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Correlation of Cardiovascular Limitations and Symptoms Profile with the Quality of Life, Anxiety and Depression Scales

Kardiyovasküler Kısıtlılık ve Semptomlar Profilinin Yaşam Kalitesi, Anksiyete ve Depresyon Skalaları ile İlişkisi

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ABSTRACT

AIM: *The aim of our study was to determine the relationship between patients' limitations and symptoms after acute coronary syndromes and quality of life, anxiety and depression levels.*

METHODS: *The universe of the research consisted of 245 patients who applied to the cardiology clinic of Kahramanmaraş State Hospital and who received treatment. Data were collected by using the Cardiovascular Limitations and Symptoms Profile, and the Quality of Life, Anxiety and Depression Scales. Percentage, mean, Pearson and Spearman correlation analyses were used during data assessment.*

RESULTS: *The mean of the patients' age was 60.58±11.81 years, 68.6% of the patients were male, and 56.3% had experienced acute myocardial infarction. The patients experienced moderate level of limitations in physical and social functions (16.64±4.46), minor level of limitations in activities within the home (women: 3.05±1.41; men: 3.23±1.40), and moderate level of concerns (8.65±2.63). Statistically significant correlations were found between limitations and symptoms, and the parameters of quality of life, anxiety and depression.*

CONCLUSION: *The limitations and symptoms of the patients experienced after acute coronary syndromes are affective on quality of life, anxiety and depression.*

Key words: *acute coronary syndromes; limitations and symptoms; quality of life; anxiety; depression*

ÖZET

AMAÇ: *Çalışmamızın amacı, akut koroner sendromlar sonrası hastaların kısıtlılık ve semptomları ile yaşam kalitesi, anksiyete ve depresyon düzeyleri arasında ilişki olup olmadığını belirlemektir.*

YÖNTEM: *Araştırmanın evrenini, Kahmanmaraş Devlet Hastanesi kardiyoloji kliniğine başvurarak tedavi gören akut koroner sendrom geçirmiş 245 hasta oluşturdu. Veriler Kardiyovasküler Kısıtlılık ve Semptomlar Profili, Yaşam Kalitesi, Anksiyete ve Depresyon Ölçekleri ile toplandı. Verilerin değerlendirilmesinde, yüzdeler, ortalamalar, Pearson ve Spearman korelasyon analizleri kullanıldı.*

BULGULAR: *Hastaların yaş ortalamasının 60.58±11.81 yıl, çoğunluğunun erkek (%68.6) ve %56.3'ünün akut miyokart infarktüsü geçirdiği belirlendi. Hastaların; fiziksel ve sosyal fonksiyonda (16.64±4.46) orta düzeyde, kadınlara özgü ev içi faaliyetlerinde (3.05±1.41) ve erkeklere özgü ev içi faaliyetlerinde (3.23±1.40) hafif düzeyde kısıtlılık yaşadıkları, kaygı düzeylerinin orta derecede olduğu (8.65±2.63) belirlendi. Kısıtlılık ve semptomlar ile yaşam kalitesi, anksiyete ve depresyon parametreleri arasında istatistiksel olarak anlamlı korelasyonlar bulundu.*

SONUÇ: *Akut koroner sendromlar sonrası hastaların yaşadıkları kısıtlılık ve semptomlar, yaşam kalitesi, anksiyete ve depresyon düzeyleri üzerine etkilidir.*

Anahtar kelimeler: *akut koroner sendromlar; kısıtlılık ve semptomlar; yaşam kalitesi; anksiyete; depresyon*

Introduction

Improvements of the outcomes of coronary artery diseases (CAD), thus acute coronary syndromes (ACSs), led to higher survival rates and longer life expectancy. Increase in lifetime necessitates patients' compliance to the disease state and the patient has to face with new onset physical, psychological, social and economic problems.

Post-ACS symptoms and complications limit patients' physical, emotional and social functions, and decrease their sense of satisfaction and quality of life[1]. After myocardial infarction (MI) individuals experience anxiety, fatigue, irritability, impairment of concentration, and sleep problems. Patients' quality of life is reduced in association with loss of personal control, inability to perform self care activities, and fear of death. Quality of life is negatively affected by factors such as

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difficulty in physical activities including walking, running, climbing stairs, stooping and straightening up; functional dependency, various limitations, and needing help in daily life activities[2]. Individuals with ACS, in the first 4–8 week period in which they are expected to resume their normal life after MI, experience difficulties in returning to their normal life and face with social traumas like job loss, divorce and job switches. During post-ACS period, both patients and their families deal with a high level of stress[1,3].

