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## Perceived stress and social support in informal caregivers of the elderly

*Estrés percibido y apoyo social percibido en cuidadores informales del adulto mayor*

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## ABSTRACT

**Objective:** Prediction of perceived stress in relation to perceived social support in IC of PAM.

**Methods:** Cross-sectional correlational predictive study conducted in second and third level hospitals in Saltillo, Coahuila (Mexico). A total of 150 IC participated in the period December 2021-March 2022 with non-probabilistic intentional sampling, applying the instruments to obtain information that was analyzed with descriptive statistics and inferential statistical analysis.

**Results:** The age of the CI is  $M=51.7$  years; 74.7 % are women; mean years of schooling is 10.93; they are employed (50.6 %); married/free union (66.7 %); daughter of the PAM (46 %); they have a mean of 32.13 months of care,  $M=13$  hours a day and  $M=4$  days a week; 80.7 % have help for care. The PAM have an average age of 72 years old, 64.7 % are women and 66.7 % have a chronic disease. The CI have a medium level of perceived social support (43.3 %) and a medium level of stress (87.3 %). The correlation shows that the lower the social support the higher the stress ( $r=-0.485$ ,  $p<0.001$ ). The level of perceived social support predicted the level of perceived stress by 21.4 %.

**Conclusion:** Social support plays an important role both in patients who present stress as it has the effect of increasing emotional well-being, stability and control that impacts both their health and the performance of care as it decreases the likelihood of negative effects that the caregiver may present.

**Keywords:** emotional stress, social support, caregivers, elderly.

## RESUMEN

**Objetivo:** Predecir el estrés percibido con relación al apoyo social percibido en cuidadores informales (CI) de personas adultas mayores (PAM).

**Métodos:** Estudio transversal correlacional predictivo realizado en hospitales de segundo y tercer nivel de Saltillo, Coahuila (México). Participando 150 CI, en el periodo diciembre 2021 - marzo de 2022, con muestreo no probabilístico intencional, aplicándoseles los instrumentos para la obtención de información que se analizó con estadística descriptiva y análisis estadístico inferencial.

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**Resultados:** La edad del CI es de  $M=51,7$  años; 74,7 % son mujeres; la media de años de escolaridad de 10,93; son empleados (50,6 %); casado/unión libre (66,7 %); hija de la PAM (46 %); tienen una media de 32,13 meses de cuidado,  $M=13$  horas al día y  $M=4$  días a la semana; 80,7 % cuenta con ayuda para el cuidado. El PAM tiene una media de 72 años, 64,7 % son mujeres y 66,7 % tiene una enfermedad crónica. Los CI tienen un nivel medio de apoyo social percibido (43,3 %) y un nivel medio de estrés (87,3 %). La correlación muestra que a menor apoyo social mayor estrés ( $r=-0,485$ ,  $p<0,001$ ). El nivel de apoyo social percibido predice en un 21,4% el nivel de estrés percibido.

**Conclusión:** El apoyo social juega un papel importante tanto en los pacientes que presentan estrés, ya que tiene el efecto de incrementar el bienestar emocional, la estabilidad y el control que impacta tanto en su salud como en la realización del cuidado, debido a que disminuye la probabilidad de efectos negativos que pueda presentar el cuidador.

**Palabras clave:** estrés emocional, apoyo social, cuidadores, anciano.

## INTRODUCTION

The role of the informal caregiver (IC) of older adults (EAP) has become a daily activity due to the increase in chronic diseases that cause dependence (1); the IC is focused on performing a social action for those who do not have personal autonomy and need help with activities of daily living (2).

There is a demand in the need for care worldwide; in 2015 around 2.1 billion people required care, of which 200 million were MAPs who had reached or exceeded healthy life expectancy. By 2030, the number of care beneficiaries is expected to reach 2.3 billion, of which 100 million will be MAPs (3). It should be noted that in Mexico, approximately 41% of dependent MAPs require assistance from an IC (1).

The role played by ICs on MAPs is based on providing support for the development of a dignified life; most of the care is provided by a family member (4), which in some cases generates adverse situations in the psycho-social sphere, both for the IC and for the MAP (5). Several studies have shown that most caregivers present mental exhaustion and the presence of stress (6,7,8); which is defined as the degree to which people perceive situations in their lives as unpredictable and uncontrollable and are therefore considered stressful (9).

