Journal of Advanced Biomedical Sciences

https://jabs.fums.ac.ir/
Online ISSN: 2783-1523

Journal of Advanced Biomedical Sciences

Fasa University of Medical Sciences

Exploring the Relationship Between Illness Perception and Self-Efficacy Among Older Adults with Acute Coronary Syndrome: A Descriptive Study Conducted in Southern Iran

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Article Info

Article Type:
Original Article

Article history:
Received
16 Jul 2024
Received in revised form
29 Jul 2024
Accepted
05 Oct 2024
Published online
20 Jan 2025

Publisher
Fasa University of Medical Sciences

Abstract

Background & Objectives: Acute coronary syndrome (ACS), one of the most common cardiovascular conditions affecting older adults, poses significant health challenges. Illness perception and self-efficacy are widely regarded as key factors in the effective management of cardiovascular diseases. Therefore, this study examined the relationship between illness perception and self-efficacy in older patients diagnosed with ACS in southern Iran.

Materials & Methods: This cross-sectional study was conducted from September to November 2024 among 164 older patients with ACS in Fasa, southern Iran, using convenience sampling. Data were collected via a demographic questionnaire, the Illness Perception Questionnaire developed by Broadbent et al., and Sullivan's Cardiac Self-Efficacy Scale.

Results: Of the 164 participants, 102 (62.2%) were male and 62 (37.8%) were female. The mean age was 67.21±5.46 years, and the mean duration of illness was 5.67±4.41 years. The mean illness perception score was 45.32±13.94, while the mean self-efficacy score was 28.96±2.41; both scores were categorized as moderate. Pearson's correlation analysis revealed a significant positive correlation between illness perception and self-efficacy. However, no significant association was observed between demographic variables and either illness perception or self-efficacy.

Conclusion: The study's findings indicate that both illness perception and self-efficacy in older patients with ACS were at moderate levels. Furthermore, a significant, positive correlation was identified between illness perception and self-efficacy. Accordingly, it is recommended that health policymakers and administrators implement strategies aimed at enhancing self-awareness, illness perception, and self-efficacy among this population.

Keywords: Older Adults, Illness Perception, Self-Efficacy, Acute Coronary Syndrome

Cite this article: Dehghani SH, Bijani M, Khiyali Z, Zandieh ZH. Exploring the Relationship Between Illness Perception and Self-Efficacy Among Older Adults with Acute Coronary Syndrome: A Descriptive Study Conducted in Southern Iran. J Adv Biomed Sci. 2025; 15(1): 67-76.
DOI: 10.18502/jabs.v15i1.17552

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Introduction

Cardiovascular disease is one of the most common chronic illnesses, serving as a major cause of hospitalization and one of the leading causes of death worldwide (1). According

to the World Health Organization (WHO), cardiovascular diseases are the leading cause of death globally and account for 82% of deaths in developing countries. Reports from the Iranian Ministry of Health and WHO also indicate that cardiovascular diseases account for 35% of all deaths in Iran (2). Acute coronary syndrome (ACS) is among the most common cardiovascular conditions worldwide (3), contributing to nearly half of all global deaths and recognized as the leading cause of death in the Asia-Pacific region (4). Effective management of ACS requires patients to commit to long-term treatment and make significant lifestyle changes to cope with the condition and its associated challenges. These changes are crucial for controlling symptoms and preventing or delaying complications. However, the success of these treatment efforts largely depends on the patients' active involvement and their confidence in performing essential self-care activities (5, 6).

Self-efficacy is defined as an individual's confidence in their ability to effectively manage their thoughts, emotions, activities, and behaviors, especially in stressful situations (7). Perceived self-efficacy profoundly affects individuals' performance, the decisions they make, the strategies they adopt to achieve their goals, and the effort they put into various activities (8, 9). People with high self-efficacy are more inclined to take on challenging tasks and show a better grasp of health-related practices (10). As a result, boosting self-efficacy can improve self-management, extend life expectancy, and lead to more effective management of health-related behaviors (11). It is crucial to identify factors that affect self-efficacy—like illness perception—to enhance it in patients with chronic diseases, since you cannot improve self-efficacy without recognizing these factors (12, 13). Mobini and colleagues have shown that a patient's perception of their illness plays a key role in predicting their self-efficacy in managing disease-related challenges and following prescribed treatments (14). The concept of illness perception, as introduced by Leventhal and Cameron, encompasses a patient's beliefs about the causes, consequences, duration, and potential for recovery or rehabilitation of their illness (15).