ACSs hold an important place among CADs and their prevalence increases worldwide. ACSs are among the most important causes of mortality and morbidity, however advancements achieved in drug therapies and interventions have increased patients' life-span. Despite modern treatment options; recurrent MI, rehospitalization and mortality rates are very high in patients with ACS[4]. ACSs pose serious threats to human life and can cause several complications during and after the acute phase. These conditions result in some limitations and symptoms, and adversely affect the quality of life.

Nurses are among the professions responsible from protecting and improving patients' quality of life. While fulfilling their responsibilities, they should determine patients' quality of life and the factors affecting quality of life. In order to increase patients' quality of life after ACS, their medical, physical, psychological and social requirements should be managed by using an effective treatment and rehabilitation program.

This study was conducted to determine, if there was a relationship between patients' limitations and symptoms after acute coronary syndromes and their quality of life, anxiety and depression levels.

Methods

Study Design

This research was conducted descriptively by using the "Cardiovascular Limitations and Symptoms Profile-CLASP" to determine the relationship between patients' limitations and symptoms after acute coronary syndromes and their quality of life, anxiety and depression levels.

Setting and Samples

The research was conducted in the cardiology clinic of Kahramanmaraş State Hospital.

The universe of the research consisted of the patients applying to the cardiology clinic between April 2011 and September 2011with acute coronary syndrome.

Power analysis was performed with the following formula to determine sample size:

$n= N\, t^2\, pq/d^2\, (N-1) + t^2\, pq$

Based on the fact that 21000 patients applied to the cardiology clinic between 2010 and 2011, and 20% of these patients had experienced acute coronary syndrome; the sample size was calculated with the formula below, accepting that the results would be within 95% confidence interval and would include d = 0.05 sampling error:

$n = (21000)\, (1.96)^2\, (0.20x0.80) / (0.05)^2\, (21000-1) + (1.96)^2\, (0.20x0.80) = 243.029$

At the end of the power analysis, sample size was determined to be 243 and the research sample consisted of 245 patients with acute coronary syndrome.

Inclusion criteria were as follows:

1. History of myocardial infarction, unstable angina pectoris, and percutaneous coronary intervention secondary to acute coronary syndromes more than one month duration.
2. Patients aged 18 years or older without communication problems.
3. Willingness to participate and answer all questions in Turkish.

Ethical Considerations

The research was conducted in compliance with scientific principles as well as with the ethical principles of the Declaration of Helsinki. Accordingly, informed consent, confidentiality, equity, *primum non nocere* principles were taken into account. In the adaptation of the Cardiovascular Limitations and Symptoms Profile-CLASP into Turkish, necessary permission was obtained from those who developed the original scale.

Written permission for conducting the research was obtained from the relevant committee (Governorship of Kahramanmaraş, Directorate of Health, B104ISM4460001/314) and approval was received from the Ethics Committee (Marmara University, Institute of Medical Sciences, Clinical Research Committee for Pre-Assessment). The patients who would participate in the research were informed about

the aim, design and benefits of the study, and the patients who accepted to participate in the study were asked to sign the informed consent form.

Measurements

Data were collected by face-to-face interview, using the Patient Description Form, Cardiovascular Limitations and Symptoms Profile, SF-36 Quality of Life Scale, and Hospital Anxiety and Depression Scale.

Patient Description Form: It was prepared to determine the socio-demographic characteristics (gender, age, height, weight, education, marital status, occupation, work status, people they lived with) and disease–related characteristics (clinical diagnosis, cholesterol values, duration of acute coronary disease, regular control visits, regular medication use, dietary compliance).

Cardiovascular Limitations and Symptoms Profile-CLASP: The scale was developed by Lewin et al. in 2002[5], and its validity and reliability in Turkish was established by Özcanlı Atik[6].

SF-36 Quality of Life Scale: Short Form 36, which is a generic scale and which offers a wide range measurement for quality of life, was developed in 1992[7]. The first reliability and validity study of SF-36 in Turkey was conducted in 1995 by Pınar[8].

Hospital Anxiety and Depression Scale (HADS): The Hospital Anxiety and Depression Scale was developed by Zigmond and Snaith[9] to screen anxiety and depression in individuals with a physical disease. The validity and reliability study of this scale in Turkish was performed by Aydemir[10].

Research hypotheses:

1. Severity of angina is related with anxiety and depression or Quality of Life (QoL),
2. Severity of shortness of breath is related with anxiety and depression or QoL,
3. Severity of ankle swelling is related with anxiety and depression or QoL,
4. Severity of tiredness is related with anxiety and depression or QoL,
5. Severity of physical and social dysfunctions is related with anxiety and depression or QoL,
6. Severity of disorders of men's activities within home is related with anxiety and depression or QoL,
7. Severity of disorders of women's activities within home is related with anxiety and depression or QoL,
8. Severity of concerns and worries is related with anxiety and depression or QoL,
9. Gender is related with anxiety and depression or QoL.

