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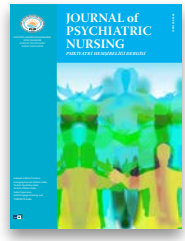

Original Article

Determination of the relationship between alexithymia, spiritual well-being, and quality of life in patients with coronary artery disease

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Abstract

Objectives: In this research, it was aimed to determine the predictors of quality of life (QoL) in coronary artery disease patients.

Methods: This descriptive and cross-sectional research was carried out with 345 coronary artery disease patients in the cardiology clinic of a university hospital. The data were collected by using the Patient Information Form, Toronto alexithymia scale-20 (TAS-20), Spiritual Well-being Scale (SWBS), and heart QoL scale (HeartQoL).

Results: The mean age of the patients was 60.71±11.88 years in this study. The average total scores of the scales were TAS-20 56.81±14.81, SWBS 109.35±19.44, and HeartQol 1.46±0.69, respectively. HeartQol was predicted by the number of children (β=−0.672), occupation (β=9.154), social security (β=5.957), following diet program regularly (β=3.452), regular walking (β=2.981), and TAS-20 (β=−0.184).

Conclusion: The presence of alexithymia in coronary artery disease patients might affect the QoL adversely. Within the extent of holistic care, it is of great importance for nurses to diagnose alexithymic patients and to plan supportive interventions for this patient group for improve QoL.

Keywords: Alexithymia; coronary artery disease; quality of life; spirituality; well being

Cardiovascular diseases (CVD) are the prominent cause of death, which induce the deaths of approximately 17.9 million people worldwide each year.[1] Coronary artery disease (CAD), one of the CVDs, is a prevalent clinical syndrome that is a global health priority, and the burden of disease is increasing at a threatening rate worldwide. The disease reduces the quality of life (QoL), increases mortality and morbidity, and creates an enormous burden on the general health system.[2]

The basic pathology in CAD formation is atherosclerosis of the coronary arteries. Lipid disorders, thrombosis, inflammation, vascular smooth cell activation, endothelial dysfunction, oxidative stress, altered matrix metabolism, and genetic factors play a role in the development of atherosclerosis.[3] CAD is a chronic issue that negatively affects QoL in both daily life and frequent and repeated long-term hospitalizations.[4] Studies have demonstrated that QoL is low in CAD and further decreases especially in untreated patients.[5,6] Besides, a low QoL is a substantial indicator of negative health outcomes, morbidity, and mortality in CAD.[7]

Recent studies have revealed that negative psychological factors (anxiety, depression, and chronic stress) also play a major role in CAD and the emergence of disease-associated complications.[8–11] Among the negative psychological factors, "alexithymia" is generally described as an emotional gap.[12,13] Individuals with high alexithymia recognize emotions based on their biological components, but they show inadequate

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ability to use pictures, thoughts, imagination, and words that express these emotions and enable them to be conveyed to the other party. Alexithymic people may misinterpret symptoms and have difficulty expressing their feelings accurately and adequately. Patients' inadequate reporting of symptoms and uncertainty in facial expression may interrupt the physician from making an accurate assessment, causing a delay in life-saving intervention.[14] The aforementioned negative personality trait may also play a role in the emergence of disease and disease-associated complications through physiological, behavioral, cognitive, or social aspects.[11,15] Alexithymia is associated with the risk of hypertension and atherosclerosis in the general population.[16] In a study performed 20 years ago, it was reported that alexithymia was associated with the diagnosis of CAD and alexithymic patients had five times more myocardial infarction than nonalexithymic patients, and mortality rates were higher.[17] Furthermore, alexithymic properties were determined to cause autonomic imbalance in patients undergoing cardiac surgery.[18] Moreover, it is suggested that the fact that alexithymic patients with AMI have difficulty in interpreting the symptoms correctly due to poor bodily response causes a delay in seeking emergency medical help, and this will result in an increase in AMI-associated mortality.[19,20]

CAD patients experience higher rates of depression, anxiety, and fear of death compared to individuals with other chronic disease groups.[21] Moreover, as a result of impaired emotional intelligence caused by alexithymia, problems arise in interpersonal relationships and they do not receive social support from family/friends and other people they interact with.[22]

