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Heart Failure Awareness Survey in a Turkish Population: HFAS-TR

Türk Toplumunda Kalp Yetersizliği Farkındalık Araştırması: HFAS-TR

ABSTRACT

Objective: Heart failure is a leading cause of death and the most common diagnosis leading to hospitalization. Its awareness is lower than that of other cardiovascular diseases, both in the general population and among patients with heart failure (HF). This study aimed to establish the current level of knowledge about HF in patients with HF with reduced ejection fraction (HFrEF) and mildly reduced ejection fraction (HFmrEF) in Türkiye.

Methods: This questionnaire-based survey study is multicenter, conducted across 34 centers from December 2021 to July 2022. We performed a survey consisting of two sets of questions focusing on individual characteristics of the patients and HF-related knowledge.

Results: The study included a total of 2,307 outpatient HF patients, comprising 70.5% males and 29.5% females with a mean age of 64.58 ± 13 (56-74) years and a mean body mass index value of 32.5 ± 10 kg/m^2. HFrEF and HFmrEF were determined in 74.7% and 25.3% of patients, respectively. Thirty percent of the patients were unaware that they had HF. While 28.7% of the patients thought that they had sufficient information about HF, 71.3% believed they lacked adequate knowledge. In the study, 25.2% of the participants identified dyspnea, 22% identified tiredness, and 25.4% identified leg edema as the most common symptoms of HF. Only 27.4% of patients recognized all three typical symptoms of HF.

Conclusion: We found that the study population's knowledge about HF symptoms and the nature of the disease was poor. Educational and awareness activities are necessary to optimize outcomes and benefits.

Keywords: Awareness, ejection fraction, heart failure, knowledge

ÖZET

Amaç: Kalp yetersizliği (KY); sık hastane yatışının ve ölümün en önemli nedenlerinden biridir. Hem genel popülasyonda hem de KY olan hastalarda farkındalığı, diğer kardiyovasküler hastalıklara göre daha düşüktür. Bu çalışmada; Türkiye'de azalmış ejeksiyon fraksiyonlu (DEF-KY) ve hafif derecede azalmış ejeksiyon fraksiyonlu KY (HEF-KY) olan hastalarda hastalık ile ilgili mevcut bilgi düzeyinin belirlenmesi amaçlandı.

Yöntem: Çalışmamız 34 merkezin dahil edildiği, Aralık 2021- Temmuz 2022 tarihleri arasında gerçekleştirilen çok merkezli bir anket çalışmasıdır. Anket; hastanın bireysel özelliklerine ve KY ile ilgili bilgilere dayanan iki aşamalı sorulardan oluşmaktadır.

Bulgular: Çalışmaya yaş ortalaması 64,58 ± 13 (56-74) yıl, %70,5'i erkek, %29,5'i kadın ve vücut kitle indeksi 32,5 ± 10 kg/m^2 olan ve ayakta tedavi gören toplam 2307 KY hastası dahil edildi. Hastaların %74,7'sinde DEF-KY, %25,3'ünde HEF-KY saptandı.Hastaların %30'u KY olduğunu bilmiyordu. KY konusunda yeterli bilgiye sahip olduğunu düşünenler %28.7 iken, %71,3'ü yeterli bilgiye sahip olmadığını düşünüyordu. Hastaların yalnızca %3,7'si KY'nin 3 tipik semptomunu tanımladı. Çalışma popülasyonunun %25,2'si dispneyi, %22'si yorgunluğu ve %25,4'ü bacak ödemini KY'nin en yaygın semptomu olarak tanımladı. KY'nin üç tipik semptomunu hastaların %27,4'ü tanımladı.

Sonuç: Çalışma popülasyonunun KY semptomları ve hastalığın doğası ile ilgili bilgilerinin düşük olduğunu gördük. Sonlanımları ve faydaları optimize etmek için eğitici ve farkındalığı arttıran faaliyetler gereklidir.

