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THE IMPACT OF NUTRITIONAL BEHAVIORS ON HEALTH PERCEPTION AND ADAPTATION TO DISEASE IN PATIENTS WITH CHRONIC HEART FAILURE

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Abstract

Chronic heart failure is a global public health problem. Nutritional behaviors significantly affect the disease trajectory, prognosis, perceived health, and adaptation of patients with heart failure. This study aims to examine the impact of nutritional behaviors on health perception and adaptation to disease in patients with chronic heart failure. This descriptive, cross-sectional study collected data from 200 patients with chronic heart failure attending a cardiology clinic between July and September 2024. Participants were assessed using the Scale for Dietary Behaviors in Heart Failure, the Perception of Health Scale, and the Adaptation to Chronic Illness Scale. Analyses included descriptive statistics, Pearson's correlation, and regression analyses. Nutritional behaviors were found to significantly influence health perception and disease adaptation. Positive correlations were observed between healthy dietary habits and health perception ($R= 0.268$, $R^2= 0.072$, $p< 0.001$) and between healthy dietary habits and disease adaptation ($R= 0.229$, $R^2= 0.052$, $p< 0.001$), indicating that healthier dietary behaviors are associated with increased health perception and greater disease adaptation. The study highlights the importance of nutritional behaviors in improving health perception and disease adaptation in chronic heart failure. These findings suggest that individually tailored nutritional interventions and education provided by healthcare professionals, particularly nurses, could enhance clinical outcomes and quality of life in patients with heart failure.

Keywords: Disease adaptation, Health perception, Heart failure, Nutritional behaviors

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INTRODUCTION

Chronic heart failure (CHF) is a significant public health issue globally due to its increasing prevalence and the complex management it necessitates (Shahim, Kapelios, Savarese & Lund, 2023) CHF represents a major global public health concern due to its rising prevalence and the complexity of its management. Recent Global Burden of Disease estimates indicate that approximately 56.5 million individuals worldwide are affected by heart failure, and age-standardized prevalence has increased steadily in recent decades. In 2021, the age-standardized prevalence reached 682.7 per 100,000 population; this increase was attributed to demographic changes and improved survival following acute cardiovascular events. Heart failure also remains associated with considerable mortality, as 1-year case fatality rates have been reported at approximately 33% across populations, highlighting persistent clinical and public health challenges (Roth et al., 2023). Numerous factors directly impact the quality of life and adaptation to disease of CHF patients (Mulugeta, Sinclair & Wilson, 2023) Among these factors, nutritional behaviors are critical in determining the course and prognosis of the disease (Seid, Amendoeira & Ferreira, 2023). Several factors affect the quality of life and how patients adapt to CHF (Mulugeta et al., 2023). Nutrition plays a key role in how the disease progresses and in patient outcomes (Seid et al., 2023). Poor calorie intake and unhealthy eating habits in people with CHF are linked to higher death rates, more hospital visits, and worse health overall (Wickman et al., 2021). Malnutrition is a known risk factor for adverse outcomes among all hospitalized patients, especially those with CHF. It can range from insufficient food intake to nonadherence to dietary recommendations for the disease. In CHF, comorbid conditions such as gastrointestinal congestion, chronic inflammation, and symptoms such as fatigue and shortness of breath can impair patients' ability to maintain adequate nutritional intake and adhere to dietary recommendations. This can lower their ability to function each day and take care of themselves (Abdoul Carime et al., 2022; Cederholm et al., 2019; Uhl et al., 2021). Current clinical practice guidelines recommend initiating nutritional support for hospitalized medical patients at risk of malnutrition to mitigate adverse outcomes associated with it (Hersberger et al., 2021). Improving nutritional behaviors can positively influence the overall health perception and adaptation to the disease of CHF patients (Benalikhoudja & Abdelbaki, 2023).

