



Original Article

The relationship between COVID-19 pandemic anxiety and the mothers' caregiver burden of children admitted to a selected hospital in Khorramabad

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Abstract

Introduction: The main purpose of the present study was to determine the relationship between the anxiety of Covid-19 pandemic and the burden of caregiving in mothers whose children were hospitalized.

Methods: In this descriptive correlational research study, 162 mothers whose children were hospitalized from February to August 2022 in Shahid Madani Hospital were selected by the available sampling method. The criteria for selecting mothers were the absence of chronic illness in children, the absence of psychological problems in mothers, and a minimum education of primary school for mothers. Questionnaires containing more than five questions with no answers were excluded from the study. Two standard questionnaires, including the Corona Disease Anxiety Scale of Alipour et al. (2020) and the Care Burden Questionnaire of Novak and Gast (1989) were administered to collect data. The data were analyzed by SPSS version 16, Pearson's correlation test, and multivariate regression. A significance level of 0.05 was considered.

Results: The findings illustrated that the anxiety score due to Corona in mothers was 49.12 ± 5.08 and their care burden score was 107.08 ± 7.25 , which were compared with the hypothetical mean of 1.5 and 3 based on the independent t-test, respectively. Correlation coefficient between the anxiety score of Corona and the care burden of the participants based on the multiple regression test indicated a significant relationship between anxiety and care burden ($r=-0.165$ and $p=0.036$)

Conclusion: The caregivers' healthiness, whose children are suffering from Covid-19 is an important health issue that health service providers should pay serious attention to.

Keywords: Anxiety, Caregiver Burden, COVID-19, Iran, Mother

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Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus, which first appeared in Wuhan, China, and gradually spread throughout the world. Most people infected by the virus would experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention (1,2).

(1).The spectrum of severity of covid-19 symptoms varies from asymptomatic and upper respiratory symptoms to acute respiratory distress syndrome. According to conducted research studies, the Covid-19 pandemic threatens people's physical health and lives. It also increases their stress levels and creates a wide range of mental health problems in society. The outbreak may cause distress, helplessness, anxiety, fear of death, and hopelessness, which often occur when people are faced with a real or perceived threat, leading to post-traumatic stress reactions(3).

Studies confirm that mental health pressures after the coronavirus epidemic at the community level are associated with pervasive effects on individuals and families (4,5). Based on systematic studies of 23 countries, it is estimated that the prevalence of children infected with Covid-19 is 1.9% (6). On average, 60% of them need hospital care and 9.7% need hospitalization in the pediatric intensive care unit (7). It has been stated in many systematic studies that the symptoms of covid-19 in children are widely different from those of adults (8) and one of the fatal complications of the coronavirus in this group is multisystem inflammatory syndrome in children. Although special nursing care has been designed to overcome the problems related to the symptoms and conditions of this disease, the number of studies conducted on children with covid-19 is still limited (9).

According to references, a child's illness is one of the most unstable incidents for parents, which has a significant impact on parents' mental health. Hospitalization of a child with multiple diagnostic and invasive procedures is a challenging experience for parents that can evoke numerous emotional reactions characterized by significant anxiety and feelings of uncertainty (10).

Most of the children with acute and chronic diseases need long-term help in daily activities, so taking care of these children creates a care burden for the parents, especially the mother, and other family members. Caring burden is defined as the physical, psychological, social, or economic reactions that appear in the caregiver during treatment, and it is defined as stress or

negative experiences caused by care in the caregiver. The caregiver burden is more evident in chronic illnesses. Children with chronic disease, in addition to illness and treatment problems, such as prolonged treatment, dietary and activity restrictions, changes in body image, inability to participate in their age specific programs, and specific daily care, require frequent or prolonged hospitalization. Repeated hospitalization can lead to negative experiences in children that recurrence of these experiences is a factor in causing mental health problems such as anxiety. The illness and hospitalization of the child also change the family's daily routines and parental roles. Prolonged illness, numerous treatment complications, unexpected costs, and sometimes loss of work position impose heavy burdens on caregivers and create many problems, like physical and mental problems, neglecting other family members, family and marital conflicts, and impact on the social life of the parents (5, 11-14). Several studies have reported the care burden of parents with a sick child between 49-72.5% (15,16).

