



Predicting the Negative Emotional Symptoms in Relatives of Patients Residing in Intensive Care Unit

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Abstract

Balanced emotions are essential for wellbeing. Having a relative admitted to the intensive care unit (ICU) associated with negative emotional symptoms, and the severity of such symptoms is associated with patients' health status, patients and relatives' characteristics as well. Purposes: To assess the level of depression, anxiety and stress, as well as to identify the predictors of negative emotional symptoms among relatives of Jordanian ICU patients. Methods: Descriptive correlation design was used, and 140 first degree relatives were recruited through convenience sampling. Depression, Anxiety and Stress Scale was used to collect data about relatives' negative emotional symptoms. Standard multiple regression was conducted to determine the extent to which variance in depression, anxiety and stress could be explained by patients' health status, patients' sociodemographics, and relatives' sociodemographics. Results: Approximately, 56%, 70%, and 76% of relatives are suffering from depression, anxiety and stress respectively. Relatives have been found suffering from mild depression plus moderate anxiety and stress. Patients' Glasgow Coma Scores is the most significant predictor for relatives' stress level. Patients' age and insurance are predictors of relatives' depression, anxiety and stress. Whereas, relatives' gender and age; are the most significant predictors for their negative emotional symptoms. Conclusions: Interestingly, variances in relatives' negative emotional symptoms were explained by patients' sociodemographics and relatives' sociodemographics, more than patients' health status. Therefore, patients' and relatives' sociodemographics should be considered in dealing with relatives' psychological status. This will help nurses to minimize the devastating impact of the negative emotional symptoms on relatives of ICU patients.

Keywords: Emotional Symptoms, Intensive, Care Unit.

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1. Introduction

Human emotions are helpful to direct attention to key experiences in our life, convey specific affective cues in social situations, and enhance specific memories [8]. These emotions can be positive or negative, and include all affective, behavioral, and cognitive mechanisms; in addition to physiological changes that prepare the person for possible actions [7]. Negative emotional symptoms are thoughts and feelings that normally present in response to hard life events. Examples of negative symptoms are depression, anxiety and stress. These emotions can be harmful and devastating to human health and adaptation if they were severe [8], and these emotions tends to occur and cluster together [12].

Having a relative with a life threatening condition, is an example for difficult life experience that is associated with negative emotional symptoms. Several studies documented that relatives of patients who were admitted to the intensive care unit (ICU) experienced serious negative emotional symptoms of depression, anxiety and stress [1, 5, 9, 13, 11]. Fumis et al. (2014) [6] reported that relatives of ICU patients suffered from anxiety and depression more than the patients themselves. Additionally, Pochard et al. (2001) [15] stated that 69% of relatives of ICU patients have anxiety, and 35% of them have depression, in which 84% of spouses experienced these symptoms. Several experts [3, 17, 18] have asserted similar association between negative emotional symptoms and having a relative admitted to ICU.

Previous literature attributed the negative emotional symptoms in relatives of ICU patients to the risk of patients' death in ICU, the complex and stressful environment in ICU, beside the financial burden on relatives [1, 2, 14]. However, little studies described the role of relatives' and patients' characteristics in predicting the negative emotional symptoms in those relatives.

Pochard et al. (2001) [15] reported that relatives of young patients who had no history of chronic diseases before admission to the ICU, experienced more symptoms of depression and anxiety, respectively. Another study, described the severity of patients' health condition, and patients' age as predictors for relatives' anxiety and depression [16]. These findings are consistent with Kross et al. (2011) [10] who reported that family members of younger patients and those who are on mechanical ventilators were at increasing risk of negative psychological symptom.

In regards to relatives' characteristics, previous studies revealed that spouse of ICU patients reported several negative emotions such as anxiety, depression, and fear [15, 16, 17]. Pochard et al. (2001) [15] stated that female relatives have more symptoms of anxiety and depression than male relatives of ICU patients. In addition, Elizarrarás-Rivas et al. (2010) [4] reported that female gender, older age, and higher educational level were significantly associated with higher levels of anxiety in relatives of patients in ICU.

Negative emotional symptoms in relatives of ICU patients in Middle Eastern communities are not fully investigated. Therefore, the purposes of this study are to assess the level of depression, anxiety and stress, as well as to identify the predictors of negative emotional symptoms among relatives of Jordanian ICU patients. This can be achieved through answering the following research questions: 1- What are the levels of negative emotional symptoms (depression, anxiety, and stress) among relatives of Jordanian ICU patients? 2- How strong is the relationship between *patients' sociodemographics and health status*, plus *relatives' sociodemographics* and relatives' negative emotional symptoms (depression, anxiety, and stress)?

2. Methods

2.1. Design and Sampling

Cross-sectional descriptive correlation design was used. First degree relatives (spouse, parent, son, and brother/sister) were recruited through convenience sampling technique. By estimating a moderate effect size ($R^2= 0.13$), a power of 0.80, with $\alpha = 0.05$, and 15 predictors; power analysis indicated the need for 132 participants. Relatives were invited to participate in the study if they were older than 18 years old, and were not diagnosed with any serious physical or psychological disorders.

