

Strategies used by families to cope with chronic mental illnesses: Psychometric properties of the family crisis oriented personal evaluation scale

Ayşe Sari MSc¹ | Zekiye Çetinkaya Duman²

¹Department of Psychiatric Nursing, Faculty of Nursing, Graduate School of Health Sciences, Dokuz Eylül University, Izmir, Turkey

²Department of Psychiatric Nursing, Faculty of Nursing, Dokuz Eylül University, Izmir, Turkey

Correspondence

Zekiye Çetinkaya Duman, Department of Psychiatric Nursing, Faculty of Nursing, Graduate School of Health Sciences, Dokuz Eylül University, 35340 Izmir, Turkey.
Email: zekiyecetinkaya69@gmail.com

Abstract

Purpose: This study was aimed at investigating the psychometric properties of the Family Crisis Oriented Personal Evaluation Scale (F-COPES) for Turkish society, which assesses the coping skills of caregivers of individuals with chronic mental illnesses.

Design and Methods: The study was conducted with 153 family caregivers of patients with a chronic mental illness admitted to the inpatient and outpatient units of two university hospitals and Izmir Schizophrenia Solidarity Association. For the language validity, the translation-back translation method was performed, for the content validity, expert opinions were obtained, for the construct validity, exploratory and confirmatory factor analysis was performed. For the reliability analysis, Cronbach α reliability coefficient was calculated and the test-retest reliability analysis was performed.

Findings: The content validity index of the scale was 0.96. The Cronbach's α reliability coefficient for the overall scale was .80. Factor loadings of the subscales ranged between 0.56 and 0.69 for the Acquiring Social Support subscale, between 0.43 and 0.74 for the Reframing subscale, between 0.53 and 0.74 for the Seeking Spiritual Support subscale. The model fit indexes were as follows: $\chi^2 = 176.369$, $df = 116$, $\chi^2/df = 1.52$, RMSEA = 0.059, CFI = 0.90, IFI = 0.91, GFI = 0.88.

Practice Implications: The results of the present study show that the levels of psychometric properties of F-COPES in Turkish society are acceptable. It is thought that it would be useful to use the F-COPES in the assessment of coping behaviors of individuals who give care to patients with a chronic mental illness and that it can be used as measurement tool in studies to be conducted with caregivers of patients with a chronic mental illness to assess their coping skills.

KEYWORDS

caregiver, coping, family, severe mental disorder

1 | INTRODUCTION

Chronic mental illnesses are an important social issue that is very common all over the world. According to the data released by the World Health Organization (WHO), 300 million people worldwide

have a unipolar mood disorder, 60 million people have a bipolar mood disorder, and 23 million people have a diagnosis of schizophrenia.¹ The situation is no different in our country, Turkey; mental illnesses are quite common. In Turkey, 18% of the population suffers a mental illness once in a lifetime.² Mental

illnesses affect not only the sufferer but also the caregiver. Families have difficulties in fulfilling the caregiving role brought about by the disease. In Turkey, the responsibility of the individual who has a chronic mental illness is undertaken especially by the family, which can become a stressful crisis for the family.³ Each family has a different strategy to cope with the burden brought about by a chronic mental illness. In the literature, it is stated that coping skills used most frequently by individuals who give care to a person with a chronic mental illness are the mobilization of resources, seeking spiritual support, reframing, passive appraisal, and social support.⁴ Hill⁵ explained reactions to family stress or crisis situations with a model. This model, called the ABCX model, was further developed by McCubbin and Patterson⁶ as a model of stress, resilience, and adaptation. In the ABCX model, the letter “A” stands for a stressor that causes a crisis for the family, “B” represents familial or social resources and opportunities, and “C” refers to how the stressor is perceived and what the coping skills are. The resulting adaptation or maladaptation status is indicated as X.^{6,7} This model, which has been applied in many countries and in different sample groups, can be adapted to the process of coping with chronic mental disorders. According to this model, while the chronic mental illness process is defined as a stressor, coping with the stressor and the resulting adaptation status can be regarded as an indication of the outcome. To assess each stage mentioned in this model, several scales and indexes have been developed. The Family Crisis Oriented Personal Evaluation Scale (F-COPES) is a Likert-type scale developed by McCubbin and Patterson⁶ to measure families’ coping strategies.^{6,8} The scale can also be used in different samples and coping processes.⁹ In their study conducted to assess the coping skills of the family members of psychiatric patients staying in inpatient units, Eaton et al¹⁰ determined that the family members had both positive and negative coping skills. Coping skills of the family caregivers were assessed with the F-COPES, and it was determined that they mostly used emotion-focused coping skills. The psychometric features of the scale were studied in different cultures and the scale was determined to have good construct validity. In his descriptive study conducted to assess how the families of individuals in an African American sample coped with the issue, Guada¹¹ also studied the psychometric features of the scale. In Guada’s study, the Cronbach’s α values of the subscales which ranged between 0.50 and 0.78 were 0.81 for the overall scale. The results obtained from the subscales of the scale demonstrated that coping strategies most commonly used by the families of African American patients with schizophrenia were reframing, seeking spiritual support, and seeking and accepting help.¹¹ Gouva et al¹² adapted the scale to Greek culture and studied its psychometric characteristics. According to the findings in Gouva et al’s study, the Cronbach’s α value of the scale was .77 and the validity and reliability levels of the scale were regarded as acceptable. In the validity and reliability study of the scale for the Portuguese language, different from the original structure, Cunha and Relvas¹³ determined seven subscales. However, because the Cronbach’s α

value of the two subscales was low, they decided to include only five subscales whose Cronbach’s α values ranged from .75 to .88.¹³ It is very important to determine coping attitudes of families, if families are to be encouraged to comply with the chronic mental illness process and if therapeutic applications aiming to enable family members to cope with the process are to be improved.¹⁴ “A family member’s being diagnosed with a mental disease” can become a life crisis for the family. It is important to understand the problems experienced by families who provide care for a person with a chronic mental illness during both hospitalization and outpatient follow-up periods and to determine their coping skills. The use of tools for evaluating families contributes both to the assessment of what problem-solving skills families have in case a family member has a mental illness and to the determination of the family intervention to be implemented.¹⁵ In Turkey, various scales are used to assess the coping skills of families in different sample groups. The most commonly used of these scales is the Appraisal of Stressful Situations and COPE with inventory. These scales are used to assess the coping strategies of adults. However, there is no specific tool used to assess patient caregivers’ coping skills in case of a chronic mental illness or to measure how they cope with crisis situations arising when a family member has a chronic mental illness. The F-COPES is a tool used specifically to assess families’ ability to cope with the crisis situations emerging when a family member has a chronic mental illness. Among the features that make the scale unique are that it is based on a model-specific to families and has been used in many countries and that its validity and reliability study has been performed. Therefore, in the present study, it was aimed to investigate the psychometric properties of the F-COPES to evaluate how families cope with many problems they face when a family member has a chronic mental illness.