Malnutrition, defined as inadequate or unbalanced nutrition, is common in people with CHF. It is linked to worse clinical outcomes, as well as how patients feel about their health and their ability to manage the disease (Knobloch, Souza, Vale, Ribeiro É & Silva, 2024). When people have poor nutrition, they may feel weaker, have less energy, and feel generally unwell. This can make them see their health as worse and feel less confident in handling their illness (López Guillén et al., 2024). Research has shown that not eating well and having poor dietary habits are closely linked to lower health perception and reduced ability to care for oneself in people with chronic heart conditions, including CHF (Wiśnicka, Lomper & Uchmanowicz, 2022). Nutritional support can significantly reduce hospitalization rates and mortality in patients with CHF (Czapla, Juárez-Vela, Łokieć & Karniej, 2021). Nurses play a critical role in assessing and managing the nutritional behaviors of patients with CHF (King-Dailey, Frazier, Bressler & King-Wilson, 2022). Additionally, nurses' proactive approaches in this area play a crucial role in enhancing patients' health perceptions and ensuring effective disease adaptation (Flaubert et al., 2021).

Malnutrition and dietary errors in individuals with CHF are associated with a wide range of adverse symptoms, including edema, dyspnea, and cachexia. These nutritional challenges contribute to significant reductions in quality of life and self-care capacity. Evidence demonstrates that inadequate nutritional intake and poor adherence to dietary recommendations exacerbate heart failure–related symptoms, limit functional capacity, and hinder patients' ability to perform effective self-care behaviors (Czapla, et al., 2021; Wawrzeńczyk, Anaszewicz, Wawrzeńczyk & Budzyński, 2019). Moreover, impaired nutritional status is independently associated with diminished health-related quality of life and an increased symptom burden in CHF patients, underscoring the critical importance of dietary management in comprehensive heart failure

care (Fernández-Pombo et al., 2021; Wiśnicka, et al., 2022). Impaired adaptation to disease adversely affects clinical outcomes by contributing to the progression of underlying conditions and increasing the risk of hospitalization. Suboptimal self-care and limited self-management capacity in individuals with chronic heart failure are independent predictors of hospitalization and long-term mortality (Calero-Molina et al., 2021). Research on adherence to treatment recommendations, such as dietary modifications, demonstrates that effective adaptation to disease is associated with improved quality of life, whereas insufficient adaptation is linked to a more complex disease trajectory (Demirci & Metin Akten, 2023). Furthermore, a recent systematic review and meta-analysis found that home-based nursing interventions aimed at enhancing self-care are associated with reductions in hospitalizations and emergency care utilization, underscoring the clinical importance of promoting adaptation-related behaviors (Longhini et al., 2025).

Therefore, this study represents one of the few attempts to comprehensively examine the associations between dietary behaviors, health perception, and adaptation to disease in patients with CHF. Although the clinical outcomes associated with nutritional status in patients with CHF have been extensively examined, comprehensive studies specifically addressing the relationships among nutritional behaviors, health perception, and adaptation to disease remain limited. In this context, the study aims to provide an integrated evaluation of these variables based on current data. The study aims to address gaps in the literature by examining the impact of nutritional behaviors on patients' health perceptions and their adaptation to disease. By addressing this gap in the literature, this study is expected to contribute to a better understanding of patient-related outcomes and to offer practical insights for the development and implementation of nutritional strategies in the management of CHF patients.

Research Questions

1. What are the nutritional habits, health perceptions, and levels of adaptation to disease among patients with chronic heart failure (CHF)?

2. Is there a significant association between nutritional behaviors and health perceptions in patients with CHF?

3. Is there a significant association between nutritional behaviors and adaptation to disease in patients with CHF?

MATERIAL AND METHOD

Design and Participants

This study employed a descriptive, cross-sectional design. Data were collected at a cardiology clinic in a state hospital in eastern Turkey between July and September 2024.

