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International Journal of Nursing Sciences

journal homepage: <http://www.elsevier.com/journals/international-journal-of-nursing-sciences/2352-0132>

Original Article

Coping strategies of family caregivers of patients with schizophrenia in Iran: A cross-sectional survey

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ARTICLE INFO

Article history:

Received 2 October 2017

Received in revised form

22 February 2019

Accepted 5 March 2019

Available online 8 March 2019

Keywords:

Adaptation
Psychological
Caregivers
Iran
Schizophrenia

ABSTRACT

Objectives: This study aimed to identify coping strategies used by family caregivers of patients with schizophrenia and their determinants.**Methods:** This was a descriptive correlational study. Participants were 225 family caregivers of patients with schizophrenia who were referred to the psychiatric clinic at one large teaching referral hospital in Iran. They were selected through purposive sampling method. Data collection tools were demographic and clinical data form, the Zarit Burden Interview (ZBI) and the Family Coping Questionnaire (FCQ).**Results:** The score of caregiver burden was 65.14 ± 9.17 . Of 225 family caregivers, 23.11% used an avoiding coping strategy. There was a significant relationship between caregiver burden and coping strategies ($P < 0.001$). The regression model showed that adaptive coping strategies were significantly associated with some demographic characteristics including age, education level, gender, employment status, losing the job because of caregiving responsibilities, perceived income adequacy, duration of illness, duration of caregiving and caregiver burden ($P < 0.05$).**Conclusion:** Family caregivers of patients with schizophrenia experience a high level of burden, which can put them at risk of using maladaptive coping strategies. Mental health professionals should plan programs that support both family caregivers and patients in clinical and community settings.© 2019 Chinese Nursing Association. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

The World Health Organization (WHO) [1] estimates that one in four families has one member with a psychiatric disorder; consequently, family members become primary caregivers who provide care to them [2]. In Iran, 23.6% of the population aged 15–64 years met the criteria for at least one DSM-IV mental disorder in the past 12 months [3]. In the case of schizophrenia, one of the most serious and debilitating conditions, mean prevalence globally is 0.2–0.3% in lifetime [4] while in Iran, specifically, lifetime prevalence is 0.25% equating to around 145,000 individuals [5]. Family members play a

significant role in providing care and support for relatives who are suffering from mental illness [6]. While it was well known that appropriate pharmacological treatment is key to patients' functioning [7], it is also the case that the quality of care given by family caregivers is significant [6].

Caregivers' responsibility for caring for mentally ill people has increased in the last three decades, mainly due to the advent of deinstitutionalization of mental health care to community based psychiatric services [1]. Concurrently, constant caregiving can affect the caregivers themselves, which may in turn directly affect the care they provide to patients [6]. Caregivers of patients with schizophrenia have experienced chronic stress in their daily lives due to the destructive and progressive nature of the condition. Some studies showed that constant care for patients with schizophrenia could have a negative impact on family members' mental health [8] and could result in missed work, financial strain [9],

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Peer review under responsibility of Chinese Nursing Association.

negative impact on leisure and social activities and family relationships [10], which in turn could create more psychological distress and to influence the ability of the family to cope and function effectively [11].

Caregivers without social support can feel isolated and alone in the care giving process. It could have resulted in higher levels of stress and family conflicts, further exacerbating this condition. It was reported that families who care for a member with chronic illness have to deal with a high level of burden and distress [12]. Given the prevalence of schizophrenia outlined above, its sometimes debilitating nature, the large role played by family caregivers, and the relationship between the quality of care provided and family caregiver stress and coping it is important to investigate these issues.

Lazarus and Folkman define 'coping' as a process that addresses how the individual responds and acts both when experiencing stress and when the level of exposure to stress increases [13]. According to their theory, coping strategies can be classified as emotion-focused vs. problem-focused [14]. Emotion-focused coping involves effortful strategies that a person utilizes to minimize the negative emotional outcomes of stress. Problem-focused coping is aimed at resolving the stressful situation directly using problem-solving or removing the source of stress [15]. Additionally, individuals can react to stressful situations using adaptive or maladaptive coping strategies. Some studies have reported that caregivers use both adaptive and maladaptive coping strategies to deal with problems caused by family members' mental illness [16,17]. Studies have also revealed that maladaptive coping strategies can affect families' caring-related outcomes. For example, Rammohan et al. showed that caregivers' use of denial as a coping strategy emerged as a significant predictor of caregiver burden, resulting in complete avoidance of their family members with mental illness and subsequent abandonment of them to psychiatric services [18]. Grover and Pradyumna also argue that caregivers' coping mechanisms can affect patient-related outcomes including relapses, readmission and quality of life [19].