2 | METHODS

2.1 | Sample of the study

The study was conducted with 153 caregivers of patients with a chronic mental illness admitted to the adult psychiatric inpatient and outpatient units of two university hospitals and izmir Schizophrenia Solidarity Association between June 2017 and February 2019. In the literature, according to the rule of 100 proposed for the sample size, there should be five participants per variable or at least 100 people should be reached.¹⁶ Therefore, because the scale consists of 30 items, 153 caregivers of the patients with a chronic mental illness were included in the study sample. The inclusion criteria of the study were as follows: being literate, being over 18 years of age, volunteering to participate in the study, and being the main caregiver of a patient with a chronic mental illness (bipolar affective disorder, schizophrenia, and schizoaffective disorder). Exclusion criteria were as follows: the absence of a kin relationship between the patient and the caregiver and the caregiver’s providing paid to care for the patient with a chronic mental illness.

2.2 | Data collection

The study data were collected using the Caregiver Descriptive Characteristics Form, Patient Descriptive Characteristics Form, and F-COPES. The data were collected from the primary caregivers of the patients admitted to the outpatient and inpatient units. All three data collection tools are self-report (self-administered) forms filled by the caregivers through face-to-face interviews. The minimum and maximum length of time required to fill in the scale was 10 and 15 minutes, respectively. The caregivers were familiarized with the data collection tools and informed about how to fill in the forms. Three weeks later, the scales were readministered to the caregivers. However, this time, the data were collected through telephone calls due to the problems faced during the face-to-face interviews. The scale items and responses were read out to the caregivers on the telephone. The interviewer marked the option selected by the caregiver.

2.3 | Data collection tools

2.3.1 | Caregiver descriptive characteristics form

The form contains items questioning the caregiver's age, sex, educational status, length of caregiving period, degree of kinship, working status, number of children, and the person whose care he/she is responsible for.

2.3.2 | Patient descriptive characteristics form

The form includes items questioning the patient's sociodemographic characteristics such as age, sex, working status, marital status, and disease-related characteristics such as his/her diagnosis.

2.3.3 | The family crisis oriented personal evaluation scale

The F-COPES is a 30-item Likert-type scale developed by McCubbin and Patterson⁶ to assess coping strategies used by families. According to the theory of McCubbin and Patterson,⁶ families can better adapt to stressful life events as their coping skills improve. The scale focuses on two dimensions of family interaction: how they overcome the challenging or problematic situations arising within the family and affecting the family, and how they overcome the challenging or problematic situations arising outside the family and affecting the family. Participants' responses are rated on a 5-point scale ranging from one to five (1 = *Strongly Disagree*, 2 = *Moderately Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Moderately Agree*, 5 = *Strongly Agree*). The scale has five subscales: Acquiring Social Support, Reframing, Seeking Spiritual Support, Mobilizing to Acquire, and Accept Help and Passive Appraisal. The Acquiring Social Support subscale contains nine items and measures the family's ability to

acquire support from friends, other families or relatives. The Reframing subscale consists of eight items and assesses the family's ability to redefine stressful events. The Seeking Spiritual Support subscale which consists of four items measures the family's ability to acquire spiritual support. The Mobilizing to Acquire and Accept Help subscale consisting of four items assesses the family's ability to seek community resources and to accept help from others. The 4-item Passive Appraisal subscale assesses the family's ability to accept difficult issues that minimize reactivity. To calculate the score for the overall scale, the scores for each subscale are calculated and summed. The higher the score obtained from the subscales is, the better the problem-solving skills and behavioral responses during difficult situations are. Items 12, 17, 26, and 28 are reverse scored.⁹

2.4 | Analysis of the study data

The data were analyzed by using the SPSS 15.0 (IBM Corporation, NY) package program. Data of the Caregiver Descriptive Characteristics Form and Patient Descriptive Characteristics Form were assessed using numbers, percentages, arithmetic mean and standard deviation. When the psychometric properties of the F-COPES were analyzed, for the language validity, the forward-translation/back-translation method was used; for the content validity, expert opinions were obtained and the Content Validity Index-CVI was calculated.

2.4.1 | Step 1: language validation

To perform the validity and reliability study of the Turkish version of the F-COPES, the written permission was obtained from the author of the scale. In the first step, to establish the language validity study of the scale, the forward-translation/back-translation method was used. In the literature, it is stated that language validity can be ensured by carefully selecting translators. In the selection of translators, it is recommended that they should have a good command of both languages, should be familiar with the culture being studied and should be knowledgeable about the structure measured.¹⁷ The text should be translated by at least two persons independently of each other. After the text is translated independently, the translations are compared from semantic, linguistic, and contextual aspects and the two texts are transformed into one text.¹⁸ In the present study, three faculty members with a good command of the subject took part in the translation process and translated the scale into Turkish independently of each other. After they completed translations, the three texts were compared from semantic, linguistic, and contextual aspects and then were transformed into one text. The researchers reviewed all translations and prepared the Turkish version of the scale. The second step in the translation process is the back-translation. At this stage, the scale was translated back to English by an independent translator who had no knowledge of the scale. Then,

after the scale translated back to English was compared with the original form, its Turkish version was prepared. The items which were translated from Turkish back to English were also sent to the author of the original scale to check whether the items were translated appropriately. The Turkish version of the scale was validated by comparing it with the original version.

