ORIGINAL RESEARCH

Association Between Family Support and Coping Strategies of People With Covid-19: A Cross-Sectional Study

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Purpose: The study aimed to determine the association between family support and coping strategies of people diagnosed with COVID-19.

Methods: The study was analytical and cross-sectional. The sample consisted of 500 participants who were selected by non-probabilistic and snowball sampling and included residents of both sexes who belonged to the city of Lima, with a diagnosis of COVID-19, who lived with relatives, and who accepted to participate in the research. For data collection, the scales "family support" and "Coping and Adaptation Process-Coping Adaptation Processing Scale (CAPS)" were used. The technique used was the survey through the home visit and the questionnaire instrument. To measure the relationship of the study variables, binary logistic regression was chosen, considering coping strategies as the dependent variable and socio-demographic data and family support as independent variables.

Results: Of the 500 participants, 50.4% were women, and 49.6% were men. The results revealed that most participants presented a high capacity for coping strategies and high perceived family support (97.2% and 81%, respectively). In the bivariate analysis, socio-demographic aspects and family support and their dimensions were related to high or low capacity for coping strategies. Significant differences were verified between marital status (p=0.026), having children (p=0.037), family support (p=0.000), and its dimensions with coping strategies. Finally, the multivariate analysis found that people with COVID-19 who perceived high family support were 33.74 times (95% CI: 7266–156,739) more likely to have a high capacity for coping strategies.

Conclusion: Therefore, it is necessary to promote the development of parental and family support skills in the face of the health emergency caused by COVID-19.

Keywords: family support, coping strategies, coronavirus, health emergency

Introduction

A coping strategy is a cognitive, emotional, or behavioral response to stress related to a particular function: problem-focused or emotion-focused coping.[1] Currently, most people who are infected with the virus that causes COVID-19 experience mild to moderate respiratory illness and recover without requiring special treatment. However, older people and those with underlying medical problems, such as cardiovascular disease, diabetes, chronic respiratory disease, and cancer, are more likely to develop severe illnesses that can lead to death.[2,3] Consequently, many people diagnosed with COVID-19 experience fear and concern about their health status, worsening of chronic health problems, non-compliance with medical regimens, and increased use of pharmacological substances.[4]

Several studies have identified a variety of predictors for the use of coping strategies during the COVID-19 pandemic. In Israel, problem-focused coping was positively correlated with social support, openness, extraversion, conscientiousness, and agreeableness.[5] Conversely, an Italian study found strong associations between maladaptive personality traits

(such as negative affect and antagonism), psychological distress, and coping strategies.[6] Similarly, a study in Peru revealed that adults with COVID-19 use self-care, compliance with health measures, relaxation, and entertainment as coping strategies.[7]

In addition, it has been verified that the greater use of adaptive coping behaviors during the COVID-19 pandemic is associated with greater resilience. The prediction of high levels of resilience was observed through adaptive coping strategies, such as acceptance, thus highlighting the importance of resilience as part of coping strategies.[8] Finally, adaptive coping strategies, such as planning, practical support, and reframing, can mediate and predict higher levels of post-traumatic growth. The pandemic can be considered a new type of traumatic stressor; it affected the entire population worldwide, causing severe disruption of daily life.[9]

Family support is an essential element of social support and refers to perceived support from the family environment. It is positively associated with better adherence to medical treatment, shorter hospital stays, and a speedy recovery; and is inversely related to depression, burnout symptoms, and suicide risk.[10,11] Family support will likely become more influential when entire societies are under strict lockdown restrictions.[12] Additionally, the importance of family support and face-to-face interactions with COVID-19 patients has been verified.[13] However, it has also been shown, in patients in intensive care, that family support, even if virtual, is essential to generate hope and confidence in the treatment and the recovery process.[14] Although the family is an essential support for the patient, the family's response to the presence of a sick member is usually complex, with positive and negative aspects. This family support could be associated with and determine by the coping strategies that the patient uses to overcome the disease.