Therefore, understanding the coping strategies employed by a particular group such as family caregivers can provide valuable information for designing interventions to help them adapt to the problems caused by living with a mentally ill family member [20].

While family members are a valuable source of support for patients with long-term conditions, and play an essential role in providing care to them and supporting them [21], this role is arguably more emphasized in the Asian context, where cultural rules, social structure and religious beliefs are strongly linked to family cohesion [22]. Understanding the role and impact of culture in the process of caregiving is important because the disease or condition is at least partly defined in its cultural context [23]. Moreover, researchers differ in how they classify various forms of coping (e.g., emotion-focused vs. problem-focused coping; approach vs. avoidance). Skinner et al. argue that it is useful to distinguish between different forms of coping strategies based on whether they are harmful or helpful [15], an issue which is clearly situated in its cultural context [24]. Identification of how the family caregiver copes with the mentally ill patient is essential in planning supportive sources for the family [25].

This study aimed to assess coping strategies and related factors among family caregivers of patients with schizophrenia.

2. Methods

2.1. Participants and settings

This was a descriptive correlational study. The study population consisted of all family caregivers of patients with schizophrenia who were referred to the psychiatric clinic of Razi hospital from

February 2015 to April 2016. Razi teaching hospital is a referral center for psychiatric disorders in Tabriz, Iran and one of the main psychiatric care facilities in the capital of the East Azerbaijan province. The hospital has 650 hospital beds.

2.2. Sample size

The sample size was determined as 225 family caregivers by the sample size formula $n = \frac{p(1-p)Z_{\frac{\alpha}{2}}^2}{e^2}$. According to Rexhaj et al. study, the p ZBI was 51.4 [18]. Other parameters were as follows: confidence interval of 95%, power of 80%, an acceptable error of 0.05, and an attrition rate probability of 10%. A homogeneous purposive sampling method was used for recruitment of participants as caregivers of schizophrenia patients according to the following inclusion criteria:

18 years or older without psychiatric disorder based on their self-report; the main caregiver (a parent, spouse, sibling or child who was the main responsible person for the care of a family member with schizophrenia without comorbidity disorders and intellectual disability, which was diagnosed by a psychiatrist); having at least one year of experience caring for patients.

2.3. Measurements

The data were collected using the Family Coping Questionnaire (FCQ) [26] and the Zarit Burden Interview (ZBI) [27]. The developers permitted the usage of all questionnaires in this study. Additionally, a family caregivers' demographic and clinical characteristics form, was used to gather information about age, gender, level of education, employment status, relationship with patient, perceived income adequacy, duration of caregiving and losing the job because of caregiving responsibilities. Patients' clinical characteristics included age, sex, type of diagnosis and duration of illness. In the present study, an expert panel of 11 faculty members of the Tabriz University of Medical Sciences verified the face and content validity of all questionnaires.

FCQ is a 27-item, 7-factor (social interests, positive communication, the patient's social involvement, coercion, avoidance, resignation and information gathering) self-administered questionnaire to measure coping styles. Items are rated on a 4-point Likert scale (1 = never, 2 = rarely, 3 = sometimes and 4 = very often). Higher scores indicate better coping strategies. According to the factor analysis that was performed by Rexhaj et al., [18], the seven dimensions were regrouped in three coping modes according three main factors. They consisted of (1) problem-focused coping (the patient's social involvement, positive communication and information gathering); (2) emotion-focused coping (coercion, avoidance and resignation); and (3) social support-focused coping (the patient's social involvement). Good validity was demonstrated during the BIOMED 1 study [28]. The reliability was reported between 0.68 and 0.83 based on the Cronbach's α coefficient [29]. In this study, the FCQ was translated into Persian by an expert, and then back-translated into English. The original source text and the back-translated text are then compared to ensure that they match.