2.4.2 | Step 2: content validity

At this stage, 10 researchers with expertise in their fields were asked first to evaluate whether the items were clear enough and appropriate for the Turkish society and for the aim to be measured and then to rate the items on a 4-point scale. If the experts gave a score of less than equal to 3 for an item, then they also indicated their recommendations for that item.¹⁹ The recommendations by the experts were collected in a single table for each item separately and the scale items were revised in line with their recommendations. The content validity index for the scale was 0.96. Except for item 27 (seeking advice from a minister) whose content validity index was 0.50, the content validity index was above 0.80 for all the other items. Because the content validity index of item 27 was low, it was revised. One of the experts stated that she did not understand what was meant by the word “minister” in item 27. Then, the author was informed on this issue and the word “minister” leading to cultural diversity was revised. After item 27 was revised, it was re-submitted to the experts to evaluate. Then it was decided not to remove it from the scale. The experts also reported that they did not recognize the discrepancies between the expressions regarding religious services in items 14 “Attending church services” and 23 “Participating in church activities”, and the author was also informed of this issue and the scale was revised in line with the explanations given by the author of the scale. After expert evaluations, the content validity index of the scale was calculated as 0.96. In line with the expert opinions, the items took their final forms and the pilot testing phase was started.

2.4.3 | Step 3: Pilot testing

In the next stage, after the content validity is established, the scale adapted should be pilot tested to find out whether there are any statements needing revision. People who take the pilot test should have characteristics similar to those of the people in the sample, but they should not be included in the sample.^{17,20} After the scale took its prefinal form based on the expert opinions, it was tested on the caregivers of 20 patients who met the sampling criteria. The caregivers were asked to answer the items on the scale and to evaluate them in terms of clarity and comprehensibility. They stated their opinions and suggestions on the items they did not understand or they thought they were not clear. After the scale items were revised in line with recommendations by the caregivers, the scale

took its final form. The caregivers of the patients included in the pilot testing phase were not included in the implementation phase. At each stage, the author of the scale was contacted. After verifying the language validity, content validity and final version of the scale, the author was informed about the process and after the author's approval, the next step was performed.

2.4.4 | Step 4: Psychometric examination

To establish construct validity, both the exploratory and confirmatory factor analysis methods were used. In the exploratory factor analysis, the KMO and Barlett's tests were used to evaluate the suitability of the data set for the factor analysis. The KMO test was used to find out whether the sample was suitable for the factor analysis. KMO values between 0.90 and 1 indicate that the sampling adequacy is excellent, between 0.80 and 0.89 indicate that the sampling adequacy is very good, between 0.70 and 0.79 indicate that the sampling adequacy is good, and between 0.60 and 0.69 indicate that the sampling adequacy is medium.²¹ The significance of the result of Barlett's test indicates that the relationship between variables is high and the data set is suitable for factor analysis.²² The Varimax rotation method, one of the Orthogonal rotation methods, was used for the rotation of the factors. The AMOS 25.0 software was used for the confirmatory factor analysis. The maximum likelihood method was chosen as an estimation method. After the confirmatory factor analysis, model fit indices and factor loads were examined. If the RMSEA value, one of these fit indices, is below 0.05, it shows a good fit, if it is below 0.08, it indicates an acceptable fit.^{23,24} On the other hand, the χ^2/df value ranging between 0 and 2 indicates a good fit, and that ranging between 2 and 3 indicates an acceptable fit. Critical n value was tested with the Hoelter's statistics.

For the reliability analysis, the normality of distribution was examined. Because the sample size was more than equal to 30, the normal distribution characteristics of the data were examined with the Kolmogorov Smirnov test.²⁵ That the data for the overall scale and subscales of the scale were not suitable for normal distribution was determined ($P < .05$). The homogeneity analysis was performed with the Spearman Correlation Coefficient. For the reliability analysis, the scale was administered twice at a 3-week interval and tested with the test-retest method. Because the data were not normally distributed, the Spearman correlation analysis was used to evaluate the correlation between the test scores and retest scores. The other method used for the reliability analysis was the calculation of the internal consistency reliability coefficient (Cronbach's α).

2.5 | Ethical issues

Before the study was started, the author who developed the scale was contacted and his written permission to adapt the scale into Turkish was obtained. Before the data collection phase of the

study, permission was obtained from the Psychiatry Departments of the two university hospitals, Izmir Schizophrenia Solidarity Association and Dokuz Eylül University Noninvasive Research Ethics Committee. (Decision Date: June 8, 2017; Decision No: 2017/15-21). The purpose of the study was explained to the caregivers and their written and verbal consent was obtained.

3 | RESULTS

3.1 | Descriptive characteristics of the patients and caregivers

The mean age of the caregivers of the patients with a chronic mental illness was 55.59 ± 12.29 years and the mean length of the caregiving period was 13.45 ± 9.17 years. Of the caregivers, 64.1% were female ($n = 98$), 2.6% ($n = 4$) were literate, 30.1% ($n = 46$) were primary school graduates, 11.1% ($n = 17$) were junior high school graduates, 24.8% ($n = 38$) were senior high school graduates, and 31.4% ($n = 48$) were university graduates. Of the caregivers, 74.5% did not work at a paid job ($n = 114$), 56.2% ($n = 86$) were parents, 19% ($n = 29$) were siblings, 17% ($n = 26$) were spouses, 5.9% ($n = 9$) were patients' children, and 80.4% ($n = 123$) lived with the patient in the same home (Table 1). The mean age of the patients with a chronic mental illness was 40.83 ± 13.82 years and the mean length of the diagnosis was

13.19 ± 8.81 years. Of the patients 49.7% ($n = 76$) were female, 75.2% ($n = 115$) were single, 88.2% (135) did not work in any job, 49.7% had schizophrenia ($n = 76$), 5.2% had schizoaffective disorder ($n = 8$), and 45.1% had bipolar affective disorder ($n = 69$) (Table 2).

