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Mood and perceived social support of Colombian older adults with chronic obstructive pulmonary disease during the pandemic: A cross-sectional descriptive study

Estado de ánimo y apoyo social percibido de adultos mayores colombianos con enfermedad pulmonar obstructiva crónica durante la pandemia: un estudio descriptivo transversal

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SUMMARY

Background: *During the pandemic, older adults have been one of the most vulnerable groups. Having a clinical diagnosis of COPD significantly increases the likelihood of poor clinical outcomes in patients with COVID-19, so these patients should be considered a high-risk group. From a positive mental health perspective, it is important to know patients' moods and perceived social support.* **Materials and Methods:** *A non-experimental quantitative, descriptive, and correlational cross-sectional study was carried out to analyze mood, perceived social support, some sociodemographic variables, and their relationships in a sample of 110 Colombian older adults with chronic obstructive pulmonary disease.* **Results:** *The mood of the older adults was predominantly negative and, in general, there were low levels of perceived social support (except for instrumental support). Statistically significant correlations were found between these two variables. Statistically significant associations were found between the practice of physical exercise with the level of positive emotional state and instrumental emotional support.* **Discussion and conclusions:** *Lack of social support is a predictor of the psychological impact of the pandemic in older adults with and without chronic diseases. It is possible that they are not receiving adequate emotional expressions or stimulation to express their feelings, that they do not have other people with whom to have pleasant leisure or recreational relationships, or that they do not receive sufficient expressions of love and affection.*

Keywords: *Old age, mental health, chronic diseases, chronic obstructive pulmonary disease, COVID-19.*

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RESUMEN

Antecedentes: *Durante la pandemia, los adultos mayores han sido uno de los grupos más vulnerables. Tener un diagnóstico clínico de EPOC aumenta significativamente la probabilidad de malos resultados clínicos en pacientes con COVID-19, por lo que*

estos pacientes deben ser considerados un grupo de alto riesgo. Desde una perspectiva positiva de salud mental, es importante conocer el estado de ánimo de los pacientes y el apoyo social percibido. **Materiales y Métodos:** *Se realizó un estudio no experimental cuantitativo, descriptivo y transversal correlacional para analizar el estado de ánimo, el apoyo social percibido, algunas variables sociodemográficas y sus relaciones en una muestra de 110 adultos mayores colombianos con enfermedad pulmonar obstructiva crónica.* **Resultados:** *El estado de ánimo de los adultos mayores fue predominantemente negativo y, en general, hubo bajos niveles de apoyo social percibido (a excepción del apoyo instrumental). Se encontraron correlaciones estadísticamente significativas entre estas dos variables. Se encontraron asociaciones estadísticamente significativas entre la práctica de ejercicio físico con el nivel de estado emocional positivo y el apoyo emocional instrumental.* **Discusión y conclusiones:** *La falta de apoyo social es un predictor del impacto psicológico de la pandemia en adultos mayores con y sin enfermedades crónicas. Es posible que no esté recibiendo expresiones emocionales o estímulos adecuados para expresar sus sentimientos, que no tenga otras personas con las que tener relaciones placenteras de ocio o esparcimiento, o que no reciba suficientes expresiones de amor y afecto.*

Palabras clave: *Vejez, salud mental, enfermedades crónicas, enfermedad pulmonar obstructiva crónica, COVID-19.*

INTRODUCTION

According to the United Nations policy report "The Impact of COVID-19 on the Elderly" (1), during the pandemic, the elderly has been one of the groups most vulnerable to negative medical, psychological, social, and economic effects. Those over 70, and even more so those over 80, have been at increased risk of illness, hospitalization, and death, all compounded by pre-existing conditions, which are much more prevalent in this population. They also face age discrimination in decisions about medical care, triage, and life-saving therapies. In developing countries such as Colombia, many older people do not even have access to essential health services. Even before the pandemic, this population demanded more access to care and support from healthcare workers. They also have more ongoing health needs, such as medication and care, and require more routine home visits.

Social restrictions introduced by governments to contain coronavirus infections had a greater impact on older adults because of their lower capacity to adapt to change. Many factors, such as confinement, limitations on social interaction, or changes in health care delivery, affected their mental health, especially because older adults lack material (e.g., access to smart technology), psychological (e.g., coping strategies, emotional stability), social (e.g., few families or friends, social support), or physical (e.g., inability to exercise) resources to cope with stress (2). Some studies have shown a deterioration in the mental health of this population. Especially, an increase in anxiety, depression (3), fear (4), and sleep disorders (5).