Since the literature on family support as an influential factor in the use of coping strategies is scarce, the study aimed to determine the association between the perception that the person with COVID-19 has about family support and coping strategies in Lima, Peru.

Materials and Methods
Study Design and Participants
The study was analytical and cross-sectional. It was carried out among the inhabitants of the district of Lima, who represent 29.7% of the total population of Peru. The sample selection was non-probabilistic by snowball sampling. It included residents of legal age, of both sexes, who belonged to Lima, with a diagnosis of COVID-19, who lived with relatives, and who agreed to participate in the investigation. We calculated the sample size based on a population of 10,000,000 inhabitants in Lima. We made a conservative assumption that 50% of participants would have a high capacity for coping strategies, with a confidence level of 95% and a margin of error of 5%, obtaining the necessary sample of 385 participants. We surveyed 500 subjects.

Procedures and Data Collection Instruments
Data collection took place from July to December 2021, ending the second wave of infections in Peru, respecting social distancing and the use of biosafety equipment regulated by the country's Ministry of Health. The technique used was the survey through the home visit and the questionnaire instrument. The study met the requirements of confidentiality, respect, and justice, requesting informed consent before data collection. The study was approved by the ethics committee of the Universidad Peruana Unión under resolution number 2021-CE-FCS - UPeU-019.

In the evaluation of socio-demographic information, the sex, age, marital status, education, having children, work, religious affiliation, the person who cares for them, the type of family (nuclear, single-parent, extended, and blended), and the use of oxygen support were considered.

For the family support variable, the scale of the same name was used, created by Leyva in Cajamarca, Peru, in 2018.[15] It has 22 items distributed in three dimensions: consistent affective (1–7 items), family adaptation (8–15 items), and autonomy (16–22 items). It presents a response scale of three values: yes (3 points), partly (2), and no (1), and categorizes family support as high (33–66 points) and low (22–32 points). The content validity of the scale based on the expert judgment was confirmed (index of 0.96). The internal consistency analysis of the scale was determined by Cronbach's Alpha coefficient ($\alpha= 0.945$), showing high reliability.

For the coping strategies variable, the scale "Coping Adaptation Processing Scale (CAPS)" created by Callista Roy was used in Colombia in 2009.[16] The instrument is made up of 47 items, grouped into five styles and strategies: recursive and focused (10 items), physical and focused reactions (14 items), alert process (9 items), systematic processing (6 items); and knowing and relating (8 items). It has a Likert-type response format with four criteria: never (1), rarely (2), almost always (3), always (4); and it categorized coping strategies into high capacity (94–184 points) and low capacity (47–93 points). The scale reported a facial validity of 95% and a global content validity index of 0.83. The construct validation of the scale was done through exploratory factor analysis, verifying that it has five factors. In addition, the internal consistency was calculated through Cronbach's alpha, which reported a reliability of 0.70.

Data Analysis

The SPSS v.24 statistical package was used for data analysis, using simple frequency tables for univariate analysis and contingency tables with a Chi-square test for bivariate analysis. In the bivariate analysis, socio-demographic aspects and family support and their dimensions were related to high or low capacity for coping strategies. Similarly, we opted for binary logistic regression for the multivariate analysis, by backward steps using the Likelihood Ratio (LR) criterion, considering coping strategies as the dependent variable and sociodemographic data and family support as independent variables. In the multivariate analysis, variables with p-value <0.05 were included in the bivariate analysis. The coding carried out has been low capacity=0 and high capacity=1. A p-value< 0.05 was considered statistically significant.

Results

Of the 500 participants, 50.4% were women, and 49.6% were men. Likewise, 63.8% belonged to the adult age group, 57.6% were married or cohabiting, 61.6% had higher education, and 62.4% had children. On the other hand, 73.4% had a job, 54% professed the Catholic faith, 51.4% lived within a nuclear family, 89.2% were cared for by a family member during their convalescence from COVID-19, and 56.4% did not use oxygen support (Table 1).

