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Evaluation of the Quality of Life of Patients with Acute Coronary Syndrome

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Abstract

Objective: Acute coronary syndrome affects important health dimensions related to individuals' social and personal relationships, their professional situations, their daily activities and quality of life. The study aimed determining the factors that affect quality of life of patients with acute coronary syndrome in the Turkish population and to examine the relationship between this factors.

Methods: The descriptive cross-sectional study was conducted with 370 acute coronary syndrome patients. Data were collected with Multidimensional Index of Life Quality-Turkish Version. Descriptive statistics were calculated. The independent sample t test, one-way anova and multiple regression analysis were used in determining effects on quality of life scores of variables.

Results: Ten variables explained 31% of the variance related to the overall scale (R=0.56, R^2=0.31, p<0.001). It has been seen that age (β=-9.39, p=0.001), marital status (β=-46.06, p<0.001), level of education (β=3.06, p=0.016), income-expense balance (β=16.77, p=0.012), number of previous infarction (β=-5.23, p=0.028) and regularly exercise (β=-16.81, p<0.001) had independent predictor effect on overall scores.

Conclusion: The study that discussed also general living standards and health-related lifestyles of the Turkish community revealed importance of cultural differences in determining the effects of a disease. This study can also enable nurses to plan nursing interventions and to improve the quality of care for this patients.

Keywords: Acute coronary syndrome; Multidimensional Index of Life Quality-Turkish Version; quality of life.

Akut Koroner Sendromlu Hastaların Yaşam Kalitesinin Değerlendirilmesi

Özet

Amaç: Akut koroner sendrom bireylerin sosyal ve kişisel ilişkileri, mesleki durumları, günlük aktiviteleri ve yaşam kalitesi ile ilgili önemli sağlık boyutlarını etkiler. Çalışma, akut koroner sendromlu hastaların yaşam kalitesini etkileyen faktörleri belirlemeyi ve bu faktörler arasındaki ilişkiyi incelemeyi amaçlamıştır.

Yöntemler: Tanımlayıcı kesitsel çalışma 370 akut koroner sendromlu hasta ile yapıldı. Veriler Çok Boyutlu Yaşam Kalitesi İndeksi-Türkçe Versiyonu ile toplandı. Tanımlayıcı istatistikler hesaplandı. Değişkenlerin yaşam kalitesi puanları üzerindeki etkilerin belirlenmesinde bağımsız örneklem t testi, tek yönlü anova ve çoklu regresyon analizi kullanıldı.

Bulgular: On değişken toplam ölçek puanı ile ilgili yaşam kalitesinin %31'ini açıkladı (R=0.56, R^2=0.31, p<0.001). Yaş (β=-

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9.39, p=0.001), medeni durum (β=-46.06, p<0.001), eğitim düzeyi (β=3.06, p=0.016), gelir-gider dengesi (β=16.77, p=0.012), önceki infarktüs sayısı (β=-5.23, p=0.028) ve düzenli egzersiz yapma (β=-16.81, p<0.001) toplam ölçek puanlarının bağımsız yordayıcı değişkenleri olarak bulunmuştur.

Sonuç: Türk toplumunun genel yaşam standartlarını ve sağlıkla ilgili yaşam tarzlarını da tartışan çalışma, bir hastalığın etkilerini belirlemede kültürel farklılıkların önemini ortaya koydu. Bu çalışma hemşirelik girişimlerini planlamalarını ve bu hastalar için bakım kalitesini artırmalarını sağlayabilir.

Anahtar sözcükler: Akut koroner sendrom; Çok Boyutlu Yaşam Kalitesi İndeksi-Türkçe Versiyon; yaşam kalitesi.

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Incidence of secondary ischemic events in acute coronary syndrome (ACS) patients group negatively affects the health-related quality of life (HRQoL) of individuals in terms of physiological, emotional and social.[1–3] The patients are at increased risk for declining HRQoL following hospital discharge for ACS.[4] Therefore, it is thought that HRQoL measurements are one of the major concerns utilized in the evaluations of health interventions to researchers working in the cardiovascular area.

HRQoL evaluates well-being of their physical, psychological and emotional functions together with social well-being of individuals and contains an assessment of all the experiences in the life of the person by itself.[5, 6] HRQoL as an important indicator of health outcomes is a source of mortality and morbidity data that isused to evaluate the effects of a disease or a treatment.[7, 8] HRQoL is important because it helps indecision making regarding patient care, source-use management and guiding health policies as well as defining patients' needs and therefore determining treatment plans.[9] Therefore, several general and disease-related questionnaires were developed to assess different aspects of HRQoL for coronary patients.[10] These questionnaires are used in quite a wide range of settings. Experts on this field agree that one should choose a proper questionnaire which measures disease-specific health dimensions and assesses health care needs of the patients.