Sample Size

The study population comprised patients diagnosed with CHF who presented to the cardiology clinics of a state hospital in eastern Turkey between July and September 2024. The sample consisted of patients who attended the cardiology clinics during the same period for CHF treatment and follow-up, and who voluntarily agreed to participate in the study. The sample comprised patients who met the study's inclusion criteria within the specified location and timeframe. The study sample was determined using the G Power program. The power analysis calculation calculated the sample size based on the data of a previous study (Özden & Çevik Aktura, 2023). The minimum sample size (Type I Error = 0.05; Power = 0.80; Effect Size = 0.43; Confidence = 0.95) was 170 participants. Patients included in the sample were selected using simple random sampling. The study included 200 patients.

The Power of Study

The study's statistical power was determined by conducting a regression analysis that explored the

relationship between dietary behaviors and health perception. As a result of this analysis, the calculated statistical power (1-beta) was 0.975, with a type I error rate (alpha) of 0.05 and a sample size of 200.

Inclusion Criteria

(1) Patients aged 18 years and older, (2) Patients without any disorder or disease that would affect cognitive functions (have the cognitive competence to understand the questions), (3) Literate patients, (4) Patients diagnosed with CHF according to the European Society of Cardiology guidelines (McDonagh et al., 2021) and classified as functional class II-IV based on the New York Heart Association (NYHA) criteria (Caraballo et al., 2019), (5) Patients willing to participate in the study met the inclusion criteria.

Exclusion Criteria

(1) Patients with kidney disease, (2) liver failure, (3) malignant diseases, and (4) those experiencing communication difficulties were excluded from the study.

Data Collection

Data were collected through face-to-face interviews. The interview duration for each participant was approximately 15–20 minutes.

Patient Information Form

The questionnaire comprised seven questions inquiring about the duration since diagnosis, age, gender, marital status, educational status, occupation, and economic status of the patients.

The Scale for Dietary Behaviors in Heart Failure (SDBHF)

The Scale for Dietary Behaviors in Heart Failure (SDBHF), developed by Boy and Enç, consists of four sub-dimensions: healthy habits, salt restriction, sugar restriction, and retention prevention. It includes 19 items (Boy & Enç, 2022). The 'Healthy Habits' sub-dimension includes items 4, 5, 11, 12, 16; the 'Salt Restriction' sub-dimension includes items 1, 3, 7, 9, 10, 15; the 'Sugar Restriction' sub-dimension includes items 6, 17, 19; and the 'Prevention of Retention' sub-dimension includes items 2, 8, 13, 14, 18. The minimum total score on this scale is 19, and the maximum is 76. An increase in the score indicates that patients with heart failure are following dietary guidelines, whereas a lower score suggests deviation from dietary recommendations. The Cronbach 'salpha coefficient of the scale was 0.72 (Boy & Enç, 2022) and 0.76 in this study.

The Perception of Health Scale (PHS)

The Perception of Health Scale (PHS), developed by Diamond et al. in 2007 (Diamond, Becker, Arenson, Chambers & Rosenthal, 2007), was adapted to Turkish in 2012 by Kadıoğlu and Yıldız. The scale consists of 15 items and four subdimensions: control center, self-awareness, certainty, and importance of health. The "Control Center" sub-dimension includes items 2, 3, 4, 12, and 13; "Self-Awareness" includes items 5, 10, and 14; "Certainty" includes items 6, 7, 8, and 15; and "Importance of Health" includes items 1, 9, and 11. The lowest possible score is 15, and the maximum score is 75. A higher score reflects a higher level of health perception. In a study by Kadioglu and Yıldız (2012), the Cronbach 'salpha coefficient for this scale was measured at 0.72 (Kadioglu & Yıldız, 2012), and for the present study, the value was 0.70.

The Adaptation to Chronic Illness Scale (ACIS)

The ACIS, developed by Atik and Karatepe, consists of 25 items divided into three subdimensions: physical adaptation (items 1, 9, 10, 13, 14, 15, 16, 18, 22, 23, 24), psychological adaptation (items 4, 6, 8, 11, 12, 20, 21), and social adaptation (items 2, 3, 5, 7, 17, 19, 25). Scores on the scale range from 25 to 125, with higher scores indicating better adaptation to the illness. Cronbach's alpha coefficient for the scale was 0.88 in the original study by Atik and Karatepe (Atik & Karatepe, 2016), and for the present study, the value was 0.74.