Data Analysis

SPSS (Statistical Package for Social Science) version 16.0 program was used for collecting and assessing the research data. Percentage, mean, Pearson and Spearman correlation analyses were used in statistical assessment.

Results

Socio-Demographic Variables of the Participants

Table 1 summarizes the socio-demographic findings of the participants of the study. The mean age of all participants, men and women were 60.58±11.81, 63.18±12.25 and 59.39±11.44 years, respectively.

Clinical Characteristics

The clinical characteristics *(Cardiovascular Limitations and Symptoms Profile, SF-36 Quality of Life Scale and Hospital Anxiety and Depression Scale)* of the participating patients were summarized in Table 2.

Table 3 summarizes the mean scores of the patients' limitations and symptoms. The results of quality of life, anxiety and depression scales were also summarized in Table 3.

The frequency of angina positively correlated with the scores of anxiety and depression symptoms and negatively correlated with the quality of life scores ($p<0.05$).

Shortness of breath diminished gender functioning ($p<0.05$) and quality of life ($p<0.01$), and it increased anxiety and depression symptoms ($p<0.01$).

Ankle swelling reduced gender functioning and quality of life ($p<0.01$) and it increased anxiety and depression symptoms ($p<0.01$).

Tiredness worsened quality of life ($p<0.01$) and it increased anxiety and depression symptoms ($p<0.01$).

Lower physical and social functioning scores were correlated positively with decreased gender functions and quality of life ($p<0.01$) and negatively with anxiety and depression scores ($p<0.01$).

Table 1. *Socio-demographics of the participants (n=245)*

Variable	n (%)	Variable	n (%)
Age (years)		**People Living With**	
18-29	1 (0.4)	Alone	21 (8.6)
30-49	38 (15.5)	Spouse	72 (29.4)
50-69	143 (58.4)	Spouse and children	130 (53.1)
≥70	63 (25.7)	Others	22 (9)
Gender		**Social Security**	
Female	77 (31.4)	Yes	230 (93.9)
Male	168 (68.6)	No	15 (6.1)
Education		**Profession**	
Illiterate	60 (24.5)	Housewife	67 (27.3)
Literate	38 (15.5)	Workman	25 (10.2)
Primary education	105 (42.9)	Pensioner	52 (21.2)
High school	36 (14.7)	Civil servant	10 (4.1)
University	6 (2.4)	Free	61 (24.9)
		Others	30 (12.2)
Marital Status		**Working status**	
Married	220 (89.8)	Unemployed	164 (66.9)
Single	5 (2)	Full-time job	40 (16.3)
Widowed	20 (8.2)	Part-time job	41 (16.7)

Table 2. *Clinical characteristics of the participants (n=245)*

Characteristics	n (%)	Characteristics	n (%)
Diagnosis		**Number of hospital admissions**	
USAP	107 (43.7)	1	71 (29)
AMI	138 (56.3)	≥2	174 (71)
Duration of ACS		**On medication**	
1-6 months	120 (49)	Regular	108 (44.1)
6 months -1 year	38 (15.5)	Mostly	46 (18.8)
1-2 years	24 (9.8)	Occasionally	66 (26.9)
2-5 year	19 (7.8)	Never	25 (10.2)
≥5 years	44 (18)		
Compliance with the follow up visits		**Compliance with diet**	
Regularly	68 (27.8)	Regularly	58 (23.7)
Mostly	49 (20)	Mostly	50 (20.4)
Occasionally	81 (33.1)	Occasionally	78 (31.8)
Never	47 (19.2)	Never	59 (24.1)
Having risk factors for ACS		**Having complications**	
Yes	236 (96.3)	Yes	145 (59.2)
No	9 (3.7)	No	100 (40.8)
Lipid levels			
LDL (mg/dl)	125.07±35.54	Kolesterol	169.13±41.63
HDL (mg/dl)	37.17±10.35		

USAP: Anstable angina pectoris, AMI: Acute myocardial infarction.
Continuous variables are presented as mean ± standard deviation and categorical variables as number (percentage).

