Original Article

Evaluation of the Relationship Between Social Support and Depression ın the Elderly With Heart Failure

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Abstract

Background: Heart failure (HF) makes it difficulty in adapt to disease and treatment in the elderly. Therefore, social support is crucial for the care of people with HF. Loss of social support might lead to mental health problems like anxiety disorder and depression.
Aim: This research aimed to evaluation of the relationship between social support and depression ın the elderly with heart failure
Methods: The study sample comprised 112 elderly people who visited the cardiology clinic and polyclinic of a university hospital in Izmir/Turkey. Data were collected by using the "Introductory Information Questionnaire", "Multidimensional Scale for Perceived Social Support" and "Geriatric Depression Scale-Short Form".
Results: The average age of elderly was 71.34±7.18 years. The mean value for geriatric depression scale-short form and total multidimensional scale for perceived social support was 8.90±3.80 and 51.06±10.87, respectively. No significant correlation was found between the perceived social support and the level of depression ($r=-0.02$, $p>0.05$). Depending on whether they lived together or not ($p<0.03$) and on the heart failure functional class ($p<0.01$), a significant difference was found in the distribution of the mean value of the total geriatric depression scale-short form.
Conclusion: The study suggests that the mean value of depression is at a level adequate for a diagnosis of depression, the level of perceived social support is on a moderate level and that there is no significant relationship between perceived social support and the mean value of depression.

Key words: heart failure, elderly, social support, depression

Introduction

Heart failure (HF) is a prevalent health problem in developed countries that impacts individual, family and social life (Kao et al., 2014). The increased longevity and related ageing increase the duration of life in people with cardiovascular diseases, resulting in an increased propensity of HF (Ilerigelen, 2010). As per the HAPPY (Heart Failure Prevalence and Predictors in Turkey) study, the prevalence of HF in Turkey was calculated as 6.9% (Degertekin et al., 2012).

Heart failure makes it difficult for individuals to adapt to their existing condition, resulting in additional constraints for treatment (Ilerigelen, 2010). Therefore, social support is crucial for the care of people with HF (Khaledi et al., 2015). It

is positively related to physical and mental health and is defined as the general value that people attach to themselves (Eker, Arkar & Yaldız 2001; Ardahan 2006). At the same time, it is known to have positive impact on the adaptation to the disease and its treatment (Sayers et al., 2008). Studies have previously shown the significance of social support in patients with HF and underlined the decrease in hospitalization ratios with its help (Krumholz et al., 2002; Yılmaz & Ergun 2010). Social support positively influences coping skills, general psychological well-being and quality of life (Chung, et al., 2013). Desirable or undesirable consequences may emerge depending upon whether social support is granted or ceased. Moreover, studies have reported that social isolation and loss of social support might increase the risk of mortality and might lead to mental health problems like anxiety disorder and depression (Murberg & Bru 2001; Yılmaz & Ergun 2010). With a 22% ratio, depression is the most common mental disorder among people with HF and twice as frequent among them as opposed to the rest of the general population (Eker, Arkar & Yaldız, 2001; Paukert, LeMaire & Cully 2009; Kao et al. 2014).). In the short run, depression deteriorates the perception of symptoms in people with HF, worsens the intensity of symptoms and increases their frequency and hence, escalates hospitalization and mortality ratios. In the long run, it negatively affects the quality of life (Eker, Arkar & Yaldız, 2001; Bekelman et al., 2007; Paukert, LeMaire & Cully, 2009; Chung et al., 2013; Kao et al., 2014). 1, 5, 10, 12, 13). In a study by Chung et al. it was concluded that age, functional class of HF and functional status have an impact on the depression symptoms and that there is a relationship between depression symptoms and low quality of life (Chung et al., 2013). Another study by Rutledge et al. showed that depression increases mortality, hospitalization ratios, rates of using healthcare benefits and registration with emergency care services (Rutledge et al., 2006). Bekelman and associates reported an increase in the heart failure-related symptoms with increase in the intensity of depression (Bekelman et al., 2007). Taking these factors into consideration, nurses should approach elderly people in a holistic manner with an awareness of the mental problems that HF brings along. There are no reports within the existing literature in Turkey on the relationship between social support for elderly with HF and depression. Consequently, this study aimed to assess the perceived level of social support and depression in elderly people with HF.

Methods

This cross-sectional research was descriptive and relational in terms of its purpose. It comprised of the elderly who were hospitalized in the cardiology clinic and were registered with the polyclinic for the symptoms of HF in one of the university hospitals in Izmir. The research sample comprised of 112 elderly individuals with age ≥ 65 years, diagnosed with HF for at least 6 months, with functional class II or III HF, scored above 23 on the mini-mental state examination, did not suffer from myocardial infarction over the past year, volunteered to take part in the research and had signed the informed consent.