3.2 | Results of the validity and reliability analysis

3.2.1 | Homogeneity analysis

Before the validity and reliability analyses, the data were analyzed whether they were normally distributed. Because the data were not normally distributed, the correlation between the items, subscales and overall scale was examined using the Spearman correlation coefficient, a non-parametric test. According to the results of this analysis, the correlation coefficient of item 15 ($r = 0.189$; $P = .001$) was below 0.20, which was considered statistically significant. The correlation coefficient of item 19 ($r = .063$; $P = 0.437$) was below .20 and thus statistically insignificant. The correlation coefficient of the items 12 ($r = -0.107$; $P = .187$), 17 ($r = -.030$; $P = .709$), 26 ($r = -.139$; $P = .086$), 28 ($r = -.080$; $P = .326$), and 30 ($r = -.070$; $P = .389$) was negative and thus statistically insignificant (Table 3). When these items were analyzed in terms of kurtosis (orthogonality) and skewness values, item 15 (Skewness = -2.480 ; Kurtosis = 7.806), 19 (Skewness = -1.968 ; Kurtosis = 5.298), 26 (Skewness = 2.075 ; Kurtosis = 5.899), and 30

TABLE 1 Descriptive characteristics of individuals giving care to people with a chronic mental illness ($n = 153$)

Caregiver characteristics	(Mean \pm SD)	
Age	55.59 ± 12.29 (min: 22.00, max: 80)	
Length of caregiving (year)	13.45 ± 9.17 (min: 1.00, max: 44)	
	n	%
Sex		
Female	98	64.1
Male	55	35.9
Educational status		
Literate	4	2.6
Primary school	46	30.1
Junior high school	17	11.1
Senior high school	38	24.8
University	48	31.4
Employment status		
Working	39	25.5
Not working	114	74.5
Degree of kinship		
Mother	61	39.9
Father	25	16.3
Siblings	29	19.0
Spouses	26	17.0
Children	9	5.9
Other	3	2.1
Living in the same house		
Yes	123	80.4
No	30	19.6
Total	153	100

TABLE 2 Descriptive characteristics of the individuals with mental illness (n = 153)

Characteristics of the patient	(Mean \mp SD)	
Age	40.83 + 13.82 (min: 17.00; max: 79.00)	
Duration of the diagnosis	13.19 + 8.81 (min:1.00; max: 41.00)	
	n	%
Sex		
Female	76	49.7
Male	77	50.3
Marital status		
Married	38	24.8
Single	115	75.2
Employment status		
Working	18	11.8
Not working	135	88.2
Diagnosis		
Schizophrenia	76	49.7
Schizoaffective disorder	8	5.2
Bipolar Affective Disorder	69	45.1
Total	153	100

TABLE 3 Item total score correlation coefficients (n = 153)

Subscales	Items	Spearman Rho (r)	P
Acquiring social support	1. Sharing our difficulties with relatives	.552	.000
	2. Seeking encouragement and support from friends	.660	.000
	5. Seeking advice from relatives (grandparents, etc)	.610	.000
	8. Receiving gifts and favors from neighbors (eg, food, taking in mail, etc)	.378	.000
	10. Asking neighbors for favors and assistance	.612	.000
	16. Sharing concerns with close friends	.574	.000
	20. Doing things with relatives (get-together, dinners, etc)	.413	.000
	25. Asking relatives how they feel about problems we face	.621	.000
	29. Sharing problems with neighbors	.542	.000
Reframing	3. Knowing we have the power to solve major problems	.312	.000
	7. Knowing that we have the strength with our own family to solve our problems	.448	.000
	11. Facing the problems "head-on" and trying to get solution right away	.217	.000
	13. Showing that we are strong	.309	.000
	15. Accepting stressful events as a fact of life	.189	.019
	19. Accepting that difficulties occur unexpectedly	.063	.437
	22. Believing we can handle our own problems	.257	.001
24. Defining the family problem in a more positive way so that we do not become too discouraged	.259	.001	
Seeking spiritual support	14. Attending church services	0.173	.032
	23. Participating in church activities	0.424	.000
	27. Seeking advice from a minister	0.505	.000
	30. Having faith in God	-0.070	.389
Mobilizing to acquire and accept help	4. Seeking information and advice from person in other families who have faced the same or similar problems	.645	.000
	6. Seeking assistance from community agencies and programs designed to help families in our situation	.333	.000
	9. Seeking information and advice from the family doctor	0.393	0.000
	21. Seeking professional counseling and help for family difficulties	0.254	0.002
Passive appraisal	12. Watching television	-0.107	0.187
	17. Knowing luck plays a big part in how well we are able to solve family problems	-0.030	0.709
	26. Feeling that no matter what we do to prepare, we will have difficulty handling problems	-0.139	0.086
	28. Believing if we wait long enough, the problems will go away	-0.080	0.326

Items indicated as bold are items with negative correlation coefficient or less than 0.20.

TABLE 4 Correlation coefficients for the scale total score and sub-dimension total score (n = 153)

Sub-scales	Spearman's rho	P
Acquiring social support	.867	.000
Reframing	.439	.000
Seeking spiritual support	.405	.000
Mobilizing to acquire and accept help	.657	.000
Passive appraisal	-.133	.101

(Skewness = -2.645; Kurtosis = 5.471) were determined not to have normal distribution. Therefore, it was decided to remove these items from the scale. The analysis of the correlation between the overall scale and the subscales demonstrated that only the correlation between the overall scale and the 5th subscale (Passive Appraisal) was below 0.20, negative and statistically insignificant (Table 4). Spearman Rho correlation coefficients between the overall scale and subscales were 0.86 for the Acquiring Social Support subscale, 0.43 for the Reframing subscale, 0.40 for the Seeking Spiritual Support subscale, and 0.65 for the Mobilizing to Acquire and Accept Help subscale. However, the correlation coefficient for the Passive Appraisal subscale was -0.133 (Table 4). Therefore, the items 12, 17, 26, 28, and 30 whose Spearman correlation coefficients were negative and statistically insignificant and the items 15 and 19 whose spearman correlation coefficient was below 0.20 and statistically insignificant were removed from the scale. Four items (items 15, 19, 26, and 30) whose correlation coefficients were low and statistically

insignificant were also unsuitable in terms of kurtosis (orthogonality). After the item analysis was performed, the writer of the scale was informed about the aforementioned items, and these items (12, 15, 17, 19, 26, 28, and 30) were removed from the scale. Total score correlations were reanalyzed after item removal and the Spearman correlation coefficients of the items were determined to range between 0.22 and 0.65 and to be statistically significant (Table 5). The correlation between the overall scale score and subscale scores was 0.87 for the Acquiring Social Support subscale, 0.46 for the reframing subscale, 0.49 for the Seeking Spiritual Support subscale, and 0.66 for the Mobilizing to Acquire and Accept Help subscale.

