Effect of online psychoeducational support on caring burden in family caregivers of COVID-19 patients: a parallel randomized controlled trial

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Summary
Background. The COVID-19 pandemic has imposed a psychological burden on a wide range of people in the community, including COVID-19 patients and their family caregivers.

Objectives. This study aimed to evaluate the effect of online psychoeducational support on the caring burden in family caregivers of individuals with COVID-19.

Material and methods. This study was conducted on 70 family caregivers of patients with COVID-19 referred to Imam Reza Hospital in Mashhad, Iran in 2021 by using a convenience sampling method. The participants were randomly assigned to intervention and control groups. The intervention group received one week of online psychoeducational support in six online group sessions of 35 to 45 minutes. Data were collected using the Zarit Burden questionnaire at the beginning and one week after the intervention. The data were analyzed using descriptive and inferential statistics (Independent t-Test, Chi-squared test, Fisher’s exact test, Mann–Whitney U test, Wilcoxon, and Paired t-Test).

Results. At the baseline, the level of caring burden in the two groups was moderate and no significant difference was observed between the groups \( p = 0.28 \). The total mean scores of caring burden before and after the intervention in the support group were 50.2 ± 10.5 and 46.0 ± 9.2, respectively, which significantly decreased after the intervention \( p < 0.001 \). Consequently, the decrease in the burden mean score was significantly greater in the support group than in the control group \( p = 0.04 \).

Conclusions. It is recommended to implement online psychoeducational support for the caregivers of patients with COVID-19 to reduce their caring burden.

Keywords: COVID-19, caregiver burden, patients.

Background

The unprecedented COVID-19 crisis has profoundly affected and changed the lives of people around the world and caused various economic and government ramifications [1, 2]. Studies have shown that a significant percentage of the general population experienced moderate to severe levels of stress or anxiety symptoms during the COVID-19 pandemic [3, 4]. Among the people affected by the psychological consequences of the COVID-19 pandemic are patients with COVID-19 and their families. People with illnesses experience various psychosocial consequences, which reduces the quality of life of the patients [5]. Uncertainty about the disease and its treatment, as the unprecedented public health crisis evolves, as well as stigmatization of the infected individuals may be some of the factors that cause psychological distress in people affected by the disease and their families [6]. This disease disrupts patients’ lives and affects their caregivers, but it can also disrupt the family relationships [7].

Caregivers are the people who are mostly involved in patient care and disease control during illness and treatment. Studies show that the quality of life of the caregivers is affected during the treatment of the patient. Fear of illness, feelings of helplessness, uncertainty about the future, anxiety, sadness, anger, emotional reactions, economic worries, psychological stress in interpersonal relationships, and fear of death are the most important social and psychological burdens during the COVID-19 pandemic. On the other hand, the process of transferring care from hospital to home often puts the burden of care on family caregivers [8]. The results of a study in Iran showed caregivers of patients with COVID-19 experienced a caring burden in the post-discharge period [9]. The caring burden means the extent to which caregivers feel that their emotional or physical health and social and financial life has been impacted as a result of caring for their patient [10]. The caring burden is considered as a two-dimensional concept; the objective caring burden (activities and care needs) and the subjective caring burden (attitudes and emotional reactions to care) [11]. The caring burden may negatively affect the family caregiver’s ability to provide quality care, leading to poor outcomes for the patient, including poor quality of life and exacerbation of distress [12, 13].

To reduce the burden of care in caregivers, there are various strategies. One of them is the use of supportive interventions...
with psychosocial approaches [14]. This strategy involves performing interventions for different strata of society, including family caregivers [9, 15, 16]. One of the effective psychosocial approaches is supportive psychoeducational interventions that address the concerns caused by the discomfort experienced by individuals [17]. Psychoeducational interventions are structured and time-limited programs that include stress management, health education, and psychological support [18]. Studies show the positive effect of a wide range of psychoeducational interventions in reducing negative outcomes in caregivers, such as caring burden, unmet needs, and psychological distress, and improving outcomes such as quality of life, resilience, and self-efficacy [19–22]. A study by Cheng et al. aimed to determine the effectiveness of a strength-oriented psychoeducation on caring competence, coping skills, psychological outcomes, and caring burden of those caring for stroke survivors. This study showed that the implementation of a psychoeducation support program for caregivers significantly improved caregiver competence and coping skills in problem solving and reduced caregiver burden [23]. Also, Ata and Doğan showed that a psychoeducational support program with content on cognitive-behavioral stress management was effective in reducing the score of caring burden, stress, and risk of psychological disorders as well as in increasing scores in emotion-based and problem-based coping skills [24].