Data Analysis

All statistical analyses were performed using SPSS 25.0 software. The normal distribution of the data was checked according to the skewness and kurtosis coefficients (Mishra et al., 2019). Descriptive statistics, including mean, standard deviation, frequency, and percentage, were used to analyze the data. Correlation analyses were conducted using Pearson's correlation coefficient. Simple linear regression models were used. A p-value of <0.05 was considered statistically significant.

Ethics Approval

This study was approved by the Muş Alparslan University Scientific Research and Publication Ethics Committee in Türkiye (Decision No: 122131; Decision Date: 04 January 2024). Additionally, written authorization was obtained from the relevant hospital administration to conduct the research (Muş State Hospital: Decision No: E-35465298-605-248721918; Decision Date: 16 July 2024). The patients included in the study were informed of the study's purpose, the application method, and the expected results. They were also informed of the possibility of withdrawing from the study at any time and were provided with written and verbal consent forms. Throughout all stages of the research, the ethical principles outlined in the Declaration of Helsinki were followed.

RESULTS

Socio-Demographic and Disease Characteristics of the Patients

The patients who participated in the study had an average diagnosis duration of 7.64±6.35 years and an average age of 57.19±13.72 years. It was observed that 56.5% of the participants were female, 81.5% were married, 35.0% were literate, 42.5% were homemakers, and 73.5% had a moderate economic status (Table 1).

Table 1. Socio-Demographic and Disease Characteristics of the Patients

Variables	X±SS	
Diagnosis Duration (years)	7.6±6.4	
Age (years)	57.2±13.7	
Height (cm)	166.2 ± 9.0	
Weight (kg)	79.4 ± 14.0	
BMI (kg/m²)	27.5 ± 5.2	
Variables	n(200)	%
Gender		
Female	113	56.5
Male	87	43.5
Marital Status		
Married	163	81.5
Single	36	18.0
Divorced	1	0.5
Education Level		
Literate	70	35.0
Primary Education	50	25.0
Secondary School	29	14.5
High School and Above	51	25.5
Occupation		
Farmer	17	8.5
Retired	35	17.5
Homemakers	85	42.5
Worker	5	2.5
Officer	13	6.5
Self-employed	45	22.5
Economic Status		
Good	37	18.5
Moderate	147	73.5
Poor	16	8.0

Mean Scores of Patients' The Scale for Dietary Behaviors in Heart Failure, The Perception of Health Scale, The Adaptation to Chronic Illness Scale and Their Sub-Dimensions

The participants' mean total SDBHF score was 46.16 ± 7.16, the mean total PHS score was 48.82 ± 6.84, and the mean total ACIS score was 82.4 ± 11.62 (Table 2). Analysis and comparison of the mean total scores with the maximum possible scores indicate that participants exhibited moderate levels of adherence to the nutritional recommendations outlined in the guidelines and moderate levels of health perception and adaptation to chronic illness.

Table 2. Mean Scores of Patients' The Scale for Dietary Behaviors in Heart Failure, The Perception of Health Scale, The Adaptation to Chronic Illness Scale and Their Sub-Dimensions

Scales	Subscales	Number of items	$\bar{X} \pm SS$
SDBHF	Healthy Habits	5	11.33 ± 2.69
	Salt Restriction	6	17.25 ± 3.52
	Sugar Restriction	3	8.57 ± 2.04
	Prevention of Retention	5	9.01 ± 2.24
	Total Score	19	46.16 ± 7.16
PHS	Control Center	5	16.00 ± 3.70
	Self-Awareness	3	10.42 ± 2.05
	Certainty	4	11.36 ± 3.01
	Importance of Health	3	11.05 ± 2.06
	Total Score	15	48.82 ± 6.84
ACIS	Physical Adaptation	11	37.44 ± 6.15
	Social Adaptation	7	22.69 ± 4.51
	Psychological Adaptation	7	22.26 ± 4.59
	Total Score	25	82.4 ± 11.62