3.3 | Validity-Related findings

3.3.1 | Construct validity

Whether the data had normal distribution characteristics was analyzed using the Kolmogorov Smirnov test. Neither the subscales nor the overall scale met the normal distribution criteria. Each item was analyzed in terms of kurtosis and skewness. Skewness values of all the items ranged between +3 and -3. The construct validity was analyzed with the exploratory and confirmatory factor analysis. In case the sample size is small, the method preferred is Unweighted Least Squares (ULS).²⁶ Therefore, the ULS method was used as factor extraction method in the exploratory factor analysis. To determine the rotation method to be used, the correlation between the factors

TABLE 5 Item total score correlation coefficients (n = 153)

Subscales	Items	Spearman Rho (r)	P
Acquiring social support	1. Sharing our difficulties with relatives	.559	.000
	2. Seeking encouragement and support from friends	.654	.000
	5. Seeking advice from relatives (grandparents, etc)	.608	.000
	8. Receiving gifts and favors from neighbors (eg, food, taking in mail, etc)	.415	.000
	10. Asking neighbors for favors and assistance	.584	.000
	16. Sharing concerns with close friends	.570	.000
	20. Doing things with relatives (get-together, dinners, etc)	.434	.000
	25. Asking relatives how they feel about problems we face	.645	.000
	29. Sharing problems with neighbors	.550	.000
Reframing	3. Knowing we have the power to solve major problems	.321	.000
	7. Knowing that we have the strength with our own family to solve our problems	.475	.000
	11. Facing the problems "head-on" and trying to get solution right away	.216	.007
	13. Showing that we are strong	.319	.000
	22. Believing we can handle our own problems	.311	.000
	24. Defining the family problem in a more positive way so that we do not become too discouraged	.296	.000
Seeking spiritual support	14. Attending church services	.221	.006
	23. Participating in church activities	.461	.000
	27. Seeking advice from a minister	.534	.000
Mobilizing to acquire and accept help	4. Seeking information and advice from person in other families who have faced the same or similar problems	.637	.000
	6. Seeking assistance from community agencies and programs designed to help families in our situation	.325	.000
	9. Seeking information and advice from the family doctor	.444	.000
	21. Seeking professional counseling and help for family difficulties	.253	.002

was investigated. First, oblique rotation was performed, and the pattern matrix, structure matrix, and factor correlation matrix were examined. In the factor correlation matrix, no value exceeded 0.32.^{27,28} Therefore, the Varimax rotation, one of the orthogonal rotation methods, was used in factor rotation because there was no correlation between the factors. The results of the exploratory factor analysis demonstrated that the variance explained and factor loadings of some items (items 6, 8, 9, 20, 21) were lower than 0.35. These items with a low factor loading value (items 6, 8, 9, 20, 21) were removed from the scale and the factor analysis was performed again. Thus, unlike the original scale, the Turkish version of the scale was constructed to have a three subscale structure. The analysis demonstrated that the Kaiser-Meyer-Olkin (KMO) value was 0.79. The result of the Bartlett's test of sphericity was $\chi^2 = 752.527$ and considered statistically significant ($P < .001$). In the exploratory factor analysis, the ULS factor extraction method and Varimax rotation method were used and in the three-factor structure, the explained variance was determined as 40.39. Factor loadings of the items calculated as a result of the three-factor exploratory factor analysis ranged between 0.42 and 0.74 (Table 6).

The original F-COPES consists of five subscales. Because the "Passive Appraisal" subscale was removed from the scale after the item analysis of the Turkish version of the F-COPES was performed and the "Mobilizing to Acquire and Accept Help" subscale was removed from the scale after the factor analysis was performed, the scale adapted to Turkish culture has a three-factor structure. The three-factor structure of the Turkish version of the scale was confirmed in the present study. In the confirmatory factor analysis, the AMOS 25.0 was used. After the confirmatory factor analysis, factor loadings of the subscales ranged between 0.56 and 0.69 for the Acquiring Social Support subscale, between 0.43 and 0.74 for the Reframing subscale and between 0.53 and 0.74 for the Seeking Spiritual Support subscale (Figure 1). The model fit indexes were as

follows: $\chi^2 = 176.369$; $df = 116$; $\chi^2/df = 1.52$, RMSEA: 0.059, CFI: 0.90, IFI: 0.91, GFI: 0.88. Hoelzer's critical N was determined as 134 ($P = .001$) (Table 7).

3.4 | Reliability-Related findings

3.4.1 | Internal consistency analysis

The Cronbach's α reliability coefficient for the overall scale was .80. The Cronbach's α reliability coefficient was .83 for the Acquiring Social Support subscale, 0.75 for the Reframing subscale, and 0.68 for the Seeking Spiritual Support subscale. The reliability coefficients of the subscales ranged between 0.68 and 0.83.

3.4.2 | Test retest reliability

The F-COPES was re-administered to the caregivers 3 weeks later. The test-retest reliability was tested using the Spearman Correlation Coefficient technique. The Spearman correlation coefficient between the two tests was 0.64 and it was statistically significant ($P = .001$). The test-retest Spearman correlation coefficient was 0.78 for the Acquiring Social Support subscale, 0.41 for the Reframing subscale, and 0.75 for the Seeking Spiritual Support subscale ($P < .001$).

4 | DISCUSSION

Chronic mental illness is a crisis situation affecting both the patient and the whole family system. The F-COPES used to determine the coping skills of family members contributes to the determination of the coping status of the family in this process which requires a

TABLE 6 Exploratory factor analysis (n = 153)

	Items	Factor load
Acquiring social support	1. Sharing our difficulties with relatives	0.55
	2. Seeking encouragement and support from friends	0.66
	4. Seeking information and advice from person in other families who have faced the same or similar problems	0.65
	5. Seeking advice from relatives (grandparents, etc)	0.59
	10. Asking neighbors for favors and assistance	0.71
	16. Sharing concerns with close friends	0.62
	25. Asking relatives how they feel about problems we face	0.52
	29. Sharing problems with neighbors	0.55
	Reframing	3. Knowing we have the power to solve major problems
7. Knowing that we have the strength with our own family to solve our problems		0.55
11. Facing the problems "head-on" and trying to get solution right away		0.56
13. Showing that we are strong		0.51
22. Believing we can handle our own problems		0.74
Seeking spiritual support	24. Defining the family problem in a more positive way so that we do not become too discouraged	0.42
	14. Attending church services	0.54
	23. Participating in church activities	0.72
	27. Seeking advice from a minister	0.61
	Total variance explained (%)	40.39