The reliability of FCQ (Persian form) was also confirmed using test-retest in the pilot study consisting of 15 family caregivers who routinely referred to the psychiatric clinic of Razi hospital ($r = 0.79$). For determining adaptive and maladaptive coping distribution in family caregivers of this study, the problem-focused coping strategies along with social support-focused coping strategies were considered as adaptive and emotion-focused coping strategies were considered as maladaptive coping.

The Zarit Burden Interview (ZBI) is a popular caregiver self-report measure with 22 items asking family caregivers questions

about physical health, psychological well-being, financial status and interpersonal relationships that cause them stress and strain. Participants respond on a 5-point Likert scale as follows: 0 = never, 1 = rarely, 2 = sometimes, 3 = quit frequently and 4 = nearly always [27]; possible score range is 0–88. Reliability measured by Cronbach coefficient has been reported as 0.77–0.93 [30,31]. Total scores were calculated by summing up the individual item scores. The higher scores imply more perceived caregiver burden. The cut offs points for the ZBI were as follows: 0–20 (little or no burden), 21–40 (mild to moderate burden), 41–60 (moderate to severe burden), and 61–88 (severe burden). In Iran, the reliability of scale was evaluated by Navidian et al. and it was determined by Cronbach's α coefficient as 0.94 [31]. The reliability of ZBI ($r = 0.84$) was confirmed using test re-test in this study.

2.4. Procedure

2.4.1. Ethical considerations

This survey was approved by ethical committee of Tabriz University of Medical Sciences (Number: TBZMED. REC.1394.968). The participants were assured that their engagement was voluntary, and that anonymity, privacy, and confidentiality of the data were guaranteed. Furthermore, they were informed about the purpose and the method of the study before signing a written informed consent. The questionnaires were distributed to eligible participants at the psychiatric clinic of Razi hospital, and respondents were asked to complete and return them in the same time.

2.5. Data analysis

Data were entered into SPSS v.13.0 for analysis. The Kolmogorov-Smirnov test was used to examine the distribution of the quantitative variables. The distribution of the total scores of the FCQ and ZBI were normal. The Pearson correlation coefficient was used to evaluate the association between the scores of family coping strategies and caregiver burden. Independent sample t-tests were used to examine differences in the mean coping scores with regard to the categorical demographic variables including caregiver's age, sex, employment status, perceived income adequacy, duration of caregiving and losing the job due to caregiving responsibilities duration of illness. Also, a one-way analysis of variance (ANOVA) was used to examine the differences between the mean coping scores with respect to other demographic variables. Simple linear regression analysis was performed for demographic characteristics (predictor variables) and coping strategies (as dependent variable). Statistical significance for all tests was set at $P < 0.05$.

3. Results

3.1. Demographic characteristics

In this study, 225 family caregivers of patients with schizophrenia who referred to the psychiatric clinic of Razi hospital in Tabriz, Iran, were studied. The age of the caregivers was 41.03 ± 10.82 years. It was noted that 56.89% were female, 32.00% studied up to high school and 71.0% were married. Of these caregivers, 52.00% were the spouses, 33.78% lost their job because of caregiving responsibilities and 60.44% did not perceive income adequacy. Duration of caregiving in 60.89% of caregivers was more than 10 years. The patients' age was 43.24 ± 14.32 years. The mean of duration of illness was 26.46 ± 9.14 years (Table 1).

3.2. Frequency of coping strategies and burden

The score of emotion-focused coping strategies was 12.27 ± 2.37 .

Table 1

Demographics for participants and their patients with schizophrenia ($n = 225$)

| Characteristics | | <i>n</i> (%) |
|---|---------------------|--------------|
| Family caregivers | | |
| Age (years) | ≤ 40 | 116 (51.56) |
| | > 40 | 109 (48.44) |
| Gender | Male | 97 (43.11) |
| | Female | 128 (56.89) |
| Level of education | No formal education | 24 (10.67) |
| | Elementary | 67 (29.78) |
| | Secondary | 55 (24.44) |
| | High School | 72 (32.00) |
| | University | 7 (3.11) |
| Relationship with the patient | Spouse | 117 (52.00) |
| | Parents | 54 (24.00) |
| | Children | 31 (13.78) |
| | Siblings | 16 (7.11) |
| Perceived income adequacy | Yes | 89 (39.56) |
| | No | 136 (60.44) |
| Employment status | Employed | 97 (43.11) |
| | Not employed | 128 (56.89) |
| Duration of caregiving (years) | 1–10 | 97 (43.11) |
| | > 10 | 128 (56.89) |
| Losing job because of caregiving responsibilities | Yes | 76 (33.78) |
| | No | 149 (66.22) |
| Patients | | |
| Gender | Male | 162 (72.00) |
| | Female | 63 (28.00) |
| Duration of illness (years) | 1–10 years | 88 (39.11) |
| | > 10 years | 137 (60.89) |

