



Relationship Between Self-care and Physician-Patient Relations in Patients with Heart Failure

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Received 2022 October 08; Revised 2023 February 20; Accepted 2023 March 13.

Abstract

This study aimed to determine the relationship between self-care and physician-patient relations in patients with Heart Failure (HF). This cross-sectional study was conducted on 200 patients with HF, referring to the outpatient clinics affiliated with Tabriz University of Medical Sciences, Iran. Utilizing a systematic random sampling method, the patients were selected from those who had made intake appointments. The Physician-Patient Relationship Questionnaire and the European Heart Failure Self-Care Behavior scale (EHFScB scale) were used to collect the data. Data were analyzed using descriptive statistics, Pearson correlation coefficient, logistic regression, Student's *t*-test, and one-way ANOVA in SPSS (ver. 25). The total score of the self-care behaviors in the patients referring to the outpatient clinics was moderate (31.88 ± 8.66). Also, significant relationships were observed between the scores of self-care behaviors and physician's gender, patient's marital status, patient's education, and between physician-patient relations scores and physician gender (P -value < 0.05). Moreover, physician-patient relations and marital status could predict the patient's self-care variable by 22% ($R^2 = 0.221$, $F = 5.35$). The study results revealed that physician-patient relations could explain the self-care behaviors of patients with HF.

Keywords: Physician-Patient Relations, Self-care, Heart Failure

1. Background

One of the major problems with healthcare systems worldwide is chronic conditions, including cardiovascular diseases (CVDs) (1). According to Orem, there are numerous options for controlling heart failure (HF), such as self-care training, one of the best practices to prevent the occurrence, progression, and complications of the disease (2). In this respect, Oksel reported poor self-care behaviors in patients with HF in Turkey (3).

The interaction between healthcare providers and service recipients is among the significant issues addressed in treatment and patient care (4). Studies have further shown that communication problems in medical and clinical practices are common in most countries,

and there is little awareness of the skills to this end (5). Despite the utmost importance of this issue, to the best of the authors' knowledge, little research has been thus far fulfilled in the Iranian context to examine the effect of physician-patient relations on self-care behaviors. Therefore, the present study aimed to bridge this gap and boost the knowledge about communication between physicians and patients.

2. Objectives

This study was conducted in outpatient clinics affiliated with Tabriz University of Medical Sciences to examine the relationship between self-care behaviors and physician-patient relations in patients with HF.

3. Methods

This descriptive-analytical cross-sectional study was conducted on all patients with HF, referring to the outpatient clinics affiliated with Tabriz University of Medical Sciences, Tabriz, Iran, from October to December 2020. The sample size was determined as 200 patients using Cochran's formula. Utilizing a systematic random sampling method, the patients were selected from those who had made intake appointments. However, for more assurance, questionnaires were distributed to 220 patients. The inclusion criteria consisted of patients aged ≥ 18 years who were not cognitively impaired and were contacted by physicians for at least six months. We excluded patients with physical disabilities (lack of speech or hearing) who could not make health-related decisions, those younger than 18, and those who did not comprehend the questionnaire. The study's objectives and questionnaire items were first explained to patients for data collection. Finally, we assured them about the confidentiality of the information and obtained their consent as an informed consent form.

Two questionnaires assessed HF patients' physician-patient relations and self-care behaviors. The first section of the researcher-made Physician-patient Relations Questionnaire (PPRQ) comprised 15 items, which asked patients to provide demographic characteristics and information on the disease. The second section consisted of 30 items, exploring the status of physician-patient relations. To normalize the Likert-type scale from 1 to 5 for each dimension of the PPRQ, the total score of the items in each dimension was divided by the number of items. Accordingly, scores of 2 or lower out of 5 indicated very poor interaction, values from 2 to 2.75 represented poor interaction, and between 2.76 and 3.5 denoted moderate physician-patient interaction. In contrast, scores between 3.51 and 4.25 indicated a good interaction, and values of 4.26 or higher referred to a very good interaction. The validity of the questionnaire was tested by a multidisciplinary board of health specialists and professors (10 people). The average content validity ratio and content validity index values were 0.86 and 0.81, respectively. The reliability of the questionnaire was assessed by the internal consistency procedure, resulting in a total Cronbach's alpha of 0.84 for the scale. The 12-item European Heart Failure Self-Care Behavior scale (EHFScB scale) was also used (6). The questionnaire has been utilized in Iranian studies, and its validity (CVI = 0.8, CVR = 0.87) and Cronbach's α (0.68) have been computed. In this measure, each item is rated on a Likert-type scale from 1 to 5, with the scores ranging from 12 to 60, wherein lower scores represent better self-care behaviors, 12 to 28 show

good behaviors, 29 to 44 represent moderate self-care behaviors, and 45 to 60 denote good self-care behaviors. The data were analyzed using the SPSS statistical software (ver. 25). The descriptive statistics, including mean and standard deviation, were calculated, followed by conducting Pearson correlation coefficient and logistic regression to examine the effect of different variables on self-care behaviors as a dependent variable.

