



# Assessment of Grief Reactions Following the Death of First-degree Relatives Due to COVID-19

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## Abstract

**Background:** Coronavirus disease 2019 (COVID-19) has made the grief process more complicated and brought about loads of unexpressed grief.

**Objectives:** The present study aimed to determine the severity of grief reactions following the death of first-degree relatives (FDRs) due to COVID-19.

**Methods:** This analytic cross-sectional study was conducted to determine the grief score of people aged over 18 with the experience of losing one of their FDRs (i.e., father, mother, and siblings) due to COVID-19. Convenience sampling was employed to select the participants. The instrument used in this study was the Grief Experience Questionnaire (GEQ-34) which was completed via phone calls. The inclusion criteria entailed a willingness to participate in the study, the age range of above 18, and experience of FDR's death. On the other hand, the exclusion criteria were severe discomfort and restlessness while talking on the phone. Descriptive statistics and multiple linear regression were employed to diagnose the factors affecting grief using SPSS software (version 22) with a significance level of 0.05.

**Results:** The findings indicated that the mean score of GEQ was  $67.22 \pm 19.24$  (ranging from 34 to 126). In this study, 54.5%, 40.2%, and 5.3% of subjects experienced low, moderate, and severe levels of grief, respectively. The grief score showed a positive relationship with the gender of the mourners and marital status; nonetheless, it was negatively correlated with subjects' employment and the age of their deceased FDRs.

**Conclusion:** As evidenced by the obtained results, among the subscales of mourning, the highest scores were related to the dimensions of justification, coping, and guilt. Communication and social support were reduced due to the COVID-19 pandemic; therefore, the provision of online mental health services can be a useful way to treat and help the bereaved.

**Keywords:** Death, GEQ, Grief, Grief experience, COVID-19

## 1. Background

Grief and mourning represent the mental reactions of the bereaved. There is a large spectrum of emotions for the expression of grief depending on the cultural norms, expectations, and conditions (i.e., unexpected death vs. expected one). Grief naturally lasts about 6-12 months, and people gradually return to their normal life, though this process is unrepresentative in some cases (1). Although grief is a natural issue in different nations, the severity of reactions and the consequences varies in individuals and nations (2). The severity and type of mental problems due to grief depend on many factors, including culture, individual's personality traits, unexpected death of family members or friends, as well as many other factors that may lengthen and deepen the grief process (3). Although most people naturally cope with the situation, some may demonstrate psychological problems, such as depression and anxiety.

Loads of unexpressed grief over a longer period with more severe symptoms result in physical and psychological trauma (5-6). Prolonged grief disorder,

along with wish, eagerness, recalling the memories of the deceased, and sadness, leads to discomfort and considerable disorder in the performance of the bereaved at least for six months (7). Grief and the ways of its expression are highly associated with cultural rituals (8). There are some differences in expressing reactions to grief for first-degree relatives (FDRs) (including father, mother, spouse, child, and siblings) among people (9). One of the crucial factors affecting grief reactions is the reason for death, and it is evidenced that unexpected death results in much more severe reactions in the bereaved (10-11). Coronavirus disease 2019 (COVID-19) pandemic has caused many families to confront the unexpected death of their beloved ones. Moreover, the process of mourning has become more complicated, and some limitations are imposed on the process of funeral rituals, washing, burial, and group mourning due to quarantine conditions.

During the COVID-19 pandemic, the loss of loved ones has become perceptible for many people. Since COVID-19-related deaths are unexpected and quarantine limitations are imposed on holding funeral rituals, there is higher severity of grief

experience, as well as devastating social and psychological consequences. Therefore, the development of appropriate strategies is required to help the bereaved cope with the mourning and promote their mental health (6, 12). The death of one of the family members is a great disaster, leading to the malfunction of the family in different aspects of life. Coping with the new situation is difficult in the absence of social and psychological supports (6, 13). High mortality rate, sudden deaths, the possibility of feeling guilty in the family members due to the nature of the disease transmission, lack of social support due to severe travel restrictions, and lack of religious ceremonies, such as funeral rituals, washing, and burial, have made people suffer from complex mourning. Therefore, this issue needs further investigation.

## 2. Objectives

Given that few studies have assessed the grief experiences of bereaved families of the individuals who succumbed to COVID-19, the present study aimed to determine the severity of grief reactions following the death of FDRs due to COVID-19.

