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Determination of predischarge learning needs of patients with myocardial infarction

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ABSTRACT

Objectives: This study aimed to determine the predischarge learning needs and influencing factors of patients with myocardial infarction.

Patients and methods: The study included 190 MI patients (156 males, 34 females; mean age: 60.2±12.7 years; range, 21 to 85 years) admitted with the diagnosis of myocardial infarction between February 2021 and February 2022. Data were collected using the Sociodemographic/Clinical Characteristics Form and the Turkish version of the Cardiac Patients' Learning Needs Inventory.

Results: The patients' symptom management, physical activity, anatomy and physiology of the heart, diet, psychological factors, lifestyle, and the mean total score on the scale were 27.45±2.64, 22.82±3.53, 20.56±3.15, 19.92±3.19, 15.45±2.81, 12.38±1.95, 155.21±17.11 points, respectively. It was found that there was a statistically significant difference in the general education need levels of the patients according to their education status, marital status, working status, exercise habit, cohabitants, additional chronic diseases, and history of heart attack/angiography and seeking information about heart attacks (p<0.05).

Conclusion: Predischarge learning needs levels of patients with myocardial infarction were relatively high. The primary learning need was for symptom management. Patients' learning needs levels varied according to sociodemographic and clinical characteristics.

Keywords: Cardiology nursing, learning needs, myocardial infarction, nursing care.

Myocardial infarction (MI) develops due to an atherosclerosis or thrombus.[1] It is among the leading causes of death in Türkiye,[2] as well as in the world.[3,4] Risk factors include the male sex, advanced age, coronary artery disease, hypertension, diabetes mellitus, and hyperlipidemia. The main purpose of the treatment and nursing care of these patients is to reduce the mortality/morbidity rate, prevent disabilities, create a healthy lifestyle, and increase the quality of life (QoL).[5,6] The learning needs of the patients should be evaluated to prevent recurrent severe symptoms and maximize their QoL.[7-11]

Patients' learning needs differ according to the prognosis of the disease and the cultural and spiritual traditions of the patient.[9] It is stated in the literature that the learning needs of patients with MI include the anatomy and physiology of the heart, psychological factors, lifestyle, correct drug use, correct diet, physical activity status, and symptom management.[8,12] With individualized nursing education planned in line with learning needs, it is easier for patients to cope with their diseases, and the rate of rehospitalization decreases. Thus, their QoL is positively supported. However, it is seen in the literature that the education given to the patients is mostly on specific subjects and is not structured in line with their learning needs.[13-15] Therefore, this study aimed to determine the learning needs and influencing factors of patients with MI.

PATIENTS AND METHODS

The population of this descriptive and cross-sectional study consisted of 190 MI patients (156 males, 34 females; mean age: 60.2±12.7 years; range, 21 to 85 years) who were admitted to the coronary intensive care unit and cardiology clinic of the Pamukkale University Faculty of Medicine between February 2021 and February 2022. Patients diagnosed with MI confirmed by a physician, able to speak and understand Turkish, who had no

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communication barriers, had mental competence, had no psychiatric disease, who was conscious, who was in stable condition, stayed in the hospital for at least two days, discharged by their physician, and willing to participate in the study were included in the study.

The face-to-face interview technique was used to collect the data. The data regarding the introductory information of the patients were obtained from the patients themselves, and the data containing the information about their medical conditions were obtained from the records in the patient's file. The Sociodemographic and Clinical Characteristics Form, developed by the researcher in line with the relevant literature, and the Cardiac Patients' Learning Needs Inventory (CPLNI) were used to collect the study data.