Caregivers experience different levels of stress, regardless of how long they have been working as caregivers; in other words, once they adopt this new role, it is likely that stressful situations will arise, which may limit the care they provide and, in turn, affect the well-being of the IC (10).

There are various ways of managing the consequences that stress generates; one of them is social support, which can be defined as a caring practice that arises from the exchange of relationships between people. It is characterized by expressions of affection, affirmation or support, offering symbolic or material assistance to another person (11); it is considered a protective factor for coping with situations involved in caregiving, since it has a positive impact on psychological well-being. According to the literature, IC presents a greater burden when perceived social support is lower (12-16), since it can predict, control and/or diminish the effects of stress (17). It is important to highlight that a lack of support networks and social relationships of family caregivers (18,19) limits the positive impact that can be achieved for the benefit of IC as well as MAP.

In this sense, it is important that nursing professionals develop research to analyze the stress perceived by ICs, as well as social support as a strategy to lessen the repercussions caused by caregiving, with the purpose of expanding the information available about ICs in the city of Saltillo to promote future research to improve the health of ICs and thus improve their health and, consequently, improve the care of the PAM.

Therefore, this study aims to predict perceived stress in relation to perceived social support in PAM IC.

## METHODOLOGY

This is a predictive correlational design, in which the variables were described and the relationships between them were analyzed. Likewise, a cross-sectional design was chosen, since it implied the collection of data on the variables at a single point in time (20).

The population consisted of chronically ill MAP ICs with a degree of dependence ranging from mild to total dependence according to the Barthel scale, residents of the city of Saltillo. The sample consisted of 150 IC who attended second and third level hospitals in Saltillo for MAP care, from December 2021 to March 2022. The sample was non-probability purposive according to its attributes, cost-effectiveness, speed and ease of availability of the sample.

The inclusion criteria were IC of older adults diagnosed with chronic diseases such as diabetes and hypertension, with mild to total dependence according to the Barthel scale; the IC should be in an age range of 18 to 59 years, dedicated to caregiving for no more than 5 years and with minimum weekly care of 56 hours and without economic remuneration.

For the exclusion criteria, the IC of persons with chronic diseases other than those described above or with more than two disabling chronic diseases were excluded. If the IC consumes any controlled drug established by the General Health Law due to adverse effects, since they can interfere with the measurement of stress due to their effect on the sympathetic and parasympathetic system (21).

The sociodemographic data form collects information in four sections: 1) general data on the person with chronic disease, 2) general data on the informal caregiver, 3) health aspects identifying how the caregiver perceives his/her health status (whether he/she has a chronic disease, medical care, medication), 4) economic aspects.

To measure the stress variable, the Perceived Stress Scale (PSS), version 14, validated by González and Landero (22), developed by Cohen (23), was used. It has a Cronbach's alpha 0.82, consists of 14 items written positively and negatively, and the response options are Likert-type with five options. The sum has a minimum range of 0 and a maximum of 56, the scores are transformed into indexes from 0 to 100 to facilitate statistical analysis; the cut-off points were: low 0-33, medium 34-66 and high 67-100 (23).

The Multidimensional Perception of Social Support Scale (EMPAS), translated into Spanish, evaluates the perception of social support from three different sources: family, peer group and significant others, with a subscale for each of these sources; it has a total reliability of 0.84, with 4-point Likert-type items. The concepts used were 1=almost never; 2=sometimes; 3=frequently; 4=always. For interpretation, they are expressed in order of ranges, considering all values from minimum to maximum: low 12-23, moderate 24-38 and high 39-48 (24).

As part of the application of the ethical aspects, the ICs voluntarily signed the informed consent form, explaining the objective of the study and the procedure to be performed, in addition to the benefits and risks of the study; the confidentiality of their data was guaranteed, and they were free to withdraw from participation at any time.

For this reason, this study adhered to the provisions of the Regulations of the General Law of Health on Research for Health of 1987, with its last published reform DOF 02-04-2014 (25); the aspects of the Mexican Official Standard NOM-012- SSA3-2012 (26), which establishes the criteria for the execution of research projects for health in human beings, will also be considered. The Ethics and Research Committee of the Dr. Santiago Valdés Galindo School of Nursing, Saltillo Unit, approved the project.