In the elderly, health-related factors, such as certain pre-existing diseases or medical comorbidities, have the greatest influence on mental and emotional health (5,6). People with two or more chronic illnesses had more symptoms of depression, neurasthenia, fear, anxiety, and hypochondriasis (4) during the pandemic. As reported by medical studies, people with pre-existing illnesses or comorbidities are at increased risk of hospitalization or death in the event of COVID-19 infection. Because coronavirus disease primarily produces symptoms associated with respiratory system dysfunction (cough, dyspnea, pneumonia, acute respiratory distress syndrome), there was much concern for older adults with chronic obstructive pulmonary disease (COPD). Although the available results suggest that COPD is not frequent comorbidity in patients with COVID-19, it is clearly associated with increased severity of disease (7), i.e., hospitalization in special care or intensive care units, mechanical ventilation, and an increased risk of death (8).

A systematic review and meta-analysis concluded that having a clinical diagnosis of COPD significantly increases the likelihood of poor clinical outcomes in patients with COVID-19, so these patients should be considered a high-risk group (9). Whether they have been informed through the media or alerted by family or friends, COPD patients have some awareness of the risk of having comorbidity. Undoubtedly, there will be some psychological impact. Studies of the psychological impact of COVID-19 in patients with chronic disease have reported that

almost a quarter report feeling a moderate to severe impact (10). Anxiety and fear of illness have also been found (11). However, other studies found no association between chronic illness and psychological symptoms (12). In general, research on chronic illness during the pandemic has focused on the analysis of clinical variables (anxiety, depression, stress, post-traumatic stress, sleep disorders, etc.) from a psychopathological perspective. Here, on the other hand, we intend to analyze non-clinical variables and from a health psychology perspective exclusively in COPD patients.

From a positive mental health perspective, it is important to know the patients' state of mind. These individuals may have experienced many emotions. In the present investigation, we assessed a range of positive and negative emotions that may have reflected changes in situations (spikes in infections, lifting of restrictions, expectation about vaccination) during the pandemic. Older adults with COPD may have felt active, alert, excited, enthusiastic, inspired, interested, strong, proud, as well as hostile, irritable, embarrassed, guilty, anxious, upset, frightened, or nervous. Each of these emotions reflects the particular way in which people interpreted their circumstances. Without being psychopathological states, such as anxiety or depression, these emotions may have contributed to or interfered with coping with the demands of their environment (personal, family, social, economic, or health).

Knowing the mood of patients is useful because it can positively or negatively affect health-related behaviors (13) such as physical self-care, physical activity, smoking, overeating, seeking medical advice/intervention, adherence to prescribed medical treatments, among others. To the best of our knowledge, no studies have been published on the mood of older adults with COPD during the pandemic. In addition to analyzing mood, here we were interested in evaluating the social support perceived by these adults. Social support is the support or help that a person has access to through links with other people, groups, and society in general. Perceived social support refers to an individual's belief that this support is available and provides what he or she considers necessary.

On this variable, some studies have been published on older adults during the pandemic and it has been reported that social support is positively associated with physical and psychological health, well-being, and quality of life since family members, friends, community networks or health personnel provide companionship, physical care, emotional support, and medical and instrumental assistance (14). However, no publications were found on perceived social support in older adults with COPD during the pandemic and this gap is unusual since, as has been emphasized, this population is highly vulnerable to the negative effects of social conditions caused by COVID-19. The present study aimed to analyze the relationships between mood, perceived social support, and some sociodemographic variables in a sample of Colombian older adults with COPD.

MATERIALS AND METHODS

Design, Participants, and Procedure

A cross-sectional, descriptive, and correlational quantitative non-experimental study was carried out. Based on convenience sampling, 110 older adults between 60 and 103 years of age (M = 75.5; SD = 10.8) with a diagnosis of COPD were included. They were part of a health care program in a city institution. The study was conducted in the city of Medellin, Colombia during the first half of 2021. The data were collected during the third peak of the pandemic in the country, which occurred between March and June. The invitation to participate in the study was sent to 200 patients, out of a population of 1 500, but only 110 patients responded (95 % confidence level; 10 % margin of error) and declared to have availability and functional capacity to answer the questionnaires. These were applied by a psychologist at the place of residence of each participant. Only patients with COPD were included, so the effect of other comorbidities was controlled. It was not inquired about psychopathological diagnoses or psychological treatments, as potential confounders.

