

THE PROCESSES OF STRESS AND COPING IN INFORMAL CAREGIVERS OF PEOPLE DIAGNOSED ON THE SCHIZOPHRENIA SPECTRUM. A LONGITUDINAL STUDY

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Abstract

The goal of this study was to analyze the role of stress factors and coping strategies in explaining the burden and depression of family caregivers of people diagnosed with a schizophrenia spectrum disorder through a longitudinal design. An evaluation was made of thirty patients with a diagnosis on the spectrum of schizophrenia and thirty informal caregivers. Participants were assessed at three successive moments: baseline, after 5 months, and after 10 months. A decrease in caregivers' levels of subjective burden across time was found. At longitudinal level, most of the caregivers' coping strategies showed a relevant relationship with subjective burden and depression at some assessment time. In addition, subjective burden and depression showed a higher relationship with the patient's negative symptomatology. At longitudinal level, avoidant and resignation showed a relevant relationship with subjective burden and depression. The changes in the evaluation of the demands that the disorder placed on the caregivers and in their coping strategies suggest the development of a process of adaptation to the disorder by the caregiver.

KEY WORDS: *Schizophrenia, informal caregivers, coping, burden, depression.*

Resumen

El objetivo de este estudio longitudinal fue analizar el papel del estrés y las estrategias de afrontamiento en la explicación de la carga y la depresión de familiares cuidadores de personas con diagnóstico del espectro de la esquizofrenia. Fueron evaluados 30 pacientes este diagnóstico y sus cuidadores informales ($n=30$). Los participantes fueron evaluados en tres momentos temporales: línea base, a los 5 meses y a los 10 meses. Se encontró una disminución de los niveles de carga subjetiva con el paso del tiempo. Asimismo, la carga subjetiva y la depresión del cuidador mostraron una mayor relación con aquellas variables del paciente relacionadas con la sintomatología negativa. A nivel longitudinal, la evitación y la

resignación mostraron una notable relación con la carga subjetiva y la depresión. Los posibles cambios en la evaluación de las demandas que el trastorno plantea y en las estrategias de afrontamiento empleadas por los cuidadores sugieren el desarrollo de un proceso de adaptación al trastorno por parte del cuidador.

PALABRAS CLAVE: *Esquizofrenia, cuidadores informales, estrategias de afrontamiento, carga, depresión.*

Introduction

Care for patients diagnosed on the schizophrenia spectrum is mainly carried out by family members who become informal caregivers (Chan, 2011). This care can be associated with negative consequences, such as psychological (e.g., depression), family, and social problems; decreased leisure activities; or economic difficulties (Chan, 2011).

The negative consequences of care can be analyzed through the Lazarus and Folkman (1986) stress and coping model. According to this model, caregivers assess stressful situations they face. This assessment factors in objective burden (i.e., positive and negative symptoms of the disorder, the patient's functional capacity) and coping strategies. The combination of objective burden and coping strategies is referred to as "subjective burden". This interaction between objective burden and coping resources determines caregivers' emotional and behavioral responses, such as depressive symptoms. Therefore, it is expected that, if the objective burden decreases or coping strategies improve, the subjective burden of the caregiver will be reduced (Magliano et al., 2000). Evidence further suggests that objective caregiving stressors and coping strategies employed by informal caregivers of patients diagnosed with schizophrenia may vary over time (Chan, 2011; Karp & Tanarugsachock, 2000; Rose et al., 2002). However, longitudinal studies on the changes in the stress process faced by these caregivers are scarce (Chan, 2011), and their results are inconsistent (Pratima & Jena, 2011).

In relation to burden, some studies show that both the objective and subjective burden of caregivers of people with schizophrenia remain stable during follow-ups (Chadda et al., 2007; Magliano et al., 2000), while others show a decrease in caregiver burden over time (Möller-Leimkühler, 2006; Roick et al., 2006). Parabiaghi et al. (2007) explained that burden reduction is a result of a series of small, but significant, changes. These changes can reciprocally alter the interaction between caregivers' stressors, beliefs, and coping strategies; social support; and cultural factors to influence the care experience.