Anahtar Kelimeler: Farkındalık, ejeksiyon fraksiyonu, kalp yetersizliği, bilgi

ORIGINAL ARTICLE
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Despite remarkable advances in evidence-based drugs and device therapies, heart failure (HF) is still a significant global problem. The prevalence of HF has risen due to factors such as population aging, improved survival following acute coronary syndrome (ACS), and an increase in the prevalence of HF risk factors, including hypertension (HT), atrial fibrillation (AF), diabetes mellitus (DM), and obesity.[1,2] HF imposes a substantial socioeconomic burden on healthcare systems due to lengthy hospital stays and high readmission rates. Moreover, it significantly impairs quality of life. Despite these challenges, little is known about the levels of awareness among HF patients regarding the severity of their disease and their shortened life expectancy.[3] Additionally, awareness of the disease is low amongst the general public, those living with HF, and even among some healthcare professionals.[4] The first study to evaluate the awareness of HF in the general public in Europe was the SHAPE (Study of Heart failure Awareness and Perception in Europe) study, which found that awareness of HF in the community was lower compared to other cardiovascular diseases.[3,5] Consequently, the Heart Failure Association of the European Society of Cardiology established a HF Awareness Day to increase HF awareness through public campaigns, with participation from many European countries including Türkiye.[5]

Subsequent population-based studies conducted in Germany, Slovenia, Lithuania, and Korea have shown that awareness of HF in the general population remains low.[6-9] These studies primarily evaluated awareness in the general population, and few have focused on the knowledge and perception of HF patients themselves.[10] Dedicated education programs targeting those affected are more important than those for the general population.[11] To the best of our knowledge, only one study in our country has evaluated the knowledge of HF patients about their disease.[12] Our study aimed to assess the knowledge and awareness of HF, identify self-care strategies used by those with pre-existing HF, provide information about the illness, and evaluate the necessity for regular public awareness activities.

Materials and Methods

The HFAS-TR (Heart Failure Awareness Survey in a Turkish Population) study is a prospective, observational, multicenter study involving HF patients across 34 hospitals in Türkiye, staffed by 48 researchers from several geographical regions. Of these centers, nine had physicians, nurses, or healthcare workers with heart failure-specific expertise. Outpatients with heart failure with reduced ejection fraction (HFrEF) and heart failure with mildly reduced ejection fraction (HFmrEF) were included between December 2021 and July 2022. The cohort included 415 patients from university hospitals, 1,031 from education and research hospitals, 80 from private hospitals, 492 from city hospitals, and 289 from state hospitals.

The diagnosis of HFrEF and HFmrEF was based on current HF guidelines criteria, which include symptoms and signs related to HF and a left ventricular ejection fraction (EF) of 40% and 41-49%, respectively.[13] Patients with acute decompensated HF, de novo HF, HF with preserved EF, or those aged under 18 years were excluded from the study.

ABBREVIATIONS

ACE-I	Angiotensin converting enzyme inhibitor
ACS	Acute coronary syndrome
AF	Atrial fibrillation
ARB	Angiotensin receptor blockers
ARNI	Angiotensin Receptor-Neprilysin Inhibitor
CAD	Coronary artery disease
CRT-D	Cardiac resynchronization therapy-defibrillator
DM	Diabetes mellitus
EF	Ejection fraction
ESC-HF	European Society of Cardiology Heart Failure
HF	Heart failure
HFmrEF	Heart failure with mildly reduced ejection fraction
HFrEF	Heart failure with reduced ejection fraction
HT	Hypertension
ICD	Implantable cardioverter defibrillator
LVAD	Left ventricular assist device
MRA	Mineralocorticoid receptor antagonists
NYHA	New York Heart Association
RAS	Renin-angiotensin system
SGLT2	Sodium-glucose cotransporter-2

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A record of demographic and clinical characteristics, laboratory findings, EF over the last 6 months, comorbidities, and medications at enrollment was maintained for each patient. Questionnaires were developed to measure patients' demographic characteristics and their level of knowledge about HF. The questionnaire consisted of two sections. The first section gathered information on patient demographics, education, comorbidities, New York Heart Association (NYHA) functional class, symptoms, and severity in the last 6 months, and whether device treatment was administered. The second part included 15 questions about patients' perceptions of the disease, covering topics such as the definition of HF, risk factors, treatment, and prognosis. Participants who answered "yes" to the question "Do you think you have enough information about HF?" were further queried about the frequency, causes, and symptoms of HF, its treatment, and prevention strategies. More detailed questions about heart failure were posed to patients who believed they had sufficient knowledge. After completing the questionnaire, patients received an informative booklet explaining HF, its progression, and preventive measures in a manner easily understandable to them. Survey questions were administered by cardiologists to patients attending the cardiology outpatient clinic. Since the primary aim of this study was to assess the knowledge of patients visiting the cardiology outpatient clinic, questions regarding the prognosis of heart failure were omitted.