SDBHF: The Scale for Dietary Behaviors in Heart Failure; PHS: The Perception of Health Scale; ACIS: The Adaptation to Chronic Illness Scale

The Relationship Between Dietary Behaviors, Health Perception, And Disease Adaptation

We found weak but statistically significant positive relationships between certain SDBHF subdimensions and specific subdimensions of PHS and ACIS. Additionally, weak but statistically significant positive relationships were identified between the total SDBHF score and both the total PHS score (r=0.27, p=0.00) and the total ACIS score (r=0.23, p=0.00) (Figure 1, Table 3). These findings suggest that improving dietary behaviors, particularly adherence to the nutritional recommendations outlined in the guidelines, may lead to enhanced health perception and better adaptation to chronic illness.

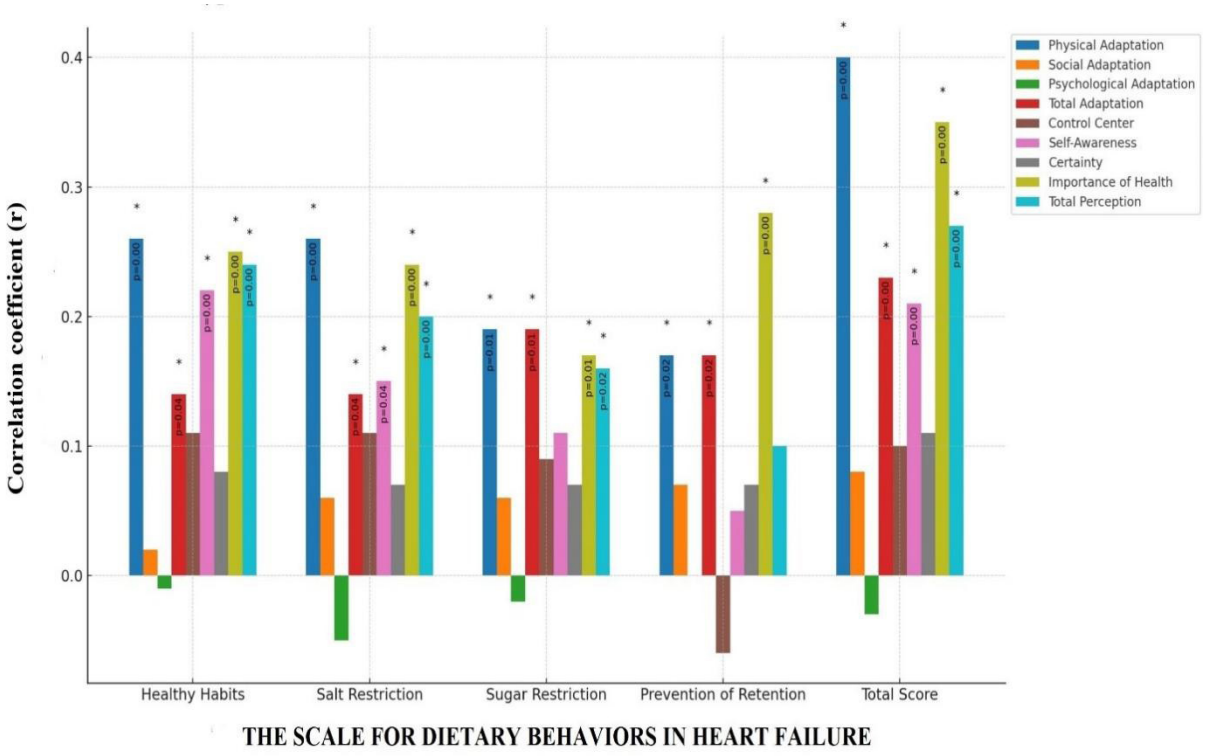

Figure 1. Relationship of Dietary Behaviors with Health Perception and Disease Adaptation

Table 3. Relationship of Dietary Behaviors with Health Perception and Disease Adaptation