On the other hand, this anxiety can be transmitted from parents to children. In other words, negative emotions in parents are related to negative emotions in children. As suggested by the literature, parents' mental health and parenting style behaviors may also play a key role in influencing children's adjustment during stressful situations (17). Parents' general mental health and psychological distress are well-established risk factors for psychological problems in children (18). The literature shows that maternal mental health is associated with poor behavioral, emotional, social, and cognitive outcomes in children, whereas paternal depressive symptomatology contributes to negative emotional and behavioral outcomes in children. Overall, psychological distress has been found to be associated with adverse behavioral and emotional outcomes in children. (19)

It has also been established that during the epidemic period, there are many stressful factors such as long hospitalization, fear of infection, fear of being infected by Covid-19, frustration, fatigue, and insufficient resources and information related to hospitalization of a child, which affect parents' mental health consequences (20). Hence, the psychological fallout of the Covid-19 pandemic is of particular concern; as such, low-cost, scalable, and readily deployable solutions will be of paramount importance to protect the world's population against the associated symptoms of psychological diseases. To this end, wearable devices and digital platforms that can be easily integrated into daily technologies like smartphones and tablets may provide viable routes for the delivery of mental healthcare. In addition to tracking the individual's cognition and mood in real-time, such solutions allow personalized

interventions. For example, gaming and virtual reality solutions, telepsychiatry, guided meditation, and mindfulness practices may all be beneficial (5-7). Also, it seems that the unknown nature of the virus and people's cognitive ambiguity about it may mostly increase anxiety and the care burden in the covid-19 pandemic. However, there is not sufficient research studies concerning the caregiver burden and parents' anxiety whose children were hospitalized during covid-19 pandemic (21). Therefore, the present study was conducted with the aim of determining the relationship between the anxiety of Corona and parents' care burden whose children were hospitalized at Shahid Madani Hospital in Khorram Abad in 2022.

Materials and Methods:

This study was a descriptive correlational research study (IR.IAU.KHUISF.REC.1401.009), performed from March to August 2022. The population of this study were all mothers whose children were hospitalized on the above-mentioned date at Shahid Madani Medical Education Hospital in Khorram Abad. A convenient sampling method was used, and 162 mothers were selected. The main criteria for choosing mothers (as the participants of the study) were the absence of chronic illness in children, the absence of psychological problems in mothers, and a minimum education of primary school for mothers. Questionnaires that had more than 5 unanswered questions were excluded from the study. The participants' demographic information was: sex, child's age, mother's age, education and occupation of parents, economic status of the family, type of health insurance, number of children, and parents' marital relationship, which were completed by the parents in a self-declaration manner.

The level of anxiety of mothers was estimated by using the Corona Disease Anxiety Scale of Alipour et al. (2020). This scale, which was prepared and validated by Alipour et al. in Iran, has 18 items and 2 components (factors). Items 1 to 9 measure psychological symptoms, and items 10 to 18 measure physical symptoms. This tool is scored on a four-point Likert scale (never = 0, sometimes = 1, most of the times = 2, and always = 3) and the range of scores obtained in this questionnaire is 0 to 54, where higher scores indicate higher levels of anxiety in people. According to the aforementioned study, the reliability of this tool was calculated by Cronbach's alpha method for the first factor ($\alpha = 0.879$), the second factor ($\alpha = 0.861$) and for the entire questionnaire ($\alpha = 0.919$). In order to check the confirmatory construct validity and to determine the proportion of the data with the two-factor model of this tool, the

confirmatory factor analysis method was used using Lisrel software version 8.8. All the items in the tool had appropriate loading and t-value (22).

The Care Burden Questionnaire developed by Novak and Gast (1989) was administered to check the level of mothers' caregiver burden. This questionnaire has 24 items, which include five subscales: time-dependent care burden (questions 1 to 5), developmental care burden (questions 6 to 10), physical care burden (questions 11 to 14), social care burden (questions 15 to 19), and emotional care burden (questions 20 to 24). The subscales related to caregivers' time, developmental and physical conditions describe caregivers' time constraints, extreme fatigue and physical health damages, and obstacles to the growth and development of caregivers, respectively.

