
Drug consumed	N	%	%	%	%	%	%
Alcohol	1	0.00	0.00	0.00	100.00	0.00	100
Tobacco	3	33.33	0.00	0.00	33.33	33.33	100
Caffeine	11	63.64	18.18	0.00	9.09	9.09	100

n = 363. N = total number of participants. % = percentage.



Stress dimension

Female participants suffered from higher levels of stress. In this group, 10.20% had a level of stress ranging from moderate to very severe, while it was present in only 4.35% of males. Unemployed individuals had the highest levels of anxiety (17.64%), informal workers (10.31%)

were the next most affected group in terms of stress. Among single individuals, 11.44% had higher levels of stress. Participants from San Salvador showed the highest levels of this condition (23.08%), while it was present in 9.14% of participants from urban areas. Individuals with a university education level were the group with the highest level of stress (17.15%) (see Table 7).

Table 7. Stress levels according to sociodemographic variables

Variable		Stress					Total
		Normal	Mild	Moderate	Severe	Very Severe	
Sex	N	%	%	%	%	%	%
Male	69	92.75	2.90	2.90	0.00	1.45	100
Female	294	84.01	5.78	5.44	3.06	1.70	100
Occupation	N	%	%	%	%	%	%
Employee	30	93.33	6.67	0.00	0.00	0.00	100
Informal employee	97	85.57	4.12	8.25	2.06	0.00	100
Housewife	178	86.52	5.62	3.37	2.25	2.25	100
Retiree	7	100.00	0.00	0.00	0.00	0.00	100
Unemployed	51	76.47	5.88	7.84	5.88	3.92	100
Marital status	N	%	%	%	%	%	%
Married	91	90.11	4.40	2.20	2.20	1.10	100
Domestic partnership	59	88.14	3.39	1.69	5.08	1.69	100
Divorced	12	91.67	0.00	0.00	8.33	0.00	100
Widowed	35	82.86	8.57	5.71	2.86	0.00	100
Single	166	82.53	6.02	7.83	1.20	2.41	100
Place of origin	N	%	%	%	%	%	%
San Salvador	350	86.00	5.43	4.29	2.57	1.71	100
Other departments	13	76.92	0.00	23.08	0.00	0.00	100
Area	N	%	%	%	%	%	%
Urban	350	85.43	5.43	5.14	2.29	1.71	100



Rural	13	92.31	0.00	0.00	7.69	0.00	100
Academic level	N	%	%	%	%	%	%
No education	32	90.63	6.25	3.13	0.00	0.00	100
Primary	130	89.23	4.62	3.08	2.31	0.77	100
Secondary	82	79.27	7.32	8.54	1.22	3.66	100
High school	83	87.95	3.61	2.41	4.82	1.20	100
University	35	77.14	5.71	11.43	2.86	2.86	100
Other	1	100.00	0.00	0.00	0.00	0.00	100

n = 363. N = number of participants. % = percentage. Other departments: Sonsonate, Cabañas, Chalatenango, Cuscatlán, La Libertad, La Paz, San Miguel, Usulután

It was observed that individuals who had undergone a COVID-19 test at some point maintained higher levels of stress. 19.23% of them showed moderate to very severe stress levels, while 33.34% of those who got a positive test also showed those same stress levels. 22.03% of the participants who reported having experienced symptoms suggestive of COVID-19 had higher levels of stress. Individuals who feared that their family members would contract the disease

(12.65%) were the ones who showed a higher level of stress. The fear of job loss exclusively affected workers in the informal sector (16.39%). 13.76% of the individuals who expressed fear of isolation showed a higher sense of stress. Among those who initiated the use of psychoactive substances (33.34%) during the pandemic, tobacco prevailed the most, accounting for 66.66%, with a stress level ranging from severe to very severe (see Table 8).