This form, developed in line with the relevant literature, consists of two sections: sociodemographic and clinical. The sociodemographic characteristics section includes 13 questions regarding the patient's protocol number, diagnosis, age, sex, marital status, education status, employment status, smoking status, sports status, body mass index, individuals they are living with, and place of residence. The clinical characteristics section includes 10 questions regarding having an additional chronic disease, the medication used regularly, history of a heart attack in family members, the reason for coming to the hospital, history of heart attack, angiography, and stent, the state of having regular check-ups, the status of receiving education about heart attack, and from whom this education was received.[9,12,15,16]

The CPLNI was developed by Gerard and Peterson.[8] The scale has been accepted as a short, simple, and understandable measurement tool for determining the learning needs of patients suffering from myocardial infarction. Turkish validity and reliability study was carried out by Uysal and Enç.[12] The Turkish Version of the CPLNI (TR-CPLNI) consists of eight subdimensions and 38 items. The TR-CPLNI includes five items to assess the anatomy and physiology of the heart, four items to assess psychological factors, three items to assess lifestyle factors, five items to assess drug information, five items to evaluate nutritional information, six items to evaluate physical activity, six items evaluate symptom management, and four items evaluating other issues. Scale scoring is calculated as follows: not important=1, somewhat important=2, moderately important=3, important=4, very important=5, and not applicable=0.

The phrase "not applicable" was accepted as 0 points so as not to affect the scoring. The score that can be obtained from the scale is between 38 and 190. The increase in the scale score indicates that the patient's learning need is increasing. The original CPLNI Cronbach's alpha value was 0.91.[8] In the Turkish validity and reliability study, Cronbach's alpha value of the overall scale was found to be 0.96. The Cronbach's alpha value of the subdimensions of the scale varies between 0.78 and 0.92.[12] In this study, Cronbach's alpha value of the overall scale was found to be 0.94. Cronbach's alpha value of the scale subdimensions ranges from 0.52-0.87.

Statistical analysis

The sample size was determined as 150 patients using the G*Power version 1.9.4 software (Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany), with a medium effect size (d=0.15), error level of 0.05, and study power of 0.80.

The data were analyzed using IBM SPSS version 22.0 software (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean ±standard deviation. Categorical variables were presented as numbers and percentages. Normality analysis was used to examine the relationship between dependent and independent variables. The normality analysis was calculated according to the kurtosis and skewness analysis. Normal distribution was accepted according to this result (skewness=0, kurtosis=±2).[17] In the comparison of the levels of the patients' learning needs according to sociodemographic/clinical characteristics, the data matching the normal distribution were evaluated by Student's t-test and one-way analysis of variance. For the data that did not fit the normal distribution, the Mann-Whitney U test or the Kruskal-Wallis test was used to compare the differences between the groups. A value p<0.05 was considered statistically significant.

RESULTS

The mean body mass index was 27.6±4.2, and 63.2% were hospitalized with a non-ST-elevation MI diagnosis. Of the patients, 81.0% were married, and 62.1% were primary school graduates. It was determined that 38.4% of the patients are employed, 36.3% are smokers, 55.3% did not exercise at all, 48.4% live in the city center, and 52.1% lived with their

Table 1 Sociodemographic characteristics of patients with MI			
Variables	n	%	χ^2±SD
Age (year)			60.2±12.7
BMI (kg/m²)			27.6±4.2
Diagnosis			
NSTEMI	120	63.2	
STEMI	70	36.8	
Sex			
Male	156	82.1	
Female	34	17.9	
Marital status			
Married	154	81.0	
Single	36	19.0	
Educational status			
Illiterate	9	4.7	
Literate	17	8.9	
Primary education	118	62.1	
Secondary education	33	17.4	
Undergraduate and postgraduate	13	6.8	
Working status			
Working	73	38.4	
Not working	117	61.6	
Smoking status			
Drinks	69	36.3	
Never drank	56	29.5	
Left	65	34.2	
State of doing sports			
Never played sports	105	55.3	
Occasional athlete	61	32.1	
Regular exerciser	24	12.6	
Living place			
Town center	92	48.4	
District	50	26.3	
Town/village	48	25.3	
Person living with			
Alone	21	11.2	
Spouse	99	52.1	
Spouse and kids	55	28.8	
Mother-father	4	2.1	
Son/daughter	11	5.8	