The caregiver's social subscale describes caregivers' feelings about role conflict, and the caregiver's emotional subscale examines caregivers' negative feelings, including the unpredictability of the illness, feelings of guilt, and so on. The scoring procedure of this questionnaire is based on a five-point Likert scale, which is completely false (score 1), false (score 2), somewhat true (score 3), true (score 4) and completely true (score 5). Accordingly, the scores obtained from this questionnaire range from 24 to 120; as such, scores 24 to 47 were considered mild care burden, 48 to 71 moderate care burden, 72 to 95 severe care burden, and 96 to 126 very severe care burden (20). In their study, Abbasi et al calculated the alpha coefficient of the whole scale to be 90% and the alpha coefficient of the subscales from 76 to 82% (23-25).

The data were analyzed using SPSS version 16 and descriptive and inferential statistical tests. In order to examine the correlation between mothers' anxiety and care burden, Pearson's correlation test was applied. Moreover, to compare the participants' anxiety and care burden with the hypothetical t-test taken from the studies, multivariate regression was used. A significance level of 0.05 was considered.

Ethical Considerations

To observe ethical issues, an approval and letter of introduction was received from the Research Deputy of Islamic Azad University of Isfahan (Khorasgan) and presented to the related authorities. Moreover, an informed written consent form was taken from the participants. They also got assured that their information and statements would be kept confidential, they would be free to participate in the study or to leave it if they were reluctant

to continue, and this study was free of charge. This article was derived from a nursing master's thesis.

Results

Based on the results, the age range of children was 6 to 12 years with an average of 8.73 ± 2.02 years, and the age range of mothers was 23 to 46 years with an average of 35.22 ± 4.18 years. Other demographic information is shown in Table 1.

Table 1. The participants' demographic information

Variable	Number	Category	Percentage
Gender	126	Female	8/77
	36	Male	2/22
Mother's education	6	Under diploma	7/3
	88	Diploma	3/54
	21	Post graduate	13
	34	Bachelor's degree	21
	13	Master's degree	8
Father's education	6	Under diploma	7/3
	78	Diploma	1/48
	36	Post graduate	2/22
	30	Bachelor's degree	5/18
	12	Master's degree	4/7
Father's occupation	6	Employee	3.7
	21	worker	13
	135	Freelance job	83.3
Mother's occupation	9	Employee	5.6
	153	Housewife	94.4
Marital status	156	Married	96.3
	6	Absolute	3.7
Number of children	123	One child	75.9
	33	Two children	
	6	More than two	20.4
		children	3.7
Economic situation	15	Good	9.25
	115	Average	70.98

	32	Weak	19.8
Insurance	117	Social security	72.2
	27	Health services	16.7
	18	No insurance	11.1
Place of residence	152	Urban	93.8
	10	Rural	
	162	Total	

Based on the results, the anxiety score of the mothers participating in the study was 49.12 ± 5.08 and their care burden score was 107.08 ± 7.25 . Statistical analysis using an independent t-test estimated the level of anxiety and mothers' care burden in the average range with hypothetical averages of 1.5 and 3, respectively. (Tables 2 and 3).

Table 2: Descriptive indexes of corona anxiety and participants' care burden

Variable	number	lowest amount	highest amount	Mean	standard deviation
Corona anxiety	162	29	54	49.12	5.08
Caregiver burden	162	76	115	107.08	7.25

Table 3: Comparison of Corona anxiety and participants' care burden with hypothetical averages of 1.5 and 3, respectively.

Component	Mean	Standard deviation	Deviation from the mean	T	degree of freedom	level of significance
Corona anxiety	2.72	0.28	0.022	55.36	161	0.001
Caregiver burden	4.46	0.30	0.023	61.589	161	0.001

The correlation coefficient between the Corona anxiety score and participants' care burden was calculated by multiple regression test, $r=-0.165$ and $p=0.036$, which indicated a significant relationship between anxiety and care burden.