Table 8. Stress levels according to COVID-19 related variables

Variable		Stress					Total
		Normal	Mild	Moderate	Severe	Very Severe	
Tested for COVID-19	N	%	%	%	%	%	%
Yes	26	76.92	3.85	11.54	0.00	7.69	100
No	337	86.35	5.34	4.45	2.67	1.19	100
Result	N	%	%	%	%	%	%
Positive	6	66.67	0.00	16.67	0.00	16.67	100
Negative	20	80.00	5.00	10.00	0.00	5.00	100



COVID-19 SYMPTOMS	N	%	%	%	%	%	%
Yes	59	66.10	11.86	13.56	3.39	5.08	100
No	304	89.47	3.95	3.29	2.30	0.99	100
Fear that a relative contracts the disease	N	%	%	%	%	%	%
Yes	237	80.59	6.75	7.59	2.95	2.11	100
No	126	95.94	2.28	0.00	1.59	0.79	100
Fear of job loss	N	%	%	%	%	%	%
Empleo formal	20	95.00	5.00	0.00	0.00	0.00	100
Empleo informal	61	77.05	6.56	13.11	3.28	0.00	100
Fear of isolation	N	%	%	%	%	%	%
Yes	167	80.24	5.99	7.78	2.99	2.99	100
No	196	90.31	4.59	2.55	2.04	0.51	100
Drug consumption	N	%	%	%	%	%	%
Si	18	50.00	16.67	11.11	16.67	5.56	100
No	345	87.54	4.64	4.64	1.74	1.45	100
Drug consumed	N	%	%	%	%	%	%
Alcohol	1	0.00	100.00	0.00	0.00	0.00	100
Tobacco	3	33.33	0.00	0.00	33.33	33.33	100
Caffeine	11	54.55	9.09	18.18	18.18	0.00	100

n = 363. N = total number of participants. % = percentage

Discussion of results

The most frequent dimension was depression, followed by anxiety, and in third place, stress. Additionally, the intensity of severity in all three affective dimensions was predominantly moderate to very severe.

12.12% of the respondents exhibited levels of depression ranging from moderate to very severe, similar to those found by Wang and colleagues, as well as Etxebarria and colleagues. This reflects a similar percentage impact and intensity of severity to what has been reported by China, the USA, and Spain (1, 2).



Only 9.64% of the respondents with anxiety disorders presented moderate to very severe intensity, reflecting a lower impact compared to the findings of Wang and colleagues (28.8%) (1) and Etxebarria and colleagues (20.9%) in China. In contrast, in Spain, anxiety predominated in the majority of individuals, especially those with high and moderate levels, 30.96% and 26.90% respectively, and in the case of mild level, it was 19.79% (2).

9.09% of the respondents had levels of stress ranging from moderate to very severe, even higher than those found by Wang and colleagues (8.1%) (1), although lower than those found by Etxebarria and colleagues (17.6%) (2). This shows that the stress experienced by users has a lower percentage impact but similar predominance in terms of intensity of severity, unlike in other countries such as China, the USA, and Spain.

Affective dimension of depression

Regarding demographic variables and their relationship to depression, it was determined that individuals with the highest levels of depressive symptoms, ranging from moderate to very severe, were women, informal workers, widowed, those from San Salvador, urban areas, and individuals with a secondary education level.

Findings regarding COVID-19 variables and their relationship to the depressive dimension were that those who had moderate to severe depression were individuals who had been tested and received a positive result (33.33%), those who had experienced symptoms (27.11%), those who expressed fear of losing their job (19.67%),

those who feared being isolated due to the pandemic (19.75%) and the ones that started to consume caffeine (36.36%).

It is important to highlight that the most frequent emotional reaction in the study was depressive, ranging from moderate to very severe, and this finding in our country matches with what has been reported by the PAHO and the WHO (3).

In the long term, the analysis suggests that survivors of SARS and MERS may be at risk of mental health conditions such as depression, anxiety, fatigue, and post-traumatic stress disorder (PTSD) in the months and years following hospital discharge (7). This is consistent with the psychological impact exhibited by the users in the dimensions of depression, anxiety, and stress.