Regarding coping strategies, studies promote an increased use of problem-focused coping strategies and the search for social support (Chadda et al., 2007). Caregivers who decrease the frequency in which emotion-focused coping strategies

are used have been shown to have reduced levels of objective and subjective burden over time (e.g., avoidance and resignation; Magliano et al., 2000).

For depression, there are no known published longitudinal studies that have evaluated, at different time points, changes in depressive symptomatology levels in caregivers of people with diagnoses on the schizophrenia spectrum.

The main objective of this study was to analyze the relationships between the objective burden of care (positive symptoms, negative symptoms, and functional deterioration of the patient), the subjective burden of care, coping strategies, and the depressive symptomatology in caregivers of people diagnosed with disorders on the schizophrenia spectrum (schizophrenia or schizoaffective disorder) over time. The specific objectives were: 1) to analyze the pattern of stability or change in objective burden levels and in the use of coping strategies by caregivers, as well as in their subjective burden and depression levels; and 2) to analyze to what extent care stressors (objective burden) and caregiver use of specific coping strategies predict variations in their discomfort (subjective burden and depression) measured at two subsequent time points: 5 and 10 months.

Method

Participants

Initial participants included 35 people diagnosed on the schizophrenia spectrum (schizophrenia or schizoaffective disorder) and their primary informal caregivers. Participants were sourced via convenience sampling. Five couples dropped out during the study's second evaluation of their own accord or as a result of hospitalization for a psychotic episode, and two couples did so in the third evaluation. Pairs 29 and 30 were incorporated after the set deadline, so they did not complete the third evaluation (T3= 10 months). The final sample consisted of 30 patients and their caregivers. Of the pairs, 86.6% were members of an association of patients and family members of people with schizophrenia, while 13.4% were linked to care services offered by two private clinics in the city of Bogotá, Colombia.

The inclusion criteria of the patients were: a) age between 18 and 60 years, b) diagnosis on the schizophrenia spectrum (schizophrenia or schizoaffective disorder), c) minimum disorder duration of one year, d) residing in the same household as the caregiver, and e) receiving outpatient psychiatric care.

The inclusion criteria of the caregivers were: a) age over 18 years, b) being a relative of the patient, c) living and having daily contact with the diagnosed family member, d) self-identifying as the main caregiver, and e) not presenting diagnoses of mental health disorder confirmed by psychiatry.

The caregiver sample was made up mostly of women (90%), with university degrees (46.7%), who were employed (56.7%), married (63.0%), and had a mean

age of 59.73 years ($SD= 7.89$). Mothers made up 66.7% of caregivers, and 20% were sisters. With respect to patients, the majority were men (70%), with a mean age of 36.43 years ($SD= 11.35$), diagnosed with schizophrenia (90%) or schizoaffective disorder (10%), who were single (86.7%), had completed high school (46.7%), and were unemployed (63.3%).

Instruments

- a) *Ad hoc Demographic Data Questionnaire*. The caregiver and patient demographic data (gender, age, marital status, educational level, current occupation, and kinship) were recorded, as well as the patient's diagnosis.
- b) *Scale for the Assessment of Negative Symptoms (SANS; Andreasen, 1983)*, Spanish version validated by Vázquez (1989a). The SANS consists of 25 items that evaluate the negative symptoms presented by patients with schizophrenia in 5 categories: affective flattening or blunting (8 items), alogia (5 items), avolition/apathy (4 items), anhedonia/asociality (5 items), and attention impairment (3 items). Each item is answered on a 6-point Likert scale from 0 ("none") to 5 ("severe"), according to the gravity of the symptom. The SANS provides scores for each of the 5 categories it evaluates and a global score. The scale has a range of scores from 0 to 95. High scores indicate greater gravity. In this study, SANS showed a reliability (Cronbach's α) of .93
- c) *Scale for the Assessment of Positive Symptoms (SAPS; Andreasen, 1984)*, Spanish version validated by Vázquez (1989b). The SAPS consists of 34 items that evaluate the severity of positive symptoms in 4 categories: hallucinations (7 items), delusions (13 items), bizarre behavior (5 items), and formal thought disorder (9 items). Items are assessed according to symptom severity on a scale from 0 ("No symptom") to 5 ("Intensely present symptom"). Each item is rated on a 6-point Likert scale from 0 ("none") to 5 ("severe"). The SAPS provides different results. The score of each of the five domains is obtained by adding the corresponding items scores. The global score accounts for the seriousness of the positive symptomatology. The SAPS has a score range from 0 to 155. A higher score indicates greater severity of the disorder. In this study, the SAPS showed a reliability (Cronbach's α) of .93
- d) *World Health Organization Short Disability Assessment Schedule (WHO DAS-S; Janca et al., 1996; World Health Organization, 2000)*. The WHO DAS-S uses 4 items to assess physical problems and mental disorders in the following areas: self-care, occupation, family/housing, and social functioning. Impairment in a person's function is assessed on a scale of 0 ("No impairment") to 5 ("Severe impairment"). The total scale score ranges from 0 (no impairment) to 20 (severe impairment). In this study, Cronbach's α was .87.