The data obtained was processed and analyzed in the Statistical Package for the Social Sciences (SPSS) version 19 for Windows. The sociodemographic characteristics of IQ and MAP will be analyzed through descriptive statistics, using central and dispersion measures. The Kolgomorov Smirnov test was used to determine the normality of the data; Spearman's correlation test was used to determine the correlation between perceived stress and perceived social support.

## RESULTS

A total of 150 ICs from PAM participated, 74.7% of them female and with a mean age of 51.7 years ( $SD = 15.23$ ). The ICs had a mean number of years of schooling of 10.93 ( $SD=4.40$ ), most of them mentioned being employed, married/free union and being the child of the PAM (Table 1), 62.7% currently live with the PAM, with a mean of 32.13 ( $SD=88.85$ ) months of care, dedicating  $M=13$  hours a day ( $SD=24.26$ ) and  $M=4$  days a week ( $SD=2.79$ ); most of them have a caregiver (80.7%), but do not have help with household chores (77%).

**Table 1. Sociodemographic data of the informal caregiver**

Variable	f	%
Sex		
Woman	112	74,7
Man	38	25,3
<b>Marital status</b>		
Married/free union	100	66,7
Widower	8	5,3
Divorced	13	8,7

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Single	29	19,1
<b>Occupation</b>		
Housewife	63	42
Employee	76	50,6
Pensioned/retired	10	6,7
Unemployed	1	0,7
<b>Relationship</b>		
Wife/partner	10	6,7
Spouse/partner	4	2,7
Mother	2	1,3
Father	1	0,7
Daughter	69	46,0
Son	26	17,3
Sister	8	5,3
Brother	4	2,7
Daughter-in-law	1	0,7
Neighbor	1	0,7
Neighbor	2	1,3
Friend	2	1,3
Another	20	13,3

**Note:** sociodemographic data; f= frequency; %= percent.

**Source:** sociodemographic data form.

Regarding the sociodemographic data of the MAP, 9.3% have an average age of 72 years, predominantly female (64.7%); 66.7% suffer from a chronic disease. Table 2 shows that most of the participants have a medium level of perceived social support and a medium level of perceived stress (see Table 2).

**Table 2. Level of social support and perceived stress**

Variable	F	%
<b>Perceived social support</b>		
Under	22	14,7
Medium	65	43,3
High	63	42,0
<b>Perceived stress</b>		
Under	0	0
Medium	131	87,3
High	19	12,7

**Note:** multidimensional scale of perceived social support; perceived stress scale; f= frequency; %= percentage.

**Source:** sociodemographic data form.

Table 3 shows the relationship between perceived stress and the hours dedicated to caregiving, that is, the more time dedicated to caregiving, the less stress perceived by the IC ( $r=-0.196$ ,  $p<0.05$ ). On the other hand, the relationship between stress and social support is present and shows that the lower the social support, the higher the stress ( $r=-0.485$ ,  $p<0.001$ ).

**Table 3. Correlation between study variables**

Variable	1	2	3	4	5	6	7	8	9	10
1. Patient's age	1									
2. Number of chronic diseases in the MAP	-,104	1								
3. Years with PAM diagnosis	,042	,144	1							
4. Years of schooling of caregiver	,035	,014	-,209*	1						
5. Months caring	,055	,041	,207*	,091	1					
6. Hours spent caring per day	-,070	,025	-,302**	-,107	-,092	1				
7. Days dedicated to care	,040	-,154	-,067	,082	-,118	,474**	1			
8. Monthly income	-,062	,031	-,124	,070	,116	,210*	-,041	1		

Continue...

9. Perceived social support	,009	-,086	,029	,017	-,112	,228**	,311**	,009	1	
10. Perceived stress	-,047	,020	-,002	,001	,103	-,196*	-,119	-,017	-,485**	1

**Note:** \*\*= $p < 0.001$ , \*= $p < 0.05$ .

**Source:** based on the results of the research.

The results obtained from the regression analysis by intro (see Table 4) show that when the perceived social support variable is included, it has a high explanatory power in relation to the perceived stress variable, as well as a higher level of statistical power of 0.80, which allows us to affirm that the results are relevant for the prediction of perceived stress in 21.4%.