The study adhered to the principles of the Declaration of Helsinki, and written consent was obtained from all participants prior to their involvement. This study was approved by the Ethics Committee of the Bakirkoy Dr Sadi Konuk Training and Research Hospital (Approval Number: 2021/520, Date: 01. 11. 2021).

Statistical Analysis

Data from the study were statistically analyzed using SPSS (Statistical Package for the Social Sciences) for Windows version 22.0 (SPSS Inc., Chicago, IL, USA). Continuous variables were reported as means ± standard deviation or median with interquartile range, and categorical variables as number (n) and percentage (%).

Results

Patient Demographic Data and Comorbidities

The study included a total of 2,307 outpatient HF patients, comprising 70.7% males and 29.3% females with a mean age of 64.58 ± 13 years (range 56-74), and a mean body mass index (BMI) of 32.5 ± 10 kg/m^2. An EF of 40% (defined as HF with reduced EF) was observed in 74.7% of the patients, and an EF of 40-49% (defined as mildly reduced EF) in 25.3%.

The patients' systolic blood pressure and average heart rate were 126 ± 20 mmHg and 80.7 ± 17 bpm, respectively. The majority of the study population were classified as NYHA class II or III, at 48.1% and 23.6%, respectively.

The most frequent comorbidities included coronary artery disease (CAD) (68.1%), HT (66.6%), moderate to severe valve disease (40.4%), dyslipidemia (49.3%), DM (39.8%), AF (26.9%), chronic kidney disease (23.3%), stroke (9.1%), pulmonary thromboembolism (2%), depression (12.7%), and peripheral artery disease (8.1%).

In the entire cohort, the prevalence of left ventricular assist devices, cardiac transplantation, and cardiac resynchronization therapy with a defibrillator (CRT-D) were 0.4%, 1.1%, and 14.2%, respectively. The baseline characteristics of the patient population are presented in Table 1.

Table 1. Baseline Characteristics of the Study Population

	n	%
Age Groups		
<30	25	1.1
30-39	74	3.2
40-49	206	8.9
50-59	452	19.6
60-69	686	29.7
>70	864	37.5
Gender		
Female	676	29.3
Male	1631	70.7
Education		
Illiterate	417	18.1
Primary School	932	40.4
Secondary School	377	16.3
High School	394	17.1
University Graduate	187	8.1
Rhythm		
Sinusal	1687	73.1
Atrial Fibrillation	620	26.9
Ejection Fraction		
<40%	1724	74.7
40-49%	583	25.3
Functional Capacity		
NYHA I	485	21
NYHA II	1109	48.1
NYHA III	545	23.6
NYHA IV	168	7.3
Hypertension	1536	66.6
Diabetes Mellitus	918	39.8
Smoking	561	24.3
Hyperlipidemia	1137	49.3
Valvular Heart Disease (moderate-severe)	933	40.4
Coronary Artery Disease	1571	68.1
Pulmonary Embolism	45	2
Cerebrovascular Accident	211	9.1
Peripheral Arterial Disease	186	8.1
Chronic Renal Disease	583	23.3
Depression	294	12.7
CRT-ICD	327	14.2
Pacemaker Implantation	45	2
LVAD/Heart Transplantation	25	1

CRT-ICD, Cardiac resynchronization therapy-defibrillator; LVAD,Left ventricular assist device; NYHA,New York Heart Association

Patient Medications, Symptom Status, and Baseline Knowledge About Heart Failure

At the time of study enrollment, 88.2% of patients were being treated with beta-blockers, 65.6% with diuretics, 54.3% with angiotensin-converting enzyme inhibitors (ACEI), and 51.1% with mineralocorticoid receptor antagonists (MRA). Additionally, 16.7% of patients were on angiotensin receptor blockers (ARB), 8.8% on angiotensin receptor-neprilysin inhibitors (ARNI), and 13.2% on sodium-glucose cotransporter-2 (SGLT2) inhibitors. At admission, AF was present in 26.9% of the patients.