- e) *Zarit Caregiver Burden Interview* (ZCBI; Zarit et al., 1980), Spanish adaptation by Martín et al. (1996). The ZCBI evaluates the negative effects of the care experience through 22 items in the following areas: physical health, mental health, social activities, and economic resources. Items are rated on a scale of 0 ("Never") to 4 ("Nearly always"). The range of scores is from 0 (no burden) to 88 (severe burden). In this study, Cronbach's α was .93.
- f) *Family Coping Questionnaire* (FCQ; Magliano et al., 1996). This questionnaire, which measures coping strategies, comprises 11 subscales (34-items): a) search for information about the patient's disorder and its treatment (2 items); b) positive communication with the patient (6 items); c) caregiver maintenance of leisure activities and social interest (6 items); d) coercion (5 items); e) escape: patient avoidance (2 items); f) resignation: lack of hope for improvement in the patient's condition (3 items); g) over-involvement: attempts by the family member to involve the patient in family and social activities (3 items); h) alcohol/drugs: use of alcohol and drugs by the caregiver (item 1); i) tolerance: permissive reactions to strange behaviors and non-compliance with prescribed treatment (4 items); j) spiritual help: search for spiritual help (1 item); and k) friendships: talking with friends about the patient's condition (1 item). The items are rated on a 4-point Likert scale (1= "Never", 2= "Rarely", 3= "Sometimes", 4= "Frequently"). Additionally, it includes an option corresponding to "Not applicable". Higher scores indicate an increased frequency in the use of coping strategies. In this study, the Cronbach's α for this scale was .82.
- g) *Center for Epidemiological Studies Depression Scale* (CES-D; Radloff, 1977). This 20-item assessment evaluates depressive symptomatology on a scale of 0 ("Never or rarely") to 3 ("Most of the time or all the time"). Higher scores indicate a greater depressive symptomatology severity. The cut-off point for clinical depression is equal to or greater than 16 (Kohout et al., 1993). The Cronbach's α was .93.

Procedure

The present study used a longitudinal design with multiple observations—taking measurements at three different time points: T1= baseline; T2= measurement at 5 months; and T3= measured at 10 months. Interviews were conducted in the participants' homes by the principal investigator, a licensed clinical psychologist. All participants signed an informed consent form and had the option to provide their phone number to determine availability for each time point assessment. The study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013). The protocol was approved by the Board of Directors, which maintains membership from patients and relatives of people diagnosed with schizophrenia, and the two private clinics' bioethics committees in the city of

Bogotá. The participants did not receive financial compensation for their collaboration. The results were presented to the participants after the study ended.

Data analysis

First, the descriptive statistics of the sample were obtained. Secondly, to analyze the variable mean stabilities throughout the study, mixed linear models with random effects were used for the participant intersections along with Bonferroni Type I error rate corrections on each level of the pairwise comparisons at each time point. These analyses were performed with SPSS v19. Third, autoregressive models were calculated in Mplus 7. These analyses were carried out to determine the stability of individual differences in subjective burden and depression and to analyze how caregiver and patient variables affect both dependent variables. This took into account the variability of the moment t that is explained by the previous level of the variable measured at an earlier time $t-1$.

Results

Sample clinical characteristics

Table 1 presents the descriptive statistics for the patients' clinical variables, and the caregivers' levels of depression, burden, and use of coping strategies at each of the three separate time points. The means showed a moderate level of caregiver subjective burden and presence of depressive symptoms without reaching clinical levels of depression (established with a cut-off point ≥ 16). The coping strategies most used by caregivers included the search for spiritual help, maintenance of social activities (social interest), search for information, and positive communication with the patient. The least used strategies were tolerance, coercion, and alcohol/drug use.