3. Data Collection and Measurement

During the visiting hours; relatives of patients residing in ICU of the largest public hospital in the Jordanian capital were invited to participate in the study. Participants' sociodemographics were collected through interviewing them, and data about patients' sociodemographics and clinical status were collected from their medical records. To assess participants' emotional status (depression, anxiety, and stress level); the study utilized the Depression Anxiety and Stress Scale (DASS). Lovibond and Lovibond (1995) [12] developed this instrument and described appropriate psychometric properties for this scale.

Later, the DASS was translated to several languages and used extensively in scientific research. Taouk et al. (2001) [19] prepared the Arabic version of DASS, and reported good validity and high internal consistency reliability. This questionnaire consists of three self-reported Likert scales to measure depression, anxiety, and stress levels. Each of these scales consists of 14 items in which the participants will respond about each item by selecting (never, sometimes, often, or always). The total scores for each subscale ranged from 0 to 42, and the higher score represents a higher level of negative emotional symptoms. In the current study the internal consistency reliability was assessed and Cronbach's α for the DASS was (0.95).

4. Ethical Considerations

Agreements to conduct the study were sought from responsible committees in Zarqa University, and Jordanian Ministry of Health. The purpose of the study, benefits, and risks were discussed with each participant. It was clear for all of them that participation is voluntary, and confidentiality of participants was ensured and informed consents were collected from each participant.

5. Data Analysis

Version 20 of the Statistical Package for the Social Sciences (SPSS) was used to analyze the data. Descriptive statistics were used to describe the study sample, and to identify the levels of negative emotional symptoms. Standard multiple regression was conducted to determine the extent to which variance in depression, anxiety and stress could be explained by *patients' health status, patients' sociodemographics, and relatives' sociodemographics*. Probability levels were considered significant at p values < 0.05 .

6. Results

Hundred and forty first degree relatives were participated in the study. Their mean age was 34.9 and ranged from 18 to 64 years old. Participants were predominantly female, married, and well-educated (Table 1). On the other hand, patients' mean age was 37.9, and ranged from 3 to 88 years old. The majority of patients were male, adult, married, and medically insured (Table 1). Patients suffered from various critical conditions that required a variety of medical interventions (Table 2).

Table 1. Description of relatives and patients' sociodemographical variables

Participants' Demographical	% (n)	Patients' Demographical Variables	% (n)
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Variables			
Gender		Gender	
Male	45.0 (63)	Male	55.0 (77)
Female	55.0 (77)	Female	45.0 (63)
Marital status		Marital status	
Married	61.4 (86)	Married	64.3 (90)
Other status	38.6 (54)	Other status	35.7 (50)
Level of education		Age group	
Secondary school and below	45.7 (64)	≤ 18 years old	17.1 (24)
Higher than secondary school	54.3 (76)	> 18 years old	82.9 (116)
Monthly income		Medically insured	
≤ 500 JD/month	67.9 (95)	Yes	54.3 (76)
> 500 JD/month	32.1 (45)	No	45.7 (64)
Relationship with the patient		Patient is responsible for the family income	
Spouse	12.1 (17)		
Son	22.1 (31)		34.3 (48)
Parent	20.7 (29)	Yes	65.7 (92)
Brother / sister	45.1 (63)	No	

Table 2. Patients' current health status (n= 140)

Clinical Variables	% (Frequency)
Patient on mechanical ventilator	62.1 (87)
Patient have nasogastric tube	50.0 (70)
Patient have urinary catheter	95.7 (134)
Patient have central line	39.3 (55)
Patient connected to infusion pump	50.7 (71)
Patient have surgical drain	28.6 (40)
Patient have fracture	12.1 (17)
Patient have cut wound	50.0 (70)
Patient have generalized edema	40.0 (56)
Glasgow coma score ≤ 7	56.4 (79)
Length of stay in ICU > 10 days	30.7 (43)
First time for being admitted to the hospital	37.1 (52)
First time for being admitted to the ICU	67.1 (94)

7. Prevalence of Negative Emotional Symptoms

Approximately, 56%, 70%, and 76% of relatives are suffering from depression, anxiety and stress respectively. The average depression, anxiety, and stress levels were 12.8, 11.7, and 19.1 respectively, meaning that according to the DASS relatives are suffering from mild *depression* plus moderate *anxiety* and *stress* (Table 3).