ACS affects the important health aspects of individuals in their social and personal relationships, occupational status and daily activities.[2, 11] Therefore, the aim of the treatment of patients presenting with ACS is not only to prolong life, but also to alleviate symptoms and improve function.[12] HRQoL measurement and evaluation of factors affecting it are useful for improving and maintaining HRQoL in ACS patients.[13] The previous studies have showed several sociodemographic and clinical factors have effected on HRQoL among survivors of ACS.[14, 15] Several factors have been identified as age, sex, type of ACS, depression, physical functioning and so on.[10, 14–18]

In our country, although there is a study on factors affecting quality of life in ACS patients, it is thought that it should be supported with different HRQoL questionnaires due to be useful in establishing a broad perspective for care and treatment approaches. Therefore, the current study was conducted to determine the factors affecting HRQoL in ACS patients.

Methods

Setting and Participants

The participants were 370 patients with diagnosis of ACS admitted to the cardiology service and outpatient clinic of a university hospital between October 2010-June 2011. The inclusion criteria were to be diagnosed with ACS, aged 18 years or older, not to verbal communication problem, able to answer the questionnaire physically and psychologically, no psychiatric history and any physical disability.

Measures

The instruments were a patient information form and The Multidimensional Index of Life Quality-Turkish Version (MILQ-TR). Patient information form prepared by the researcher based on the literature was used to determine the socio-demographic (age, sex, marital status, educational status, occupation, social security etc.) and disease-related characteristics (medical diagnosis, incidence of infarction, smoking and alcohol use, diet and exercise etc.) of the sample. The MILQ-TR were used in order to perform the HRQoL measurements based on this characteristics of the sample. Turkish validity and reliability study of the MILQ developed by Avis et al.[19] was made by us in 2012. 34-items MILQ-TR includes six sub-dimension: physical health (15 items), mental health (4 items), access to the health personel (5 items), interpersonal relations (5 items), financial status (3 items) and social function (2 items). MILQ have a seven-point Likert format that ranged from 1 (very dissatisfied), 2 (dissatisfied), 3 (somewhat dissatisfied), 4 (neither satisfied nor dissatisfied), 5 (somewhat satisfied), 6 (satisfied) and 7 (very satisfied). Higher scores indicate better functioning or health status. Cronbach's alpha coefficient of the MILQ-TR is 0.94 for all of the scale and coefficients for six subscales range from 0.72-0.94.

Ethical Consideration

The study was conducted in accordance with the Declaration of Helsinki. Approval was obtained from local ethics committee (21.09.2010/117). Informed consent was obtained from all participants.

Data Analysis

The data were analysed using SPSS for Windows (version 18.0; SPSS Inc., Chicago, IL, USA). Descriptive statistics such as percentage, mean and standard deviation were calculated. Parametric tests were performed because the data showed normal distribution. The Pearson correlation test was used to determine the independent variables that were associated with the MILQ-TR. Then, multiple regression analysis was applied to showing of significance them among independent variables that affect HRQoL. The independent sample t test and one-way anova were analysed in comparing effects on the MILQ-TR of independent variables.

Results

The majority of the patients were male (n=279, 75.4%) and married (n=347, 93.8%). The age of patients ranged from 30 to 75 years old with a mean age of 58.63 years (SD=7.76). The majority of patients with ACS were: retired (n=170, 46.0%), primary school graduate (n=180, 48.7%), equal income-expense level (n=216, 58.4%), living together with other family members (n=355, 95.9%). Only 3% of patients did not have any social security. All the same, most of sample had diagnosed with myocardial infarction (MI) (n=192, 51.9%), 44.1% had once hospitalised and time of diagnosis for all participants were 0-12 months (n=121, 32.7%). While most patients with ACS were on a diet with regard to their disease (n=234, 63.2%), most of them were not doing exercise (n=241, 65.1%).