## 3. Methods

This cross-sectional and descriptive-analytic study aimed to determine the grief score of individuals over 18 with an experience of losing one of their FDRs due to COVID-19. The population of this study included all family members whose FDR was hospitalized and died from COVID-19 in the teaching hospitals of Mazandaran University of Medical Sciences. Firstly, we obtained the Ethics code (IR.MAZUMS.REC.1399.422) and an introduction letter from the Research and Technology Vice-presidency of Mazandaran University of Medical Sciences. Thereafter, we referred to the reception of teaching hospitals and received the list of people who died due to COVID-19 (from January 21, 2020-July 20, 2020) with their family's contact number (the one recorded in the patient's file upon admission). We called them, and in the case of their willingness, we asked them to fill in the GEQ (Grief Experience Questionnaire) on the phone. We used convenience sampling to gather data. The following formula was used to calculate the number of subjects:

$$n = \frac{z_{1-\alpha/2}^2 * p * (1 - p)}{d^2}$$

Since few similar studies had been conducted to estimate the number of participants, we considered  $P=0.05$ , confidence limits of 95% ( $z \approx 2$ ), and precision of 0.05 for the formula. Subsequently, the calculations revealed that we needed 400 participants to take part

in the study.

Barrett and Scott devised GEQ with 55 items in 1989 to evaluate the phenomenon of grief. Scoring was based on a 5-point Likert-style scale, ranging from 1 (never) to 5 (always) (14). In this study, we employed the questionnaire developed by Mehdipoor et al. (2009) who have determined the validity and reliability of the GEQ in an Iranian context. Their study led to a 34-item questionnaire with seven subscales, including rejection, stigmatization, search to find an explanation, guilt, somatic reaction, personal appraisal or other people's judgment concerning the reason of death, and shame. To determine its construct validity, they used two methods. They made a correlation calculation of GEQ and Goldberg and Hillier General Health Questionnaire in 1979, employing principal component analysis and convergent validity. The Cronbach alpha coefficient of the total questionnaire was 88%, and its components obtained values of 70% to 86%. In this questionnaire, all scores are added up to determine the level of grief. In this regard, the total score of 34-68, 68-102, and over 102 represent low, moderate, and high levels of grief, respectively (15).

The inclusion criteria entailed bereaved person's willingness to participate in the study, the age range of over 18, the experience of FDR's death, and the ability to respond to the questions on the phone. On the other hand, the exclusion criteria were their reluctance to participate in the study and being unable either physically or psychologically to answer the questions. This study obtained permission from the university authorities, got informed consent from the participants, and was committed to the confidentiality of the information.

The researchers used descriptive statistics (i.e., mean, standard deviation, frequency, and percentage) to analyze the data. Moreover, they ran a t-test, analysis of variance, and multiple linear regression to diagnose the factors affecting grief using SPSS software (version 22) with a significance level of 0.05. Prerequisites were examined using Kolmogorov-Smirnov and Bartlett tests.

## 4. Results

The participants of this study included 400 bereaved participants who had lost one of their FDRs due to Covid-19. The majority of cases (57.6%) were males, and the mean age of the participants was  $43.76 \pm 11.36$  years (within the range of 18-82). As illustrated in Table 1, 85.7%, 9.5%, and 4.8% of participants were married, single, and widowed, respectively. The highest and lowest frequency of education level was diploma (40.1%) and higher than a bachelor's degree (13%), respectively. Regarding their occupation, most of the participants were self-employed (33.2%), while students made up 2% of the

participants. Moreover, the information related to the deceased revealed that 217 (54.8%) cases were males, 95.5% were married, 2.5% cases were widowed or divorced individuals, and the rest were singles. The mean age of the deceased was

66.90±14.03, 23% of cases suffered from underlying diseases, and 48.3% of them had the experience of recurrent hospitalization. Most of the deceased (64%) died more than four months ago. Table 1 illustrates the descriptive information.