In recent years, it has been stated that individuals who have chronic diseases have turned to nonpharmacological practices, including spiritual approaches in coping with the disease, and spiritual health-strengthening practices have been beneficial, particularly in patients with cardiac diagnoses.[23–25] Spiritual well-being (SWB) is recognized to be a protective factor in improving health and preventing diseases. SWB affects the way individuals handle difficulties, brings meaning and purpose to life, provides a sense of self-efficacy, and reduces stress and anxiety by creating a positive mental space.[26,27] Consequently, a harmonious relationship between physical and mental health is achieved, adaptation to the disease increases, and QoL is affected positively.[2,28] In research regarding the effect of SWB on CAD patients, it has been determined that SWB has positive effects on disease severity[29] and anxiety and thereby plays a role in increasing the QoL of patients.[30,31] Many studies have shown that intervention programs for psychosocial risk factors by nurses for CAD patients are more effective than usual care programs, and therefore, studies in which risk factors are examined in more detail are needed to prepare effective nursing intervention programs.[32,33]

What is presently known on this subject?
- Low quality of life is a predictor of mortality in cardiovascular diseases
- Alexithymic features are observed in patients with coronary artery disease and alexithymic features negatively affect the quality of life.

What does this article add to the existing knowledge?
- Alexithymia associated with negative health outcomes and poor quality of life in patients with coronary artery disease
- Spiritual well-being may affect the quality of life in coronary artery disease.

What are the implications for practice?
- It is important to raise the awareness of nurses to identify the factors that negatively affect the quality of life in coronary artery disease patients and plan nursing interventions.

In the literature, it is observed that there are studies assessing alexithymia, SWB, and QoL individually or together in CAD, and it has also been stated that alexithymia and low QoL are associated with CAD.[22,34] Hence, the primary aim of in this research, it was aimed to determine the relation between alexithymia, SWB, and QoL in CAD and the secondary aim is to reveal the factors affecting QoL in patients with CAD.

Research Questions

1. What is SWBS score average of CAD patients?
2. What is Toronto Alexithymia Scale-20 (TAS-20) score average of CAD patients and how many of the patients are alexithymic?
3. What is the HeartQoL score average of CAD patients?
4. Is there a relationship between HeartQoL, TAS-20, and SWBS in CAD patients?
5. What are the factors predicting HeartQoL score average of CAD patients?

Materials and Method

Research Design

This study has a descriptive correlational design.

Participants

The population of the research consisted of patients with coronary artery disease who were Cardiology Clinic of the Health Research Hospital of a state university and undergoing coronary angiography (CAG). The total number of patients hospitalized in the cardiology clinic and who underwent angiography in 1 year was 1988. The sample size was calculated to be 323 people based on the sampling method (5% margin of error and 95% confidence interval) with a known population. All patients who agreed to participate in the research between 1 March and 30 June 2022 and met the research criteria (had a diagnosis of CAD confirmed by CAG had no hearing and self-expression challenges, and had no cognitive impairment) were included in the sample, and the research was carried out with 345 individuals due to the probability of data loss.

Procedure of Data Collection

At the start of the study, the researchers identified patients who met the inclusion criteria. After the patients were informed regarding the study, data collection forms were applied by the researchers to the patients who met the research criteria and voluntarily agreed to participate in the study by face-to-face interview method in the patient's room. The questionnaires were completed in about 20–25 min for each patient. In this study, the mean scores from the HeartQoL Scale were the dependent variables; the mean scores from TAS-20 and SWBS, and the descriptive characteristics were the independent variables.

Description of Data Collection Tools

The Patient Information Form, TAS-20, SWB Scale (SWBS), and Heart QoL Scale (HeartQoL) were used to collect the data.

Patient Information Form

The questionnaire consisted of two parts: Sociodemographic characteristics (gender, age, marital status, educational status, social security, number of children, occupation, employment status, and people living together at home) and disease characteristics (disease duration, number of CAGs, presence of additional chronic diseases, complaints associated with the disease, presence of stress, drug use status, sleep, diet, physical activity, smoking, and alcohol drinking).