Overall scores of the MILQ according to patients characteristics were significantly correlated with the following variables: age (r=-0.26, p<0.001), marital status (r=-0.34, p<0.001), level of education (r=0.22, p<0.001), social security (r=-0.11, p=0.035), income-expense balance (r=-0.19, p<0.001), with whom she/he lives (r=0.26, p<0.001), number of previous infarction (r=-0.13, p=0.010), frequency of hospitalization (r=-0.14, p=0.006), regularly exercise (r=-0.28, p<0.001), drug compliance (r=-0.10, p=0.047). Table 1 shows the results of multiple regression analysis of independent variables associated with overall scores. Ten variables explained 31% of the variance related to the overall MILQ-TR (R=0.56, R^2= 0.31, p<0.001). When the test results are analyzed for significance of regression coefficients, it has been seen that age (β=-9.39, p=0.001), marital status (β=-46.06, p<0.001), level of education (β=3.06, p=0.016) and income-expense balance (β=16.77, p=0.012), number of previous infarction (β=-5.23, p=0.028) and regularly exercise (β=-16.81, p<0.001) had independent predictor effect on overall scores.

Table 1. Findings of multiple regression analysis on independent variables associated with overall MILQ-TR

	Total MILQ-TR Score			
	B	**Beta**	**t**	**P**
Constant	324.43		8.74	**<0.001**
Age	-9.39	-0.15	-3.31	**0.001**
Marital status	-46.06	-0.34	-5.20	**<0.001**
Level of education	3.06	0.11	2.43	**0.016**
Social security	-7.82	-0.02	-0.47	0.633
Income-expense balance	-6.77	-0.12	-2.52	**0.012**
With whom she/he lives	-10.09	-0.06	-0.91	0.362
Number of previous infarction	-5.23	-0.10	-2.20	**0.028**
Frequency of hospitalization	-4.34	-0.08	-1.74	0.082
Regularly exercise	-16.81	-0.24	-5.21	**<0.001**
Drug compliance	-4.69	-0.03	-0.82	0.411
R=0.56 R^2= 0.31 F=15.14	**p<0.001**			

Table 2 shows the comparisons of patients characteristics regarding overall MILQ-TR and its subscales. Statistically significant and higher scores were obtained as follows: 30-45 years vs. over 60 years for physical health (F=20.75, p<0.001), mental health (F=4.48, p=0.012), interpersonal relationships (F=9.30, p<0.001) and overall score (F=13.22, p<0.001); married vs. singles for physical health (t=7.04, p<0.001), mental health (t=3.59, p<0.001), interpersonal relationships (t=12.46, p<0.001), social function (t=7.34, p<0.001) and overall score (t=7.14, p<0.001); university graduates vs. others for physical health (F=6.93, p<0.001), interpersonal relationships (F=5.83, p<0.001), social function (F=6.11, p<0.001) and overall score (t=6.24, p<0.001); higher income vs. others for physical health (F=6.47, p=0.002), financial status (F=27.22, p<0.001), social function (F=13.26, p<0.001) and overall score (F=6.73, p=0.001); no history of infarction vs. once or twice ones for mental health (F=12.74, p<0.001) and overall score (F=3.88, p=0.021); regular exercise vs. ones who do not exercise regularly for physical health (t=6.37, p<0.001), mental health (t=3.10, p=0.002), access to the health personnel (t=2.25, p=0.025), interpersonal relations (t=2.89, p=0.007), social function (t=4.42, p<0.001) and overall score (t=5.85, p<0.001).

Discussion

The study aimed determining the factors that affect HRQoL of patients with ACS in the Turkish population and