Several studies suggest that people with a positive perception of their illness are better able to understand and analyze its various aspects accurately and realistically, which in turn has a significant impact on their health-related behaviors (16, 17). Patients who experience sudden changes in their health often feel uncertain about their future, which leads to fluctuations in their perceptions of their illness. Such fluctuations can ultimately weaken their confidence and belief in their ability to manage their condition effectively (18). In one study, patients with coronary heart disease showed high levels of illness perception, expressing confidence in managing the disease with proper treatment. Notably, men had a better perception of their illness than women, and an association was found between the chronic nature of the disease and patient age (19). Another study reported that people with coronary artery disease had a moderate level of illness perception (20).

Elderly patients often have comorbidities and geriatric syndromes, which increase their vulnerability to adverse outcomes and complications, making chronic illness management more challenging (21). Furthermore, research indicates that evaluating illness perception in cardiac patients can offer a crucial basis for developing targeted interventions to improve disease management and control (22). Despite the significance of these factors, no previous study has specifically examined the relationship between illness perception and self-efficacy in elderly patients with ACS. To address this gap, the current study was carried out to explore this relationship in elderly patients living in Fasa, a city in southern Fars Province, Iran.

[DOI: 10.18502/jabs.v15i1.17552]

Materials and Methods

This cross-sectional study was carried out between September and November 2024 with 164 older adult patients with ACS at Vali Asr Hospital in Fasa, southern Iran, using convenience sampling. The target population included older adult patients diagnosed with ACS. The inclusion criteria were as follows: the willingness to participate, an age of 60 years or older, no cognitive disorders (e.g., dementia or Alzheimer's disease), effective communication skills (without significant hearing or speech impairments), and a confirmed ACS diagnosis by a cardiologist. Patients were excluded if they declined to participate or submitted incomplete questionnaires. Sampling was performed using a convenience sampling method. The required sample size was determined based on a 95% confidence level, 90% power, and an anticipated correlation of r=0.2 between illness perception and self-efficacy, resulting in a target of 161 participants (23). A total of 180 elderly patients with ACS were invited to participate; of these, 164 completed and returned the questionnaires, resulting in a response rate of 98%.

$$n = \left(\frac{z_{1-\frac{\alpha}{2}} + z_{1-\beta}}{0.5 \ln(\frac{1+r}{1-r})} \right)^2 + 3$$

Data Collection Tools

Data were gathered using a demographic checklist that captured information on age, gender, marital status, education level, occupation, and illness duration, as well as two self-report questionnaires: The Illness Perception Questionnaire and Sullivan's Cardiac Self-Efficacy Scale (SCSES).

Illness Perception Questionnaire

The Illness Perception Questionnaire, which comprises eight items, was developed by Broadbent et al. in 2006 (24). This instrument evaluates various dimensions of illness perception, including consequences, duration, personal control, treatment control, identity, concerns, understanding of the illness, emotional response, and perceived causes. Each item is scored on a 0–10 Likert scale, resulting in a total score ranging from 0 to 80. Scores are categorized as follows: 0–35 indicates a weak illness perception, 36–50 a moderate illness perception, and 51–80 a strong illness perception. The Cronbach's alpha for this questionnaire was reported as 80%, with test-retest reliability over a six-week interval ranging from 42% to 75% for individual items (24). In Iran, the questionnaire's validity was confirmed, with a Cronbach's alpha of 87% (25).