Scales			The Scale for Dietary Behaviors in Heart Failure (SDBHF)				
	Subscales		Healthy Habits	Salt Restriction	Sugar Restriction	Prevention of Retention	Total Score
The Perception of Health Scale (PHS)	Control Center	r	0.11	0.11	0.09	-0.06	0.10
		p	0.13	0.13	0.21	0.42	0.16
	Self-Awareness	r	0.22*	0.15*	0.11	0.05	0.21*
		p	0.00	0.04	0.13	0.44	0.00
	Certainty	r	0.08	0.07	0.07	0.07	0.11
		p	0.25	0.35	0.34	0.30	0.14
	Importance of Health	r	0.25*	0.24*	0.17*	0.28*	0.35*
		p	0.00	0.00	0.01	0.00	0.00
	Total Score	r	0.24*	0.20*	0.16*	0.10	0.27*
		p	0.00	0.00	0.02	0.16	0.00
The Adaptation to Chronic Illness Scale (ACIS)	Physical Adaptation	r	0.26*	0.26*	0.19*	0.17*	0.40*
		p	0.00	0.00	0.01	0.02	0.00
	Social Adaptation	r	0.02	0.06	0.06	0.07	0.08
		p	0.78	0.41	0.39	0.34	0.29
	Psychological Adaptation	r	-0.01	-0.05	-0.02	0.00	-0.03
		p	0.88	0.51	0.76	0.98	0.65
	Total Score	r	0.14*	0.14*	0.19*	0.17*	0.23*
		p	0.04	0.04	0.01	0.02	0.00

r; Pearson correlation coefficient; *: Correlation coefficient is significant at the level of 0.05($p<0.05$).

Regression Analysis Model of Dietary Behaviors on Health Perception and Disease Adaptation

Dietary behaviors and health perception exhibit a weak but statistically significant relationship (R: 0.268, R^2: 0.072, p: 0.000), with dietary behaviors explaining 7.2% of the total variance. In other words, 7.2% of the change in the dependent variable (PHS) is explained by the independent variable (SDBHF) included in the model. According to the standardized regression coefficient (Beta), a one-unit increase in dietary behavior is associated with a 7.2% increase in health perception. The t-test results for the significance of the regression coefficients indicate that dietary behaviors have a significant positive effect on health perception (Table 4).

Dietary behaviors and disease adaptation exhibit a weak but statistically significant relationship (R: 0.229, R^2: 0.052, p: 0.001); dietary behaviors explain 5.2% of the total variance. In other words, 5.2% of the change in the dependent variable (ACIS) is explained by the independent variable (SDBHF) included in the model. According to the standardized regression coefficients (Beta), a one-unit increase in dietary behaviors is associated with a 5.2% increase in disease adaptation. The t-test results for the regression coefficients show that dietary behaviors significantly and positively affect disease adaptation (Table 4).

Table 4. Regression Analysis Model of Dietary Behaviors on Health Perception and Disease Adaptation

Variables	B	Std. Error	Beta	t	p
(Constant)	37.025	3.056	-	12.114	0.000
SDBHF	0.256	0.065	0.268	3.907	0.000
Dependent Variable: PHS					
R: 0.268	R^2: 0.072	F: 15,264	p:0.000	Durbin-Watson: 1,905	
Variables	B	Std. Error	Beta	t	p
(Constant)	65.253	5.250	-	12.429	0.000
SDBHF	0.371	0.112	0.229	3.304	0.001
Dependent Variable: ACIS					
R: 0.229	R^2: 0.052	F: 10.918	p:0.001	Durbin-Watson: 1.825	

SDBHF: The Scale for Dietary Behaviors in Heart Failure; PHS: The Perception Of Health Scale; ACIS: The Adaptation to Chronic Illness Scale

DISCUSSION

This study presents significant findings on the impact of nutritional behaviors on health perceptions and disease adaptation among patients with CHF. Our results demonstrate that nutritional behaviors are among the important determinants shaping patients' health perceptions and adaptation to disease. These findings are consistent with recent literature, which emphasizes the complex interplay between nutrition and CHF management.