Stability of caregiver and patient variables

For data analysis, mixed linear models with random effects were fitted for participant intersections (Table 2). The results show statistically significant changes over time for several caregiver (subjective burden, over-involvement, positive communication, and search for information) and patient (hallucinations, alogia, and anhedonia/asociality) variable averages. Specifically, there was a significant reduction in burden levels, $F(2, 56.155) = 8.031$, $p < .01$, but not for depression. Pairwise comparisons of each time level revealed that there were score differences between T1 and the other time points for caregiver variables, yet differences in scores for patient variables did not show a generalizable pattern. It is worth noting

that there was a decrease in the use of three coping strategies by caregivers (over-involvement, positive communication, and information seeking) compared to baseline.

Table 1

Means and typical deviations for depression, burden, and coping strategies for patients and the caregiver at each of the three time points

Variables	T1	T2	T3
Caregiver			
Subjective burden	32.10 (13.68)	23.47 (14.86)	24.11 (13.30)
Depression	12.27 (7.69)	15.60 (11.60)	14.00 (10.61)
Tolerance	1.47 (2.01)	1.00 (1.74)	.96 (1.48)
Over-involvement	6.17 (2.79)	4.03 (2.33)	4.61 (2.99)
Resignation	5.90 (2.01)	4.90 (1.97)	5.68 (2.51)
Escape	2.53 (1.01)	2.57 (1.17)	2.32 (.82)
Coercion	5.13 (2.86)	4.63 (3.03)	4.68 (2.84)
Social interest	12.87 (4.15)	12.93 (4.16)	14.29 (4.81)
Positive communication	14.93 (4.59)	12.40 (4.30)	12.32 (5.33)
Information	5.00 (1.78)	3.80 (1.56)	3.89 (1.91)
Alcohol/drugs	1.10 (.40)	1.03 (.18)	1.00 (.00)
Friendships	1.37 (.72)	1.50 (.73)	1.46 (.84)
Spiritual help	3.33 (1.03)	3.63 (.89)	3.57 (.96)
Patient			
Hallucinations	6.20 (6.41)	3.83 (5.26)	5.71 (7.02)
Delusions	9.47 (9.29)	6.48 (6.79)	7.61 (6.90)
Bizarre behavior	.27 (1.02)	.41 (1.24)	.43 (1.26)
Formal thought disorder	2.80 (3.87)	1.97 (3.56)	1.89 (3.60)
Affective flattening or blunting	3.53 (4.05)	3.66 (4.05)	4.21 (3.98)
Alogia	3.40 (3.65)	4.97 (3.65)	5.07 (3.86)
Avolition/apathy	3.43 (3.07)	3.03 (2.86)	3.50 (2.91)
Anhedonia/asociality	7.93 (4.91)	6.90 (4.01)	8.61 (3.99)
Attention impairment	1.93 (2.49)	1.24 (2.10)	1.36 (2.04)
Functioning	3.77 (2.52)	3.31 (2.55)	3.32 (2.68)

Figure 1 presents the autoregressive model for depression and subjective burden, $\chi^2(10, N= 30)= 14.159, p= .17$; RMSEA= .12; 90% CI [0.00-0.25]; CFI= .94; TLI= .91; SRMR= .11. Autoregressive weights showed the measurement's stability over time. Depression changed more between measurement at T1 and T2 ($\beta= .455, p< .001$) than between T2 and T3 ($\beta= .740, p< .001$), where there was increased stability. In turn, subjective burden stability was similar between time points T1 and T2 ($\beta= .520, p< .001$) and between T2 and T3 ($\beta= .596, p< .001$). The cross weights showed a weak relationship, especially in the case of the coefficients of burden on depression that were close to zero. However, the coefficients of depression on burden were positive between two consecutive time points (i.e., greater depression at one point in time tends to be associated with greater burden later).