Table 3. Prevalence of negative emotional symptoms among the family members (n= 140)

Levels of burden	Percent	Frequency
Depression		
Normal	44.3%	62
Mild	16.4%	23
Moderate	21.4%	30
Severe	09.3%	13
Extremely Severe	08.6%	12
Anxiety		
Normal	30.0%	42
Mild	14.3%	20
Moderate	25.7%	36
Severe	17.9%	25
Extremely Severe	12.1%	17
Stress		
Normal	24.3%	34
Mild	30.7%	43
Moderate	25.7%	36
Severe	12.9%	18
Extremely Severe	06.4%	9

8. Factors Predicting Relatives' Negative Emotional Symptoms

The total predictor variables that belongs to *patients' sociodemographics* together significantly predict relatives' depression ($F_{8,131} = 3.537, P < 0.001$), anxiety ($F_{8,131} = 3.233, P < 0.002$), and stress levels ($F_{8,131} = 3.659, P < 0.001$); whereas, patients' insurance status, and age were the most significant predictors among this group of predictors. Predictor variables that belongs to *patients' health status* together significantly predict relatives' anxiety ($F_{11,128} = 2.143, P < 0.02$), and stress levels ($F_{11,128} = 2.267, P < 0.01$); and patients' Glasgow coma score was the most significant predictor for relatives' anxiety and stress levels. The total predictor variables that belong to *relatives' sociodemographics* together significantly predict relatives' depression ($F_{7,132} = 7.99, P < 0.001$), anxiety ($F_{7,132} = 4.302, P < 0.001$), and stress levels ($F_{7,132} = 5.271, P < 0.001$); whereas relatives' gender and age were the most significant predictors for their depression, anxiety and stress levels.

9. Discussion

The prevalence and severity of negative emotional symptoms in relatives of patients residing in the ICU indicates the degree to which they are psychologically affected by the condition of their sick relative. Since 56%, 70%, and 76% of relatives reported experiencing the symptoms of depression, anxiety and stress respectively; these findings indicated that the symptoms of anxiety, stress, and depression are clustered together among participants. This was supported by Lovibond and Lovibond (1995) [12] who pointed that different negative emotional symptoms usually appear together as a response to facing a threatening life experience.

The prevalence of depression for relatives of patients residing in the ICU in the current study is 56%; which can be described the highest among the previous studies. For instance, Maruiti et al. (2008) [13] and Pochard et al. (2001) [15] reported that 42% and 35% of relatives of patients in ICU had depression respectively. In fact, about 79% of the current study participants labeled the condition of their patients as seriously critical. Therefore, the high level of depression in the current study might be attributed to the perception of high risk of losing their relatives in the ICU. The high sense of seriousness might be related to the fact that most of our patients have critical health related

indicators (Table 2). Other unresolved concerns might also influence participants' emotional status, such as financial burden, as well as change of roles within the family.

About two thirds of relatives reported suffering from stress and anxiety. This is consistent with several previous studies that reported relatively high levels of stress and anxiety among relatives of patients admitted to the ICU [13, 14, 15]. Since 67% of patients included in the current study were admitted to the ICU for the first time; stress and anxiety among their relatives could be attributed to the experience of the new difficult situation which is hospitalization of a close relative in the ICU.

Patients' sociodemographical variables, specifically patients' age and insurance status significantly predict stress, anxiety, and depression levels among their relatives. Similar findings were reported by [16, 10], who reported that relatives of young patients have more anxiety and depression than relatives of old patients; and highlighted that the critical illness affecting young patients may impose a severe psychological burden on other family members. Therefore, the current study supports the accumulated evidence about the role of patients' age in predicting family members' psychological response. In regards to insurance status, findings here are consistent with Acaroğlu et al. (2008) [1] who reported that financial problems are the main source of anxiety for relatives of patients in ICU. Patients' insurance status is an important issue in middle and low income countries such as Jordan.

Patients' health status significantly predicted anxiety and depression in relatives. Patients' GCS scores were the most significant predictor for relatives' anxiety and stress. This finding is consistent with Kross et al. (2011) [10] who reported that family members of those who are severely ill are at increased risk of negative psychological symptom.

Sociodemographic characteristics of relatives themselves were also significantly predicted their negative emotional symptoms. Among sociodemographic characteristics, relatives' gender and age were the most significant predictors for their depression, anxiety and stress levels. These results are consistent with previous studies which reported that female relatives reported higher level of anxiety, stress, and depression [1, 11, 16]. These findings are expected as females usually use emotion-focused coping strategies which are less effective to control stress. The age of relatives was also a strong predictor for negative emotional symptoms in relatives, and this is congruent with Elizarrarás-Rivas et al. (2010) [4] who found that increasing relatives' age is associated with increasing their depression and stress levels.

10. Conclusions

Variances in relatives' negative emotional symptoms were explained by *patients' sociodemographics* and *relatives' sociodemographics*, more than *patients' health status*. Patients' and relatives' sociodemographics should be considered in dealing with relatives' psychological status. Therefore, nurses should focus in their care plans and psychological support on family members of younger patients, and female relatives since they are at higher risk to experience more negative emotional symptoms. This will help nurses to minimize the devastating impact of the negative emotional symptoms on relatives of ICU patients.

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