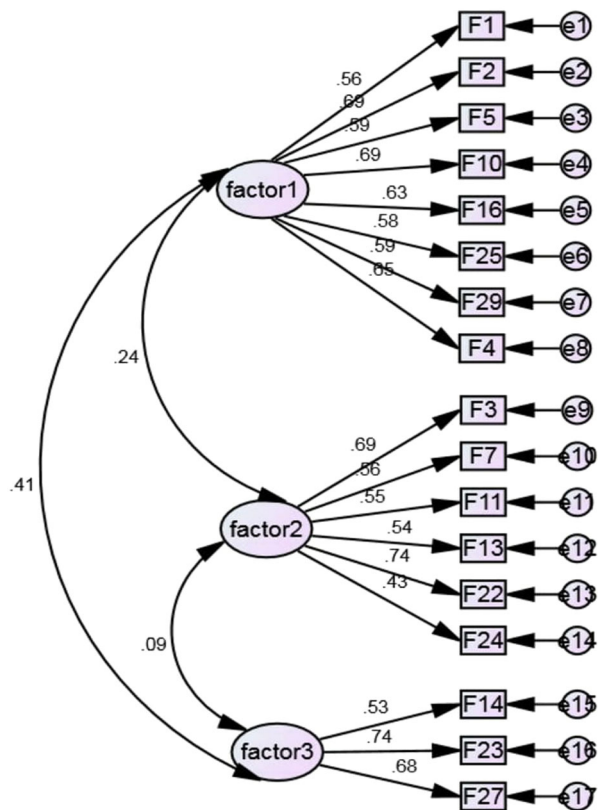


FIGURE 1 Confirmatory factor analysis of the family crisis oriented personal evaluation scale [Color figure can be viewed at wileyonlinelibrary.com]

holistic approach. Below is discussed the F-COPES, whose psychometric properties are investigated in Turkish society, in light of the following findings obtained:

The language-validity of the F-COPES was performed using the translation-back translation method. Upon the completion of the language validity stage, the content validity of the scale was performed by obtaining expert opinions. At this stage, the content validity index of item 27 (seeking advice from a minister) was determined as 0.50. To clarify what this item meant, the author of the scale was consulted. The author pointed out that the problems related to the mentioned item were expected problems and were of cultural origin. The word “minister” in item 27 is translated into Turkish in two ways: firstly, and mostly “a head of a government department” and secondly “a trained religious leader”. In the language validity study of the scale we performed, the word was used to mean “head of a government department”. However, when we contacted the author of the scale to verify that meaning, she stated that the emphasis was on religious values and explained what

was meant by the item. Based on her explanation, item 27 was revised and the word “minister” was used to mean a trained religious leader. The low level of the item content validity index of item 27 was thought to result from the fact that the word “minister” was not used the same way the author used it; therefore, this item was not excluded from the scale.

The three items included in the same subscale which posed difficulty while they were interpreted during content validity were on spiritual values too. Although the equivalence of “church services” mentioned in the original scale is “mosque services” in Turkish society, the term “religious services” was used instead of “mosque services” not to make religious discrimination. To ensure the compatibility of these items to Turkish culture, support was obtained from both the experts and the author of the scale, and the items took their final forms.

When the item analysis was performed, it was decided to remove some of the items from the scale. Of these items, 12, 17, 26, and 28 are in the Passive Appraisal subscale, and high scores obtained from these items indicate that the coping behavior displayed is not positive. The Spearman correlation coefficient of all the items in this subscale was negative, low and statistically insignificant. In another study conducted with the caregivers of patients with schizophrenia, the psychometric properties of the F-COPES were examined, and the correlation coefficients for this subscale were negative and low as in the present study. This was explained as follows: Of the coping strategies, the passive appraisal was not perceived as a method of coping with stressors by the participants in the sample of that study.¹¹ However, these items were not perceived negatively by caregivers in Turkish culture. In Turkish culture, coping with a problem over time, an emotion-focused coping style, is a common form of coping with mental illnesses.²⁹ That is why these items are considered negative and statistically insignificant in the caregiver group studied because of the cultural effect. The item-total score correlation coefficient of Item 19 (doing things with relatives; get-togethers, dinners, etc) was similarly low and statistically insignificant. The low correlation coefficient of this item in the Turkish sample may be due to family stigma. The prejudiced and discriminatory approach of the society towards families, referred to as “courtesy stigma” in the literature, can lead to the family’s social withdrawal. Caregivers are socially affected due to stigmatization, hide their relative’s mental illness and isolate themselves socially.^{30,31} Social withdrawal due to stigmatization suggests that social withdrawal may cause caregivers to avoid sharing difficulties with relatives as a method of coping and cause them to fail to share the problems they experience with their relatives.

Unlike the original structure, the three-factor structure was confirmed in Turkish society. Therefore, the “Passive appraisal” and “Mobilizing to acquire and accept help” subscales were excluded from the scale. In the validity and reliability studies of the scale, while the original structure was retained in some studies,³² a different structure was observed in some other studies.¹¹ The factor loadings of the subscales of the scale ranged from 0.42 to 0.74 and accounted for 40.39% of the

TABLE 7 Model fit indices of the Family Crisis Oriented Personal Evaluation Scale

χ^2	df	P	χ^2/df	RMSEA	GFI	CFI	IFI	Hoelter (P = .01)
176.369	116	0.00	1.52	0.059	0.88	0.90	0.91	134

variance. As stated in psychometric studies, factor loading values should be 0.40 and above.¹⁶ Therefore, the factor structure obtained in the present study was considered to be within the limits stated in the literature. The validity and reliability study conducted with a Portuguese sample yielded a 7-factor structure and it was recommended that the last two subscales should not be used due to their poor internal consistency.¹³ If the RMSEA value, one of these fit indices, is below 0.05, it shows a good fit and if it is below 0.08, it indicates an acceptable fit.^{23,24} The RMSEA value obtained from the scale structure was 0.05, which was within acceptable limits.