TAS-20

The 20-item TAS is a 5-point Likert type scale developed by Bagby et al.[12] The scale consists of three sub-dimensions: "Having difficulty in recognizing emotions, difficulty in expressing emotions, and extroverted thinking." As the total score collected from the scale increases, the level of alexithymia increases. For the cutoff score of the scale, 51 points and below should be scored if it is desired to work with a group that is not pure alexithymic, and 59 points and above should be scored if it is desired to work with an alexithymic group. The "Cronbach's alpha value" of the total scale adapted to Turkish by Güleç et al.[35] was determined to be 0.78. The Cronbach's Alpha value was found to be 0.90 in this study.

SWBS

It is a 29-item and 5-point Likert type (1-Not suitable for me at all - 5-Completely suitable for me) scale developed by Eksi and Kardas[36] to measure SWB of adults. The scale consists of 3 sub-dimensions, which are Transcendence: Commitment to a superior, supreme, powerful, and divine power, Adaptation to Nature: Adaptation to nature and environment, and Anomie: Making sense of life. In case a total score is desired, the items in the anomie sub-dimension are scored inversely. The high score collected from each sub-dimension of the scale indicates that the individual has the property evaluated by the relevant sub-dimension. The total score to be obtained from the scale ranges between 29 and 145 points, and as the total score increases, the SWB level increases as well. The Chronbach's alpha value of the scale was assessed to be 0.88. In this research, the Chronbach's Alpha value of the scale was determined to be 0.93.

HeartQoL

The scale was developed by Oldridge et al.[37] to measure the QoL in people over the age of 18 with ischemic cardiac disease, the Turkish validity and reliability study of the scale was conducted by Duğan and Bektaş[38]. The scale has 14 items under two sub-dimensions, physical (10 items) and emotional characteristics (4 items). Each item is scored between 0 and 3; 3 is evaluated as "no discomfort" and 0 as "very uncomfortable." In the assessment of the scale, high scores indicate no dysfunction and high QoL, whereas low scores indicate high dysfunction and low health level. The Cronbach's alpha reliability coefficient of the scale was determined to be 0.88. In this study, the Cronbach's reliability coefficient of the scale was noted to be 0.92.

Statistical Analysis

The data were evaluated with the Statistical Package for Social Sciences (SPSS) 25.0 package program. In the research, skewness and kurtosis values were accepted as ±3 as indicators of normality.[39] Descriptive statistics, number, percentage, mean, and standard deviation were used, and the relation between the scales was assessed via Pearson correlation analysis. Multivariate linear regression analysis was implemented to identify the factors associated with QoL, and as a result of bilateral comparisons (univariate analysis), related and high representation rate variables were included in the model. Categorical independent variables were altered to dummy variables. Dummy variables were presented in the findings as reference variables.

Ethical Consideration

In this study, ethical permission was obtained from a university's Faculty of Health Sciences Non-interventional Studies Ethics Committee (date: December 31, 2021 no: 81829502.903/291), and institutional permission was taken from the hospital where the research was carried out. Permission was taken from the developers of the scales for the research. This study was conducted according to the Declaration of Helsinki. Data confidentiality was observed in this study and verbal and written informed consent was obtained from the patients.

Table 1. Distribution of patients' sociodemographic data (n=345)

Variables	Mean±SD	Min-max
Age	60.71±11.88	20–96
Period of CAD diagnosis (years)	4.67±4.11	1–30
Number of CAGs	2.30±0.60	1–5
Number of children	4.72±2.69	0–16

	n	%
Gender		
Female	173	50.1
Male	172	49.9
Marital status		
Married	312	90.4
Single	33	9.6
Having children		
With children	319	92.5
Occupation		
Homemaker	155	44.9
Farmer	87	25.2
Worker	14	4.1
Retired	47	13.6
Tradesman	20	5.8
Unemployed	5	1.4
Civil servant	17	4.9
Income status		
Poor	42	12.2
Moderate	261	75.7
Income status		
Good	42	12.2
Education status		
Illiterate	7	16.5
Literate	176	51.0
Primary School	67	19.4
High school	21	6.1
University	24	7.0
Employment status		
Unemployed	252	73.0
Employed	83	24.1
Works whenever he/she Finds a job	10	2.9
Social security		
Yes	194	56.2
No	151	43.8
Place of residence		
Village	140	40.6
County	112	32.5
Province	93	27.0
Whom he/she lives with at home		
Alone	18	5.2
With spouse	48	13.9
With spouse and children	248	71.9
With relatives	18	5.2
With children and grandchildren	13	3.8

SD: Standart deviation; CAD: Coronary artery disease; CAG: Coronary angiography.