Affective dimension of anxiety

Regarding demographic variables and their relationship to anxiety, individuals who exhibited moderate to severe symptoms were women, unemployed people, individuals in a domestic partnership, those from San Salvador, rural areas, and individuals with a secondary education level.

The findings on the variables related to COVID-19 and their relationship to the dimension of anxiety, revealed that individuals with moderate to severe symptoms of this disorder were those who had undergone testing and received a negative result (20%), those who had experienced suggestive symptoms (27.12%), individuals who expressed a greater fear of losing their job (15%), and those who initiated the consumption of tobacco (66.66%).



The results obtained in the study align with the data reported by the PAHO and WHO (3), given that the emotional dimension of anxiety corresponds to one of the most frequent reactions experienced in stressful situations.

Affective dimension of stress

Regarding demographic variables and their relationship to stress, the groups that exhibited moderate to very severe stress symptoms were women (10.20%), unemployed individuals (17.64%), single individuals (11.44%), residents of San Salvador (23.08%), individuals from urban areas (9.14%), and those with a university education level (17.15%).

The relationship of COVID-19 variables to the stress dimension revealed that individuals with symptoms ranging from moderate to very severe were those who had undergone testing (19.23%), tested positive for COVID-19 (33.34%), experienced symptoms of possible infection (22.03%), with a predominant fear of losing their job (16.39%), initiated drug use during the pandemic (33.34%), with a higher incidence of tobacco use (66.66%).

Stress and anxiety are naturally linked to the threat of the pandemic, but the measures implemented by governments in many countries, such as lockdowns, school closures, or quarantines, exacerbate the psychological pressure to such an extent that, according to the WHO, "increased levels of loneliness, depression, harmful alcohol and drug use, self-harm, or suicidal behavior are expected" (8).

In light of the aforementioned, the results obtained demonstrate the existence of the psychological impact of the pandemic on mental health, given that in the three affective dimensions investigated, namely depression, anxiety, and stress, levels ranging from moderate to very severe were reported. There was also an increase in the consumption of legal psychoactive substances such as coffee and tobacco.

12.20% of individuals exhibited moderate levels of depression as a trait, stress levels in 66.49% of individuals showed some form of disturbance on the following scales: crossed the threshold (35.02%), excessive stress (25.38%), and too much stress (6.09%), in 33.50% it was normal, suicidal ideation was detected in 1.52% of individuals while being absent in 98.47% (9).

Regarding the association between stress level, anxiety, and depression as traits and states, no relationship was found among these variables. Therefore, the authors of this study suggest that stress is a physiological response to a specific situation such as the current epidemiological circumstances. As this situation has persisted, it has led to the emergence of psychological symptoms like anxiety and depression in individuals, hindering their ability to cope effectively with the stress-inducing situation.

Anxiety or distress is an imprecise response of the body to the unknown, with a feeling of escape or flight that intensified in the face of COVID-19. As the pandemic persists, feelings of sadness, lack of motivation, inhibition, and a



diminished will to live may emerge, potentially leading to suicidal risk in extreme cases (8). The study carried out with hospital users shows that the emotional reactions of depression, anxiety, and stress found in the surveyed individuals are part of the psychological symptoms that had an impact on the situation of the pandemic crisis.

Conclusions

A significant portion of the individuals exposed to the current COVID-19 pandemic situation suffer, with increased frequency, from moderate to severe depressive disorders, which puts the population at risk of potential suicide, in addition to experiencing intense states of anxiety and stress. This shows a considerable psychological impact on users as a consequence of the pandemic, therefore it is necessary to strengthen preventive measures in mental health care. It is important to mention that according to the stress theory, every stressor generates internal pressure in individuals, which is cognitively perceived as threatening, as is the case with the pandemic. From the perspective of psychological models of the depression theory such as learned helplessness, it leads individuals to conceive uncertain prospective judgments about their future, develop a negative perception of their environment and health, which consequently explains why the most significant psychiatric disturbance found in the study was depression.