Study instruments

Three different questionnaires were used to collect data in the research. The first one is the "Introductory Information Questionnaire" which intends to identify the demographic characteristics of the elderly people. The second one is the "Multidimensional Scale for Perceived Social Support-MSPSS", which intends to measure the level of the perceived social support that the elderly people with HF think they have. The third one is the "Scale for Geriatric Depression-Short Form-GDS-SF" which intends to measure the levels of depression.

Introductory Information Questionnaire

This questionnaire, which has been developed by the researchers in line with the related literature, contains 15 questions, eight of which target the socio-demographic characteristics of the elderly and seven of which target specific disease-related features (Kao et al., 2014; Khaledi et al., 2015; Chung et al., 2013).

Multidimensional Scale for Perceived Social Support-MSPSS

This scale was first developed by Zimmet et al. (1998). It identifies the factors that define the levels of individuals' perceived social support. The validity and reliability tests of MSPSS in Turkey were conducted by Eker, Arkar & Yaldız (2001). It consists of 12 items in total. This likert-type scale consists of seven categories ranging from 'absolutely not' to 'absolutely yes' (1–7 points). Each category has three sub-scales consisting of four items, which intend to identify family, friend and special someone support. The

lowest score in the sub-scales is four, whereas the highest is 28. The lowest score in the entire scale is 12, whereas the highest is 84. Higher the score, stronger the level of perceived social support (Eker, Arkar & Yaldız, 2001). The Cronbach's alpha value of the scale was 0.76.

Scale for Geriatic Depression-Short Form-GDS-SF

This scale was developed by Yesavage et al. in 1983 to enable the screening of the elderly for signs of depression (Yesavage et al., 1983). The short form, containing 15 questions, was developed in 1991 by Burke Roccaforte & Wengel (1991) to make the scale easier to use, and validity and reliability tests were conducted. This form is a quick and easily applicable screening test. Its validity and reliability were tested in Turkey on 276 patients, 30 of whom were diagnosed with depression in the year 2000. Five questions on the scale are designed as positive (numbers 1, 5, 7, 11 and 13) and the rest as negative. In the evaluation of the scale, 'no' as a response to positive questions and 'yes' to negative questions is given one point each. Getting a score of six or above on the scale is associated with a diagnosis of depression (Ertan & Eker, 2000). For the purpose of this study, the Cronbach' alpha value of the scale was 0.72.

Data analysis

Data were analyzed with Statistical Package for Social Sciences 22.0 (SPSS, IBM Corp., Armonk, NY, USA). Numbers, percentages, means and standard deviations were used to evaluate descriptive characteristics. Correlation, t-test and Kruskal–Wallis variance analysis were used to analyse the data. The obtained results were assessed at the confidence interval of 95% and significance was accepted as $p < 0.05$.

The study was approved by the ethical committee of the EUNF (approval number: 2012-36). After the approval, the necessary written consents were obtained from the institution where the research was proposed, following which it was launched. All the participants were informed about the purposes of the study and their oral and written consent was obtained. Additionally, the necessary authorizations to use the scales described above were granted.

Results

The average age of the elderly who took part in the study was 71.34±7.18 and 55.4 % male. In the current study, 53.6 % of patients were in the NYHA class III, 58 % of patients were hospitalized twice in the last year (Table 1). The mean values of 8.90±3.80 and 51.06±10.87 for GDS-SF and total MSPSS respectively. Among the perceived social support sub-scale among the elderly individuals, the highest mean family support subscale was found (26.28±2.79) (Table 2).There was no significant relationship between GDS-SF total score and total MSPSS and the sub-scales scores of the elderly with heart failure (Table 3). A significant difference was observed depending on the distribution of mean values of total GDS-SF in terms of socio-demographic and disease related features, on whether or not the elderly people lived together ($p<0.03$) and on their class of HF ($p<0.01$). No significant difference was observed based on age groups, gender, marital status, educational level, perceived income levels, employment status, whether there was another disease accompanying HF, the duration of HF, frequency of hospitalization in the past year or the symptoms of HF, which are most disturbing to the patient ($p > 0.05$) (Table 4).