Results

In this research, the mean age of the patients was found to be 60.71±11.88 years, the period of CAD diagnosis was found to be 4.67±4.11, and the number of CAGs was found to be 1.30±0.60. Of the patients, 50.1% were female, 90.4% were married, 92.5% had children, 44.9% were homemakers, 75.7% had a moderate income, 51% were literate, 73% did not work, 56.2% had social security, 40.6% lived in the village, and 71.9% lived with their spouses and children (Table 1).

It was noted that, of the patients, 90.4% had comorbidities (31.3% hypertension) and 42.3% experienced the most chest pain, 82.3% took their medication regularly, 40.9% experienced side effects related to drugs, 33.6% were under severe stress, 59.7% regularly followed the diet program, 63.2% performed regular physical activity (walking/exercise), 84.1% did not smoke and 87.5% did not drink alcohol, 71.1% received training regarding the disease, and 67.1% found their knowledge about the disease adequate (Table 2).

In Table 3, the total mean scores and sub-dimension mean scores of the TAS-20, SWBS, and HeartQoL scales

Table 2. Characteristics of patients regarding the disease (n=345)

	n	%
Chronic disease apart from CAD (yes)	312	90.4
The most prevalent symptom		
Chest pain	146	42.3
Fatigue	76	22.0
Palpitation	59	17.1
Shortness of Breath	61	17.7
Other	3	0.9
Taking medication regularly (yes)	284	82.3
Experiencing drug-related side effects (yes)	141	40.9
Feeling under severe stress (yes)	116	33.6
Following the diet regularly(yes)	206	59.7
Performing physical activity (walking/exercise) (yes)	218	63.2
Smoking (yes)	55	15.9
Alcohol Drinking (yes)	43	12.5
Training about the disease (yes)	266	71.1
Finding information about his/her disease adequate (yes)	213	61.7

CAD: Coronary artery disease

Table 3. Distribution of HeartQoL, SWBS and TAS-20, total and Sub-dimension scores of patients (n=345)

Variable	Minimum	Maximum	Mean±SD
HeartQoL	0.07	2.93	1.46±0.69
Physical quality of life	0.00	2.90	1.42±0.69
Emotional quality of life	0.00	3.00	1.55±0.83
SWBS	50.00	145.00	109.35±19.44
Transcendence	25.00	75.00	60.28±11.38
Adaptation to the nature	11.00	35.00	28.13±5.41
Anomie	7.00	35.00	20.93±8.51
TAS-20	25.00	95.00	56.81±14.81
Having difficulty in expressing emotions	7.00	35.00	18.49±6.62
Having difficulty in recognizing emotions	5.00	25.00	13.64±4.67
Extroverted thinking	10.00	37.00	24.66±6.53
TAS-20 cut-off score	**n**	**%**	
Patients with alexithymia (score of 59 and above)	132	38.3	
Borderline (between 52 and 58 points)	85	24.6	
Patients without alexithymia (score of 51 and below)	128	37.1	

HeartQoL: Heart quality of life scale; TAS-20: Toronto alexithymia scale; SD: Standart deviation; SWBS: Spiritual well-being scale.

are presented. The individuals who participated in the study received 56.81±14.81 points from the TAS-20 scale, 109.35±19.44 points from the SWBS scale, and 1.46±0.69 points from the HeartQoL scale. Based on the TAS-20 cutoff score, 38.3% of the patients were alexithymic, and 62.9% showed alexithymic characteristics.

In the research, there was a weak negative correlation between TAS-20and SWBS and its sub-dimensions "Transcendence" and "Adaptation to the Nature" ($p<0.05$). A moderate negative correlation was detected between alexithymia and HeartQoL and its sub-dimensions "physical life quality" and "emotional life quality" ($p<0.05$). A quite weak positive correlation was noted between the SWBS sub-dimensions "transcendence" and "adaptation to nature" and HeartQoL and its sub-dimensions; a weak negative significant correlation was noted between the SWBS "anomie" and HeartQoL and its sub-dimensions (Table 4; $p<0.05$).