Due to the emergence of new needs and major lifestyle changes as a result of the outbreak of the emerging COVID-19 disease, family members experience a great deal of distress [25]. It should be noted that the mental health of caregivers plays a crucial role in inpatient care. Therefore, the implementation of interventions such as psychoeducational support to reduce psychological stress seems to be necessary for these people.

**Objectives**

This study was conducted to determine the effectiveness of online psychoeducational support on the caring burden in family caregivers of patients with COVID-19.

**Material and methods**

**Design**

This randomized controlled trial with a pretest–posttest design was performed on two groups of caregivers of COVID-19 patients (intervention and control groups).

**Participants**

The study was conducted on 70 family caregivers of patients with COVID-19 referred to Imam Reza hospital (Referral center for patients with COVID-19) in Mashhad, in northeast Iran in February–March 2021. The eligible participants were divided into two groups of intervention and control by using quadruple random blocking allocation (by a statistics consultant via SPSS software) (Figure 1). The exclusion criteria were as follows: not participating in the posttest, missing two or more supportive sessions, having history of psychiatric disorders, participating in COVID-19 supportive interventions, being a member of health care staff and deciding to withdraw from the study.

![Figure 1. CONSORT flow diagram of the study](image-url)
The Zarit Burden Inventory (ZBI) is a tool for measuring the level of care burden. This questionnaire consists of 22 questions. A score less than 30 is considered a mild burden, 31 to 60 is a moderate burden, 61 to 88 is believed to be a severe care burden. The minimum and maximum score that can be achieved are 0 and 88, respectively. Higher scores indicate a greater burden of care [10]. This questionnaire includes four subscales of individual caring burden (1, 2, 7, 10, 11, 17, 19, and 20), social caring burden (3, 6, 12, and 13), emotional caring burden (4, 5, 8, 9, 14, and 22), and economic caring burden (15, 16, and 27) [26]. The reliability of this tool in Iran has been reported by Navidian et al. using the test–retest method (0.94) [27]. The internal consistency of this method is 91% as measured by Cronbach’s alpha coefficient [28, 29]. The face validity of the instruments used in the present study was confirmed by seven faculty members of Mashhad School of Nursing and Midwifery.

Intervention

The intervention was performed as a psychoeducational support for caregivers in the WhatsApp social network during a live video call of a group of three to five people, in six sessions of 35 to 45 minutes during a week. The WhatsApp social network was selected for intervention due to reasons such as ease of use, availability, and the possibility of making encrypted group video calls. The intervention was planned by the researcher and the time of implementation was adjusted in prior coordination with the caregivers. Educational support was provided in the first three sessions since the patients were recently discharged, and then in the second three sessions of the intervention, psychological support was planned according to the stress management program based on the Lazarus and Folkman transactional stress-coping model (1984). The day before each session, the supportive content required for the next session was sent to the members in the form of video clips based on Table 1, which was sent to the caregivers in the group to discuss and exchange views on the content during the session. All the caregivers in the intervention group were given the opportunity to ask questions in the online groups and share their caregiving experiences with other caregivers in case of any ambiguity or questions about their patient care. The control group received regular training in the referral hospital. A description of the content presented in the sessions is available in Table 1.

Sample size

According to the study of Ata and Doğan [24], considering the 95% confidence interval and 80% test power, with a 20% probability of data loss, the sample size of this study was 70 (35 people in each group).

Blinding

In this study, according to the type of intervention, the statistical consultant was blinded to the allocation of individuals to the intervention and control groups.