Table 1 General Characteristics of the Study Population

Variables		n=500	%
Sex	Male	248	49.6
	Female	252	50.4
Age	Young (18–29)	122	24.4
	Adult (30–59)	319	63.8
	Elderly (≥60)	59	11.8
Marital status	Single/Widowed/Divorced	212	42.4
	Married/Co-habitant	288	57.6
Education	Primary	192	38.4
	University	308	61.6
Do you have children?	Yes	312	62.4
	No	188	37.6
Do you have a job?	Yes	367	73.4
	No	133	26.6
Religion	Catholic	270	54.0
	Other denominations	230	46.0
Who takes care of you?	Family	446	89.2
	Carer	54	10.8
Type of family	Nuclear	257	51.4
	Single-parent	62	12.4
	Extended	169	33.8
	Blended	12	2.4
Use oxygen support	Yes	218	43.6
	No	282	56.4

In the descriptive analysis of the study variables, it was found that 97.2% of the participants had a high capacity for coping strategies and 2.8% a low capacity. In the same way, a high capacity was obtained in the recursive and focused alert process, systematic processing, and knowing and relating in 99.6%, 92.2%, 75%, and 80.2%, respectively. However, the physical and focused dimensions presented a low capacity of 89.2%. On the other hand, the family support variable was perceived as high by 81% of the participants and low by 19%. In addition, the consistent affective and family autonomy dimensions were rated as high by 91.8% and 78.6%. On the contrary, the family adaptation dimension was perceived as low at 53.8% (Table 2).

In the bivariate analysis with the chi-square test, it was found that there are significant differences between marital status (p=0.026), having children (p=0.037), family support (p=0.000) and its dimensions with coping strategies with a p-value <0.05 (Table 3).

Lastly, the multivariate analysis found that people with COVID-19 who perceived high family support were 33.74 times (95% CI: 7266–156,739) more likely to have a high capacity for coping strategies (Table 4).

Table 2 Descriptive Analysis of the Variables Family Support and Coping Strategies in People with COVID-19

Variables	High		Low	
	N	**(%)**	**N**	**(%)**
Coping Strategies	486	97.2	14	2.8
Recursive and focused	498	99.6	2	0.4
Physical and focused	54	10.8	446	89.2
Alert process	461	92.2	39	7.8
Systematic processing	375	75	125	25
Knowing and relating	401	80.2	99	19.8
Family support	405	81	95	19
Consistent affective	459	91.8	41	8.2
Family adaptation	231	46.2	269	53.8
Family autonomy	393	78.6	107	21.4

Note: Bivariate analysis of family support and coping strategies in people with COVID-19.

Table 3 Bivariate Analysis of Family Support and Coping Strategies in People with COVID-19

Variables		Coping Strategies				Total		p-value
		High Capacity		**Low Capacity**				
		n	**%**	**n**	**%**	**n**	**%**	
Sex	Male	241	49.6	7	50.0	248	49.6	0.976
	Female	245	50.4	7	50.0	252	50.4	
Age	Young	117	24.1	5	35.7	122	24.4	0.532
	Adult	312	64.2	7	50.0	319	63.8	
	Elderly	57	11.7	2	14.3	59	11.8	
Marital status	Single/Widowed/Divorced	202	41.6	10	71.4	212	42.4	0.026*
	Married/Co-habitant	284	58.4	4	28.6	288	57.6	
Education	Elementary	190	39.1	2	14.3	192	38.4	0.060
	University	296	60.9	12	85.7	308	61.6	
Do you have children?	Yes	307	63.2	5	35.7	312	62.4	0.037*
	No	179	36.8	9	64.3	188	37.6	
Do you have a job?	Yes	355	73.0	12	85.7	367	73.4	0.290
	No	131	27.0	2	14.3	133	26.6	

(*Continued*)

Table 3 (Continued).