4. Results

Among 200 study participants, 104 (52%) were female, and 188 (94%) were married. The highest number of patients (35%) was in the age group over 60 years, and 85 (42.5%) had undergraduate. Among 200 physicians in the study, 156 were male (78%), and the highest number of physicians (44.5%) was in the age group of 51-60 years.

The mean total score of self-care was moderate (31.88 ± 8.66). This finding is consistent with the results of Siabani et al. (7) and Zamanzadeh et al. (8), who showed that the total self-care score was moderate.

Furthermore, the present study showed no significant relationship between self-care and patients' age (P-value > 0.05). This finding is in line with the results of Akyol et al. (9) and Unsar et al. (10). Orem et al. say that the abilities and needs of self-care in a healthy person vary according to the level of development that determines a certain age (11). This finding contradicts the results of Izadi Avajji et al. (12), who showed that with age increasing, physical problems and care requisites would increase in patients as they have lower energy for self-care than the younger patients.

Our finding also showed no significant relationship between self-care and patients' gender (P-value > 0.05), but according to the regression analysis, men had more appropriate self-care than women. Artinian et al. (13) and Bairami et al. (14) showed no significant relationship between self-care scores and patients' gender. It seems that the effect of gender differences on self-care can change by factors such as individuals' physical, mental, and behavioral conditions.

The new findings of our study showed a significant relationship between self-care and physician gender. The self-care behaviors of patients referred to female physicians were more appropriate than patients referred to male physicians.

According to the present study's findings, there was a significant relationship between self-care and patients' marital status (P-value < 0.05), so married people had more self-care than single people (Table 1). The present study's findings align with the results of Fuladvandi et al. (15).

Table 1. Relationship Between Self-care Behavior and Physician-Patient Relations by Demographic Variables

Variables	Frequency (%)	Self-care Behavior, Mean \pm SD	P-Value	Physician-Patient Relations, Mean \pm SD	P-Value
Age group			0.211		0.568
< 30	12 (6)	35.25 \pm 8.90		111.08 \pm 20.44	
31 - 40	22 (11)	29.22 \pm 8.4		107.04 \pm 20.05	
41 - 50	40 (20)	32.75 \pm 9.21		111.17 \pm 24.92	
51 - 60	56 (28)	32.82 \pm 8.44		115.35 \pm 21.42	
> 60	70 (35)	30.9 \pm 8.42		114.47 \pm 21.19	
Gender			0.379		0.86
Male	96 (48)	31.32 \pm 8.86		112.77 \pm 21.45	
Female	104 (52)	32.4 \pm 8.47		113.28 \pm 22.21	
Marital status			0.041		0.338
Single	12 (6)	36.83 \pm 7.24		118.91 \pm 14.93	
Married	188 (94)	31.56 \pm 8.66		112.66 \pm 22.18	
Education			0.031		0.338
Under diploma (illiterate, elementary, or high school)	85 (42.5)	34.39 \pm 8.36		113.84 \pm 21.58	
Diploma	42 (21)	30.69 \pm 7.34		110.73 \pm 23.38	
Academic	46 (23)	41.45 \pm 10.32		113.17 \pm 21.35	
Other	27 (13.5)	-		-	
Gender of physicians			0.001		0.001
Male	156 (78)	41.21 \pm 8.25		116.10 \pm 21.15	
Female	44 (22)	36.22 \pm 9.02		102.18 \pm 20.96	
Total score		31.88 \pm 8.66		2.65 \pm 0.72	

5. Discussion

The present study showed a significant relationship between self-care and patients' education levels (P -value < 0.05). People with diploma-level education had more self-care than other groups (Table 1). Fuladvandi et al. (15), Baghianimoghadam et al. (16), and Chin et al. (17) also showed a significant relationship between self-care scores and patients' education levels. Patients with a higher level of education have better decision-making powers to adopt healthy behaviors and understand the instructions correctly (18).

Based on the present study's findings, the total score of the PPR was poor, with a mean of 2.65 ($SD = 0.72$) (Table 1). This finding is in line with the results of Bigdeli et al. (19), Bastani et al. (20), and Flocke et al. (21).