The moderate levels of dietary adherence, health perception, and adaptation to chronic illness identified in this study (Table 2) align with previous research on patients with chronic heart failure. Uysal et al. (2020) found that individuals with chronic heart failure often demonstrate moderate adherence to recommended dietary behaviors, which correlates with limitations in self-care and perceived health status (Uysal, Öz Alkan, Enç & Yiğit, 2020). Similarly, Lee and Tseng (2022) observed that, although patients are aware of dietary recommendations, maintaining long-term adherence to nutrition-related behaviors remains difficult due to symptom burden, lifestyle constraints, and challenges in incorporating dietary changes into daily routines (Lee & Tseng, 2022). Furthermore, a systematic review by Wawrzeńczyk et al. (2019) demonstrated that impaired nutritional status in patients with chronic heart failure is strongly associated with reduced functional capacity, diminished quality of life, and challenges in adapting to the chronic nature of the disease (Wawrzeńczyk et al., 2019). These findings corroborate the results of the present study, indicating that moderate engagement in nutritional behaviors may be inadequate for achieving optimal perceived health and effective adaptation to disease. Overall, the evidence emphasizes that nutritional behaviors constitute a vital yet complex aspect of chronic heart failure management and highlights the necessity for ongoing, supportive, and nurse-led interventions to improve dietary adherence, enhance health perceptions, and facilitate adaptation to chronic illness.

Nutritional habits and behaviors directly influence the course of the disease and health perception in patients with CHF (Powell-Wiley et al., 2021). Research has shown that nutritional behaviors positively impact health perception (Billingsley, Hummel, & Carbone, 2020; Patel & Joseph, 2020). In this study, the relationship between dietary behaviors and health perception was investigated, revealing that dietary behaviors, such as healthy habits, salt and sugar restriction, and prevention of retention, had statistically significant positive relationships with various sub-dimensions of health perception (Table 3). Dietary behaviors positively affected health perception (Table 4). The study by Benalikhoudja and Abdelbaki (2023) highlights that malnutrition is a common and detrimental factor in the development of CHF, emphasizing the need to evaluate nutritional status in terms of morbidity and mortality (Benalikhoudja & Abdelbaki, 2023). Similar results have been

reported in the literature (Obata et al., 2021; Uysal, et al., 2020). Additionally, a study by Lee et al. (2021) found that nutritional interventions positively affected patients' energy intake, body mass index, and, consequently, their health perception (Lee, Jeong, Choi & Kang, 2021). Similarly, Fernández-Pombo et al. (2021) emphasized that nutritional interventions can prevent muscle loss and cachexia in CHF patients (Fernández-Pombo et al., 2021). These findings suggest that dietary behaviors can improve the health perception of patients with CHF.

Nutritional behaviors are essential for disease adaptation in patients with CHF (Lee & Tseng, 2022). Studies have shown that nutritional behaviors positively affect disease adaptation (Camafort, Park & Kang, 2023; Wickman et al., 2021). In light of this study's findings, dietary behaviors showed a positive, statistically significant relationship with disease adaptation (Table 3) and were found to positively influence disease adaptation (Table 4). Other studies support these results. Ishikawa and Sattler (2021) highlighted that nutrition positively affects heart failure pathophysiology, quality of life, hospitalizations, and disease adaptation (Ishikawa & Sattler, 2021). Wawrzeńczyk et al. (2019) emphasized that nutritional disorders are a significant risk factor for CHF, significantly influencing disease progression and prognosis, and negatively affecting disease adaptation (Wawrzeńczyk, et al., 2019). Hersberger et al. (2021) reported that personalized nutritional support reduces mortality and cardiovascular events (Hersberger et al., 2021). Similarly, Uysal et al. (2020) observed that healthy dietary habits positively influence health perception (Uysal et al., 2020). Solikha et al. (2023) demonstrated that disease perception influences dietary behaviors, with healthy dietary practices enhancing patients' subjective health perception (Solikha, Utomo & Tampubolon, 2023). Additionally, Kretschmer and Loch (2022) highlighted the role of positive eating behaviors in significantly supporting health perception, underscoring the critical importance of nutrition in managing chronic conditions (Kretschmer & Loch, 2022). These findings suggest that dietary behaviors can improve the health perception of CHF patients with CHF.