Ethical Considerations

The research was approved by the Universidad

Cooperativa de Colombia: Bioethical Concept No. BIO130 was issued by the Bioethics Subcommittee through Act No. 009 of November 26, 2020. All participants signed the informed consent for the research. The data were collected during the first semester of 2021. Resolution 8430 of 1993 of the Colombian Ministry of Health (which establishes the scientific, technical, and administrative norms for health research), Law 1090 of 2006 of the Colombian Congress (which regulates the practice of the profession of psychology in Colombia and establishes the code of ethics, bioethics, and other provisions), and the Helsinki Declaration of 1975, as revised in 2013, were taken into consideration.

Instruments

Ad hoc sociodemographic questionnaire: a questionnaire was prepared and applied to collect sociodemographic information on sex, marital status, level of schooling, whether or not the patient is a pensioner, place of residence, type of housing, with whom the patient lives, number of children, whether the patient has a caregiver, whether the patient is an active smoker, whether the patient exercises, how many times the patient uses an inhaler during the day, whether the patient is functional in basic activities, and whether the patient uses a wheelchair.

Positive Affect and Negative Affect Scale (PANAS) (15): is a 20-item questionnaire, ten items that are oriented towards positive affect and ten that are oriented towards negative affect. Each item is scored on a Likert scale of five response options from 0 (never) to 4 (extremely). Positive affect is an indicator of a positive emotional state and reflects mood states such as interest, activation, enthusiasm, energy, pride, readiness, decisiveness, inspiration, attentiveness, and activity. In contrast, negative affect is an indicator of a negative emotional state and reflects mood states such as tension, disgust, guilt, fright, anger, irritation, shame, nervousness, uneasiness, and fear. Psychometric analyses in different populations and countries have reported adequate levels of reliability and validity (16).

Medical Social Support Outcome Study (MOS) Questionnaire (17): is a 20-item questionnaire grouped into four dimensions of functional social support (plus one item that assesses the social support network): emotional/informational, instrumental, positive social interaction, and affective support. Each item is scored on a Likert scale of five response options from 1 (never) to 5 (always). The emotional/informational dimension refers to the emotional empathic manifestations a person receives and the encouragement to express feelings, as well as the information, advice, or counseling he/she receives from others. The instrumental dimension consists of tangible, material assistance or help. The positive social interaction dimension refers to the availability of other people with whom to have pleasant leisure or recreational relationships. Finally, the affective support dimension involves the expressions of affection and affection that a person receives from others. Psychometric analyses in different populations and countries have reported adequate levels of reliability and validity (18).

Data analysis

Data were systematized and analyzed using the statistical package for social sciences IBM SPSS v. 25. Descriptive analyses (summary measures and classification of variable levels), calculations of Spearman correlation coefficients for quantitative variables, and chi-square association tests (λ^2) for qualitative variables were performed. A value of $P < 0.05$ were considered significant.

RESULTS

There were no missing data in any of the variables. Most of the participants were women. All lived in urban areas. Marital status was predominantly widowed or married. The most frequent educational level was primary school. Most of the participants lived in their own homes and with a relative. The highest percentage of caregivers were children or spouses. A considerable percentage (7.3 %), given their health status, reported being active smokers. Most reported using an inhaler three times a day. Regarding whether or not they practiced any physical activity, the percentages were very

similar. The majority did not use a wheelchair. And a very high percentage (60.9 %) reported not being functional in basic activities (Table 1).

Table 1

Sociodemographic characteristics of the participants

Variable	Category	Percentage
Sex	Female	70.9 %
	Male	29.1 %
Marital status	Widowed	51.8 %
	Married	25.5 %
	Separated	4.5 %
	Single	9.1 %
	Unmarried	9.1 %
Schooling	Primary	89.1 %
	High School	9.1 %
	University	1.8 %
Pensioned	No	50.0 %
	Yes	50.0 %
Place of residence	Urban	100.0 %
Type of housing	Own	72.7 %
	Rental	17.3 %
	Family	10.0 %
Lives with	Family	95.5 %
	Alone	3.6 %
	Caregiver	0.9 %
Caregiver	Child	55.5 %
	Spouse	20.9 %
	Other relatives	17.2 %
	Caregiver	3.6 %
	No one	1.8 %
	Neighbor	0.9 %
Active smoker	No	92.7 %
	Yes	7.3 %
Engage in physical exercise	No	51.8 %
	Yes	48.2 %
Times per day using the inhaler	1	18.2 %
	3	47.3 %
	5	34.5 %
Functional in basic activities	No	60.9 %
	Yes	39.1 %
Use of wheelchair	No	76.4 %
	Yes	23.6 %

Older adults' mood was predominantly negative, characterized by high percentages in low levels of positive affect and high percentages in high levels of negative affect (Table 2). Regarding the dimensions of social support, only instrumental support had the highest percentage at the high level, the other dimensions had the highest percentages at the low level.