Variables		Coping Strategies				Total		p-value
		High Capacity		Low Capacity				
		n	%	n	%	n	%	
Religion	Catholic	261	53.7	9	64.3	270	54.0	0.433
	Other religions	225	46.3	5	35.7	230	46.0	
Who takes care of you?	Family	432	88.9	14	100	446	89.2	0.187
	Carer	54	11.1	0	0.0	54	10.8	
Type of family	Nuclear	248	51.0	9	64.3	257	51.4	0.681
	Single-parent	60	12.3	2	14.3	62	12.4	
	Extended	166	34.2	3	21.4	169	33.8	
	Blended	12	2.5	0	0.0	12	2.4	
Use oxygen support	Yes	214	44.0	4	28.6	218	43.6	0.250
	No	272	56.0	10	71.4	282	56.4	
Family support	High	403	82.9	2	14.3	405	81.0	0.000*
	Low	83	17.1	12	85.7	95	19.0	
Consistent affective	High	457	94.0	2	14.3	459	91.8	0.000*
	Low	29	6.0	12	85.7	41	8.2	
Family adaptation	High	229	47.1	2	14.3	231	46.2	0.015*
	Low	257	52.9	12	85.7	269	53.8	
Family autonomy	High	391	80.5	2	14.3	393	78.6	0.000*
	Low	95	19.5	12	85.7	107	21.4	

Note: *p<0.05 statistically significant.

Table 4 Multivariate Analysis of Family Support and Coping Strategies in People with COVID-19

Variables		OR	CI 95%		p-value
			LL	UL	
Marital status	Single/Widowed/Divorced	1	(Reference)		0.299
	Married/Co-habitant	2306	0.477	11,144	
Do you have children?	Yes	1	(Reference)		0.232
	No	0.398	0.088	1800	
Family support	High	1	(Reference)		0.000*
	Low	33,748	7266	156,739	

Note: *p<0.05 statistically significant.
Abbreviations: OR, odds ratio; LL, lower limit; UL, upper limit.

Discussion

Active coping strategies in stressful situations include positive thinking, optimism, acceptance, purpose in life, humor, positive planning and reframing, and social support.[17] An essential element of social support is family support. Due to the negative psychological impact of the COVID-19 outbreak,[18] needs to address ways to increase protective coping mechanisms that can improve health and possibly be used as a preventive measure in the future. This study showed that family support and its dimensions are associated with coping strategies. In addition, people with COVID-19 who perceived high family support were 33.74 times more likely to present a high capacity for coping strategies.

Coping strategies appear to have different effects on preventing or promoting psychological symptoms.[19] Concerning the pandemic, a previous study showed that the coping strategies used by a sample of Peruvian families are similar to those used

by other populations; however, the most prominent cross-cultural differences were observed in religious coping, which was the most common in Peru. The Catholicism practiced by the majority of the Peruvian population and the practices of praying for relief from difficulties and anguish could be the reason for the high prevalence of religious coping in Peru.[20]. The study found that 97.2% of the participants with COVID-19 presented a high capacity for coping strategies, highlighting their recursive and focused style. (Table 2). This factor is the primary dimension of the coping processing construct, which reflects accepting behaviors and resources used by oneself, focusing on being inventive, and seeking positive results.[21] Similar results were found in a study carried out in Pakistan, in which most COVID-19 patients manifested high coping capacity, practicing more acceptance strategies and seeking social support.[22] Something similar happened in Romania, where COVID-19 patients used significantly more emotion-focused and engagement coping strategies, in contrast to COVID-19 patients who developed post-traumatic disorder and used emotion-focused and disengagement strategies.[23]

On the other hand, a significant interaction between marital status and coping strategies was previously evidenced.[24] This study found a significant relationship between married and/or cohabiting marital status and a high capacity for coping strategies (p=0.026) (Table 3). Similarly, a study in Turkey on patients with breast cancer revealed that being single and having a delay in diagnosis are related to negative coping, while married patients present positive coping.[25] These results indicate the need for more outstanding care for patients without a partner to improve their coping strategies and adaptation to a crisis such as a disease caused by COVID-19.