The effect level was determined by utilizing linear regression analysis between the patients' HeartQoL Scale total scores and demographic data in this study. As a result of the analysis, it was noted that the model was significant, the Adjusted R2 value was 0.506, and the explanatory power of the model was 50.6% (F:12.000, $p<0.001$). It was observed that the HeartQoL dependent variable of the participants was affected by number of children (β=−0.672), occupation (β=9.154), having social security (β=5.957), following diet program regularly (β=3.452), walking regularly (β=2.981) and TAS-20 scale points (β=−0.184). In the research, being married, unemployed, illiterate, unemployed, not having social security, living in a village, living alone at home, not taking their medication regularly, not dieting, not walking regularly, not receiving education about their disease, not receiving education about their disease, drinking alcohol and feeling under severe stress were accepted as dumy variables (Table 5).

Discussion

In this study to evaluate the relationship between alexithymia, SWB, and QoL in CAD. In addition, as a secondary aim of this study, the factors affecting the QoL in CAD patients were also revealed.

In studies investigating the QoL of CAD patients in Iran, China, Türkiye, and Iceland, the mean HeartQoL score was found to be low (between 1.30±0.70 and 2.30±0.6).[38,40–42] In this research, similar to the literature, the HeartQoL score average of CAD patients was found to be low (1.46±0.69). In recent years, studies comparing healthy groups and CAD patients have reported that disease symptoms affect the QoL negatively.[5,40,41] Although the symptoms caused by other chronic diseases were not questioned in a wide range in this research, it is stated in the literature that the presence of other accompanying chronic diseases in addition to the symptoms related to CAD might affect the QoL negatively[4,7] (Table 3). It has been reported that there is a positive relationship between SWB and QoL in CAD patients and that spirituality affects the QoL positively in these patients.[43,44] In their systematic review, Abu et al.[45] revealed that spirituality was effective in enhancing the QoL in CVD patients. Heravi et al.[44] concluded that spiritual therapy promotes the QoL in elderly individuals with CAD. Likewise, in this study, it can be suggested that there is

Table 4. TAS-20, SWBS, HeartQoL total scores and sub-dimensions relations of the patients (n=345)

	1	1A	1B	1C	2	2A	2B	2C	3	3A	3B
1- TAS-20											
r	1	0.847**	0.891**	0.772**	-0.258**	0.029	-0.316**	-0.316**	-0.539**	-0.508**	-0.505**
p		**0.000**	**0.000**	**0.000**	**0.000**	0.593	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
1A-Having difficulty in expressing emotions											
r		1	0.761**	0.364**	-0.260**	0.170**	-0.407**	-0.383**	-0.469**	-0.442**	-0.440**
p			**0.000**	**0.000**	**0.000**	**0.001**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
1B-Having difficulty in recognizing emotions											
r			1	0.534**	-0.131*	0.192**	-0.240**	-0.260**	-0.588**	-0.540**	-0.576**
p				**0.000**	**0.015**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
1C- Extroverted thinking											
r				1	-0.227**	-0.245**	-0.133*	-0.143**	-0.327**	-0.318**	-0.286**
p					**0.000**	**0.000**	**0.013**	**0.008**	**0.000**	**0.000**	**0.000**
2- SWBS											
r					1	0.552**	0.858**	0.892**	0.039	0.045	0.019
p						**0.000**	**0.000**	**0.000**	0.472	0.409	0.721
2A-Anomie											
r						1	0.133*	0.133*	-0.215**	-0.164**	-0.280**
p							0.013	0.014	0.000	0.002	0.000
2B-Adaptation to the nature											
r							1	0.907**	0.166**	0.152**	0.165**
p								**0.000**	**0.002**	**0.005**	**0.002**
2C-Transcendenc											
r								1	0.161**	0.139**	0.173**
p									**0.003**	**0.010**	**0.001**
3-HeartQoL											
r									1	0.973**	0.872**
p										**0.000**	**0.000**
3A- Physical QoL											
r										1	0.737**
p											**0.000**
3B- Emotional Qol											
r											1
p											

*: Correlation is significant at the 0.05 level (2-tailed); **: Correlation is significant at the 0.01 level (2-tailed). TAS-20: Toronto alexithymia scale-20; SWBS: Spiritual well-being scale; HeartQoL: Heart quality of life scale.