Sullivan's Cardiac Self-Efficacy Scale

The SCSES, developed by Sullivan and colleagues in 1998, was designed to measure cardiac self-efficacy. This 16-item questionnaire uses a 5-point Likert scale (ranging from 0, meaning not confident at all, to 4, meaning very confident) to assess patients' self-efficacy (26). The SCSES evaluates self-efficacy across three subscales: symptom control (items 1–10), lifestyle adjustment (items 11–12), and functioning (items 13–16). Total scores vary from 0 to 64 and are categorized as low (0–22), moderate (23–32), or high self-efficacy (33–64). Sullivan et al. reported a Cronbach's alpha of 0.90 for this scale (28 ref 27???). In Iran, Varayi and colleagues validated the SCSES, obtaining a Cronbach's alpha of 0.97 (29).

Data Analysis

The collected data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics, including one-way ANOVA (analysis of variance), multiple linear regression, and the Pearson correlation coefficient. Factors with a p-value of ≤0.2 were included in a multiple linear regression model using the backward elimination technique to identify factors associated with self-efficacy. Variables found to be significant in univariate analysis were also entered into the regression model. Before performing multivariate

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linear regression, the researchers verified the assumptions of normality, homogeneity of variance, and independence of residuals. Data analysis was performed using SPSS (statistical package for social science) version 23. Statistical tests were considered significant at P<0.05.

Results

A total of 164 elderly patients participated in the study, with 102 males (62.20%) and 62 females (37.80%). The mean age of the participants was 67.21±5.46 years, while the average duration of illness was 5.67±4.41 years. Additional demographic details are presented in Table 1.

The mean illness perception score was 45.32±13.94, placing it in the moderate range. Likewise, the mean self-efficacy score, measured at 28.96±2.41, also fell within the moderate category (Table 2).

A statistically significant and positive correlation was observed between illness perception and self-efficacy (r=0.47, P<0.001) (Table 3).

Moreover, the analysis indicated no statistically significant association between demographic variables and either illness perception or self-efficacy among older adults (P>0.05) (Table 4).

Multiple linear regression analyses revealed no statistically significant association between demographic characteristics and self-efficacy (P>0.05) or between demographic characteristics and illness perception. In contrast, the analysis demonstrated a direct and statistically significant relationship between self-efficacy and illness perception among older adult patients diagnosed with acute coronary syndrome (β=0.97, P<0.001) (Table 5).

Table 1. Individual characteristics of the subjects (n=164)

Variable		Frequency	Percentage
Gender	Male	102	62.20
	Female	62	37.80
Disease duration	1-5years	104	63.43
	5-10years	44	26.82
	>10 years	16	9.75
Education	Primary school	54	32.94
	Less than Diploma	90	54.87
	>Diploma	20	12.19
Occupation	Employee	64	39.02
	Self-employed	38	23.17
	Housewife	62	37.81
Marital status	Single	8	4.87
	Married	132	80.48
	Divorced	10	6.09
	Widowed	14	8.56

Table 2. Mean and standard deviation of illness perception and self-efficacy scores in older adult patients with acute coronary syndrome)n=164)

Variable		Frequency (percentage)	Total Mean±SD
Illness perception	Poor	24 (14.63)	45.32±13.94
	Moderate	96 (58.53)	
	Good	44(26.82)	
Self-efficacy	Poor	32 (19.51)	28.96±2.41
	Moderate	102 (62.19)	
	Good	32 (19.51)	

SD: standard deviation

[DOI: 10.18502/jabs.v15i1.17552]

Table 3. The relationship between illness perception and self-efficacy

Variable		Illness perception	Self-efficacy
Illness perception	Pearson Correlation	1	0.47
	P-value	-	<0.001
Self-efficacy	Pearson Correlation	0.47	1
	P-value	<0.001	-

Table 4. Associations between socio demographic factors, illness perception and self-efficacy in older adult patients with acute coronary syndrome (n=164)