The Coronavirus pandemic became a disruptive event that seriously impacted the mental health of many individuals, which is a determinant of overall well-being in coping with stress. Women

were the most affected, accounting for 81% of the cases compared to 19% for men. 51% expressed fear of contagion, with 29 individuals (8%) showing moderate depression, 8% experiencing mild anxiety, and 10% reporting mild to moderate stress. These findings align with some of the predictable responses in users' health when facing a crisis of this magnitude, such as fear, anxiety, depression, irritability, and increased consumption of tobacco and coffee.

There is a multifactorial causal that triggers the presence of depression, anxiety, and stress, including social, family, and economic factors which create vulnerability. Individuals at risk of experiencing moderate to severe symptoms of depression, anxiety, and stress showed predominant psychosocial factors such as: informal employment, residents of San Salvador (large urban core), and being female. Meanwhile, the following were the more prominent COVID-19-related factors: individuals who underwent a COVID-19 test, those who experienced symptoms related to COVID-19, those who exhibited a higher fear that their family members would contract the disease; additionally, individuals who earned a living through informal work held a greater fear of job loss and fear of isolation.

Moderate to very severe symptoms of depression and anxiety were observed in individuals with a positive COVID-19 test. Anxiety and stress symptoms, ranging from moderate to very severe levels, were observed in unemployed individuals and those who initiated tobacco consumption. The variables exclusively associated with



moderate to very severe depression were being retired, being widowed, and those who started caffeine consumption.

In the dimension of anxiety, it was observed that moderate to very severe symptoms occurred more frequently in individuals in a domestic partnership, with negative COVID-19 test results, and from rural areas. On the other hand, it was observed that being single and having a university level of education were the indicators with the highest incidence.

Recommendations

Addressed to the National Psychiatric Hospital.

Based on the findings of this study, it is recommended that the hospital institution where the research was carried out, prioritizes the identified cases of moderate to severe depression, by establishing a database or records of these cases in order to individualize them and provide psychological and/or psychiatric assistance, thereby avoiding the risk of increased severity of the cases. It is also suggested to consider reactivating the "ANIMO" support group.

Perform preventive interventions or psychological approaches in cases where mild to moderate intensity was identified, providing mental health psychotherapeutic support through Psychology.

Addressed to the users.

Participants are encouraged to seek the necessary support to receive mental health care, as well as medical care for problems that may arise

as a result of the pandemic. It is important to be promptly assisted by qualified personnel when any symptom that puts health at risk is identified, by using teleconsultation services as a first point of contact.

To the users who already presented symptoms, regardless of the severity level, it is recommended to continue their treatment and follow-up as determined by mental health specialists in each case, according to the severity of the condition. It is important to take into consideration the avoidance of unnecessary exposure to healthcare centers by using the provided emergency contact numbers and links.

Addressed to the Evangelical University of El Salvador

Provide support in research with social impact and social outreach that helps foster or enhance interventions in healthcare programs.

Addressed to the Ministerio de Salud Pública (Ministry of Public Health, MINSAL)

Due to the intensity of the severity in the affective, anxious, and stress dimensions found in many participants, a more detailed psychological and psychiatric evaluation is required. Therefore, it is necessary for the Ministry of Public Health to consider participating so that these evaluations are conducted among individuals seeking various consultations at all levels of healthcare, but mainly at the primary healthcare level, aiming to timely identify these patients and implement the necessary individual and group interventions to address this issue. Teleconsultation should be



promoted and personnel should be trained to be capable of providing psychological interventions for psychiatric conditions, including the use of virtual reality platforms for the treatment of various disorders, the implementation of biofeedback should be considered to record emotional and physiological levels experienced by the users when exposed to virtual reality elements that trigger stress.

**Addressed to the Comisión Nacional Antidro-
gas (National Anti-Drug Commission)**

It is necessary to perform a nationwide study in order to determine the effect of the COVID-19 pandemic on the initiation or increase of psychoactive substances consumption at a national level, in order to develop strategic care plans for individuals who have initiated or increased the consumption of psychoactive substances due to the COVID-19 pandemic.



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