Table 1 Continued		
Variables	n	%
Presence of chronic disease*		
Yes	143	75.3
No	47	24.7
Type of chronic disease #		
Hypertension	81	56.6
Coronary artery disease	73	51.0
Diabetes mellitus	63	44.1
Chronic obstructive pulmonary disease	12	8.4
Asthma	8	5.6
Peripheral artery disease	7	4.9
Chronic renal failure	7	4.9
Congestive heart failure	2	1.4
Other (onnamed)	23	16.1
Continuous drug use status		
Using	134	70.5
Not using	56	29.5
Presence of a relative who has had a heart attack		
Yes	97	51.1
No	93	48.9
The reason why the patient came to the hospital#		
Chest pain	181	95.3
Back pain	57	30.0
Pain radiating to the left arm	71	37.4
Stomach ache	48	25.3
Heart attack/angio history *		
Yes	74	38.9
No	116	61.1
Stent placement history *		
Yes	49	66.2
No	25	33.8
Regular check-ups		
Yes	74	38.9
No	116	61.1
Getting information about heart attack		
Yes	42	22.1
No	148	77.9
From whom did he get the information*		
Health personnel	20	47.6
Relative/friend	9	21.4
Social media	13	31.0

MI: Myocardial infarction; SD: Standard deviation; BMI: Body mass index; STEMI: ST-elevated myocardial infarction; NSTEMI: Non-ST elevated myocardial infarction; Onnamed: Hyperlipidemia, rheumatoid arthritis, bening prostatic hyperplasia, hypothyroidism, cerebrovascular disease, lung cancer, lymphoma glaucoma, gastritis /reflux, vertigo, gout; * The analyzes were calculated on patients with "history of chronic disease", "history of continuous drug use", "having angio" and "receiving information about heart attack"; # Patients gave more than one disease name.

Tablo 2		
Distribution of the mean scores of the scale of learning needs of patients with MI		
	Distribution of scale score averages	
Scale sub-dimensions	$\chi^2 \pm SD$	Min-Max
Symptom management	27.5±2.6	14.0-30.0
Drug information	23.0±2.1	12.0-25.0
Physical activity	22.8±3.5	12.0-32.0
Anatomy and physiology of the heart	20.6±3.2	12.0-25.0
Nutritional information	19.9±3.2	11.0-25.0
Psychological factors	15.5±2.8	8.0-20.0
Other topics	13.7±3.4	6.0-20.0
Lifestyle factors	12.4±2.0	5.0-15.0
Grand scale total	155.2±17.1	100.0-190.0
MI: Myocardial infarction; SD: Standard deviation.		

spouses. It was determined that 75.3% of the patients had a chronic disease, 56.6% had hypertension, 70.5% regularly took medicines, and 51.1% had a relative who had a heart attack. It was determined that 95.3% of the patients applied to the hospital with chest pain, 38.9% had angiography, and 66.2% of them had a stent. It was determined that 38.9% of the patients had regular heart health checks, 22.1% had information about heart attacks, and 47.6% of them received information from health personnel (Table 1).

The distribution of the mean scores of the patients' learning needs with MI is given in Table 2. The overall mean score for the education needs of the patients was 155.2±17.1. It was observed that symptom management (27.5±2.6), drug information (23.0±2.1), physical activity (22.8±3.5), and anatomy and physiology of the heart (20.6±3.2) subdimensions were the subjects with the highest learning needs (in the first four ranks), while nutritional knowledge (19.9±3.2), psychological factors (15.5±2.8), other subjects (13.7±3.4), and lifestyle factors (12.4±2.0) subdimensions were the subjects with the lowest learning needs (in the last four ranks) (Table 2).

The relationship between the level of learning needs according to sociodemographic and clinical characteristics of patients with MI is given in Table 3. A statistically significant difference was found between the marital status (F=5.766, p=0.001), educational status (F=4.995, p=0.001), employment status (Z=-3.162, p=0.002), state of doing sports (F=5.136, p=0.007), and cohabitant (F=8.188,

p=0.001) of the patients included in the sample and the total scale score (p<0.05). Similarly, it was found that there was a statistically significant difference between those who did not have a chronic disease (Z=3.000, p=0.003), who did not have a history of heart attack/angiography (t=-2.993, p=0.003), and those who received information about the heart attack (t=2.900, p=0.004) and the mean scale score (p<0.05) (Table 3). It was determined that the scale subdimension learning needs levels of the patients varied according to their sociodemographic and clinical characteristics (Table 3).