Statistical methods

The normality of quantitative data was evaluated using the Kolmogorov–Smirnov test. The data were analyzed using descriptive (absolute and relative frequency, mean and standard deviation) and inferential statistics (independent t-Test, Chi-squared test, Fisher’s exact test, Mann–Whitney U test, Wilcoxon, and paired t-Test) in both the control and intervention groups. The significance level was set at p < 0.05 for all statistical tests.

Ethical considerations

This study was approved by the ethics code IR.MUMS.NURSE.REC.1399.051 in the Ethics Committee of Mashhad School of Nursing and Midwifery. The trial was registered at the Iranian Registry of Clinical trial with the IRCT20210109049978N1. The implementation method was explained to all study participants. In addition, they gave their consent to participate in the study through an online form. They were also informed that they could stop participating in the study at any point. As this was an online intervention, all the groups created were gender disaggregated. Female caregivers were allowed to share their voice only while making a video call. Data collection tools were shared online to caregivers and were completed in two stages before and after the intervention (one week after the intervention).

Results

No significant difference was observed (p > 0.05) in patients with COVID-19 between the intervention and control groups in terms of the demographic variables (i.e. gender, age, marital status, level of education, history of hospitalization in critical
Table 2. Demographic characteristics of COVID-19 patients

| Variables                          | Groups                  | p      |
|-----------------------------------|-------------------------|--------|
|                                   | Intervention            | Control|
| n (%)                             | n (%)                   |        |
| Gender                            |                         |        |
| male                              | 21 (60)                 | 18 (55.7) | 0.470* |
| female                            | 14 (40)                 | 17 (44.3) |        |
| Marital status                    |                         |        |
| single                            | 11 (31.4)               | 6 (17.1) | 0.163* |
| married                           | 24 (68.6)               | 29 (82.9) |        |
| Level of education                |                         |        |
| secondary school                  | 16 (45.7)               | 12 (34.3) | 0.873**|
| high school                       | 6 (17.1)                | 6 (17.1) |        |
| associate degree                  | 2 (5.7)                 | 2 (5.7) |        |
| academic degree                   | 11 (31.4)               | 15 (42.8) |        |
| Employment status                 |                         |        |
| housewife or unemployed           | 16 (45.7)               | 9 (25.7) | 0.043**|
| self-employed                     | 5 (14.3)                | 1 (2.9) |        |
| retired                           | 9 (25.7)                | 12 (34.3) |    |
| employee                          | 4 (11.4)                | 12 (34.3) |        |
| student                           | 1 (2.9)                 | 1 (2.9) |        |
| History of hospitalization in critical care units | yes                     | 18 (51.4) | 14 (40.0) | 0.337* |
|                                    | no                      | 17 (48.6) | 21 (60.0) |        |
| Need for supporting associations  | yes                     | 1 (2.9) | 0 (0.0) | 1.000**|
|                                    | no                      | 34 (97.1) | 35 (100) |        |
| Need for supplemental oxygen      | yes                     | 16 (45.7) | 13 (37.1) | 0.467* |
|                                    | no                      | 19 (54.3) | 22 (62.9) |        |
| Mean ± SD                         | Age (years)             |        |
|                                   | 56.4 ± 18.1             | 60.8 ± 17.6 | 0.301***|

* Chi-squared test, ** Fisher’s exact test, *** Independent t-Test, n – frequency, % – percent, SD – standard deviation.