% in caregivers of older adults.

**Table 4. Explanatory model of social support on perceived stress**

Model	F	R2	ΔR2	B	Standard error	B	p	1- β	f2
Model 1 Perceived stress	40,385 (1-148)	,214	,209	-,308	,048	-,463	,0001	,99	,272

**Note:** F= Anova, ΔR2=adjusted R2, B=unstandardized beta, β=standardized beta, p=significance level, 1- β=statistical power, f2=effect size.

**Source:** based on the results of the research.

Likewise, the VIF (*Variance inflation factor*) collinearity indicators were greater than 10 and the tolerance values were greater than 0.20, which indicates that there are high correlations between the factors of the model, and finally, the Durbin Watson indicator was within two units, which allows a generalization of the data.

## DISCUSSION

When observing the sociodemographic characteristics of the participants, they are similar to different studies carried out in CI (27,28), in which the female gender predominates, being housewives the ones who mostly play the role of caregivers, having as kinship daughters of the people receiving care, they refer to being married and over 50 years of age (28,29); these characteristics

are mainly linked to the gender roles that are socially acquired, as well as to the culture and history that gives recognition to women as family caregivers (27).

Regarding the level of schooling, the most prevalent group corresponds to those with secondary education. These results are in agreement with those reported in the literature, in which the highest percentage of IC have completed secondary education. Linares (30) mentions that the level of schooling constitutes a personal factor that enhances caregiving skills; to the extent that the IC has a better capacity to understand and resolve the caregiving situation, it becomes a protective factor for stress management.

According to the dedication to caregiving in hours, days and months, there are studies in which ICs dedicate more than 12 hours to caregiving (31,32). Ruiz et al. report that ICs dedicate 7 days a week (33), a lower figure than that reported in this research; there is also a difference with the years of caregiving, since ICs have dedicated more than two years to MAP, while in other research ICs have been doing this activity for five years (31); these discrepancies influence IC, since the greater the time dedicated to caregiving, there are negative repercussions at the physical, mental and emotional levels in ICs (34).

Most of them have help for caregiving, in contrast to the literature which reports that they do not have help for this task (35,36); this is reflected in the level of social support perceived by the medium to high IC, which, in contrast to other studies, perceive a low level of affective social support (49.3%) (37). Different studies (38,39) emphasize the importance of social support (38,39).

The importance of social support as a variable that moderates the negative impact of caregiver role performance, as a stress buffer (40).

Some negative effects shown by different studies in IC are a high degree of stress (39); it is observed that in this study there is a medium level of stress; it is also observed that the more time dedicated to caregiving, the less stress is perceived by IC. A qualitative study shows that caregiving is perceived by Mexican families as a strong moral obligation to unconditionally help and care for their relatives, including the provision of physical and emotional support; therefore, there will always be stress on the caregiver, but it is perceived as gratitude and/or reciprocity rather than as an additional burden (41).

Correlational analysis showed that the lower the social support, the higher the stress. Authors have pointed out that the presence of a strong social network determines lower levels of caregiver burden (42). This reinforces that social support serves to maintain and promote mental health, and generally those with lower levels of support are at greater risk of presenting psychological problems (43); thus, social support is important for the generation of a promoting condition that allows better coping styles for the reduction of stress (42).

Perceived social support has a high explanatory power in relation to the perceived stress variable, as well as a higher level of statistical power and high effect size, which allows us to affirm that the results are relevant for the prediction of perceived stress. Social support networks play an important role in the well-being of caregivers, protect against the stress generated by the IC role and enable the patient to re-evaluate the situation and adapt better to it, helping him/her to develop positive coping responses (44).

## CONCLUSION

The results obtained show that the sociodemographic characteristics of both the IC and the PAM are factors that are related to the level of perceived stress; these factors are on the way to strengthening health promotion actions, as well as areas that require attention for the well-being of the IC.

Social support plays an important role in both MAPs and ICs who experience stress, as it has the effect of increasing emotional well-being, stability, and control, which im-

The caregiver's health and the performance of the care are both affected, since it reduces the probability of negative effects that the caregiver may present.

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