**Table 1.** Descriptive and analytic information of bereaved individuals' grief score and the deceased

Bereaved individuals				The deceased					
Variable		N (%)	Mean	P-value	Variable	N (%)	Mean	p-value	
<b>Gender</b>	Male	228 (57.6)	62.94	0.001	<b>Gender</b>	Male	217 (54.8)	67.99	0.380
	Female	168 (42.4)	72.69			Female	179 (45.2)	66.29	
<b>Marital status</b>	Single	38 (9.5)	65.76	0.008	<b>Marital status</b>	Single	8 (2.0)	70.50	0.627
	Married	341 (85.7)	66.71			Married	376 (95.5)	67.31	
	Widowed	19 (4.8)	80.63			Widowed	10 (2.5)	62.10	
<b>Education status</b>	Primary school	79 (19.8)	71.54	0.093	<b>Underlying disease</b>	Yes	92 (23.0)	69.54	0.187
	Diploma	160 (40.1)	67.05			No	308 (77.0)	66.52	
	B.Sc.	108 (27.1)	64.85		<b>Recurring hospitalization</b>	Yes	193 (48.3)	66.58	0.526
	Higher	52 (13.0)	65.08			No	207 (51.7)	67.81	
<b>Occupation</b>	Jobless	14 (3.5)	86.43	0.001	<b>Date of the death</b>	1-2 months	7 (1.8)	61.71	0.001
	Worker employee	23 (5.8)	59.91			2-3 months	58 (14.6)	70.17	
	Self-employed	118 (29.6)	63.06			3-4 months	76 (19.1)	59.06	
	Housewife	132 (33.2)	65.19			More than 4 months	254 (64.0)	69.25	
	Student	103 (25.9)	72.29						
		8 (2.0)	76.00						

The mean score of GEQ was 67.22±19.24, ranging from 34-126. The findings revealed that 54.5%, 40.2%, and 5.3% of participants suffered from low, moderate, and high levels of grief, respectively. Table 1 displays the mean score of grief related to different variables of bereaved participants and the deceased. According to this

table, bereaved women, widowed, those with primary school education level, and jobless subjects had a higher grief score. Moreover, the grief score was higher when the deceased FDRs were men, single, without any underlying disease, and with a higher rate of recurrent hospitalization.

Table 2 depicts the mean scores of GEQ for each

**Table 2.** Mean and standard deviation of GEQ scores and its components

Component	Mean±SD
<b>Guilt</b>	14.52±4.87
<b>Search for explanation</b>	17.71±6.87
<b>Somatic reactions</b>	8.34 3.43
<b>Rejection</b>	8.06±3.22
<b>Personal or other people's judgment in relation to the reason for death</b>	6.72±2.74
<b>Shame</b>	6.41±2.20
<b>Stigmatization</b>	5.60±2.35
<b>Total</b>	67.22±19.24

The stepwise multiple linear regression method was employed to identify the factors affecting the grief score. Table 3 illustrates the significant variables that affect the grief score of bereaved

participants. It shows that gender, marital status, and occupation of bereaved individuals and the age of the deceased had significant effects on the grief score of bereaved family members.

**Table 3.** Factors affecting the grief score of bereaved individuals losing their FDRs due to COVID-19

Variable	Beta	SE	p-value	
<b>Gender of the bereaved</b>	Male	ref		
	Female	8.36	2.64	0.002
<b>Marital status of the bereaved</b>	Single	ref		
	Married	6.27	3.32	0.060
	Widowed	13.12	5.41	0.016
<b>Occupation of the bereaved</b>	Jobless	ref		
	Worker	-22.02	6.49	0.001
	Employee	-20.37	5.51	0.001
	Self-employed	-18.91	5.45	0.001
	Housewife	-19.97	5.69	0.001
<b>Age of the deceased</b>	Student	-13.34	7.94	0.094
	Years	-0.35	0.06	0.001

component. According to this table, search for explanation ( $17.71\pm 6.87$ ) and guilt ( $14.52\pm 4.87$ ) have the highest scores among the questionnaire components.

Moreover, [Table 3](#) demonstrates that the GEQ score for females is 8.36 units higher than that of males. In terms of marital status, the score of bereaved married individuals is 6.27 units more than the singles, though it is not statistically significant. On the other hand, the grief score of the widowed is 13.12 units higher than that of the singles, indicating a significant difference. Regarding occupation status, the grief scores for bereaved workers, employees, self-employers, and housewives were 22.02, 20.37, 18.91, and 19.97 units less than that of jobless participants, and it was statistically significant. Nonetheless, no significant difference was observed between the students' scores of grief and that of jobless subjects. Finally, the age of the deceased person was the only factor affecting the grief score — that is to say, a one-unit increase in the age caused a 0.35-unit decrease in the grief score.

## 5. Discussion

The current study aimed to determine the severity of grief reactions following the death of FDRs due to COVID-19. The findings indicated that the mean score of GEQ was  $67.22\pm 19.24$ , ranging from 34-126. Moreover, the bereaved person's gender, marital status, and occupation, as well as the age of deceased FDR significantly affected the grief score of the bereaved one.