Variable		Illness perception Mean±SD	P value*	Self-efficacy Mean±SD	P value*
Gender	Male	35.21±9.36	0.37	26.41±1.94	0.30
	Female	38.49±8.54		24.29±1.68	
Age	60-70years	36.19±8.41	0.41	25.36±2.07	0.39
	>70years	34.07±7.36		23.41±1.83	
Education	Primary school	27.34±3.94	0.29	21.17±1.93	0.41
	Less than Diploma	33.21±2.10		23.±41±2.09	
	>Diploma	35.31±6.89		24.78±1.96	
Occupation	Employee	21.41±2.98	0.17	23.27±1.83	0.19
	Self-employed	29.48±4.89		22.40±2.01	
	Housewife	30.29±6.54		26±24±1.89	
Marital status	Single	28.46±4.78	0.41	27.26±1.36	0.12
	Married	27.41±3.81		26.74±1.63	
	Divorced	29.69±7.43		28.36±1.89	
	Widowed	23.46±4.89		26.41±1.70	
Disease duration	1-5years	27.29±8.73	0.39	24.37±1.41	0.46
	5-10years	31.46±4.89		27.36±1.98	
	>10years	27.36±6.79		23.33±11.73	

*One-way ANOVA, SD: standard deviation

Table 5. Multiple linear regression analysis of the effect of demographic characteristics on self-efficacy in older adult patients with acute coronary syndrome

Independent variables	B	SE	β	t	P value
Age	0.002	0.098	1.222	0.224	0.371
Gender	0.035	0.115	1.442	0.151	0.191
Married status	0.476	0.326	0.120	1.458	0.147
Education	0.118	0.232	0.42	0.510	0.611
Occupation	0.475	0.270	0.201	1.755	0.81
Disease duration	0.006	0.035	0.13	0.159	0.874
Scores of illness perception	0.17	0.014	0.97	1.236	P<0.001

B: Regression coefficient. SE: Standard error. β: Standardized beta coefficient, t: t test

B: Regression coefficient. SE: Standard error. β: Standardized beta coefficient, Adjusted R square=0.022

Discussion

The incidence of ACS among the elderly is projected to increase substantially due to the

[DOI: 10.18502/jabs.v15i1.17552]

aging of the population (30). In this context, our study aimed to examine the relationship between illness perception and self-efficacy in elderly patients with ACS in southern Iran. The findings revealed that the mean illness perception score in this patient group was moderate, and no statistically significant associations were found between this score and any of the demographic or clinical variables examined. These results align with those reported by Nur (31), Rodgers et al. (30), Mobini et al. (14), and Najafi Ghezeljeh et al. (18), who also reported moderate levels of illness perception in patients with cardiac diseases. Nevertheless, in contrast to our study, some previous investigations have documented higher levels of illness perception (19, 22, 32). This discrepancy may be explained by differences in participant demographics, notably a younger average age in those studies relative to our sample. Similarly, studies by Paryad et al. (33) and Rodgers et al. (30) reported no significant relationship between illness perception and demographic variables, such as educational attainment, among patients with cardiac conditions, which is consistent with our findings. However, earlier research has identified positive correlations between male gender and ACS (19, 29), between educational level and illness perception in heart failure patients (19), and between age and illness perception (19, 34). Striberger et al. (35) also noted gender-based differences in illness perception for intermittent claudication, observing distinct variations between men and women. These discrepancies across studies may stem from variations in the demographic and clinical profiles of the study populations or differences in the data collection instruments used.

The present study revealed that the mean self-efficacy score among elderly ACS patients was moderate, with no significant associations observed between self-efficacy and any demographic or clinical variables. A scoping review by Sugiharto et al. underscored the pivotal role of self-efficacy as a predictor of self-care behavior in patients with coronary heart disease (CHD), noting that most studies reported low to moderate self-efficacy levels among CHD patients (36). Similarly, Barham et al. (37), Peyman et al. (38), and Seif et al. (39) reported moderate self-efficacy levels among cardiovascular patients. Nonetheless, some earlier studies have documented higher self-efficacy levels in cardiac patients (14, 39), a discrepancy with our findings. These inconsistencies could be attributed to differences in demographic and clinical variables or to variations in the design and implementation of the self-efficacy measurement tools. In line with the present study's results, other research has reported no significant associations between age, gender, and self-efficacy levels in patients with ischemic heart disease (11, 29). Likewise, age did not appear to affect self-efficacy among elderly individuals with chronic conditions (40). Nevertheless, some studies have identified significant associations. For instance, Peyman et al. (38) and Paryad et al. (33) reported correlations between age, educational attainment, and self-efficacy in elderly cardiac patients. Moreover, a scoping review highlighted the predictive influence of demographic variables—such as age, gender, and occupation—in determining self-efficacy among patients with coronary artery disease (36). Concerning the lack of a relationship with age, it is plausible that other factors—such as geographical and climatic conditions, religious beliefs, personal values, psychological attitudes (e.g., a sense of youthfulness), levels of physical activity, and perceived competence— may have played a role. The socio-cultural context of Fasa, marked by a strong work ethic among the elderly—coupled with widespread participation in gardening and farming among older men and household duties among elderly women, even at advanced ages—could also account for this divergence. Furthermore, the study's results demonstrated a positive and direct relationship