In McCubbin et al's³³ original study of the scale, the Cronbach's α reliability coefficient of the overall scale was .81. The Cronbach's α value of the overall scale in the present study was .80, consistent with that of the original study. In the original structure, reliability coefficients ranged between .63 and .83. In the present study, reliability coefficients ranged from 0.68 to 0.83, as in the original structure. In the Turkish version of the scale, the subscale "Mobilizing Family to Acquire and Accept Help" was not included in the structure due to the low factor loadings of its items. In Batra et al's³⁴ descriptive study conducted to determine the coping skills of caregivers of patients with schizophrenia, the coping strategy of Indian caregivers for the "Mobilizing Family to Acquire and Accept Help" subscale was their weakest coping skill. This result is consistent with the result related to Turkish society. The low score obtained from the "Mobilizing Family to Acquire and Accept Help" subscale might be due to the lack of support services or the lack of continuity of services in the health care system targeting families, or families' lack of awareness of existing services in Turkey. Families have problems accessing services to provide them with professional support while they cope with mental illnesses.³⁵ This result of the present study is thought to be an indicator of this finding. The test-retest reliability coefficient measured with the Spearman correlation coefficient was 0.64. The test-retest reliability coefficients for the subscales ranged from 0.41 to 0.78. This result is lower than the results of the adaptation studies performed to investigate the psychometric characteristics of the F-COPES. In Hassani et al's study,³² the test-retest reliability correlation coefficient of the scale for a 4-week interval was 0.81. The test-retest correlation coefficient for the subscales of the original scale ranged from 0.61 to 0.95.³³ One of the factors thought to lead to this difference was probably due to the fact that the caregivers who completed the scale through face-to-face interviews at the pretest completed the scale by answering the researchers on the telephone at the posttest.

5 | STRENGTHS AND LIMITATIONS OF THE STUDY

The study has its strengths and limitations. One of the strengths of the study is that the scale adapted into Turkish is a specific scale which measures families' problem solving and coping skills in the

process of providing care to patients with a chronic mental illness, and whose validity and reliability study has been conducted in many languages. In this respect, it provides an opportunity for researchers to compare similar studies conducted in this field and it meets an important need to measure coping skills of families giving care to patients with a chronic mental illness in Turkish culture. On the other hand, it has some limitations. One of them is the sample size. As is known, the large sample size reduces the sample size-related errors²²; thus, including a sufficient number of participants in the sample is of great importance in achieving a reliable factor analysis. The larger sample size is needed to obtain more stable results. In the present study, only 153 caregivers were reached because of barriers in reaching caregivers. After the analysis of the data regarding 153 caregivers, Hoelter index value was obtained as 134. In the literature, it is recommended that the value of the Hoelter index should be more than equal to 200 if there are no barriers to achieve the sample size.³⁶ Therefore, not being able to achieve the recommended sample size was another limitation of this study. Because the size of the sample was below the criteria mentioned in the literature, it is recommended that this result should be taken into account when the confirmatory factor analysis results are used. Due to the same reason, when the retest data were collected, the caregivers were contacted by telephone.

6 | IMPLICATIONS FOR NURSING PRACTICE

It was regarded that the F-COPES, which assesses the families' ability to cope with the crisis emerging when a family member has a chronic mental illness, can be used in the Turkish population and that its psychometric properties were at an acceptable level. It is thought that it would be useful to use the F-COPES in the assessment of coping behaviors of individuals/family members who give care to patients with a chronic mental illness, and that it can be used as measurement tool in studies to be conducted with caregivers of patients with a chronic mental illness to assess their coping skills.

It is thought that the F-COPES could be used in planning descriptive or experimental family intervention studies for individuals who give care to patients with a chronic mental illness, evaluating the effectiveness of the intervention, and assessing the problem solving and coping status of caregivers. Moreover, the results obtained through the administration of the scale will contribute to the determination of the issues related to caregivers' needs and the planning and implementation of counseling and psychiatric nursing interventions in these areas. The fact that the F-COPES has a strong conceptual and theoretical basis will also make it possible to test the nursing model in studies in which the scale will be used.

It is recommended to conduct studies to investigate the coping status of family members by using the F-COPES. In line with the results of the study, it is also recommended that studies in which the F-COPES is used should be performed to compare coping skills of

families giving care to patients with chronic mental illnesses. It is also recommended to develop scales aimed at assessing families' strategies to cope with the chronic mental illness in Turkish culture.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria: the conception and design of the study, or acquisition of data, or analysis and interpretation of data; drafting the article or revising it critically for important intellectual content; final approval of the version to be submitted.