Table 1. The socio-demographic and disease related features (N=112)

Characteristics N(%)	
Age (years, mean±sd)	71.34±7.18
Age group, n (%)	
65-74	
7 (77.7)	
75-84	
9 (17.0)	

>84 (5.3)	
Gender, n (%)	
Female	0 (44.6)
Male	2 (55.4)
Marital status, n (%)	
Married	03 (92.0)
Single	(1.8)
Separate	(6.2)
Education level, n (%)	
Illiterate	0 (26.8)
Literate	0 (17.9)
Primary	5 (41.0)
HighSchool/University	5 (14.2)
Perceived income level, n (%)	
Poor	3 (11.6)
Medium	0 (71.4)
Good	9 (17.0)
Elderly people lived together, n (%)	
Alone	(1.8)
With wife	3 (78.6)
With children	2 (18.6)
Employment status, n (%)	
Employed	(2.7)
Unemployed	09 (97.3)
Social security, n (%)	
Yes	12 (100.0)
No	(0.0)
The duration of the HF, (month, mean±sd)	47.64±38.18
NYHA classification, n (%)	
NYHA II	2 (46.4)

NYHA III	
) (53.6)	
Another disease accompanying HF, n (%)	
Yes	
) (80.4)	
No	
2 (19.6)	
Frequency of hospitalization in the past year, n (%)	
Nothing	
(0.9)	
Once	
1 (36.6)	
Twice	
5 (58.0)	
Three times and over	
(4.5)	
Medication treatment*, n (%)	
Diuretic	
5 (41.5)	
Angiotensin-Converting Enzyme Inhibitors	
9 (9.2)	
Angiotensin-Receptor Blockers	
(1.4)	
β-blockers	
9 (23.7)	
Digoxin	
) (24.2)	
The symptoms of HF which disturb the patient, n (%)	
Dispne	
) (62.5)	
Edema	
8 (16.1)	
Chest pain	
1 (9.8)	
Fatigue	
3 (11.6)	
Restricted activities, n (%)**	
Motor vehicle / automobile use	
1 (3.7)	
Do housework	
5 (8.8)	
The ability to act quickly and hurry	
5 (19.0)	
Sexual life	
(2.7)	
Uphill or climbing stairs	
12 (38.0)	
Use tool that want power and energy	
2 (24.4)	
Personal hygiene	
) (3.4)	

Table 2. The mean scores for total multidimensional scale of perceived social support and subscale

MSPSS Min- Max	Mean	SD
Family Support 12-28	26.28	2.79
Friends Support 4-24	12.62	4.36
Private Person Support 4-25	12.15	6.25
Total 24-76	51.06	10.87

Table 3. The correlation between the mean values of total GDS-SF and the mean values of the total MSPSS and the sub-scales

Scale	GDS-SF	
MSPSS	**r**	**p**
Family Support	-.030	0.750
Friends Support	-.066	0.489
Private Person Support	.011	0.905
Total scale	-.041	0.668

Table 4. The distribution of mean values of total GDS-SF in terms of socio-demographic and disease related features

The socio-demographic and disease related properties	N=112	Mean	SD	t	KW p
Age group					
65-74 age	87	8.91	3.89	1.240	.538
75-84 age	19	8.21	2.87		
>84	6	10.83	4.99		
Gender					
Female	50	8.26	3.24	-1.61	0.11
Male	62	9.41	4.16		
Marital status,					
Married	103	8.81	3.74	1.713	.425
Single	2	7.50	4.94		
Separate	7	10.50	4.72		
Education level					
Illiterate	30	8.56	3.32	3.193	.526
Literate	20	8.15	4.54		
Primary	46	9.43	3.61		
High school/University	16	8.93	4.31		
Perceived income level					
Poor	13	9.00	4.20	0.033	.984
Medium	80	8.82	3.67		
Good	19	9.15	4.28		
Elderly people lived together					
Alone	2	7.50	4.94	6.702	0.03
With wife	88	8.39	3.69		
With children	22	11.04	3.60		
Employment status					
Employed	3	12.33	6.80	1.59	0.11
Unemployed	109	8.80	3.70		
NYHA classification					
NYHA II	52	7.55	3.89	-3.66	< 0.001
NYHA III	60	10.06	3.34		
Another disease accompanying HF					
Yes	90	8.80	3.82	.57	0.57
No	22	9.31	3.79		
Frequency of hospitalization in the past year					
Nothing	1	2.00	.00	6.286	.098
Once	41	8.41	3.52		
Twice	65	9.04	3.76		
Three times and over	5	12.40	4.72		
The symptoms of HF which disturb the patient					
Dispne	70	9.67	3.87	7.478	.058
Edema	18	8.11	3.72		
Chest pain	11	6.72	3.16		
Fatigue	13	7.69	3.11		

KW; Kruskal–Wallis test, $p<0.05$

Discussion

Recently, studies on vulnerability within the geriatric group have considerably increased. Vulnerability is defined as the loss of ability to adapt to stress and an increase in inclination towards disease and death, in relation with progressive decline of the physiological reserve in multiple organ systems. It is related not only to the health of the patient but also to factors like multiple drug use, undesired reaction to medication, increased hospitalization and health care benefit use periods and loss of social support (Toraman, 2014; Goldwater & Pinney, 2015). It has been proven that depression is one of the typical characteristics of vulnerability. On the other hand, it also is a significant factor in terms of survival and the quality of life as far as elderly with HF are concerned (Testa, Cacciatore & Galizia, 2011).