DISCUSSION

After cardiovascular diseases, particularly MI, patients experience many physical and psychological complications and need information about the disease process.[18,19] In this study, which aimed to determine the predischarge learning needs of patients with MI and influencing factors, the general learning needs of the patients were found to be quite high. Similar to the findings of this study, it was stated in the national and international literature that the learning needs of patients with MI are high.[16,18,19] The study findings are similar to the literature, and it can be stated that patients need information about the disease and the changes affecting the postdischarge process.

According to the results of this study, the learning needs of the patients are affected by their sociodemographic and clinical characteristics. Single

Tablo 3

The relationship between the learning needs scale score of patients with MI and the independent variables

Variables	Grand scale total	Symptom management	Drug information	Physical activity	Anatomy and physiology of the heart	Nutritional information	Psychological factors	Other topics	Lifestyle factors
Diagnosis	t=1.478 p=0.141	t=-0.372 p=0.710	t=-0.351 p=0.725	t=1.276 p=0.204	t=0.761 p=0.448	t=2.253 p=0.025	t=1.74 p=10.083	t=1.468 p=0.144	t=-1.708 p=0.088
Sex	t=-0.541 p=0.589	Z=-1.120 p=0.263	Z=-0.491 p=0.623	t=1.141 p=0.255	Z=-0.718 p=0.473	Z=-1.429 p=0.153	Z=-0.108 p=0.914	t=-1.563 p=0.120	Z=-1.768 p=0.077
Marital status	F=5.766 p=0.001	KW=0.758 p=0.519	KW=3.029 p=0.031	KW=0.490 p=0.690	F=3.149 p=0.026	KW=6.629 p=0.001	KW=4.264 p=0.006	F=5.552 p=0.001	KW=9.854 p=0.001
Educational status	F=4.995 p=0.001	KW=18.272 p=0.003	KW=19.021 p=0.002	F=3.386 p=0.006	F=2.858 p=0.016	KW=18.478 p=0.002	F=4.462 p=0.001	F=2.032 p=0.076	KW=23.883 p=0.001
Working status	Z=-3.162 p=0.002	Z=-3.694 p=0.001	Z=-2.174 p=0.030	t=4.208 p=0.001	t=1.775 p=0.077	t=1.765 p=0.079	t=2.698 p=0.008	t=1.911 p=0.058	Z=-1.232 p=0.218
Smoking status	KW=1.881 p=0.155	KW=1.881 p=0.155	KW=2.245 p=0.325	F=2.810 p=0.063	F=1.299 p=0.275	F=1.816 p=0.165	F=1.153 p=0.318	KW=0.871 p=0.420	KW=7.280 p=0.026
Doing sports status	F=5.136 p=0.007	KW=4.306 p=0.116	KW=4.228 p=0.121	F=3.441 p=0.034	F=2.920 p=0.056	KW=6.613 p=0.037	F=4.856 p=0.009	KW=5.447 p=0.066	F=4.902 p=0.008
Living place	KW=1.641 p=0.440	KW=0.660 p=0.719	KW=0.231 p=0.891	F=1.390 p=0.252	F=2.178 p=0.116	F=0.365 p=0.695	F=5.294 p=0.006	F=0.267 p=0.766	KW=5.361 p=0.069
Person living with	F=8.188 p=0.001	KW=10.264 p=0.036	KW=13.142 p=0.011	F=6.138 p=0.001	F=4.677 p=0.001	KW=27.982 p=0.001	KW=19.282 p=0.001	F=5.970 p=0.001	KW=37.569 p=0.001
Presence of chronic disease	Z=-3.000 p=0.003	Z=-2.221 p=0.026	Z=-1.307 p=0.191	t=-3.672 p=0.001	t=-3.018 p=0.003	t=-1.332 p=0.185	t=-2.285 p=0.023	t=-2.328 p=0.021	Z=-2.053 p=0.040
Continuous drug use status	t=-1.906 p=0.058	Z=-2.140 p=0.032	t=0.061 p=0.951	t=-2.862 p=0.004	t=-2.082 p=0.037	t=-0.349 p=0.727	t=-1.631 p=0.104	t=-1.908 p=0.058	Z=-1.529 p=0.126
Presence of a relative who has had a heart attack	t=1.087 p=0.278	Z=-0.618 p=0.537	Z=-1.298 p=0.194	t=-0.128 p=0.898	t=1.008 p=0.315	t=1.631 p=0.105	Z=1.143 p=0.254	t=-0.403 p=0.687	Z=-1.230 p=0.219
Heart attack/angio history	t=-2.993 p=0.003	Z=-3.341 p=0.001	Z=-2.033 p=0.042	t=-2.143 p=0.033	t=-2.553 p=0.011	Z=-1.945 p=0.053	t=-1.949 p=0.053	Z=-2.481 p=0.014	Z=-1.918 p=0.055
Stent placement history	t=2.464 p=0.092	Z=2.464 p=0.092	Z=-2.144 p=0.342	t=2.003 p=0.142	t=0.768 p=0.468	t=1.338 p=0.269	t=0.948 p=0.392	t=1.793 p=0.174	t=1.147 p=0.324
Regular check up	t=1.862 p=0.064	Z=-0.111 p=0.911	Z=-0.476 p=0.634	t=0.096 p=0.320	t=2.083 p=0.039	t=2.197 p=0.029	t=1.301 p=0.195	t=3.086 p=0.002	Z=-0.844 p=0.399
Getting information about heart attack	t=2.900 p=0.004	Z=0.047 p=0.963	t=1.136 p=0.257	t=2.291 p=0.023	t=2.742 p=0.007	t=2.316 p=0.022	t=2.266 p=0.025	Z=3.331 p=0.001	Z=-1.191 p=0.234
From whom did he get the information?	F=1.799 p=0.164	F=0.293 p=0.830	F=1.266 p=0.300	F=1.491 p=0.233	F=3.653 p=0.021	F=0.774 p=0.516	F=1.537 p=0.221	F=1.454 p=0.242	F=1.921 p=0.143