Table 2. Drug Treatments and Symptom Status at Admission

	n	%
Medications		
ACEI	1252	54.3
ARB	386	16.7
ARNI	204	8.8
Beta Blocker	2035	88.2
MRA	1181	51.2
Loop Diuretics	1514	65.6
SGLT-2 inhibitors	304	13.2
Dyspnea at Rest		
Mild	985	42.7
Moderate-Severe	447	18.4
Dyspnea at Exercise		
Mild	920	39.9
Moderate-Severe	1078	46.7
Orthopnea		
Mild	816	35.4
Moderate-Severe	386	16.7
Paroxysmal Nocturnal Dyspnea		
Mild	679	29.4
Moderate-Severe	274	11.9
Chest Pain		
Mild	753	32.6
Moderate-Severe	188	8.1
Fatigue, Weakness		
Mild	1106	47.9
Moderate-Severe	806	34.9
Anxiety		
Mild	926	40.1
Moderate-Severe	202	8.8
Hospitalization in Previous Six Months		
Any Reason	461	20
Heart Failure	592	25.7

ACEI, Angiotensin-Converting Enzyme Inhibitor; ARB, Angiotensin Receptor Blocker; ARNI, Angiotensin Receptor-Neprilysin Inhibitor; MRA, Mineralocorticoid Receptor Antagonist; SGLT, Sodium-Glucose Cotransporter.

When the patients were asked about HF symptoms—including dyspnea at rest or during exercise, angina, orthopnea, paroxysmal nocturnal dyspnea, anxiety, and tiredness—18.4% reported moderate to severe dyspnea at rest, and 46.7% reported moderate-to-severe dyspnea during exercise. Approximately half of the patients did not experience angina (59.2%), orthopnea (47.9%), paroxysmal nocturnal dyspnea (58.7%), or anxiety (51.1%), while 47.9% reported mild fatigue and tiredness. In the last 6 months, 54.3% of patients had not been hospitalized, 25.7% were hospitalized due to HF, and 20% for other reasons. The drug treatments and symptom status at the time of admission are detailed in Table 2.

When asked, "If you experienced shortness of breath, fatigue, tiredness, and swollen ankles, which disease would you suspect?" and given the options of lung disease, HF, or myocardial infarction, 62.2% of the patients identified HF. Highly educated patients demonstrated better understanding of their diseases than those with less education (9.2% vs. 5.5%, $p = 0.019$). We observed a weak negative correlation between the age of the patients and their ability to answer the question "What condition do you have?" ($r = -0.71$, $P < 0.001$). Most patients (52.6%) believed that cancer had a more fatal prognosis than HF.

Regarding the question "What heart condition do you have?", 30.4% of patients did not select the HF option. When asked

Table 3. Awareness About Heart Failure (HF) Among Respondents: A Breakdown by Question

	n	%
If you experienced weakness, dyspnea, and swelling in your ankles, which of the following conditions would you suspect?		
Pulmonary disease	337	14.6
Heart attack	536	23.2
Heart failure	1434	62.2
Among the following, which condition is the most life-threatening?		
Cancer	1249	52.6
Heart failure	1018	44.1
Which heart condition do you have?		
Heart failure	701	30.4
Other	1606	69.6
Which chronic disease most frequently results in hospital admission?		
Heart failure	1002	43.4
Coronary artery disease	702	30.4
Hypertension	398	17.3
Valvular heart disease	121	5.2
Hyperlipidemia	84	3.6
Do you feel well-informed about heart failure?		
Yes	662	28.7
No	1645	71.3

which chronic disease most often leads to hospitalization, HF was the most commonly chosen at 43.4% (n = 1002), compared to CAD at 30.4%, HT at 17.3%, valvular heart disease at 5.2%, and hyperlipidemia at 3.6%. Awareness about HF as it pertains to these questions is shown in Table 3.

Only 28.7% of the patients felt they had adequate information about HF, whereas 71.3% believed they lacked sufficient knowledge. The responses of the patients who felt adequately informed about HF are detailed in Table 4.

Additional questions were posed to those patients who believed they had sufficient information about HF. Concerning HF symptoms (breathlessness, tiredness, or swollen ankles), 25.2% of the study population identified shortness of breath, 22% identified tiredness, and 25.4% identified leg edema as the most common symptoms of HF. Only 27.4% of patients recognized the three typical symptoms of HF.

When asked about which function of the heart is impaired in HF, 31.9% of the patients had no idea, and 45.3% correctly answered that the contractile function of the heart was impaired. Regarding prevention options, 0.5% chose vaccination, 11.1% chose not smoking, 2.1% chose losing weight, 19.7% selected following a healthy diet and regular exercise, and 57.7% chose control of blood pressure with 2.1% opting for control of lipids. One hundred and seventy-five patients (26.4%) were unaware of the adverse consequences of HF.

When asked how HF can be treated, 3.7% did not consider drugs as an option, 31.7% thought the same for pacemakers, and 5.3% had no idea about treatment options. Four hundred and twenty-two patients (63.7%) reported not using any supplements, while 9.9% used only fish oil, 0.5% used only herbal products, and 19% used vitamins.