In this study, the mean value of GDS-SF was 8.90±3.80. A score of six and over the total from scale is considered to be associated with a diagnosis of depression (Toraman, 2014). Therefore, a similar diagnosis of depression could be made for the elderly in this study on the basis of the mean value given above This finding is similar to findings in the related literature (Paukert, LeMaire & Cully, 2009; Bekelman et al., 2007). Other research has shown that the frequency of depression in patients with HF is higher than that in the rest of the society (Kao et al., 2014; Ilerigelen, 2010; Paukert, LeMaire & Cully, 2009). It is highly likely that a person suffering from a disease like HF, which is chronic, progressive and may be fatal, goes through mental health problems like anxiety disorder and depression. On the other hand, the loss of functionality caused by the disease, the increased limitation of activities, the neuro-hormonal and neuro-chemical changes that occur as a result of the disease can also worsen the anxiety disorder and depression (Yıldırım et al., 2012). Besides that, depression can accelerate the emergence and the progression of HF through the hyperactivity of the sympathetic nervous system and hypothalamic–pituitary–adrenal axis (Friedmann et al., 2014). In other words, it can be argued that there is a bi-directional pathophysiological relationship between HF and depression, where HF can lead to depression and depression can deteriorate the prognosis of HF (Friedmann et al., 2014).

In this research, the mean value of 'family support' sub-scale of MSPSS was 26.28±2.79, whereas that of 'special someone support' was 12.15±6.25. The mean value for the total scale, on the other hand, was 51.06±10.87. From the sub-scale scores, it can be inferred that for elderly people, family support ranks first followed by friend support and special someone support. The point interval of the scale indicates that the mean value for total scale is close to the middle. This result is similar to the study results of Khaledi et al. (2015) (Experimental group = 54.00 ± 22.1, control group = 51.3 ± 10.1). In the studies conducted by Chung et al. (2013) and Yılmaz and Ergun (2010), the perceived social support score averages were found to be higher, respectively (66.3 ± 17.9, 64.25 ± 11.35).

The main purpose of this study was to evaluate the relationship between perceived social support levels and depression in elderly people with HF. Accordingly, there was no significant correlation between perceived social support in elderly people with HF and depression ($p>0.05$). While this finding is in line with the study by Macabasco et al. (2010), it contradicts studies by Friedmann et al. (2014), Chung et al. (2012) and Trivedi et al. (2009), which reported an increase in depression with a decrease in the social support. Social support helps individuals to cope with the difficulties, while easing the adaptation to disease by meeting their most fundamental social needs and positively influencing physical and mental health (Korkmaz & Tel, 2010). We found that there was no significant relationship between social support and depression; however, this could be related to the small sample size and the existence of other independent variables that might affect depression but were not included in the study.

The mean values of GDS-SF were found to be significantly higher for the elderly who lived with their children as opposed to those who lived with their spouses or those who lived alone ($p<0.05$). We did not find any similar finding in the existing literature. However, this can be explained with the possibility of the loss of spouse, the fact that the individual had to live away from his/her home or the possibility that the individuals believe that they are a physical, psycho-social or financial burden to their children.

The mean value of the total GDS-SF for people with HF class III was found to be significantly

higher than for those with HF class II ($p<0.01$). In a study by Yıldırım et al. (2012) on patients with decompensated systolic HF, and in another study by Paukert, LeMaire & Cully (2009) on elderly people with HF, it was found that the mean value of depression increases as the class of HF increases. In a meta-analysis by Rutledge et al. (2006) it was found that as the HF class increases, the depression ratios increase. Additionally, the frequency of depression among patients with HF III is nearly twice as much as patients with HF class II (Rutledge et al., 2006). Higher depression scores for people with HF class III, which is characterized by certain limitations on daily activities, is an expected finding and displays parallels with the existing literature (Paukert, LeMaire & Cully 2009; Rutledge et al., 2006; Friedmann et al., 2014).

Limitations of the study; the main limitation of this study was that the research was conducted in only one hospital, which was a university hospital, as a result of which private and state hospitals were excluded.

Conclusion and Recommendations

It was concluded that the mean value of depression is at a level adequate for a diagnosis of depression, the level of perceived social support is on a mediocre level and that there is no significant relationship between perceived depression and the mean value of depression. Additionally, a significant difference in the distribution of the mean values of depression was found depending on whether or not the elderly lived together or on the class of HF.

The results obtained from the study are not generalizable; however, regular screening for depression is essential for elderly with HF. Individuals in the risk group should be referred to related professionals, and patients and their families should be granted counselling. On the other hand, more comprehensive studies on other factors that might impact depression, besides social support, should be conducted.

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