As part of social support, family support is a multidimensional factor that depends on an individual's self-perception of "how supported or lonely I feel". Its importance lies in how to "help to cope" with the adverse effects of stress, which increases self-esteem and the feeling of control over the environment.[26] In addition, it has been described that the regular implementation of family support for patients in intensive care increases the perception of the quality of care provided and decreases the length of stay and costs.[27] On the other hand, the lack of family support strongly impacts mental and physical health, including premature death at rates comparable to obesity and smoking.[28,29]

Previous works show high levels of family support in studies carried out in Peruvian families with members with different chronic diseases and mental disorders.[30,31] According to the survey applied by the World Values Survey (WVS), the majority of Peruvians consider the family and marriage as valuable institutions; this consideration is higher than the world average and could be a reason for the sound levels of family support observed in Peruvian families. This study found that 81% of the participants with COVID-19 perceived high family support, and family support and its three dimensions were significantly associated with a high capacity for coping strategies (Table 2 and Table 3). Similarly, a study in Indonesia revealed that good family support positively impacts the recovery of patients with COVID-19.[32] Likewise, a study in Amsterdam found that patients with COVID-19 perceived family support from their relatives as positive, allowing them to reduce anguish and anxiety.[33]

Lastly, the multivariate analysis found that people with COVID-19 who perceived high family support were 33.74 times (95% CI: 7266–156,739) more likely to have a high capacity for coping strategies (Table 4). Similarly, a study on cancer patients in Indonesia found a strong and positive association between family support and the problem-focused coping strategy.[34] At the same time, there was a significant negative association (p=0.001) and a moderate correlation (r=−0.462) with the coping strategy focused on emotion. Likewise, a study conducted on patients with bipolar disorder in Turkey determined that family functions affected the coping attitudes of patients, and those patients who healthily evaluated family functions made use of adaptive coping strategies to a greater extent.[35] Moreover, a study in Semerag, Indonesia demonstrated a relationship between family support and coping mechanisms in patients with heart failure.[36] Therefore, we believe that family support can improve the coping mechanisms of patients with COVID-19 because the family acts as a source of coping, so patients have coping mechanisms that are adaptable to deal with the disease and undergo the treatment and recovery process.[37]

Given the results obtained, some government actions should be carried out to develop family support skills in the population. Governments must implement legislation and finance programs dedicated to strengthening the families of their populations. Projects such as "CLOSE US", a family-strengthening strategy promoted by the National Comprehensive Program for Family Well-being of the Ministry of Women and Vulnerable Populations of Peru, will help reinforce family functions of affection, training, socialization, care, and economic security; and thus promote family relationships that help its members have better-coping strategies in traumatic situations such as the one caused by the COVID-19 pandemic. For health personnel, the data from this study obtained at the population level show the need for intervention programs to strengthen the internal dynamics of families, especially those in situations of vulnerability and

social risk. In addition, clinical staff should develop intervention programs to strengthen coping strategies, which could generate important inputs for mitigating the psychosocial consequences generated by the pandemic.

Our study has some limitations that must be considered. First, family support and coping strategies were assessed using a self-administered questionnaire. Therefore, the results may be vulnerable to bias due to social desirability effects or memory effects and the use of methodologies such as in-depth interviews. However, the fact that validated scales have been Used is a strength of the study. Second, it is a cross-sectional study; due to the health emergency context, it was not feasible to plan a longitudinal study. Therefore, confirming a causal relationship between the variables under study is impossible, and future longitudinal studies are recommended. Finally, the sample was non-probabilistic and did not allow extrapolation of the results. In addition, the sample was limited to one city in the country However, it is true that it is the capital and is home to 30% of the Peruvian population, the results cannot be generalized. Future studies should consider providing evidence that can be generalized to patients nationally and from other regions.

Conclusion

This study showed that family support and its dimensions are associated with coping strategies; in addition, people with COVID-19 who perceived high family support were 33.74 times more likely to present a high capacity for coping strategies. These findings are expected to promote the implementation and development of parental and family support skills to improve coping skills and adaptation to the disease in patients with COVID-19.

Data Sharing Statement

The original data used to support the findings of this study are available from the corresponding authors upon request.

Ethical Statement

All procedures were performed following the 1964 Helsinki Declaration and its later amendments.

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Disclosure

The authors report no conflicts of interest in this work.

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