These strategies were the most frequently used strategies (54.22%) by participants, including avoidance (23.11%), coercion (16.44%), and resignation (14.67%). Information gathering on patient's illness and its treatment was the least used coping strategy (10.22%). The results also showed that 54.22% of caregivers used maladaptive coping strategies 12.27 ± 2.37 and 45.78% of them used adaptive coping strategies 13.01 ± 3.27 . Distributions of coping strategies utilized by family caregivers are presented in Table 2.

In addition, the results showed that 38.27% of the family caregivers reported a severe level of burden 69.21 ± 9.02 , 29.41% reported high level of burden 48.32 ± 8.74 and 19.39% reported mild level of burden 39.21 ± 5.41 . The level of burden in 12.93% of the family caregivers was low 18.07 ± 3.30 . The score of family burden was 65.14 ± 9.17 in general.

Correlation analysis using Pearson product-moment correlation coefficient revealed that all FCQ subscales were significantly negative correlation with burden (ranging from 0.32 to 0.41), indicating that as the mean score of coping strategies improved, burden decreased. Furthermore, the mean score of burden was higher in the caregivers who used maladaptive coping strategies compared to the caregivers who used adaptive (49.51 ± 10.24 vs 27.31 ± 7.11 , $P < 0.001$).

3.3. Relation of coping strategies with clinical and demographic characteristic

As seen in Table 3, FCQ score was higher in caregivers > 40 years

Table 2

The Score of each subscale of coping in family caregivers.

| Coping Strategies | Mean \pm SD |
|----------------------------------|------------------|
| Social interests | 8.63 \pm 1.12 |
| Positive communication | 10.9 \pm 1.83 |
| Information gathering | 4.41 \pm 1.34 |
| The patient's social involvement | 5.27 \pm 1.61 |
| Coercion | 12.31 \pm 2.42 |
| Avoidance | 14.46 \pm 3.34 |
| Resignation | 6.43 \pm 2.72 |

Table 3
FCQ score of caregivers with different characteristics.

| Variables | | Mean \pm SD | t or F | P |
|---|---------------------|-------------------|-------------------|--------|
| Caregiver's age | ≤ 40 | 20.24 \pm 5.64 | 2.33 ^a | <0.001 |
| | >40 | 29.17 \pm 7.39 | | |
| Gender | Male | 32.18 \pm 10.26 | 1.47 ^a | <0.001 |
| | Female | 26.15 \pm 8.24 | | |
| Level of education | No formal education | 18.15 \pm 7.00 | 2.14 ^b | <0.001 |
| | Elementary | 21.11 \pm 6.17 | | |
| | Secondary | 25.24 \pm 7.16 | | |
| | High School | 29.16 \pm 8.00 | | |
| | University | 33.24 \pm 10.26 | | |
| Relationship with the patient | Spouse | 19.28 \pm 6.29 | 3.23 ^b | <0.001 |
| | Parents | 21.34 \pm 6.24 | | |
| | Children | 25.42 \pm 7.00 | | |
| | Siblings | 29.27 \pm 8.21 | | |
| | Employed | 32.16 \pm 10.42 | | |
| Employment status | Employed | 32.16 \pm 10.42 | 2.74 ^a | <0.001 |
| | Not employed | 29.14 \pm 6.35 | | |
| Perceived income adequacy | Yes | 31.28 \pm 9.36 | 3.43 ^a | <0.001 |
| | No | 19.00 \pm 6.17 | | |
| Duration of caregiving (years) | 1–10 | 29.38 \pm 7.73 | 2.46 ^a | <0.001 |
| | >10 | 22.26 \pm 7.69 | | |
| Duration of illness (years) | 1–10 | 29.59 \pm 9.64 | 2.67 ^a | <0.001 |
| | >10 | 23.22 \pm 6.65 | | |
| Losing job because of caregiving responsibilities | Yes | 19.48 \pm 6.43 | 1.73 ^a | <0.001 |
| | No | 29.39 \pm 8.41 | | |

Note:

^a t Independent t-test.