ORCID

Ayşe Sari  <http://orcid.org/0000-0002-5577-9205>

Zekiye Çetinkaya Duman  <http://orcid.org/0000-0002-7447-874X>

REFERENCES

- World Health Organization (Dünya Sağlık Örgütü) (2018). Mental disorders, fact sheet. <https://www.who.int/news-room/fact-sheets/detail/mental-disorders>. Accessed February, 2019.
- The Ministry of Health of Turkey (Sağlık Bakanlığı) (2011). *National Mental Health Action Plan (Ulusal Ruh Sağlığı Eylem Planı 2011-2023)*, Ankara. <https://www.psikolog.org.tr/doc/ulusal-ruh-sagligi-eylem-planı.pdf>. Accessed February, 2019.
- Çetinkaya Duman Z, Bademli K. Families of chronic psychiatric patients: a systematic review (Kronik psikiyatri hastalarının aileleri: sistematik bir inceleme). *Curr Approaches Psychiatry (Psikiyatride Güncel Yaklaşımlar)*. 2013;5(1):78. <https://doi.org/10.5455/cap.20130506>
- Saunders JC. Families living with severe mental illness: a literature review. *Issues Ment Health Nurs*. 2003;24(2):175-198. <https://doi.org/10.1080/01612840305301>
- Hill R. *Families under stress: adjustment to crisis separation and reunion*. New York, NY: Harper & Row; 1949.
- McCubbin H, Patterson J. The family stress process; The double ABCX model of adjustment and adaptation. *Marriage Fam Rev*. 1983;6:7-37.
- Lavee Y, McCubbin HI, Patterson JM. The double ABCX model of family stress and adaptation: an empirical test by analysis of structural equations with latent variables. *J Marriage Fam*. 1985;47: 811-825.
- Robinson DL. Family stress theory: implications for family health. *J Am Acad Nurse Pract*. 1997;9(1):17-24.
- Fischer J, Corcoran K. *Measures for Clinical Practice and Research: A Sourcebook: Couples, Families, And Children*. 1. New York, NY: Oxford University Press; 2007.
- Eaton PM, Davis BL, Hammond PV, Condon EH, McGee ZT. Coping strategies of family members of hospitalized psychiatric patients. *Nurs Res Pract*. 2011;2011:1-12. <https://doi.org/10.1155/2011/392705>
- Guada J. The unique coping strategies of african american families with a loved one with schizophrenia: the use of the family crisis oriented personal evaluation scale. *J Family Social Work*. 2012;15(3): 171-186. <https://doi.org/10.1080/10522158.2012.675625>
- Gouva M, Dragioti E, Konstanti Z, Kotrotsiou E, Koulouras V. Translation and validation of a greek version of the family crisis oriented personal evaluation scales (F-COPES). *Interscientific Health Care*. 2016;8(2):64-72.
- Cunha D, Relvas AP. Inventário de avaliação pessoal orientado para a crise em família (F-COPES). *Avaliação Familiar: Vulnerabilidade, Stress E Adaptação*. 2016;2:19-35. https://doi.org/10.14195/978-989-26-1268-3_1
- Krstić T, Oros M. Coping with stress and adaptation in mothers of children with cerebral palsy. *Med Pregl*. 2012;65(9-10):373-377. <https://doi.org/10.2298/MPNS1210373K>
- Neabel B, Fothergill-Bourbonnais F, Dunning J. Family assessment tools: A review of the literature from 1978-1997. *Heart Lung*. 2000; 29(3):196-209. <https://doi.org/10.1067/mhl.2000.106938>
- Tavşancıl E. *Tutumların Ölçülmesi Ve SPSS İle Veri Analizi*. Ankara: Nobel; 2014:19-51.
- Deniz KZ. The adaptation of psychological scales (Psikolojik ölçme aracı uyarlama). *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*. 2007;40(1):1-16.
- Çapık C, Gözüm S, Aksayan S. Intercultural scale adaptation stages, language and culture adaptation: updated guideline (Kültürlerarası ölçek uyarlama aşamaları, dil ve kültür uyarlaması: güncellenmiş rehber). *Florence Nightingale Hemşirelik Dergisi*. 2018;26(3): 199-210.
- Polit DF, Beck CT. The content validity index: are you sure you know what's being reported? critique and recommendations. *Res Nurs Health*. 2006;29:489-497. <https://doi.org/10.1002/nur.20147>
- Şencan H (2005). Sosyal ve Davranışsal Ölçümlerde Güvenirlik ve Geçerlik. Ankara, Seçkin.
- Akgül A (2005). Tıbbi Araştırmalarda İstatistiksel Analiz Teknikleri SPSS Uygulamaları. Ankara: Emek, 3. press, 440-446.
- Beavers AS, Lounsbury JW, Richards JK, Huck SW, Skolits GJ, Esquivel SL. Practical considerations for using exploratory factor analysis in educational research. *Pract Assessment, Res Evaluation*. 2013;18.
- Erkorkmaz Ü, Etikan Ü, Demir O, Özdamar K, Sanisoğlu SY. Confirmatory factor analysis and fit indices: review (Doğrulamalı faktör analizi ve uyum indeksleri). *Türkiye Klinikleri J Med Sci*. 2013; 33(1):210-223. <https://doi.org/10.5336/medsci.2011-26747>
- Hooper D, Coughlan J, Mullen MR. Structural equation modelling: guidelines for determining model fit. *Electronic J Business Res Methods*. 2008;6(1):53-60.
- Seçer İ. *SPSS ve LISREL ile Pratik Veri Analizi Analiz ve Raporlaştırma*. Ankara: Anı; 2017.
- Jung S. Exploratory factor analysis with small sample sizes: a comparison of three approaches. *Behav Process*. 2013;97:90-95. <https://doi.org/10.1016/j.beproc.2012.11.016>
- Fabrigar LR, Wegener DT, MacCallum RC, Strahan EJ. Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*. 1999;4(3):272-299.
- Tabachnick BG. *Using multivariate statistics*. 6th. London, UK: Pearson Education.
- Arsılantaş H. Burden and coping strategies of psychiatric patients' caregivers (Psikiyatri hastalarının bakım vericilerinde yük ve baş etme stratejileri). *Türkiye Klinikleri J Psychiatric Nursing-Special Topics*. 2018; 4(1):39-47.
- Maiocco S, Shelley E, Salmund S, Jewell ST, Caldwell B, Lieggi M. Experiences of stigma among family members of persons living with schizophrenia: a systematic review protocol. *JBI Database Systematic Rev Implementation Rep*. 2017;15(6):1575-1584. <https://doi.org/10.11124/JBISIR-2016-003150>
- Şengün İnan F, Çetinkaya Duman Z. Chronic mental illness and family stigma (Kronik Ruhsal Hastalıklar ve Ailenin Damgalanması). *Türkiye Klinikleri Psychiatric Nursing-Special Topics*. 2018;4(1):60-66.
- Hassani P, Abbasi P, Zagheri Tafreshi M, Zayeri F, Ziapour A. Persian version of family crisis oriented personal evaluation scales:

- psychometric properties. *Int J Pediatr*. 2018;6(1):6919-6930. <https://doi.org/10.22038/IJP.2017.27746.2402>
33. McCubbin HI, Thompson AL. *Family assessment inventories for research and practice*. Madison, WI: University of Wisconsin-Madison; 1991.
34. Batra BS, Ghildiyal R, Mathews MM. Coping strategies among caregivers of patients with schizophrenia: a descriptive study. *IOSR J Dental Med Sci (IOSR-JDMS)*. 2014;1(14):20-29. <https://doi.org/10.9790/0853-141262029>
35. Doody O, Butler MP, Lyons R, Newman D. Families' experiences of involvement in care planning in mental health services: an integrative literature review. *J Psychiatr Ment Health Nurs*. 2017;24(6):412-430. <https://doi.org/10.1111/jpm.12369>
36. Kline RB. *Principles and practice of structural equation modeling*. 3rd. New York, NY: The Guildford Press; 2011.

How to cite this article: Sari A, Çetinkaya Duman Z. Strategies used by families to cope with chronic mental illnesses: Psychometric properties of the family crisis oriented personal evaluation scale. *Perspect Psychiatr Care*. 2020;56: 462–473. <https://doi.org/10.1111/ppc.12457>