Table 2

Results of mixed linear models to measure the variable mean stability for caregivers and patients at each of the three time points

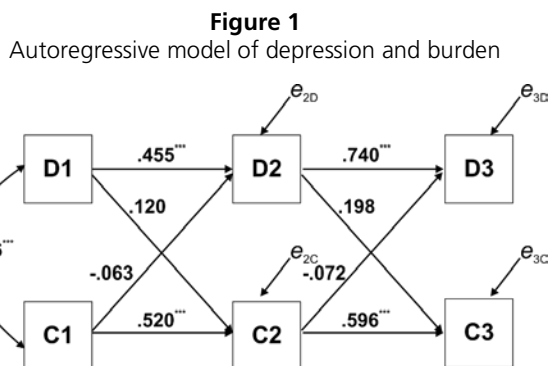
Variables	Effect	Pairwise comparisons		
		T1-T2	T1-T3	T2-T3
Caregiver				
Burden	$F(2.56.155)=8.031^{**}$	8.633 ^{**}	8.324 ^{**}	-.309
Depression	$F(2.56.493)=1.751$	-3.33	-1.502	1.827
Tolerance	$F(2.56.903)=.912$	.467	.524	.058
Over-involvement	$F(2.56.871)=6.038^{**}$	2.133 ^{**}	1.577	-.556
Resignation	$F(2.56.574)=3.133^*$	1.000	.284	-.716
Escape	$F(2.57.100)=.673$	-.033	.224	.258
Coercion	$F(2.56.738)=.447$	.500	.479	-.021
Social interest	$F(2.56.379)=3.242^*$	-0.067	-1.578	-1.511
Positive communication	$F(2.56.418)=6.670^{**}$	2.533 [*]	2.794 ^{**}	.261
Information	$F(2.56.601)=6.427^{**}$	1.200 ^{**}	1.130 [*]	-.70
Alcohol/drugs	$F(2.49.589)=1.221$	.067	.086	.020
Friendships	$F(2.57.291)=.294$	-.133	-.094	.040
Spiritual help	$F(2.53.604)=1.482$	-.300	-.127	.173
Patient				
Hallucinations	$F(2.55.111)=5.181^{**}$	2.049 [*]	.207	-1.842 [*]
Delusions	$F(2.55.840)=2.715$	3.012	1.712	-1.300
Bizarre behavior	$F(2.50.959)=.524$	-.140	-.260	-.120
Formal thought disorder	$F(2.55.286)=1.284$	.691	.788	.097
Affective flattening or blunting	$F(2.55.617)=.736$	-.099	-.803	-.704
Alogia	$F(2.55.318)=6.065^{**}$	-1.636 [*]	-1.895 ^{**}	-.258
Avolition/apathy	$F(2.54.747)=.966$	.414	-.313	-.727
Anhedonia/asociality	$F(2.55.166)=4.044^*$	1.087	-.978	-2.065 [*]
Attention impairment	$F(2.54.138)=1.018$	.630	.484	-.146
Functioning	$F(2.54.856)=.774$	.401	.215	-.186

Notes: ^{**} $p < .01$; ^{*} $p < .05$. Pairwise comparisons were corrected by Bonferroni.

Predicting Subjective Burden and Depression in Caregivers with Autoregressive Models

Autoregressive models were adjusted for caregiver coping strategies and patient variables with cross weights for burden and depression (Table 3). In general, autoregressive weights showed that patient variables were stable, but caregiver variables showed increased variability. Specifically, social interest and positive communication strategies, spiritual help, coercion, resignation, and information-seeking were the most stable. Other strategies, such as collusion and over-involvement, showed less stability. It was also observed that the cross weights predicting depression and subjective burden from coping strategies were not significant. Alternatively, the cross weights of the patient's negative symptoms corresponded with a significant increase in caregiver burden. The relationship

between patient negative symptoms and depression was less pronounced, yet a negative relationship was observed.



Notes. D= Depression; C= Burden; e= error. Autoregression weights and cross weights standardized completely. *** $p < .001$. The numbers represent the three measures in time.