Discussion

The present study was conducted to determine the relationship between the anxiety of coronavirus and the care burden of mothers whose children were hospitalized at Shahid Madani educational and therapeutic hospital in Khorram Abad, Iran, in 2022.

The results of this study illustrated that the level of Covid-19 anxiety in parents whose children were suffering from corona was higher than the average level. Yuan et al.'s (2020) concluded that based on the hospital anxiety and depression scale and the sleep anxiety scale, the anxiety score of mothers during the epidemic was significantly higher than that of mothers in a non-epidemic time. So, mothers' anxiety score during the epidemic was 10.3 ± 7.02 , of which 21 parents were anxious, while this score in a non-epidemic time was 10.2 ± 3.6 which indicated that only 4 parents were anxious (26).

Orsini et al. (2021) study also revealed that parents whose children tested positive for Covid-19 were more susceptible to suffering from post-traumatic stress, anxiety, and depression symptoms (27).

Also, Liang et al. (2024) demonstrated a positive significant correlation between anxiety ($r=0.334$), stress ($r=0.354$), depression ($r=0.324$) and externalized behavioral disorder ($p<0.001$) in young children's mothers in Iran during covid-19 pandemic (28).

According to these studies, parents experienced high levels of symptoms of anxiety during the COVID-19 outbreak, which can be associated with behavioral disorders in their children and consequently have a negative effect on their health. Therefore, it is crucial to pay more attention to the parents' mental state and its complications for children.

Based on the findings of this research study, the care burden of parents with hospitalized children was at an average level. According to Safaian et al. (2017), more than half of caregivers experience severe caregiving burden (29).

In another study, Abbasi et al. (2013), utilized a similar tool to investigate the caregiver burden of the hemodialysis patients. They found the care burden to be moderate (30). In addition, Salmani et al. (2014) reported the high severity of caregiver burden of cancer patients (31). The rationale for this difference can be associated to the nature, duration and lethality of cancer compared to Covid-19. Moreover, the care burden experienced by parents whose children were suffering from cancer was also more than average in the study conducted by Valizadeh et al. (2014) (32).

Based on the findings of this study, there is a significant relationship between the Corona anxiety and the care burden of parents with hospitalized children. According to Bekar et al. (2022), no correlation was detected between scores of caregiving burden and coronavirus anxiety, which is not consistent with the results of the present study. This inconsistency can be related to different tools or the statistical population (33).

Safaian et al. (2017) investigated the relationship between caring pressure, stress, anxiety, and depression in caregivers of cancer patients in Imam Reza Hospital, Bojnord city. In this study, the correlation between the overall mean score of caregiving burden and the mean scores of stress (0.629), anxiety (0.629) 0.569) and depression (0.598) was reported as positive and significant (20).

According to the results of the current study, it should be highlighted that caregiving burden is an issue that is very problematic for both the patient and the caregiver. Due to its hidden nature, caregiving burden is not usually considered a disease; therefore, the patient and the caregiver would suffer.

Conclusion

Increasing pressure on caregivers will result in several consequences, such as inadequate patient care, patient abandonment, family isolation, loss of hope for social support, disruption of family relationships, and forgetting one's own needs.

Based on the results of the present study and the positive correlation between anxiety and care burden of caregivers, it can be acknowledged that people's vulnerability to caregiving burden may be affected by using anxiety control strategies, which has been mentioned in some studies (22).

Therefore, sensitivity to the care burden of mothers with children suffering from acute diseases such as covid-19 who need to be hospitalized in medical centers is very important, especially during an epidemic. Health care service providers can use anxiety control strategies and inform parents about their child's treatment process to overcome the negative effects of mothers' anxiety and care burden.

Regularly, every research study has a few limitations, and this research is not an exception. Among the limitations of the current research, it can be pointed out that a small number of questionnaires remained unanswered, which is probably due to the number of questions in the questionnaires. Another limitation that probably had an effect on the results of this study was

the impossibility of controlling background variables such as personality traits of individuals and cultural and social factors of families. Therefore, it is suggested to conduct similar research and compare its results with the results of the present study by considering these variables.

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Conflict of interest

According to the authors, this article has no conflict of interest.

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