^b F ANOVA.

of age (29.17 \pm 7.39, $P < 0.001$), who were male (32.18 \pm 10.26, $P < 0.001$), studied up to university education (33.24 \pm 10.26, $P < 0.01$), were sibling caregivers (29.27 \pm 8.21, $P < 0.001$), perceived income adequacy (31.28 \pm 9.36, $P < 0.001$), employed (32.16 \pm 10.42, $P < 0.001$), whose relatives' duration of illness was less than 10 years (29.59 \pm 9.64, $P < 0.001$) and who did not lose their job because of caregiving responsibilities (29.39 \pm 8.41, $P < 0.01$).

All demographic and clinical variables were entered into a linear regression model to control for multicollinearity. Variables that affect coping strategies, including age, educational level, gender, employment status, losing the job because of caregiving responsibilities, perceived income adequacy, duration of illness and duration of caregiving were included as independent variables, and the main variable, including coping strategies was entered as dependent variable (Table 4). According to this analysis, all of the independent variables were significant independent predictors of coping strategies (Table 5). It should be noted that the recommended model explains 51.4% coping strategies of the variance changes of the outcome variables ($R^2 = 0.51$).

4. Discussion

Our findings showed that family caregivers used more emotion-focused coping strategies and mostly used strategy by them was avoidance, which is supported by studies reported that caregivers

used more emotion-focused coping strategies [15,30–33]. Eaton et al. [32] pointed that when avoidance is used to minimize exposure to a stressor, this is considered effective. On the other hand, when continual avoidance of a stressor could be an ineffective coping strategy and result in future depressive symptoms in caregivers [30,34]. Furthermore, a significant finding of the current study is that family caregivers used the strategy of seeking for information on patient's illness and treatment at the lowest level. In line with these findings, some studies showed that families generally have little knowledge about mental illness, which can result in negative outcomes such as negative attitude towards mental illness [35], readmission and a higher rate of relapse [19].

In order to increase the role of families in patients' rehabilitation, it is essential that they should be informed about the nature of the disease. In line with this result, some studies reported that families of patients with mental illness most need information about treatment modalities and strategies for managing problems [36,37]. However, some studies reported that mental health professionals usually did not involve family members in the treatment plan of people with mental illness, there was poor interaction between mental health professionals and family members; mental health professionals gave them very little information about the illness [38–41]. Similarity, Poreddi et al. [42] found that although the positive outcomes of improving public knowledge about physical disease are widely accepted, the improvement of knowledge about mental illness has been ignored in healthy policies.

Table 4
Assignment method of independent variables.

| Independent variables | Assignment method |
|---|---|
| Caregiver's age | $>40 = 0, \leq 40 = 1$ |
| Gender | Male = 0, female = 1 |
| Level of education | No formal education = 1, Elementary = 2, Secondary = 3, High School = 4, University = 5 |
| Employment status | Employed = 0, Not employed = 1 |
| Perceived income adequacy | No = 0, Yes = 1 |
| Duration of caregiving (years) | 1–10 = 0, $>10 = 1$ |
| Duration of illness (years) | 1–10 = 0, $>10 = 1$ |
| Losing job because of caregiving responsibilities | Yes = 0, No = 1 |

Table 5
Predictors of coping strategies in multiple linear regression analysis.

| Coping Strategy | β | SE | B | t | P |
|---|---------|-------|-------|-------|--------|
| Constant | – | 6.37 | –4.39 | –0.57 | 0.43 |
| Caregiver's age | –0.19 | 3.31 | –1.17 | –2.19 | 0.03 |
| Female | 0.18 | 2.42 | 5.17 | 2.49 | <0.001 |
| Level of education | 0.19 | 2.37 | 4.19 | 2.39 | 0.02 |
| Employment status | –0.19 | 4.72 | –2.73 | –2.34 | 0.73 |
| Perceived income adequacy | 0.17 | 0.163 | 1.76 | 6.24 | <0.001 |
| Duration of caregiving | 0.18 | 2.09 | 3.37 | 2.32 | <0.001 |
| Duration of illness | –0.17 | 3.24 | –4.69 | 4.29 | <0.001 |
| Losing job because of caregiving responsibilities | –0.18 | 2.84 | –3.87 | 3.28 | 0.02 |
| Burden | –0.17 | 2.37 | –5.42 | –4.32 | <0.001 |

Note: $R^2 = 0.51$, $F = 673.34$, $P < 0.001$.