Table 2

Descriptive statistics and levels of the mood variables and the dimensions of perceived social support

Variable	M	DE	Level	
			High	Low
Mood				
Positive affect	28.6	9.2	33.6 %	66.4 %
Negative affect	22.1	10.6	70.9 %	29.1 %
Social support				
Social support network	8.6	7.8	-	-
Emotional/Informational	28.5	9.1	38.2 %	61.8 %
Instrumental support	17.1	3.4	59.1 %	40.9 %
Positive social interaction	13.9	4.5	35.5 %	64.5 %
Affective support	11.9	3.4	47.3 %	52.7 %

Regarding age, statistically significant weak correlations (coefficients between 0.21 and 0.24) were found with the four dimensions of social support, but there were no correlations with mood (Table 3). Regarding positive emotional state, there were statistically significant weak (coefficients between 0.27 and 0.32), moderate (coefficient of 0.43) correlations with the same four dimensions. For the negative emotional state, statistically significant weak correlations (coefficients between -0.24 and -0.37) were found with the four dimensions of social support.

Finally, the asymptotic significance values (p-value) of λ^2 test are presented to evaluate the association between some qualitative sociodemographic variables and the levels (high/low) of emotional state and the dimensions of perceived social support (Table 4). Statistically significant associations were found between the practice of physical exercise with the level of positive emotional state and instrumental emotional support. Likewise, functionality in basic activities was associated with informational emotional support. Finally, there was a relationship between the use of a wheelchair with a positive emotional state and informational emotional support. No differences were found when comparing by sex, marital status, living with and caregiver.

Table 3

Spearman coefficients between emotional state and perceived social support dimensions

	1	2	3	4	5	6	7	8
1. Age	1.000	-0.039	-0.095	0.070	0.247**	0.219*	0.216*	0.210*
2. Positive affect		1,000	-0.307**	0.130	0.329**	0.435**	0.275**	0.329**
3. Negative affect			1.000	0.109	-0.319**	-0.374**	-0.41*	-0.353**
4. Social support network				1.000	0.350**	0.214*	0.387**	0.392**
5. Emotional/Informational					1.000	0.745**	0.901**	0.774**
6. Instrumental support						1.000	0.681**	0.800**
7. Positive social interaction							1.000	0.790**
8. Affective support								1.000

*p<0.05; **p<0.01

Table 4

Associations between sociodemographic variables and levels of emotional state and perceived social support

	Positive affect	Negative affect	Emotional/ Instrumental	Instrumental support	Pos. Social interaction	Affective support
Sex	0.150	0.434	0.599	0.698	0.880	0.957
Marital status	0.806	0.548	0.435	0.291	0.113	0.288
Lives with	0.719	0.341	0.198	0.266	0.132	0.092
Caregiver	0.516	0.752	0.826	0.168	0.507	0.410
Active smoker	0.334	0.682	0.134	0.456	0.089	0.113
Engage in physical exercise	0.001**	0.310	0.926	0.010*	0.378	0.457
Functional in basic activities	0.061	0.827	0.029*	0.338	0.185	0.193
Use of wheelchair	0.024*	0.440	0.023*	0.125	0.568	0.303

*p<0.05; **p<0.01

DISCUSSION

The two main findings of this study were the tendency of older adults with COPD to manifest a negative mood state, characterized by disinterest,indifference,inactivity,indecisiveness, inattention, tension, disgust, guilt, anger, irritation, uneasiness, or fear; and low levels of perceived social support in the dimensions of emotional/informational support, positive social interaction, and affective support. The results of the correlation analyses between these variables showed that a negative emotional state correlates negatively with the dimensions of social support. Although it is not possible to determine causality from this type of analysis, it is logical to consider that low levels of social support negatively affect emotional state (19).