Table 3
Fully standardized autoregressive weights for caregiver variables and caregiver depression with burden cross weights

Variables	Autoregressive weights		Depression		Subjective burden	
	β_{1-2}	β_{2-3}	β_{1-2}	β_{2-3}	β_{1-2}	β_{2-3}
Caregiver						
Tolerance	.081	.085	-.031	-.032	.034	.032
Over-involvement	.239	.166	-.084	-.079	-.072	-.065
Resignation	.537***	.524***	-.032	-.037	.089	.106
Escape	.191 ^t	.278 ^t	.134	.167	-.037	-.044
Coercion	.330**	.410***	.074	.089	.018	.021
Social interest	.730***	.663***	-.022	-.023	-.022	-.023
Positive communication	.599***	.422***	-.115	-.115	.079	.077
Information	.312 [*]	.274 [*]	.051	.051	.024	.023
Friendships	.299 [*]	.285 [*]	-.057	-.079	-.065	-.072
Spiritual help	.586***	.433***	.061	.058	-.108	-.098
Patient						
Hallucinations	.850***	.891***	-.093	-.108	.157	.174
Delusions	.719***	.571***	.047	.040	-.074	-.059
Formal thought disorder	.690***	.829***	.036	.043	.125	.135
Affective flattening or blunting	.574***	.741***	-.129	-.156	-.034	-.041
Alogia	.645***	.745***	-.179 ^t	-.205 ^t	.192 ^t	.206 ^t
Avolition/apathy	.523***	.509***	.260 [*]	-.261**	.331**	.311**
Anhedonia/asociality	.564***	.537***	-.089	-.083	.177	.154
Attention impairment	.509***	.627***	.024	.025	.332**	.341**
Functioning	.795***	.816***	.231 [*]	-.261 [*]	.308**	.314**

Note: ^t= $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Discussion

This study proposed two main objectives: 1) to analyze the pattern of stability or change in objective burden levels and in the use of coping strategies by caregivers, as well as in their subjective burden and depression levels; and 2) to analyze to what extent care stressors (positive symptoms, negative symptoms, and functional deterioration of the patient) and caregiver use of specific coping strategies predict variations in their discomfort (subjective burden and depression) measured at two subsequent time points: 5 and 10 months.

First, moderate levels of subjective burden and depressive symptomatology were observed for the three time points. On average, none of the three measures reached the cut-off point for levels of clinical depression. These results correspond with previous findings from studies involving family caregivers of people with schizophrenia (Chadda et al., 2007; Ghosh and Greenberg, 2009; Grandón et al., 2008).

Second, in terms of stability and change patterns, the results showed significant changes from baseline (T1) to T2 and T3. Specifically, a significant reduction was found in the level of caregiver subjective burden at 5 and 10 months, a finding that coincides with previous study findings (Möller-Leimkühler, 2006; Parabiaghi et al., 2007; Roick et al., 2006). This burden reduction possibly corresponds to a process of caregiver adaptation to the patient's health condition (Mora-Castañeda et al., 2018). It is also possible that burden reduction may be related to formal activity attendance and participation in informal practices of mutual support between family caregivers that take place in the patient and family member care center with which 86.6% of the study participants were linked.

Additionally, a significant reduction over time was found in the use of certain coping strategies, such as seeking information about the disorder, overinvolvement, and positive communication with the patient. This reduction could be a consequence of an adjustment process in which the caregiver stops attempting to control the disorder and the affected relative's behavior, as suggested by Karp and Tanarugsachock (2000).

Regarding caregiver depressive symptoms, no significant changes were found at 5 or 10 months. This may be because the depressive symptom means did not reach clinical significance (on average, they did not exceed the cut-off point at any time of the evaluation). This could suggest that some levels of emotional distress are "inevitable" or difficult to modify based on individual circumstances. Also, the role of cultural variables, such as familism, probably played a modulating role in the caregivers' emotional response as suggested by another study (Mora-Castañeda et al., 2020).

Regarding the stability or change pattern in the symptomatology and functional capacity of people with schizophrenia spectrum diagnoses, changes were

found in hallucinations, alogia, and anhedonia/asociality, with a different pattern for negative and positive symptomatology. While alogia and anhedonia/asociality tended to increase over time, a fluctuation in the presentation of hallucinations was observed (i.e., decreased at 5 months but increased again at 10 months). Previous studies have also found stability in patient symptomatology (Heilbronner et al., 2016) or even a decrease in symptomatology over time (Savill et al., 2015).