Table 3. Demographic characteristics of caregivers

| Variables              | Groups                  | p      |
|------------------------|-------------------------|--------|
|                       | Intervention            | Control|
| n (%)                 | n (%)                   |        |
| Gender                 |                         |        |
| male                   | 17 (48.6)               | 14 (40.0) | 0.470* |
| female                 | 18 (51.4)               | 21 (60.0) |        |
| Marital status         |                         |        |
| single                 | 17 (51.5)               | 16 (48.5) | 0.811* |
| married                | 18 (48.6)               | 19 (51.4) |        |
| Level of education     |                         |        |
| secondary school       | 1 (2.9)                 | 0 (0.0) | 0.816**|
| diploma               | 3 (8.6)                 | 2 (5.7) |        |
| associate degree       | 7 (20.0)                | 6 (17.1) |        |
| academic degree        | 25 (71.4)               | 27 (77.1) |        |
| Employment status      |                         |        |
| housewife or unemployed | 12 (34.3)              | 1 (2.9) | 0.003**|
| self-employed          | 10 (28.6)               | 10 (28.6) |        |
| retired                | 1 (2.9)                 | 1 (2.9) |        |
| employee               | 11 (31.4)               | 21 (60.0) |        |
| student                | 1 (2.9)                 | 2 (5.7) |        |
| Relationship with the patient |                    |        |
| mother                 | 2 (5.7)                 | 1 (2.9) | 0.788**|
| sister                 | 1 (2.9)                 | 1 (2.9) |        |
| grandchild             | 1 (2.9)                 | 15 (42.9) |        |
| daughter               | 10 (28.6)               | 6 (17.1) |        |
| son                    | 10 (28.6)               | 11 (31.4) |        |
| wife                   | 11 (31.4)               |        |        |
| Cohabitation with the patient |                  |        |
| yes                    | 31 (88.6)               | 27 (77.1) | 0.205* |
| no                     | 4 (11.4)                | 8 (22.9) |        |
| Mean ± SD              | Age (years)             |        |
|                        | 39.09 ± 11.4            | 40.1 ± 10.01 | 0.674***|
| Income (million toman per month) |          |        |
|                        | 4.10 ± 1.40             | 4.63 ± 4.65 | 0.148***|

* Chi-squared test, ** Fisher’s exact test, *** Independent t-Test, n – frequency, % – percent, SD – standard deviation.
According to the results in Table 4, the mean and standard deviation of the scores of caring burden subscales between the two groups, before and after the intervention (including individual, social, emotional, and economic caring burden) were not significantly different ($p > 0.05$). The mean and standard deviation of individual caring burden in the intervention group after the intervention were significantly different ($18.8 \pm 4.3$ vs $21.4 \pm 4.6$; mean difference $= -2.6 \pm 3.9$).

The mean score of the total caring burden of the intervention and control groups before the intervention was not significantly different ($p = 0.072$). The total score of caring burden in the intervention group after the intervention had significantly decreased ($46.0 \pm 9.2$ vs $50.2 \pm 10.5$; mean difference $= -4.1 \pm 5.6$). Also, there was a significant difference between the mean difference scores of total caring burden in the intervention and control groups. The caring burden score in the intervention group decreased more than the control group after the intervention ($-4.1 \pm 5.6$ vs $-1.7 \pm 5.5$).

**Discussion**

Our findings showed that remote-based psychoeducational support can reduce the caring burden in caregivers of patients with COVID-19 in the post-discharge period. These changes are important because these caregivers are faced with caring for patients with an unknown, emerging, and prevalent disease with high physical and mental complications, which can increase the burden of care. Also, limited studies have been conducted on various aspects of mental health and supportive needs in caregivers of patients with this disease.

The results of the present study showed that the caregivers of patients with COVID-19 in both groups before the intervention experienced a moderate caring burden ($50.2 \pm 10.5$ and $49.0 \pm 9.0$ for intervention and control group, respectively). The results of a study by Hekmatpou et al. showed that the mean scores of caring burden before intervention in the intervention and control groups were severe ($67.84 \pm 4.23$, $61.60 \pm 11.30$) [30]. Possible reasons for the difference in these findings can be attributed to the difference between the type of patients and the sample size. In that study, patients had suffered stroke, which is a chronic disorder that results in different caregiving needs than for a patient with COVID-19. Consistent with the findings of the present study, a study by Ghorbani et al. was conducted to investigate the effect of education and telephone counselling on caregiver strain and unmet needs in family caregivers and self-care behaviors in patients with cancer. The results showed that the mean scores of pre-intervention caregiver strain in the intervention and control groups were ($49.1 \pm 7.9$ and $46.2 \pm 7.0$, respectively) and that caregivers in both groups experienced a moderate caregiving burden [20]. Mirzaei et al. previously conducted a study to evaluate the caring of family caregivers of patients with COVID-19 in Iran. The results showed that 83.2% and 80.9% of family caregivers of inpatients and outpatients suffered from severe caring burden, which indicates the intensity of caregiving burden for COVID-19 patients and the need to implement support programs to reduce it [9].