In patients with CHF, non-adherence to physical activity recommendations, dietary guidelines, and medication regimens has been identified as a significant factor contributing to recurrent hospitalizations. Conversely, improved adherence to treatment has been associated with better recovery rates. Furthermore, studies evaluating the effectiveness of nutritional interventions suggest that nutritional support can enhance clinical outcomes in CHF patients (Catarino, Vaz & Paiva, 2022; Georgieva, Rushid, Nankova, Borisova & Yotov, 2023; Rizzuto, Charles & Knobf, 2022;). Czapla et al. (2021) reported that malnutrition negatively affects hospitalizations and mortality, and improving nutritional status can positively impact these outcomes (Czapla et al., 2021). Chrysohoou et al. (2022) presented findings supporting the impact of dietary behaviors on overall health perception and quality of life in CHF patients. (Chrysohoou, Mantzouranis, Dimitroglou, Mavroudis & Tsioufis, 2022). Wickman et al. (2021) reported that DASH diet interventions positively affect CHF patients (Wickman et al., 2021). Based on this study's findings and relevant literature, we believe that dietary behaviors among patients with CHF may significantly affect health perception and adaptation to disease.

Despite a statistically significant relationship among nutritional behaviors, health perception, and disease adaptation, effect sizes were relatively small. This indicates that while nutritional behaviors are a contributing factor, they account for only a limited portion of the variance in patients' health perceptions and adaptation levels. From a clinical perspective, this suggests that these outcomes are multifactorial and likely influenced by other clinical, psychological, and socioeconomic variables not fully captured in this study. Therefore, while promoting healthy dietary habits remains a vital component of heart failure management, it should be integrated into a broader, multidisciplinary intervention strategy to achieve more substantial clinical improvements. Although these relationships were statistically significant, the effect sizes were weak; therefore, the clinical significance of the findings may be limited. Clinicians should interpret these results cautiously, recognizing that small statistical associations may not lead to meaningful clinical improvements.

Limitations and Generalizability

This study was conducted at a single cardiology clinic, which may limit the generalizability of the results.

The sample predominantly consisted of patients with NYHA class 2 heart failure, with limited representation of those in advanced stages (NYHA classes 3 and 4). This limitation may restrict the applicability of the findings to patients with advanced heart failure. Although the study examined the relationships between dietary behaviors, health perception, and adaptation to disease, it did not account for several potentially influential variables, such as psychosocial factors, physical activity levels, and medication use. Additionally, the dietary behavior scale only evaluates general dietary patterns; therefore, more detailed information on specific nutrient intakes and overall dietary quality is needed. Future research should incorporate more diverse samples, longitudinal designs, and comprehensive assessment tools to strengthen the robustness and applicability of these findings. Importantly, confounding factors such as socioeconomic status, food access, medication use, and healthcare access, which may significantly impact the relationships under study, should be included in analyses. Thus, we encourage future studies to conduct more comprehensive analyses that integrate these variables.

CONCLUSION

This study reports significant findings from an investigation of the effects of nutritional behaviors on health perception and disease adaptation in CHF patients. Consistent with previous findings, nutritional interventions can improve the health perception and disease adaptation of CHF patients. Therefore, developing and implementing nutritional strategies to manage CHF is essential. Additionally, regularly assessing nutritional status and implementing personalized plans can improve patients' overall health and quality of life.

In conclusion, nutritional behaviors significantly affect health perception and adaptation to disease in patients with CHF. These findings underscore the importance of nutritional strategies in the management of CHF and provide practical recommendations for clinical practice. Although nutritional behaviors positively affect health perception and adaptation to illness, the small magnitude of this effect suggests it may not be sufficient on its own in clinical practice. Therefore, it is important to integrate nutritional strategies with other treatment and care approaches in clinical applications.

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