According to the results, male caregivers used problem-focused coping strategies more than female caregivers. It is consistent with the study by Ghazanfar and Shafiq that male caregivers are more resilient in providing care for people with mental illness and using more action oriented, persistent and firm approaches [43]. Furthermore, in Iranian culture, male members of the family are more likely to have commitment and socialization than women; therefore, they try to cope with the problems by solving them directly and managing the source of stress [44].

Based on the findings, age was positively and significantly correlated with coping strategies, as older caregiver used more problem-focused strategies. Consistent with this finding, some studies showed that as caregivers' age increases, their ability to deal with their problems increases and they are able to cope with stressors originated from living with a mentally ill family member [32,40]. However, contrary to the reported positive association between age and caregivers' coping, Snyder et al. found that the older caregiver used more emotion-focused coping strategies such as resignation and avoidance [45]. The possible reason for this contradictory finding may be that when caregivers become older, they become worried about who may take care of their ill family member in the future and perceive that they could not provide care to the mentally ill patient.

In addition, the education level had a positive correlation with caregiver's coping. It could be explained that the more highly educated caregivers could get a better jobs, more support resources and higher salaries to help them deal with their problems. It is consistent with the views of Papastavrou et al. suggests that caregivers with higher educational levels adopt more problem-focused coping skills in coping with caring problems [46].

In our study, losing the job due to caregiving responsibilities was another factor affecting caregivers' coping strategies. This finding is in line with the studies that showed the caregivers who were unemployed or had low incomes, suffered more distress, because they had less resources to meet the caring demands. Overall, economic problems can result in particular distress for caregivers during long treatment periods as resources run out [47,48]. Financial problems can induce a lot of stress on family caregivers and result in maladaptive coping strategies. Furthermore, the chronicity of mental illness may contribute to a greater financial burden on caregivers [49].

Providing care to a family member with schizophrenia is a persistent stressor and causes a high level of stress. The present study, along with several previous studies, confirmed that caregiver burden was significantly associated with emotion-focused coping strategies. The possible reason for this finding is that emotion-focused coping strategies were less effective in reducing the caregivers' distress, resulting in high burden. Some studies on family caregivers of schizophrenic patients also reported that those who use problem-focused coping strategies experience fewer burden

than those who use emotion-focused coping strategies [19,30].

This study has some limitations. First limitation is the cross-sectional type of study. Although it is worth determining the relationship between coping and related factors, precise causal relationship between coping strategies with burden and other socio-demographic factors cannot be established. Further semi-empirical and empirical researches need to be done on coping strategies used by family caregivers of patients with mental illness. Second, the generalization of this study is limited by the homogeneous sample. Therefore, it could be suggested that conducting further studies using a larger sample with a diverse socio-demographic background would get a better understanding of strategies used by caregivers to deal with the mentally ill family member.

5. Conclusions

The results of this study indicated that family caregivers used more maladaptive coping strategies, including avoidance, coercion and resignation. The information gathering was the least coping strategy used by them. Furthermore, the results showed that the burden and some demographic factors of family caregivers are the strongest predictors of coping in family caregivers of patients with schizophrenia.

In the light of these results, we recommend the following:

- Mental health professionals should consider family caregivers' needs and challenges while caring for a patient with mental illness and plan supportive resources for both patients and their families in clinical and community settings.
- They can also support caregivers by promoting their readiness to resume caregiving role and involving them in the patients' care plan.
- Nurses and other healthcare professionals could support caregivers by conducting psychoeducation sessions in the clinical care settings to reinforce them to overcome challenges while taking care of a family member with schizophrenia.
- Carry out further studies in our country to assess the needs of family caregivers while dealing with mentally ill patients.

Acknowledgement

The authors wish to appreciate all family caregivers, whose contributions enabled the production of this article.

Conflicts of interest

The authors declare no conflicts of interest.

Funding

This study was financially supported by Tabriz University of Medical Sciences (ethic number: TBZMED.REC.1394.968).

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2019.03.006>.

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