It should be noted that one of the factors associated with the caring burden in caregivers is the coping strategies of caregivers in dealing with stressors [31]. According to a study by Sun et al., coping styles and psychological growth are essential for maintaining the mental health of caregivers of patients with COVID-19 [32]. Dhital et al. also recommended the use of appropriate coping strategies for patients and their families to manage COVID-19-induced distress [33]. In this regard, the stress management program according to the Lazarus and Folkman transactional stress-coping model (1984) relying on the psychological support of caregivers was used to provide appropriate coping strategies in dealing with stressors. Various studies have shown the effectiveness of this type of support. For example, the results of the study by Piher and Kipfer showed that the use of a group psychoeducative program based on this model has a significant effect on reducing psychological distress and...
caring burden and on improving the self-efficacy of caregivers of patients with dementia [34]. López-Liria et al. also showed that using a stress management program based on this model has a significant effect on reducing the distress of parents of children with disabilities and improving their coping strategies in dealing with stressful situations [35]. Ducharme et al. also demonstrated that using this supportive intervention for elderly caregivers as a nursing-based intervention has increased self-efficacy and reduced perceived threat and health risks in caregivers. Providing online support is an innovative intervention method that allows nurses to reach caregivers who cannot normally participate in support programs. Providing this program at the beginning of the care path helps caregivers learn as soon as possible how to face caregiving needs and improve their health [36]. Although the communities studied in previous studies were caregivers of the chronic patients or the elderly, the results were consistent with the present study.

In this study, a part of the intervention was to provide the necessary education on caring for a patient with COVID-19. Blevins (2020) states the need for caregivers to receive the necessary educational support to provide home care for a family member with COVID-19 [37]. One of the ways to reduce the complications of COVID-19 in patients and their families is to provide education to the family to care for the patient in the post-discharge period, which can be done remotely to prevent the spread of the disease [38]. The caregiving needs of the caregiver and insufficient knowledge and skills have been identified as major risk factors for increasing the caregiver burden [39, 40]. In line with the results of the present study, the results of the study of Hekmatpou et al., which aimed to determine the effectiveness of patient care education on the caring burden and quality of life of caregivers of stroke patients, showed that providing training to caregivers in the form of telephone counselling sessions and a training booklet, in addition to routine training methods, had a significant effect on reducing the burden of care and improving the quality of life of caregivers [30]. Also, a study conducted by Ghorbani et al. investigated the effect of education and telephone counselling on the burden of care and unmet needs in caregivers and the self-care behaviors in cancer patients. The results showed that by providing educational support during four sessions of 15 to 20 minutes of telephone counselling, in addition to face-to-face training and training booklets, a significant reduction was seen in the caring burden and unmet needs in caregivers and in the improvement of self-care behaviors in patients [20]. Also, a study by Thim and Ratlnasamy aimed to determine the effect of psychoeducational support on knowledge about schizophrenia and caring burden in 350 caregivers of patients with schizophrenia. They showed that educating caregivers with general information about schizophrenia, the causes, signs, and symptoms, drug management, psychosocial management, nursing support, and family roles of these patients significantly reduced the caring burden and increased the knowledge of the caregivers [41]. The present study differed from other studies in terms of the disease, cultural background, and sample size. However, it confirms the results of previous studies which revealed a favorable effect of psychoeducational support in reducing negative outcomes (such as caring burden) in caregivers.

Limitations of the study

The characteristics of COVID-19 are significantly different from other diseases. Also, the period of home care for patients is usually considered to be two weeks. Therefore, the generalizability of the results of the present study to other studies may be limited.

Conclusions

Family caregivers of patients with COVID-19 experienced caring burden during the post-discharge care period. Implementing a psychoeducational Intervention is recommended as an effective way to reduce the caring burden in family caregivers of COVID-19 patients.