The results of this study revealed that widowed and divorced individuals experience a higher rate of grief, in comparison with singles. In a similar vein, a study conducted on 710 elderlies suggested that they suffered considerable depression after the death of their spouse (16). In conclusion, regarding their previous devastating experience (death of the spouse or divorce), the widowed and divorced experience a new shocking experience when they lose one of their FDRs and feel more isolated than the singles. This may be the reason for their higher grief scores, compared to the singles.

In this study, the average GEQ score for bereaved women was 8.36 units higher than that of men. Assare et al. performed a cross-sectional prevalence study in 2012 on 751 patients referring to an outpatient psychiatric center in Kermanshah. They used two questionnaires of Beck Depression Inventory-II and Grief Measurement Scale for the evaluation of grief signs and symptoms. Consistent with the findings of the present research, the results of the stated study indicated that grief severity was higher among women and singles (ref1717). Another study conducted on female refugees has demonstrated that out of 106 participants, 90 cases experienced grief and 9.41% of subjects had

prolonged grief. In addition, grief symptoms are considerably accompanied by depression (18). These findings highlight that women are more susceptible to grief after the loss of their family members, as compared to men.

Furthermore, based on the results of this study, the people who work experience lower levels of grief. Bereaved jobless people may experience a higher grief rate since they have lost their economic support and are concerned about their financial status in the future. A descriptive study by Papa et al. demonstrated that change in income affects the coping behavior of people and deepens grief (19). Moreover, the people who work have a lower grief score since they are occupied with their job responsibilities and have less time to think about negative ideas.

In this study, the age of the deceased significantly affected the grief score of bereaved participants— that is to say, a one-unit increase in the age of the deceased caused a 0.35-unit decrease in the grief score. Consequently, the bereaved ones will experience lower levels of grief when the deceased one is older. This may be related to their age and the possibility of their death; nonetheless, future research may shed more light on this issue. It goes without saying that the severity of grief is higher following the death of the youth. Another hard grief experience is the loss of a child, which is more severe than other cases (20, 21). Bogensperger and Lueger-Schuster conducted a study with a quantitative-qualitative approach on 30 parents who experienced the death of their children. The results of the stated study disclosed that the sudden death of the child critically affected the parents (22).

Two components of “search for an explanation” ( $17.71\pm 6.87$ ) and “guilt” ( $14.52 \pm 4.87$ ) had the highest scores in the present study. The results of a study by Fayazi Bordbar in Mashhad has revealed that the dimensions of notoriety or stigma, trying to justify and cope with the absence of the deceased, judging the person or others, and feeling ashamed of the cause of death were the most influential in the experience of mourning (23). Accordingly, the survivors may differently experience emotions due to the absence of the deceased. Moreover, the person may feel guilty due to the conditions of separation, quarantine, hospitalization of the patient in special conditions during the premortem period, the impossibility of care during illness, and self-blame (24).

This study has reported personal or other people's judgment concerning the reason for death ( $6.72\pm 2.74$ ) as a subscale of grief in bereaved family members. In general, mourning rituals are held in groups in Iran; nonetheless, in the COVID-19 pandemic and quarantine, the bereaved do not have this opportunity even in funeral rituals (25). In some cities, the people who die from COVID-19 are buried

in a separate cemetery, and this makes the survivors feel a social stigma (26) which is one of the challenges related to COVID-19 affecting the control and treatment of the disease (27- 28). Risk factors affecting the social stigma in people facing COVID-19 include acute disease history, discrimination, self-isolation, and people's perception of the disease (29). To moderate social stigma, it is recommended that we exploit the authority of social media and clergymen. The use of cautious messages can also change the attitude of people towards COVID-19. It is necessary to prepare mental health practitioners and policymakers to deal with the future wave of problems due to incomplete grief, post-traumatic stress disorder, and prolonged grief in society (30-33).

One of the strengths of this study is investigating the severity of grief among the families of the deceased due to COVID-19; however, it suffers from some limitations. One limitation was the completion of questionnaires on the phone, and bereaved individuals might have withheld their real feelings and emotions while responding to the questions. Another limitation was that the researchers completed the questionnaires with available people who answered the phone call. Finally, this study assessed the bereaved ones regardless of their family background; therefore, this issue requires further study.

## 6. Conclusion

Among the mourning subscales, the highest scores were related to the dimensions of justification and coping ( $17.71 \pm 6.87$ ), as well as guilt ( $14.52 \pm 4.87$ ). Due to the pandemic conditions of Covid-19, communication and social support have been reduced; therefore, the provision of online mental health services can be a useful way to treat and help bereaved people. The results of the present study can be of great help in prevention, support, and treatment programs for Covid-19 mourners.

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