MI: Myocardial infarction.

patients, secondary school graduates, working individuals, those living with their parents, those who regularly exercise, those with a history of chronic disease/angiography, and patients who have information about heart attack have higher general education needs levels. It was stated in the literature that being a woman and having a high level of education has an effect on learning needs.[16,18,19] In this study, unlike in the literature, the majority of the patients were male and had graduated from secondary school. However, considering that the patients live with their parents, it can be stated that parental support increases the level of sharing their learning needs with healthcare professionals, and this is due to cultural differences.

When the mean score of the general learning needs of the patients included in the study was examined, it was determined that symptom management was in the first rank. In their study to determine the learning needs of patients with MI, Sultana et al.[18] reported that the learning needs of patients related to symptom management are quite high. Symptom management is an effort to control the risks associated with the disease. Patients who have undergone MI experience a fear of death during the crisis and want to know how to deal with a similar situation after discharge.[20] In this study, it was determined that the learning needs of patients who are secondary school graduates, employed, living with their spouses and children, who do not have additional chronic diseases, do not use drugs continuously, and have no previous history of heart attack and angiography were higher than the other patients. According to these results, contrary to the literature,[20] those without a history of chronic disease have higher learning needs related to symptom management. Thus, it can be interpreted that individuals who do not have a chronic disease experience more fear during MI and need more information to cope with the process compared to patients who have experienced angina before. However, the fact that this group of patients did not experience any conditions related to acute coronary syndrome before may have increased the need for information about the symptoms.