Table 2. Comparisons between MILQ-TR and patients characteristics

Socio-demographic characteristics	N	MILQ-TR PH Mean±SD	MH Mean±SD	AHP Mean±SD	IR Mean±SD	FS Mean±SD	SF Mean±SD	Overall score Mean±SD
Age†								
30-45	14	89.14±10.74	24.42±3.22	27.50±7.49	25.92±2.92	12.71±3.91	6.85±3.54	193.07±22.73
46-60	211	78.36±17.95	21.67±5.11	29.11±5.65	24.70±4.32	11.52±3.79	7.04±3.29	178.63±31.16
61-75	145	67.22±19.19	20.47±6.01	29.53±5.36	22.73±4.99	10.93±4.62	6.26±3.45	163.17±32.77
p/F		**0.000/20.75**	**0.012/4.48**	0.398/0.92	**0.000/9.30**	0.191/1.66	0.100/2.31	**0.000/13.22**
Marital status*								
Married	347	76.11±17.97	21.56±5.33	29.14±5.64	24.63±3.90	11.40±4.09	6.95±3.31	176.04±30.58
Single	23	48.73±19.17	17.39±6.34	30.39±5.06	14.13±4.10	10.34±5.00	3.26±2.26	129.00±30.41
p/t		**0.000/7.04**	**0.000/3.59**	0.303/-1.031	**0.000/12.46**	0.331/0.99	**0.000/7.34**	**0.000/7.14**
Level of education†								
Literate	85	64.28±19.50	20.52±5.15	29.40±6.29	22.48±5.57	9.92±3.92	5.52±3.07	157.88±32.90
Illiterate	11	53.45±18.00	17.54±5.53	29.63±5.59	18.27±6.19	10.54±4.36	3.63±2.01	138.45±31.93
Primary	180	73.17±18.00	21.46±5.26	29.28±5.43	24.09±4.31	11.40±4.26	6.39±3.19	171.92±29.89
Secondary	58	77.50±17.70	22.20±4.85	29.32±5.91	25.08±3.67	10.65±3.52	7.10±3.14	178.17±30.04
University	36	78.03±20.27	20.53±6.20	27.89±5.93	28.41±5.18	11.84±4.33	7.32±3.80	179.12±36.68
p/F		**0.000/6.93**	0.084/1.95	0.188/1.50	**0.000/5.83**	0.110/1.81	**0.000/6.11**	**0.000/6.24**
Income-expense balance†								
Income > expense	21	81.85±20.69	21.61±5.86	30.47±5.27	24.00±4.32	15.52±4.02	8.71±3.84	188.42±34.41
Income = expense	216	76.41±18.14	20.99±5.56	29.29±5.48	24.32±4.29	11.96±3.97	7.19±3.31	176.32±31.27
Income < expense	133	69.98±19.86	21.76±5.30	28.90±5.88	23.41±5.22	9.66±3.71	5.65±3.11	165.49±32.89
p/F		**0.002/6.47**	0.429/0.84	0.470/0.75	0.289/1.24	**0.000/27.22**	**0.000/13.26**	**0.001/6.73**
Number of previous infarction†								
No	178	75.03±17.81	21.93±5.06	29.61±5.53	24.02±4.45	11.52±4.24	6.83±3.40	175.23±30.14
Once	163	75.17±19.38	21.46±5.20	28.85±5.55	24.06±4.73	11.30±4.04	6.65±3.38	173.63±32.43
Twice and over	29	66.27±24.57	16.58±7.21	28.89±6.43	23.17±5.54	10.44±4.17	6.51±3.26	157.27±43.23
p/F		0.059/2.84	**0.000/12.74**	0.437/0.83	0.624/0.47	0.430/0.84	0.839/0.17	**0.021/3.88**
Regularly exercise*								
Yes	129	82.37±16.71	22.50±5.23	30.11±4.61	24.87±4.06	11.79±3.80	7.76±3.23	185.69±29.00
No	241	70.14±19.12	20.66±5.51	28.74±6.04	23.49±4.89	11.09±4.31	6.17±3.32	166.39±32.44
P/t		**0.000/6.37**	**0.002/3.10**	**0.025/2.25**	**0.007/2.89**	0.127/1.52	**0.000/4.42**	**0.000/5.85**

*Student's t test; †One-way anova; PH: physical health; MH: mental health; AHP: access to the health personnel; IR: interpersonal relationships; FS: financial status; SF: social function; SD: standard deviation.

to examine the relationship between this factors. Multiple regression analysis showed that ten variables were associated with MILQ-TR. These related factors are explained in detail below.

Age was a factor associated with HRQoL and health-related physical, mental, and interpersonal relationships were higher in younger patients.

Male, 40 years and older and sedentary lifestyle were the majority of the sample. Considering that these are risk factors for ACS, it can be said that most participants reflect disease-related risk factors.[20, 21] In Turkey, similar socio-demographic characteristics have been found in some other studies. In those studies, the majority of the participants were male, married, with low educational level and retired.[8, 22, 23] These results explain that irreversible risk factors such as age and gender are important on ACS formation.

Participants aged 30-45 years were found to have higher scores on physical health, mental health and interpersonal relations subscales than other age groups. Regression analysis showed that the decrease in the HRQoL was statistically significant with increasing age. These results indicate that physical health, emotional state and social relations are more satisfactory in young patients than other age groups. Bengtsson et al.,[7] similar results were reached, and it was found that physical health increased in individuals under the age of 59 years. In Turkey, the other two studies showed that the total HRQoL score falls with increasing age.[24, 25] Due to increasing age, increased physical limitations, de-

creased physical strength and energy and frequent chronic diseases are thought to be the reasons for this.