Therefore, a family caregiver's adjustment process is likely to respond to changes in their assessment of the disorder and the demands it poses, rather than to a change in the patient's actual symptom pattern. As mentioned above, it is probable that this assessment change is likely aided by care center activities between patients and family members, as well as the development of caregivers' skills oriented to practical patient support over time—results that coincide with a previous study (Möller-Leimkühler & Wiesheu, 2012).

Third, this study explored the relationship between subjective burden and depression with caregiver and patient variables at each of the three time points. As in other studies (Thunyadee et al., 2015), a positive and significant relationship between subjective burden levels and depression was found at all three time points. In addition, different coping strategies were related to and could predict, cross-sectionally, subjective burden and depression for each time point. Coping strategies that appear to be cross-sectionally related to increased subjective burden and depression are resignation, avoidance, coercion, positive communication, and information-seeking, while social interest is associated with decreased burden and depression—findings that coincide with other studies (Hanzawa et al., 2010; Magliano et al., 1998).

Regarding the patient's symptoms, it was observed that higher levels of alogia, avolition/apathy, and poorer functional capacity were related to higher levels of subjective burden, while attention problems and low levels of anhedonia/asociality were related to caregiver depressive symptomatology. These findings are consistent with previous study findings in which patients' negative symptoms were perceived as more stressful by caregivers (Dyck et al., 1999).

Finally, autoregressive models were used to explore the extent to which the variable levels at one point in time could predict the subjective burden and depression of caregivers later. In the present study, high levels of depressive symptomatology at one time point tended to be associated with an increased subjective burden later. In this way the depressive symptomatology seems to predict the future subjective burden of caregivers of people with diagnoses on the schizophrenia spectrum, therefore, serving as a risk factor for burden. It is important to note that some stability is identified in both measures; caregivers who have more subjective burden or depressive symptoms at T1 have more burden in subsequent time points. Additionally, at the longitudinal level, the patient's symptoms seem more stable than the caregivers' coping strategies. In addition, higher levels of

patient avolition/apathy, attention difficulties, and poorer functional capacity appear to be subjective burden risk factors for the caregiver. These results coincided with those found by Magliano et al. (2000), who also observed that an increase in the patient's functional deterioration predicted the subjective burden of care level.

In summary, the findings of this study suggested that caregivers go through an adaptation process as shown by a reduction in burden. This is characterized by a decrease in the use of coping strategies aimed at patient control and, over time, a variation in their evaluation of the disorder and the demands it poses. That said, the levels of depressive symptomatology did not change over time.

Further, the results showed that the functional capacity of the patient, rather than the changes in their symptoms, could predict variations in the results of the caregivers' stress process. This was true for both subjective burden and depressive symptomatology. Finally, it should be noted that, to our knowledge, this is the first longitudinal study conducted in Colombia to analyze changes in coping strategies, subjective burden, and depressive symptomatology in family caregivers of people with diagnoses on the schizophrenia spectrum.

The results of this study have numerous clinical implications. Interventions aimed at reducing the use of coping strategies that increase subjective burden and/or depressive symptoms, such as resignation, avoidance, or coercion, are necessary and would help caregivers increase their leisure activities and social interest, thus increasing their behavioral activation. In interventions aimed at patients on the schizophrenia spectrum, it is essential to increase their functional capacity to decrease long-term caregiver subjective burden and depression.

This study has several limitations. First, it had a small sample, made up largely of patients and family members utilizing services at a care center. A larger sample size would allow for stronger statistical power and clearer significant relationships between relevant variables, such as escape and burden or depression, whose associations in this study have not gone beyond trends. Additionally, follow-up was carried out after a short time (10 months), which prevented gathering more information about the caregiver's stress process. Moreover, the time point in which the first measure was taken varied for each family, which is a limitation because each family could have been in a different phase of the stress and coping process for their relative's disorder. Finally, cultural variables, whose consideration could have enriched the analysis in relation to outcome variables (e.g., the probable modulating role of familism in the emotional response of caregivers), were not taken into account.

Despite these limitations, we believe that the results of this study provide relevant information on the longitudinal evolution of numerous variables associated with the burden and depression of this population. Furthermore, the results of this study showed the importance of continuing to develop longitudinal studies that

provide information about transformations in the experience of caregiving stress in relatives of people on the schizophrenia spectrum.

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