The secondary learning needs of the patients included in the study is drug knowledge. Drug information is an important variable for patients to comply with their treatments and to reduce the problems that may be experienced regarding the irregular use of drugs.[18] The long duration of treatment

after MI increases the patients' learning needs about drugs.[21] In this study, similar to the literature,[9,16,18,21] all patients had high learning needs about drugs. It was stated in the national and international literature that drug information is among the top three topics demanded by patients who have undergone MI.[9,16,18,21] In this study, patients who are married, graduated from secondary school, employed, living with their parents, and who do not have a history of heart attack and angiography have a higher desire to get information about medications. However, no similar study was found in which all these variables were compared. Although no statistically significant difference was found in the drug knowledge subdimension of the learning needs according to sex in this study, it was stated in the literature that females expressed their drug knowledge learning needs more than males, and the difference was statistically significant.[19,21] This is explained by the fact that females, by their very nature, are more careful to ask for information about medication and control appointments than males.[19,21] Cultural structure is considered to be another reason why the level of learning needs varies according to sex. Considering that Almaskari et al.[19] conducted their study in Oman, whereas Alsaqri et al.'s[21] study was conducted in Saudi Arabia, sociocultural differences and sample differences between these countries explain the sex differences in findings. In other words, patient characteristics may vary from patient to patient and from culture to culture. Another reason affecting the high level of learning needs of patients on drug information in this study and other studies is that these patients may have positive or negative experiences with the drugs they constantly use. When these results are evaluated, it is seen that information about drugs cannot be ignored in the discharge training of patients after MI.

According to the findings of this study, one of the priority issues that patients need to learn is physical activity. However, it is stated in the literature that the learning needs about physical activity in patients with cardiovascular disease are not a priority.[9,19] Huriani[9] explain this situation with the necessity of restricting physical activity in the acute and subacute periods, which is the recommendation of the American Heart Association. According to the findings of this study, patients who have graduated from secondary school, are employed, exercise occasionally, live with their spouses and children, do not have additional chronic diseases, do not use medicines continuously, do not

have a history of heart attack and angiography, and know about heart attack have higher learning needs regarding the physical activity subdimension. Contrary to the findings of the current study, Almaskari et al.[19] determined that patients with higher education levels (undergraduate/graduate) have a higher desire to learn about physical activity. As can be seen, sociodemographic characteristics can affect learning needs related to physical activity. Almaskari et al.[19] interpreted this situation as sociodemographic characteristics, country conditions, cultural differences, and climate changes affecting individual priorities for learning needs.

Another issue that patients feel the need to learn primarily after MI is the anatomy and physiology of the heart (in the fourth rank). Patients are eager to receive information about the anatomy and physiology of the heart. Similar to the results of the current study, it is stated in the literature that patients who had an MI or cardiovascular disease have high learning needs about the anatomy and physiology of the heart.[18,19] Knowing the structure of the heart and the MI process makes it easier for patients to understand their disease and adapt to the treatment/care process and lifestyle change.[18] According to the findings of the current study, patients who are single, secondary school graduates, living with their spouses/children, who do not have a chronic disease, who do not have a history of angiography, who do not use medications continuously, who have regular health check-ups, who have information about heart attack, and who receive information from health personnel have higher levels of learning needs about the anatomy and physiology of the heart. Contrary to the findings of the current study, it is reported in the literature that patients with a history of comorbidity and acute coronary syndrome have a higher need for learning about the anatomy and physiology of the heart. Nur'aeni et al.[14] explained this situation with the theory of common sense. According to the common sense theory, the high severity of the disease and the threat factors perceived by the individual, and the fear of death increase the patients' learning needs. The finding of the current study that patients without chronic disease and acute coronary syndrome have higher learning needs regarding the anatomy and physiology of the heart can be interpreted as the acute coronary syndrome picture being perceived as a significant threat by the patients, which increases the learning needs.