[DOI: 10.18502/jabs.v15i1.17552]

between illness perception and self-efficacy in elderly ACS patients. This suggests that patients who possess a deeper understanding of their illness and its impact on their lives exhibit higher levels of self-efficacy and a greater capacity to engage in self-care activities, thereby managing their condition more effectively. Previous research supports the notion that illness perception enhances self-efficacy in managing chronic illnesses. Similarly, studies by Mohammadi et al. (41), Mobini et al. (14), Alhofaian et al. (23), and Kim et al. (42) corroborate this association. Seah et al. further emphasized the connection between illness perception and self-efficacy, reporting that patients often experience uncertainty about their future owing to abrupt changes in their health status. These fluctuations can modify patients' illness perceptions, which, in turn, may diminish their confidence and self-belief—both critical components of self-efficacy necessary for effective self-care (43). Al-Amer proposed that the relationship between illness perception and self-efficacy may adhere to a theoretical framework in which illness perception serves as a predictor of self-efficacy. Thus, an individual's overall perception of their illness could positively influence their confidence in acquiring specific skills and their capacity to engage in self-care activities (44). However, contrasting findings have been reported by Knowles et al., who observed a significant yet negative relationship between these variables in diabetic patients (45). This discrepancy may be attributable to differences in the nature of the illnesses examined or to variations in the demographic characteristics of the participants.

Application to Clinical Practice

Community-based initiatives that foster social participation and engagement play an essential role in enhancing self-efficacy and cultivating a positive perception of aging. By offering opportunities for older adults to contribute to their communities and sustain social connections, these initiatives can boost their sense of competence and self-worth. Moreover, health system managers can leverage the study's findings in care planning to enhance the self-efficacy of older adults with chronic diseases.

Limitation

While the study's findings offer valuable insights, it is imperative to acknowledge several limitations when interpreting the results. A primary limitation of cross-sectional studies is their inability to establish temporal relationships between exposure and outcome variables, thereby constraining causal inferences. Furthermore, the cross-sectional design does not capture potential changes in participants' attitudes and behaviors over time. Future research should consider longitudinal or cohort designs with larger sample sizes and incorporate additional psychological, social, cultural, and spiritual variables to yield a more comprehensive understanding of these relationships. Another limitation arises from the reliance on self-reported data for illness perception and self-efficacy, which may have led to underreporting of actual experiences. To mitigate this issue, future studies should incorporate qualitative methodologies—such as interviews—to complement the quantitative findings. Moreover, the use of convenience sampling in this study may limit external validity and restrict the generalizability of the results.

Conclusion

The present study's findings indicate that both illness perception and self-efficacy levels among elderly patients with ACS are moderate. Furthermore, a positive and direct association between illness perception and self-efficacy was observed. These results underscore the need for health policymakers and administrators to design and implement targeted interventions aimed at enhancing illness perception and, in turn, bolstering self-efficacy among elderly ACS patients. Strengthening these factors is essential for empowering patients to effectively manage and control their condition.

[DOI: 10.18502/jabs.v15i1.17552]

Acknowledgments

This article is derived from a medical thesis approved by Fasa University of Medical Sciences (Approval Number: 403102) and was financially supported by the university. The authors extend their sincere gratitude to the Vice Chancellor of Research for invaluable assistance, and they also thank the elderly participants who generously contributed to this study.