Table 3. *The summary of the data gathered by using the study forms. Limitations, symptoms, quality of life, anxiety and depression scores of 245 participants were expressed with mean ± standard deviation (SD) and minimum – maximum (min – max) values*

	(mean ± SD)	(min – max)
Cardiovascular Limitations and Symptoms Profile Limitations and Symptoms		
Angina	7.48±4.82	0 – 16
Shortness of Breath	6.69±4.93	0 – 14
Ankle Swelling	1.86±3.16	0 – 10
Tiredness	6.08±2.96	0 – 9
Physical and Social Functions	16.64±4.46	7 – 23
Women's activities within the home	3.05±1.41	2 – 6
Men's activities within the home	3.23±1.40	2 – 6
Concerns and Worries	8.65±2.63	3 – 12
Gender	4.09±4.33	0 – 12
SF-36 Quality of Life Scale		
Physical Function	49.92±29.55	0 – 100
Physical Role	34.33±38.18	0 – 100
Emotional Role	37.15±37.23	0 – 100
Social Function	55.42±31.79	0 – 100
Mental Health	48.84±21.24	0 – 100
Vitality	29.64±22.23	0 – 90
Pain	42.46±27.05	0 – 100
General Health	40.69±23.76	0 – 92
Hospital Anxiety and Depression Scale		
Anxiety	10.43±5.18	0 – 21
Depression	11.31±5.15	0 – 21

The scores of men's activities within the home correlated negatively with angina ($p<0.01$), shortness of breath ($p<0.05$), tiredness ($p<0.01$), the quality of life ($p<0.01$), and positively with the scores of physical and social functioning ($p<0.01$), concerns and worries ($p<0.01$), anxiety ($p<0.01$).

The scores of women's activities within the home correlated negatively with the scores of anxiety and depression symptoms ($p<0.01$) and the quality of life ($p<0.01$).

The concerns and worries correlated positively with anxiety and depression symptoms ($p<0.01$) and negatively with quality of life ($p<0.01$).

Gender functioning correlated negatively with shortness of breath, ankle swelling, and anxiety ($p<0.05$); and it correlated positively with mental health, physical functioning, social functioning, and general health perception ($p<0.05$).

Discussion

Physical, psychological and occupational limitations and symptoms after acute coronary syndrome can impair individuals' quality of life. In the present study, the general evaluation of the limitation and symptom levels of the patients revealed that patients experienced angina and shortness of breath at a minor level, and tiredness at a moderate level. It was also determined that patients experienced limitations in physical and social functions at a moderate level, women's and men's activities within the home at a minor level, concerns and worries at a moderate level, and that their mean scores for gender were at a normal level and they did not experience any limitations in this sub-domain. Ankle swelling complains were quite low, indicating that ankle swelling symptoms were not at a significant level among the patients (Table 3).

The Quality of Life SF-36 score averages are evaluated within the range from 0 to 100, where "0" indicates the worst and "100" indicates the best health condition[11]. According to the results obtained from the study, the patients experienced concerns and worries generally at a moderate level, which affected their emotional role and mental health score averages; they experienced angina and shortness of breath at a minor level and tiredness at a moderate level, which affected their physical function, physical role, liveliness/tiredness, pain and

perceived general health, and therefore did not cause a significant increase in their score averages.

The participants experienced limitations in physical and social functions at a moderate level. The activities within the home were affected a little bit. Kurcer et al., in their initial assessment of coronary artery patients, found SF-36 mean scores 38.0±3.3 for physical function, 22.5±4.2 for physical role, 26.6±1.9 for emotional role, 47.2±2.6 for mental health, 41.2±14.7 for social function, 50.0±15.9 for perceived general health, 38.0±10.1 for liveliness/tiredness, and 32.0±10.4 for pain[12].

In Turkey the cutoff score has been found 10/11 for the anxiety sub-scale and 7/8 for the depression sub-scale. Accordingly, the scores above these values were evaluated as risky scores[11]. In our study, anxiety levels of 51.2% and depression levels of 73.2% of the patients were determined above the cutoff scores (Table 3).

According to our study results, the moderate level of worries and concerns and other limitations and symptoms experienced by the patients may be considered as high risks for depression and anxiety. In the study conducted by Canlı et al., serious anxiety was reported in all patients (100%) included in the research, and serious depression was reported in 34% of the patients[13]. On the other hand, in a different study carried out with MI patients, anxiety and depression levels were determined to be low[14].

Correlation analysis of the study variables did not show significant correlation between gender and physical role, emotional role, liveliness/tiredness, pain, depression, angina, tiredness, women's and men's activities within the home and concerns-worries. The findings support the validity of the CLASP scale in measuring the physical, social and psychological health of ACS patients.

Lewin et al. studied the validity and reliability of CLASP and determined significant correlations between the relevant sections of the disease effect profile and CLASP, between the sleep problems scale and the tiredness sub-domain of CLASP, and between the worries sub-domain of CLASP and anxiety and depression[5]. In the study carried out by Lopez et al., significant correlations were found between CLASP and the relevant sections of SF-36 and HADS[15].

In line with these results, it may be suggested that nurses should evaluate ACS patients' limitations and symptoms and their quality of life at regular intervals. Following the evaluation, treatment and applications for improving quality of life should be planned and initiated. ACS patients have limitations and symptoms that lower their life quality and make them prone to anxiety and depression.

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