Table 4. Responses from Patients Who Believed They Had Sufficient Information About HF

	n	%
What are the symptoms of heart failure?		
Shortness of breath	167	25.2
Tiredness	145	22
Swollen ankles	168	25.4
All of the above	182	27.4
Which function of the heart is impaired in HF?		
Contractile function	299	45.3
Relaxation function	7	0.9
Both of them	145	21.9
Not sure	211	31.9
What is most important for preventing heart failure?		
Healthy diet and regular exercise	131	19.7
Not smoking	73	11.1
Controlling hyperlipidemia	14	2.1
Losing weight	14	2.1
Regulating blood pressure	382	57.7
Vaccination	3	0.5
Not sure	45	6.8
What are the adverse consequences of heart failure?		
Rhythm abnormalities	158	23.9
Thrombus formation	84	12.7
Valvular regurgitation	124	18.7
All of the above	121	18.3
Not sure	175	26.4
Do you think a small amount of alcohol intake protects the heart?		
Yes	130	19.6
No	336	50.8
Not sure	196	29.6
How can heart failure be treated?		
Medications	92	13.9
Medications and diet	118	17.8
Medications and pacemaker	134	20.2
Medications, diet, and pacemaker	111	16.8
Medications, diet, pacemaker, and artificial heart	147	22.2
Diet, pacemaker, and artificial heart	25	3.7
Not sure	35	5.3
How frequently do you weigh yourself?		
Once a month	312	47.1
Once a week	146	22.1
Daily	39	5.9
Never	165	24.9
Which of the following do you use as a supplement?		
None	422	63.7
Fish oil	66	9.9
Herbal products	3	0.5
Vitamins	119	19
Fish oil and vitamins	52	7.9

Discussion

In this study, we analyzed awareness and knowledge among a broad sample of patients with pre-existing HF about the risk factors, symptoms, and available treatment strategies in Türkiye. We found that the study population's knowledge about HF symptoms and the nature of the disease was poor. Although awareness among patients treated in tertiary centers is expected to be high, it was found to be low in our study. Compared to previous studies conducted in Türkiye on HF, the most significant advantage of this HFAS-TR study is that it evaluated awareness of HF, and most importantly, provided patients with information at the end of the questionnaire.

Although the use of renin-angiotensin system (RAS) inhibitors (ACEIs or ARBs) seems sufficient, they are prescribed at lower rates compared to data from studies conducted in Europe and the USA, where usage rates are 71% and 86.8%, respectively (71% and 82.9%).[14,15]

In contrast, the use of beta-blockers and MRAs has been reported at higher rates compared to the ESC-HF (European Society of Cardiology Heart Failure) pilot study (88.2% vs. 86.7% and 51.1% vs. 43.7%).[1]

The current study results showed that the rate of ARNI use was only 8.8%, and this low usage is most likely due to the cost.

ARNI is not included in the reimbursement scope of the Social Security Institution in Türkiye, and therefore cannot be prescribed as widely as other drugs. These results demonstrate the need for more frequent use of evidence-based therapies for HF in Türkiye.

When investigating device therapies in this study, only 14.2% of the patients received ICD or cardiac resynchronization therapy-defibrillator (CRT-D), which is quite low compared with previous studies on HF conducted in Türkiye and Europe.[14,16,17] This is an important gap between recommendations and actual clinical practice that should be addressed.[18] This observation suggests that physicians do not sufficiently assess patients with HFrEF for ICD or CRT requirements, or opt for more conservative treatment options due to financial and cost-effectiveness concerns. In this study, we found relatively high rates of heart transplantation and left ventricular assist device (LVAD) usage, possibly because most of the researchers involved were from tertiary centers.

Although the patients included in this study had been previously diagnosed with HF, one-third of them were unaware that they had HF. When the three main symptoms were presented to individuals who believed they had sufficient knowledge about HF, only 3.7% correctly identified all three symptoms. This rate is much lower compared to the results of previous studies conducted in 2011 by Lainscak et al.[4] (30%) and in 2018 by Grigaliūnas et al.[8] (26%). Considering that those surveys were conducted years ago and among the general population, the current state of HF awareness in the Turkish population is somewhat disappointing. These findings underscore the need for effective educational campaigns and for physicians to provide more information to enhance HF awareness in Türkiye.