Table 5. Multiple linear regression analysis findings of the factors affecting the HeartQoL total scale score

Model independent variables	β	SE	β	t	p
Constant	26.100	6.222		4.195	**0.000**
Age	-0.072	0.047	-0.088	-1.531	0.127
Number of CAGs	-0.844	0.677	-0.053	-1.247	0.213
Number of children	-0.672	0.192	-0.184	-3.494	**0.001**
Marital status					
Married[a]	0.0	–	–	–	–
Single	-3.298	1.991	-0.100	-1.657	0.099
Occupation					
Unemployed[a]	0.0	-	-	-	-
Housewife	6.236	3.394	0.319	1.837	0.067
Farmer	9.154	3.417	0.409	2.679	**0.008**
Worker	8.321	3.876	0.169	2.147	**0.033**
Retired	8.130	3.520	0.287	2.310	**0.022**
Tradesman	5.741	3.797	0.138	1.512	0.132
Civil servant	3.075	4.304	0.069	0.714	0.476
Educational status					
Illiterate[a]	0.0	–	–	–	–
Literate	1.860	1.239	0.096	1.502	0.134
Primary school	1.730	1.467	0.070	1.180	0.239
High school	0.407	2.219	0.010	0.183	0.855
University	5.759	3.018	0.151	1.908	0.057
Employment status					
Unemployed[a]	0.0	–	–	–	–
Employed	-0.439	1.223	-0.019	-0.359	0.720
Working whenever he/she finds a job	-2.163	2.410	-0.037	-0.898	0.370
Having social security					
Yes	5.957	0.993	0.304	6.001	0.000
No[a]	0.0	–	–	–	–
Place of residence					
Village	0.0	–	–	–	–
County	-0.762	0.968	-0.037	-0.787	0.432
Province	-1.914	1.203	-0.087	-1.591	0.113
The people living together at home					
Alone[a]	0.0	–	–	–	–
With spouse	-0.843	2.441	-0.030	-0.345	0.730
With spouse and children	0.305	2.312	0.014	0.132	0.895
With relatives	2.304	2.456	0.053	0.938	0.349
With children and grandchildren	2.879	2.953	0.056	0.975	0.330
Those who take their medication regularly[b]	0.027	1.259	0.001	0.021	0.983
Those who follow their diet program regularly[b]	3.452	1.186	0.174	2.909	**0.004**
Those who walk regularlyb	2.981	1.156	0148	2.579	**0.010**
Those who received training about their disease[b]	-1.844	1.040	-0.080	-1.772	0.077
Those who find the level of knowledge about their disease adequate[b]	1.358	0.998	0.068	1.360	0.175
Those who do not drink alcohol[c]	1.932	1.224	0.066	1.578	0.116
Those who do not feel under severe stress[c]	-0.634	0.881	-0.031	-0.719	0.473
TAS-20	-0.184	0.034	-0.281	-5.398	0.000
SWBS	-0.022	0.022	-0.043	-0.990	0.323

F (32.312)=12.000; R=0.743; R2=0.552; Adjusted R^2=0.506; Durbin Watson: 1.794; p<0.001. [a]: Reference level; [b]: Reference value, those who answered no; [c]: Reference value, those who answered yes. HeartQoL: Heart quality of life scale; β: Regression coefficient; SE: Sstandard error; β: Standardized coefficients; t: independent sample t test, CAG: Coronary angiography; TAS-20: Toronto alexithymia scale-20; SWBS: Spiritual well-being scale.

a significant relationship between SWB and quality of life, and as patients' SWB levels increase, their QoL increases (Table 4).

In this research, a moderate negative relation was noted between TAS-20 and HeartQoL and its subscales "physical and emotional quality of life" (Table 4). Accordingly, there are studies in the literature suggesting that there is a significant (negative) relation between alexithymia and QoL.[46,47] Alexithymia is associated with maladaptive coping strategies,[48] and for this reason, alexithymic CAD patients may experience more challenges in managing the disease due to situations such as not being able to recognize the symptoms of the disease, difficulty in misinterpreting and expressing them, not being able to handle stress, not taking adequate protective measures and being inadequate in treatments and, consequently, it is thought that their QoL is affected negatively.