It is reported in the literature that creating behavior change related to diet is the most significant step in developing healthy lifestyle behavior.[18,22,23] Unhealthy diets, particularly those containing fats, carbohydrates, and sugars, increase the risk of cardiovascular disease. However, for the patients participating in this study, the learning need regarding nutrition was not on their priority list. The high body mass index of the patients included in the sample group suggests that their eating habits and healthy lifestyle behaviors are not adequate. However, in this study, it was determined that learning needs about nutrition were more important than some variables. It was determined that patients who are diagnosed with ST-elevation MI, who are married, who have graduated from secondary school, who exercise occasionally, who live with their spouse/children, who have regular health checks, and who receive information about heart attack have a higher level of learning needs regarding nutrition compared to other patients. This situation can be interpreted as the sociodemographic and clinical characteristics of the patients affecting their learning needs regarding nutrition. Particularly the patient group that develops healthy lifestyle behavior has higher learning needs regarding the correct diet. It was stated that the risk of morbidity/mortality is higher in this patient group.[22,23] Therefore, it is thought that patients who are trying to develop high-minded, healthy lifestyle behaviors included in this study may have needed to learn more about heart-protective nutrition to avoid experiencing acute coronary syndrome again.

The learning needs of patients are affected by physiological and clinical processes as well as psychological factors. In this study, it was determined that the psychological factors are not a priority for participants. However, it was stated in the literature that the desire of MI patients to get information about psychological factors is at the forefront. In addition, according to the literature, patients need information about coping with stress after discharge the most.[18,19] It is considered that physiological problems are at the forefront since the patients in the study group are in the acute post-MI period. Another reason is cultural differences. This difference may have been because the patients in the study group were in the acute post-MI period, they focused on physiological symptoms rather than psychological factors, or they may have been the result of cultural differences. When the relationship between the psychological factors subdimension and

some variables were examined, it was determined that the patients who are single, have undergraduate and higher education, are employed, exercise regularly, live in the city center, live with their parents, do not have a chronic additional disease, and have information about heart attack have high learning needs about psychological factors. Hence, it can be suggested that patients who are educated, have healthy lifestyle behaviors, such as regular exercise, and do not have additional chronic diseases experience more stress during a heart. From a different perspective, the fact that the patients in this group were employed and living in the city center may have created another stress factor. Moreover, the fact that these people are also single and have taken responsibility for their parents may have increased their psychological burden as well as their physiological burden. Therefore, this may have increased the need for psychological support.

In this study, the learning needs of the patients about other subjects are in the last place. Other issues include the service to get support at discharge, the tests to be performed, and informing family members about heart-lung resuscitation or where and how to get support for family members. The reason why patients' learning needs for this subdimension are at the back of the line compared to other dimensions can be considered as the desire of patients to prioritize their individual needs rather than family during the acute illness period. When the relationship between the subdimension of other issues and some variables was examined, it was determined that the learning needs of patients who were single, living with their parents, who did not have a history of chronic disease/heart attack/angiography, who had regular check-ups, and who had information about heart attack were higher. Therefore, it can be interpreted that patients who do not have a history of chronic disease and heart attack but have knowledge about it want to act more cautiously during a possible acute coronary condition.

In this study, the learning needs of the patients related to lifestyle ranked last. However, contrary to the findings of this study, it was stated in the literature that the efforts of patients diagnosed with MI to develop healthy lifestyle behavior in the early post-MI period are at the forefront.[14] Although the general learning needs of the patients regarding a healthy lifestyle were low, it was found that it varies according to some sociodemographic and clinical

characteristics. Patients who are single, have a high education level, smoke, exercise regularly, live with their parents, and do not have a chronic disease are more willing to reorganize their lifestyle, suggesting that patients with higher education levels are more willing to create healthy lifestyle behaviors. However, the fact that these patients experienced a major acute condition and at the same time have the knowledge in this area may have increased their learning needs towards protective lifestyle behaviors for themselves and their families.

In conclusion, the general predischarge learning needs of patients undergoing MI are high. Among the topics that require education, the first four are symptom management, drug information, physical activity, and the anatomy and physiology of the heart. The learning needs levels of the patients regarding the scale subdimensions vary according to their sociodemographic and clinical characteristics. Accordingly, assessing the learning needs of patients with MI before discharge, providing individual structured training for the patients in line with their learning needs, providing standard spontaneous education in cases where structured patient education cannot be done, conducting similar studies with larger and multicenter sample groups, in which qualitative and qualitative-quantitative study designs are used together, and obtaining broader and more detailed information on the subject is recommended.

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