The results clearly show that although patients acknowledged hearing about HF, they had little understanding of what it actually entails. When asked which function of the heart is impaired in HF, one in three patients had no idea, while less than half answered that the contractile function of the heart was impaired. These results may be explained by the fact that public awareness of HF among is lower than that of heart attacks, and the symptoms of HF are less specific compared to those of heart attacks and other cardiovascular conditions. Furthermore, information about heart attacks is more prominently featured on television channels and in the media than information about HF. Consequently, heart attacks and their complications, including sudden cardiac death, attract more attention in society, which may lead to greater public awareness of these issues. This might explain why the most common complaint among patients visiting cardiology outpatient clinics is chest pain. When patients were asked about the most common cause of hospitalization, the most frequent responses were HF and CAD. This may indicate that patients understand the seriousness of these conditions.

When discussing prevention strategies, non-smoking, following a healthy diet, and exercise were the preferred options. Despite HT being a significant risk factor for the development of HF, 31.4% of the patients did not identify it as such.

There is a significant overlap between respiratory infections and the exacerbation of underlying HF. Vaccination against respiratory infections in patients with HF may have a protective effect, which could improve quality of life and clinical outcomes.[19] Although vaccination does not play a major role in the pathophysiology of HF, it is important in preventing acute HF attacks. However, only 19% of the study population selected vaccination as a prevention strategy. Therefore, there is a need to increase physician awareness about the benefits of vaccination and to encourage them to vaccinate patients with HF in Türkiye.

The perception, knowledge, and adaptation of 504 patients with HF were the subjects of a study by Murat et al.[12] In that study, most of the patients were NYHA classes 2-3 and had HF with reduced EF. The prevalence of comorbidities was comparable between the two studies. Compared to that study, the number of illiterate patients was higher in our study (6.7% vs. 18.1%), and our patients were older (59.8 ± 14 years vs. 64.58 ± 13 years). Most patients were aware that shortness of breath, fatigue, and palpitations could develop due to HF. Approximately 40% of the patients were unfamiliar with the diagnosis of HF and lacked sufficient awareness of the effects of their medications. Similar to our findings, Murat et al.[12] found that patient awareness of heart failure was low and that increasing patient knowledge would positively impact disease perception and treatment adherence.

To optimally manage their condition, patients with HF need a comprehensive understanding of their condition, its typical symptoms, and the significance of any changes in their symptoms. This study highlights that patients with HF continue to be confused about many aspects of their condition and how to manage it. The results also underscore the need to develop and implement future strategies to optimize outcomes and benefits. Ideally, activities should not be limited to daily or weekly initiatives aimed at raising awareness of HF but should evolve into an ongoing effort by the general public, healthcare professionals, and patients. Within the scope of national healthcare services, preventive activities and iterative campaigns should be carried out simultaneously to promote healthy lifestyles and reduce the development of diseases.

Conclusion

In conclusion, we found that the study population's knowledge about HF symptoms and the nature of the disease was poor. The main reason for the low awareness may be that heart attacks are more common in society and their symptoms are therefore better recognized. Additionally, patients are not given enough information in busy outpatient clinics. Methods need to be developed to provide patients with clear and accessible information about the symptoms of HF, their medications and likely side-effects, and most importantly, how to prevent it. Providing HF patients with descriptive information about the disease, points to consider in follow-up, and information on when the disease may progress will further support their ability to cope with HF and improve quality of life. This may help not only to improve and maintain the quality of life of patients and reduce hospital admissions but also to reduce disease-associated costs.

This study had some limitations, primarily the observational design, which may have led to bias in patient selection. Additionally, all patients were enrolled from the cardiology outpatient clinic, and those who presented at the internal medicine and/or emergency

clinics were not included, so the patient sample may not represent HFrEF and HFmrEF patients in Türkiye. Another limitation was that, since the patients included in the study were evaluated under outpatient conditions, the time allocated to patients in some centers may have been limited due to an excessive number of patients. The high number of tertiary centers may not fully reflect the country-wide HF population data. Most patients who participated in our study stated that they were not informed about heart failure. Therefore, detailed questions were directed to those who believed they were informed. Finally, the surveys conducted on this topic do not adhere to an international standard scale, so although prepared with precision, the questionnaire's ability to assess awareness may be limited.

Ethic Committee Approval: This study was approved by the Ethics Committee of the Bakirkoy Dr Sadi Konuk Training and Research Hospital (Approval Number: 2021/520, Date: 01.11.2021).

Informed Consent: Written consent was obtained from all participants prior to their involvement.

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