In this study, it was determined that HeartQoL is significantly predicted by the number of children, occupation (farmer, worker, retired), having social security, following a regular diet program, walking regularly, and TAS-20, and, these factors explain HeartQol by 50.6%, the remaining 49.4% was explained by other factors (Table 5). In addition, it is suggested that the number of children significantly predicts the QoL. Soleimani et al.[49] reported that social support significantly predicts the QoL in cardiac patients. As in numerous societies, having children is quite important in Turkish society for reasons such as providing social support, supporting care, making care-related decisions, and providing care in case it is necessary, and this is a significant factor in increasing the QoL. As a result of this study, it has been shown that patients with a higher number of children may have a higher QoL and this may be related to having adequate social/family support in the management of their disease.

Regular exercise is essential to reduce stress and modify risk factors. Healthy and regular nutrition is an efficient factor in protecting against cardiac diseases, reducing disease-related complications and mortality, and hence promoting the QoL.[50,51] Frøjd et al.[52] stated that low physical activity significantly predicts the physical sub-dimension of QoL in cardiac patients. Gillison et al.[53] revealed in their meta-analysis study that good exercise capacity is associated with QoL. In this research, it was determined that a regular diet and regular walking significantly predicted HeartQoL and these results supported the literature.

It is a known fact that psychological factors play a major role in the etiology and exacerbation of CVD.[54] Many studies performed on CAD patients indicate that alexithymia may have a significant role in predicting patients' QoL.[9,46] Considering the relationship between difficulty in identifying emotions and somatoform disorder and the possibility of misinterpreting physical events due to alexithymia, alexithymia is expected to have negative effects on QoL.[22] As a result of this study, it was concluded that alexithymia significantly predicts HeartQoL (Table 5).

SWB is a coping mechanism for patients, particularly in the management of stress, loneliness, and depression due to chronic diseases,[55] and SWB has been known to be a predictor of QoL in cardiac patients.[23] While there was a significant relationship between SWB and HeartQoL in this study, the relation could not be seen in the model. Whereas, due to the high average age of CAD patients in this research, it is expected that there will be a relationship between SWB and HeartQol. It is believed that SWB does not predict the QoL in CAD, as the meaning and purpose of life are influenced due to the patients' inability to cope with the symptoms and their alexithymic characteristics.

In the research, the mean SWBS total score was high in CAD patients (109.11±9.68). Similarly, in the studies performed on CAD in Iran, the total score average of SWBS (peak score 120) was reported to be high (79.55 and 103.11, respectively).[56,57] In studies conducted on chronic heart failure patients in the USA, the total SWB (peak score 48) score average was found to be at a medium level of 35.9 (min-max: 30–44) and a low level of 12.07 (SD: 5.71).[25,58] Reviewing the studies above, it can be seen that the SWB average score varies by country. It is known that spirituality is a noteworthy resource in coping with chronic diseases in Muslim societies,[59] and in this study, similar to Iran, it is believed that the SWB score is high in Türkiye, as the majority of the population is Muslim similar to Iran, may be due to religion or the fact that the emphasis on social life rather than individual life in eastern societies strengthens coping mechanisms and provides psychosocial support.

In this research, 62.9% of CAD patients demonstrated alexithymic characteristics and the total TAS-20 score average was 56.81±14.81. In studies performed on patients with cardiac disease, it was determined that the mean TAS-20 score varied between 49.9±8.91 and 65.2±11.6.[11,22,60] The outcomes of this research confirm previous studies reporting that CAD patients show alexithymic characteristics.

Limitation of the study

The first limitation of this study is that the data are based on the self-report of the patients, and the second limitation is that the results are specific to the sample. The third and final limitation is that the study was conducted in a single center.

Conclusion

In this study, it was determined that HeartQoL was significantly predicted by the number of children, occupation (farmer, worker, and retiree), having social security, following the diet program regularly, walking regularly, and TAS-20. According to these results, it is recommended that nurses identify the social support needs of CAD patients who have no children and train patients about compliance with the diet and exercise program.

It is critical to utilize the necessary measurement tools at every stage of healthcare delivery in the early diagnosis of alexithymic individuals and to raise the awareness among nurses regarding the use of nonpharmacological interventions to reduce alexithymia and improve the QoL in individuals with CAD. It is known that SWB is substantial in improving the QoL, and in this research, SWB did not predict HeartQoL, even though there was a significant relationship. Therefore, it is recommended that nurses assess SWB and provide care in this context, and this study should be repeated in various sampling groups or qualitative research is conducted.

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