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References

1. Fegert JM, Vitello B, Plener PL, et al. Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality. Child Adolesc Psychiatry Ment Health 2020; 14: 1–11.
2. Dawson DL, Golljani-Moghaddam N. COVID-19: Psychological flexibility, coping, mental health, and wellbeing in the UK during the pandemic. J Contextual Behav Sci 2020; 17: 126–134.
3. Qiu J, Shen B, Zhao M, et al. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. Gen Psychiatr 2020; 33(2): e100213.
4. Mirhosseini S, Dadgari A, Basirinezhad MH, et al. The proportion of death anxiety and its related factors during the COVID-19 pandemic in the Iranian population. Fam Med Prim Care Rev 2021; 23(1): 36–40.
5. Eisazadeh F, Aliakbari Dehkordi M, Aghajanbigloo S. Psychological consequences of patients with coronavirus (COVID-19): a qualitative study. Iran J Health Psychol 2020; 2(2): 9–20.
6. Guo Q, Zheng Y, Shi J, et al. Immediate psychological distress in quarantined patients with COVID-19 and its association with peripheral inflammation: a mixed-method study. Brain Behav Immun 2020; 88: 17–27.
7. Arnout BA, Al-Dabbagh ZS, Al Eid NA, et al. The effects of corona virus (COVID-19) outbreak on the individuals’ mental health and one’s family roles: a comparative epidemiological study. Iran J Health Psychol 2020; 20(6): 26–47.
8. World Health Organization. Home care for patients with suspected novel coronavirus (2019-nCoV) infection presenting with mild symptoms and management of contacts: Interim guidance. Home care for patients with suspected novel coronavirus (2019-nCoV) infection presenting with mild symptoms and management of contacts: Interim guidance 2020. 4-4 [cited 17.02.2021]. Available from URL: https://www.who.int/immunization/areas/covid-19/coronavirus_home_care?open=interim_guidance&language=en.
9. Mirzaei A, Raesi R, Saghari S, et al. Evaluation of family caregiver burden among COVID-19 patients. Open Public Health J 2020; 13(1): 808–814.
10. Zarit SH, Reever KE, Bach-Peterson J. Relatives of the impaired elderly: correlates of feelings of burden. Gerontologist 1980; 20(6): 649–655.
11. Caserta MS, Lund DA, Wright SD. Exploring the Caregiver Burden Inventory (CBI): further evidence for a multidimensional view of burden. Int J Aging Hum Dev 1996; 43(1): 21–34.
12. Milbury K, Badr H, Fossella F, et al. Longitudinal associations between caregiver burden and patient and spouse distress in couples coping with lung cancer. Support Care Cancer 2013; 21(9): 2371–2379.
13. Mirhosseini S, Baghaieh M, Basirinezhad M, et al. Health-related quality of life and caregiver’s burden in patients with chronic diseases: a cross-sectional study. Fam Med Prim Care Rev 2021; 23(1): 29–35.
14. Corry M, Neenan K, Brabyn S, et al. Telephone interventions, delivered by healthcare professionals, for providing education and psychosocial support for informal caregivers of adults with diagnosed illnesses. Cochrane Database Syst Rev 2019; 5(S5): CD012533.
15. World Health Organization. Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020. World Health Organization; 2020 [cited 20.02.2021]. Available from URL: https://apps.who.int/iris/handle/10665/331490?localeattribute=ar&locale=.-
16. Pfefferbaum B, North CS. Mental health and the Covid-19 pandemic. N Engl J Med 2020; 383(6): 510–512.
17. Matsuda A, Yamaoka K, Tango T, et al. Effectiveness of psychoeducational support on quality of life in early-stage breast cancer patients: a systematic review and meta-analysis of randomized controlled trials. Qual Life Res 2014; 23(1): 21–30.
18. Kohl LF, Crutzen R, de Vries NK. Online prevention aimed at lifestyle behaviors: a systematic review of reviews. J Med Internet Res 2013; 15(7): e146.