Conflicts of Interest

The authors declare no competing interests.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethical Considerations

All participants provided written informed consent to participate in the study. The study was conducted in accordance with the principles of the revised Declaration of Helsinki, a statement of ethical principles that guides physicians and other participants in medical research involving human subjects. Participants were assured of the anonymity and confidentiality of their information.

Code of Ethics

The study was approved by the Institutional Research Ethics Committee of Fasa University of Medical Sciences, Fasa, Iran (Ethical code: IR.FUMS.REC.1403.087).

Authors' Contribution

M.B., Z.Kh., and Zh.Z. conceptualized the study. Zh.Z. and Sh.D. conducted the research. M.B., Z.Kh., and Zh.Z. drafted the manuscript, while M.B. and Z.Kh. approved the study design. All authors reviewed and finalized the manuscript.

References

1 Sahoo S, Padhy SK, Padhee B, Singla N, Sarkar S. Role of personality in cardiovascular diseases: An issue that needs to be focused too!. Indian Heart J. 2018; 70: S471-S7.
2 Barzegari A, Noorani N, Mirzaei M. Comparison of Data Mining Algorithms in Prediction of Coronary Artery Diseases Using Yazd Health Study Data (YaHs) . J Shahid Sadoughi Uni Med Sci. 2023; 31(7): 6824 -35. [In Persian]
3 Libby P. Braunwald's heart disease-E-book: a textbook of cardiovascular medicine: Elsevier Health Sciences; 2021.
4 Najaf Najafi M, Abdollahi Moghaddam A, Hosseini Z S, Khadem-Rezaiyan M. Acute Coronary Syndrome in Mashhad, Northeastern of Iran: Report of a Decade. Multidiscip Cardio Annal. 2022;13(2):e115916.
5 Vladeanu M-C, Bojan IB, Bojan A, Iliescu D, Badescu MC, Badulescu OV, et al. Angiotensin-converting enzyme gene D-allele and the severity of coronary artery disease. Experiment Therapeut Medicine. 2020;20(4):3407-11.
6 Ghaedrahamt M, Zohari Anboohi S, Borhani F, Gholami Chaboki B. The relationship between spiritual intelligence and self-efficacy in patients with acute coronary syndrome admitted to cardiac care unit. Ir J Cardiovasc Nurs. 2021;10(1):120-7. [In Persian]
7 Mousset ES-P, Lane J, Therriault D, Roberge P. Association between self-efficacy and anxiety symptoms in adolescents: Secondary analysis of a preventive program. Social and Emotional Learning: Research, Practice, and Policy. 2024;3:100040
8 Han N-S, Won M-H. Association between social support and physical activity in patients with coronary artery disease: multiple mediating roles of self-efficacy and autonomous motivation. Health Care. 2022;10: 425-36.
9 Nuraeni A, Sugiharto F, Anna A, Sari E, Mirwanti R, Trisyani Y, Emaliyawati E. Self-Efficacy in Self-Care and Its Related Factors Among Patients with Coronary Heart Disease in Indonesia: A Rasch Analysis. Vasc Health Risk Manag. 2023;19:583-93.
10 Jafari Sejzi F, Morovati Z, Heidari R. Validation of the cardiovascular management self-efficacy scale. Med J Mashhad Univ Med Sci. 2018;61(4):1112-22. [In Persian]
11 Boroumand S, Shahriari M, Abbasi Jebeli M, Baghersad Z, Baradaranfard F, Ahmadpoori F. Determine the level of self-efficacy and its related factors in patients with ischemic heart disease: A descriptive correlational study. Iranian Journal of Nursing Research (IJNR). 2015;9(4):61-9. [In Persian]
12 Hatef M, Sharif Nia H, Mousavinasab N, Esmaeili

[DOI: 10.18502/jabs.v15i1.17552]