The first finding is consistent with the results of studies that have reported depression, stress, and anxiety in older adults during the pandemic (3-6). Disinterest, inactivity, indecision, and irritation are mood states that, depending on frequency, intensity, and duration, could be associated with clinical depression. Likewise, depending on the frequency, intensity, and duration of tension and anger, these could be associated with clinically significant levels of stress. And, logically, restlessness and fear may be associated with anxiety. A study of adults over 60 years of age also in South America (Brazil) found that the factors associated with depression during the pandemic were: being female, having low income,

and low educational level (20,21). Here, 70 % of the participants were women and 89 % had only primary education. Additionally, only half were receiving a pension. However, λ^2 tests showed no association between sex and mood.

Having a chronic illness has also been considered a risk factor for depression, anxiety, or stress in older adults during the pandemic. Reportedly, older adults with a chronic disease appear to experience more symptoms of stress and anxiety than those without a chronic disease, and this difference is more marked in women (22). As stated, having COPD increases the risk of hospitalization, severe illness, and death in case of contagion (9). These patients were most likely informed of this risk by physicians, nurses, family members, friends, or simply through the media. This information undoubtedly contributed to their emotional state of tension, anger, irritation, uneasiness, or fear.

Particularly, regarding the psychological impact of the pandemic on patients with chronic diseases, it has been found that female sex and having respiratory symptoms are some of the main factors associated with a negative impact on the emotional state (10). Undoubtedly, COPD symptoms can be confused with COVID-19 symptoms, and this may have been a cause for concern, uneasiness, and fear in older adults. There are reports that patients with chronic diseases experience health anxiety (11). People with high levels of health anxiety spend most of their time worrying about their health, are very aware of bodily sensations or changes, frequently think they are going to get sick are unable to control these thoughts and are afraid of becoming seriously ill (23).

Lack of social support has been reported to be a predictor of the psychological impact of the pandemic in older adults with and without chronic diseases (10,24). These findings are consistent with the results of the correlation analyses presented here. As stated, a negative emotional state had statistically significant correlations with all four dimensions of social support. It has been confirmed, through quantitative meta-analyses, that social support is protective against depression in older adults in Western countries (25). The family is the main source of social support and here 95.5 % of the older adults lived with their families. This may be the reason why the majority reported a high level (59.1 %) of instrumental support. Family members, in this case mostly children and spouses, maybe provide the necessary material resources, such as financial support or help with activities of daily living. This is undoubtedly related to the fact that the majority (60.9 %) stated that they were not functional in basic activities.

However, regarding the perception of emotional/informational support, positive social interaction, and affective support, most adults had low levels. It is possible, then, that they are not receiving adequate emotional empathic displays or stimulation to express their feelings, that they do not have other people with whom to have pleasant leisure or recreational relationships, or that they do not receive sufficient expressions of affection and affection. This is likely associated with disinterest, indifference, and inactivity on the part of some of them. This lack of emotional support may have generated feelings of loneliness and affective isolation, a phenomenon that has been widely documented in older adults during the pandemic (26,27) and is consistent with the theory of disengagement or withdrawal in adulthood (28).

It should be noted, however, that the practice of physical exercise was positively associated with positive mood, which coincides with ample evidence in this regard. However, only half of the older adults do so. The other half are exposed not only to greater deterioration of their physical health condition but also to a detriment of their mental health and psychological well-being since the absence of physical activities in the elderly affects the quality of life, emotional state, and perceived social support in patients with COPD (29).

CONCLUSIONS AND LIMITATIONS

Certainly, the results presented here suggest a negative emotional state in most older adults with COPD and low levels in their perception of social support (except instrumental). Furthermore, a negative correlation between both variables. Admittedly, not all participants can be included in this conclusion. There were older adults

with positive mood states. Most likely these same adults had high levels of perceived social support. Or perhaps their mood state responds to personality styles or individual, family, or social protective factors. Sample size does not allow generalizations to be made from the results. The major contribution of the study is its contribution to the area of health psychology of chronically ill older adults during the pandemic.

The main limitation is the sample size. However, this is one of the first studies on the subject with COPD population in Latin America, so it can be considered as exploratory. Another limitation is its descriptive and correlational level, which does not allow causality to be explained. However, its results may be useful for directing future research. Psychological factors, such as mood and perceived social support, influence physical health. Healthcare workers that consider these can improve the health behaviors of chronically ill patients. Healthcare workers working with older adults with COPD during the pandemic should be aware that emotions and social supports are critical issues in understanding a patient's behavior and the course of their disease.

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