Marital status was an independent variable of the HRQoL. Married participants had more scores than physical, mental, interpersonal relationships and social function areas of health. Durmaz et al.[26] found that married individuals had higher social, economic status, and familial relationships subscale scores than single individuals. Bosworth et al.[27] emphasized the importance of social support for this group of patients, overall score of single people who did not receive adequate support was lower than the married ones. Individuals have the desire to be able to cope with the disease, to share the difficulties related to the disease and to support someone in their daily activities. However, the majority of the individuals who lost their spouses in this study suggest that their HRQoL may be adversely affected.

The level of education was an independent predictor for MILQ-TR. Also, university graduates received higher scores from both overall scale and physical, interpersonal relationships, social function areas. Increased level of education has enabled individuals to participate more in physical activities, to feel more ready for the triggering feature of the disease and to have more self-confidence in their relationships with their families. Similarly, Yılmaz et al.,[22] physical activity levels, positive behaviors in emotional reactions, participation in social activities and adaptation to nutritional style were found to be higher in individuals with higher education. Beşer et al.[28] found that educational status only affected the sub-dimension of the physical field of the HRQoL. These results may be due to the fact that individuals with high educational level are more likely to gain awareness of the disease and to research and learn about the situation and to respond more positively to the returns of the disease.

Income-expense balance is an independent predictor variable in regression analysis. In addition, the HRQoL of those with good income-expense balance were high levels of physical health, financial status and social function. The fact that higher income level indicates that individuals feel safer and better in the physical and work environment and they are more confident and willing to participate in social activities. Yılmaz et al.[22] found that negativity in physical activity, insecurity and emotional response subdimensions was significant in low-income groups. Sönmez et al.[29] stated that socio-economic inequality significantly affects cardiovascular morbidity and mortality.

In the study, it was observed that the number of previous infarction among the individuals who had infarction history had decreased MILQ-TR scores. In addition, the increased number of infarction had a negative effect on the mental health of individuals. In a study investigating the effects of coronary artery disease (CAD) on the HRQoL, compared to the control group, general, physical and emotional health of individuals with CAD were decreased.[3] Myocardial infarction is an important health problem that causes physical deterioration as well as causing emotional breakdown and deteriorating personal and social relationships. However, the increase in the number of infarction may have adversely affected mental health due to the increase in the number of hospitalizations, separation from home and family, and separation from the occupational environment.

Regularly exercise was an independent variable of the HRQoL. Also, individuals who making regular exercise received statistically significant and higher scores from all others of the scale except the financial status subscale. These results indicate that individuals do not have to make an additional payment for exercise, they feel more dynamic in daily life activities, and they are more mentally comfortable and peaceful. Sevinç and Akyol[8] found that physical, emotional and social health of patients who are active and exercising regularly were better. It has been reported that individuals who exercise regularly increased their physical health and fell better, improved mental health, sense of confidence, motivation at work and treatment success rates increased.[30] It can be expected that individuals who are included in the study will receive high scores from the important areas of physical, mental, social and interpersonal relationships of the HRQoL together with the phenomenon of regular exercise.

This study had some limitations. First, research was performed wherein only one hospital in Turkey and with 8-month period. Second, although current study in cross-sectional type can be generalized to the community, it allows less cause effect relationship according to other research methods or not allow statements on the stability of these findings over time. Third one is that MILQ-TR which was found to be valid and reliable a scale for Turkish society was used for the first time as HRQoL instrument in Turkey. Therefore, it is necessary to spread the use of this scale on a similar patient groups and in different regions in Turkey.

Conclusions

The study that discussed general living standards and health-related lifestyles of the Turkish community revealed importance of cultural differences in determining the effects of a disease. However, our findings indicated that MILQ-TR effective is a measurement tool in measuring

HRQoL of Turkish society and in determining at what level is effective on life satisfaction of these cultural differences. Also, cardiac patients experience difficulties in the true sense in order to cope with the disease and to ensure adaptation to process after discharge. Therefore, the information obtained from this study can be important for health professionals' effectively care creating enough perspective in order to prepare the patient in this process. This study can enable nurses to plan nursing interventions and to improve the quality of care for this patients.

Ethics Committee Approval: The study was conducted in accordance with the Declaration of Helsinki. Approval was obtained from local ethics committee (21.09.2010/117). Informed consent was obtained from all participants.

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