R, Shafipour V. Self-efficacy and prediction of associated factors in patients with chronic diseases. J Mazand Univ Med Sci. 2018;28(162):86-94. [In Persian]
13 Mohammadi F, Tehranineshat B, Farjam M, Rahnavard S, Bijani M. The correlation between resilience, self-efficacy and illness perception in patients with type 2 diabetes: a cross-sectional study. Clin Diabetol. 2022;11(3):175-82.
14 Mobini S, Allahbakhshian A, Shabanloei R, Sarbakhsh P. Illness Perception, Self-Efficacy, and Medication Adherence in Patients With Coronary Artery Disease: A Path Analysis of Conceptual Model. SAGE Open Nurs. 2023;9:1-14.
15 Leventhal H, Leventhal EA, Cameron L. Representations, procedures, and affect in illness self-regulation: A perceptual-cognitive model. Handbook of health psychology. 2001;3:19-47.
16 Stafford L, Berk M, Jackson HJ. Are illness perceptions about coronary artery disease predictive of depression and quality of life outcomes? J Psychosom Res. 2009;66(3):211-20.
17 Mailani F, Nurikhsani N, Muthia R. Illness Perception and Self-Care in Coronary Heart Disease Patients: A Cross-Sectional Study. Caring: Indonesian J Nurs Sci. 2023;5(2):118-24.
18 Najafi Ghezeljeh T, Eydi M, Haghani S. Illness Perception In Patients With Heart Failure Admitted To Selected Centers Of Iran University Of Medical Sciences. Nurs Midwif J. 2019; 17 (2) :91-101. [In Persian]
19 Mosleh SM, Almalik MM. Illness perception and adherence to healthy behaviour in Jordanian coronary heart disease patients. Europ J Cardiovasc Nurs. 2016;15(4):223-30.
20 Dugunchi F, Mudgal SK, Marznaki ZH, Shirafkan H, Abrotan S, Jafarian F, et al. Levels of adherence to treatment, illness perception and acceptance of illness in patients with coronary artery disease - descriptive and correlational study. BMC Cardiovasc Disord. 2024;24(1):171-80.
21 García-Blas S, Cordero A, Diez-Villanueva P, Martinez-Avial M, Ayesta A, Ariza-Solé A, et al. Acute Coronary Syndrome in the Older Patient. J Clin Med. 2021; 10(18): 4132-48.
22 Thagizadeh A, Ghahramanian A, Zamanzadeh V, Aslanabadi N, Onyeka TC, Ramazanzadeh N. Illness perception and cardiovascular risk factors in patients with myocardial infarction undergoing percutaneous coronary intervention in Iran. BMC Cardiovasc Disord. 2022;22(1):245-57.
23 Alhofaian A, Alaamri MM, Abdalmajeed MA, Wadaah LS, Aljuhani LA, Amin MA, et al. The Role of Illness Perception and Self-Efficacy in Determining Quality of Life among Cancer Patients. Clin Pract. 2024; 14(2):498-507.
24 Broadbent E, Petrie KJ, Main J, Weinman J. The brief illness perception questionnaire. J Psychosom Res. 2006;60(6):631-7.
25 Aghayousefi A, Shaghaghi F, Dehestani M, Barghi Irani Z. The Relationship between Quality of Life (QoL) and Psychological Capital with Illness Perception in MS Patients. Health Psychol. 2012;1(1):29-41.
26 Sullivan MD, LaCroix AZ, Russo J, Katon WJ. Self-efficacy and self-reported functional status in coronary heart disease: a six-month prospective study. Psychosom Med. 1998;60(4):473-8.
27 Fors A, Ulin K, Cliffordson C, Ekman I, Brink E. The Cardiac Self-Efficacy Scale, a useful tool with potential to evaluate person-centred care. Eur J Cardiovasc Nurs. 2015;14(6):536-43.
28 Keshavaraz N, Naderifar M, Firouzkohi M, Abdollahimohammad A, Akbarizadeh MR. Effect of telenursing on the self-efficacy of patients with myocardial infarction: A quasi-experimental study. Signa Vitae. 2020;16(2):92-6.
29 Varaei S, Shamsizadeh M, Cheraghi MA, Talebi M, Dehghani A, Abbasi A. Effects of a peer education on cardiac self-efficacy and readmissions in patients undergoing coronary artery bypass graft surgery: a randomized-controlled trial. Nurs Crit Care. 2017;22(1):19-28.
30 Rodgers JL, Jones J, Bolleddu SI, Vanthenapalli S, Rodgers LE, Shah K, et al. Cardiovascular Risks Associated with Gender and Aging. J Cardiovasc Dev Dis. 2019;6(2):19
31 Nur RM. Illness perception and cardiovascular health behaviour among persons with ischemic heart disease in Indonesia. Int J Nurs Sci, 2018;5(2):174–180.
32 Lotfi-Tokaldany M, Shahmansouri N, Karimi A, Sadeghian S, Saadat S, Abbasi SH, et al. Association between illness perception and health-related quality of life in patients with preexisting premature coronary artery disease. J Psychosom Res. 2019;120: 118–123
33 Paryad E, Balasi LR, Kazemnejad E, Booraki S. Predictors of Illness Perception in Patients Undergoing Coronary Artery Bypass Surgery. J Cardiovasc Disease Res. 2017;8(1):8-16.
34 Ünal Ö, Akyol Y, Tander B, Ulus Y, Terzi Y, Kuru Ö. The relationship of illness perceptions with demographic features, pain severity, functional capacity, disability, depression, and quality of life in patients