19. Laudenslager ML, Simoneau TL, Mikulich-Gilbertson SK, et al. A randomized control trial of stress management for caregivers of stem cell transplant patients: effect on patient quality of life and caregiver distress. Psycho-Oncol 2019; 28(8): 1614–1623.
20. Ghorbani F, Zare M, Heshmati Nabavi F, et al. Effect of education and telephone counseling on caregiver strain and unmet needs in family caregivers and self-care behaviors in patients with cancer: a randomized clinical trial. Evid Based Care 2020; 10(1): 51–60.
21. Valiee S, Razavi NS, Aghaieejadi MH, et al. The role of hope to alleviate anxiety in COVID-19 outbreak among community dwellers: an online cross-sectional survey. Ann Acad Med Singap 2020; 49(10): 723–730.
22. Kumboyono K, Alfianto AG, Wihastuti TA, et al. The effect of psycho-educational intervention on the caregiver burden among caregivers of hemodialysis patients. J Res Dev Nurs Midw 2019; 16(1): 13–24.
23. Navidani A, Kermansaravi F, Rigi SN. The effectiveness of a group psycho-educational program on family caregiver burden of patients with mental disorders. BMC Res Notes 2012; 5(1): 1–7.
24. Ata EE, Dogan S. The effectiveness of a brief cognitive behavioural stress management programme on mental status, coping with stress attitude and caregiver burden while caring for schizophrenic patients. Arch Psychiatr Nurs 2018; 32(1): 112–119.
25. Mirhosseini S, Dadgari A, Basirinezhad MH, et al. Effectiveness of a psychoeducation program on the quality of life in patients with coronary heart disease: a clinical trial. Appl Nurs Res 2017; 33: 36–41.
26. Emamzadeh A, Torabi M, Farzad M, et al. The effect of psycho-educational intervention on patients’ quality of life and caregivers’ burden. J Multidiscip Healthc 2020; 12: 211.
27. Chaadda RK, Singh TB, Ganguly KK. Caregiver burden and coping. Soc Psychiatry Psychiatr Epidemiol 2007; 42(11): 923–930.
28. Sun N, Wei L, Shi S, et al. A qualitative study on the psychological experience of caregivers of COVID-2019 patients. Am J Infect Control 2020; 48(6): 592–598.
29. Dhillon GP, Karki TB, Nepali K. Psychological distress in the COVID-19 patients and their family members of Makawanpur District, Nepal. Int J Makawanpur Mult Camp 2021; 2(1): 1–14.
30. Pihet S, Kipfer S. Coping with dementia caregiving: a mixed-methods study on feasibility and benefits of a psycho-educative group program. BMC Geriatr 2018; 18(1): 1–13.
31. López-Liria R, Vargas-Muñoz E, Aguilar-Parra JM, et al. Effectiveness of a training program in the management of stress for parents of disabled children. J Child Fam Stud 2019; 1–14, doi: 10.1007/s10826-019-01665-5.
32. Ducharme F, Dubé V, Lévesque L, et al. An online stress management training program as a supportive nursing intervention for family caregivers of an elderly person. Can J Nurs Infor 2011; 6(2): 1–19.
33. Blevins S. COVID-19 education for caregivers. Medsurg Nurs 2020; 29(5): 341–342.
34. Lew HL, Oh-Park M, Cifu DX. The war on COVID-19 pandemic: Role of rehabilitation professionals and hospitals. Am J Phys Med Rehabil 2020; 99(7): 571–572.
35. Abbasi A, Asayesh H, Rahmani H, et al. The burden on caregivers from hemodialysis patients and related factors. J Res Dev Nurs Midw 2011; 8(1): 26–33.
36. Aydede SK, Komenda P, Djurdjev O, et al. Chronic kidney disease and support provided by home care services: a systematic review. BMC Nephrol 2014; 15(1): 1–18.
37. Thimmajja SG, Rathinasamy EVL. Effectiveness of psycho-education on knowledge regarding schizophrenia and caregivers’ burden among caregivers of patients with schizophrenia – a randomized controlled trial. Fam Med Prim Care Rev 2019; 21(2): 104–111.

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