[DOI: 10.18502/jabs.v15i1.17552]

with chronic low back pain. Turk J Phys Med Rehabil. 2019;65(4):301-8.
35 Striberger R, Zarrouk M, Kumlien C. Axelsson M. Illness perception, health literacy , self-efficacy, adherence and quality of life in patients with intermittent claudication – a longitudinal cohort study. BMC Nurs. 2023; 22: 167-79.
36 Sugiharto F, Nuraeni A, Trisyani Y, Putri AM, Armansyah NA, Zamroni AH. A Scoping Review of Predictors Associated with Self-Efficacy Among Patients with Coronary Heart Disease. Vasc Health Risk Manag. 2023;19: 719-31.
37 Barham A, Ibraheem R, Zyoud S.H. Cardiac selfefficacy and quality of life in patients with coronary heart disease: A cross-sectional study from Palestine. BMC Cardiovasc Disord. 2019;19:290-302.
38 Peyman N, Abdollahi M, Zadehahmad Z. The study of related factors with self-care and self-efficacy in heart failure patients. J Torbat Heydariyeh Univ Med Sci. 2018;6(1):55-61. [In Persian]
39 Seif SS, Gholami M, Tarrahi M J, Hossein Pour A H, Valiniaei S, Bazgir Z. The relationship between health literacy and perceived self-efficacy in cardiovascular patients hospitalized in Khorramabad educational hospitals in 1396. J Nurs Edu. 2018; 7 (3) :14-21. [In Persian]
40 Aslani M, Amidi Mazaheri M, Batavani M. Self-efficacy Among Older Adults in Fereydunshahr City. Salmand: Ir J Age. 2017; 11 (4) :558-565
41 Mohammadi F.M, Tehranineshat B, Farjam M, Rahnavard S, Bijani M. The correlation between resilience, self-efficacy and illness perception in patients with type 2 diabetes: A cross-sectional study. Clin Diabetol. 2022; 11(3): 175–182
42 Kim H, Sereika SM, Lingler JH, Albert SM, Bender CM. Illness Perceptions, Self-efficacy, and Self-reported Medication Adherence in Persons Aged 50 and Older With Type 2 Diabetes. J Cardiovasc Nurs. 2021;36(4):312-328.
43 Seah AC, Tan KK, Huang Gan JC, Wang W. Experiences of patients living with heart failure: a descriptive qualitative study. J Transcult Nurs. 2016;27(4): 392-9
44 Al-Amer R, Ramjan L, Glew P, Randall S, Salamonson Y. Self-efficacy, depression, and self-care activities in adult Jordanians with type 2 diabetes: The role of illness perception. Issues Ment Health Nurs. 2016; 37(10): 744–755
45 Knowles S. R, Apputhurai P, O'Brien C. L, Ski C. F, Thompson D. R, Castle D. J. Exploring the relationships between illness perceptions, self-efficacy, coping strategies, psychological distress and quality of life in a cohort of adults with diabetes mellitus. Psychol Health Medicine. 2020;25(2): 214–228.

[DOI: 10.18502/jabs.v15i1.17552]