The present study's findings showed no significant relationship between PPR and age, gender, marital status, and education of patients. This finding contradicts the

results of Chegini et al. (22), Devoe et al. (23), and Bigdeli et al. (19). However, factors affecting PPR may vary depending on their educational levels or marital status, as reported in earlier quantitative research.

Based on the present study's findings, there was a significant relationship between PPR and physician gender, so female physicians had a better relationship with patients (P -value < 0.05).

The results of multiple linear regression indicated that based on the size of the beta coefficient, there was a significant relationship between some patient variables (PPR and marital status) and patients' self-care (P -value < 0.05). Patients with a higher mean score of interaction with the physician had 34% more self-care ($\beta = -0.341$, $P < 0.05$). Men also had 18% more self-care than women ($\beta = -0.185$, $P < 0.05$). The components of PPR and marital status could explain and predict the patient's self-care variable by 22% ($R^2 = 0.221$, $F = 5.35$).

Based on the present study's findings, it is recommended to take measures such as the presence of physicians with high communication skills, especially female physicians, in heart disease clinics, allocating at least one unit of PPR and communication skills training in medical curricula and medical assistants in heart disease, using health education experts in clinics or mass media training programs, preparing books and educational leaflets for patients with heart failure and their families, developing software programs to remind self-care activities such as annual injection of influenza vaccine, and making them available to patients' families.

5.1. Limitations

This cross-sectional study used short-run survey data, so we had limitations in making associations between the variables. Also, data may be biased due to the self-reporting questionnaire.

Acknowledgments

The authors sincerely thank the Student Research Committee of Tabriz University of Medical Sciences, Tabriz, Iran, for their support and the outpatient clinics as the research settings in Tabriz.

Footnotes

Authors' Contribution: R. G., Y. P., Z. C., and T. J. participated in designing the study, gathering the data, analyzing and interpreting the data, and writing the manuscript. R. G., Y. P., and A. B. contributed to writing and finalizing the manuscript draft. All authors read and approved the manuscript.

Conflict of Interests: The authors declare that they have no competing interests.

Ethical Approval: This article was derived from a research project approved by the Student Research Committee of Tabriz University of Medical Sciences with the code of ethics [IR.TBZMED.REC.1399.400](#).

Funding/Support: No external funds were granted for this research.

Informed Consent: Patients' consent was received as an informed consent form.

References

- Aghajloo A, Negarandeh R, Janani L, Tanha K, Hoseini-Esfidarjani SS. Self-care status in patients with heart failure: Systematic review and meta-analysis. *Nurs Open*. 2021;**8**(5):2235–48. [PubMed ID: 33619877]. [PubMed Central ID: [PMC8363344](#)]. <https://doi.org/10.1002/nop2.805>.
- Mohammadpour A, Rahmati Sharghi N, Khosravan S, Alami A, Akhond M. The effect of a supportive educational intervention developed based on the Orem's self-care theory on the self-care ability of patients with myocardial infarction: A randomised controlled trial. *J Clin Nurs*. 2015;**24**(11-12):1686–92. [PubMed ID: 25880700]. <https://doi.org/10.1111/jocn.12775>.
- Oksel E, Akbiyik A, Kocak G. FP32 self-care behaviour analysis of patients with chronic heart failure. *Eur J Cardiovasc Nurs*. 2009;**8**(1_suppl):S22. [https://doi.org/10.1016/s1474-5151\(09\)60071-2](https://doi.org/10.1016/s1474-5151(09)60071-2).
- Ha JF, Longnecker N. Doctor-patient communication: A review. *Ochsner J*. 2010;**10**(1):38–43. [PubMed ID: 21603354]. [PubMed Central ID: [PMC3096184](#)].
- Moin A, Anbari AK. [The Patient-Physician Communication]. DMJ; 2010, [cited 85]. Persian. Available from: <https://sid.ir/paper/457751/fa>.
- Jaarsma T, Arestedt KF, Martensson J, Dracup K, Stromberg A. The European Heart Failure Self-care Behaviour scale revised into a nine-item scale (EHFScB-9): A reliable and valid international instrument. *Eur J Heart Fail*. 2009;**11**(1):99–105. [PubMed ID: [19147463](#)]. <https://doi.org/10.1093/eurjhf/hfn007>.
- Siabani S, Driscoll T, Davidson PM, Najafi F, Jenkins MC, Leeder SR. Self-care and its predictors in patients with chronic heart failure in Western Iran. *J Cardiovasc Nurs*. 2016;**31**(1):22–30. [PubMed ID: [25419944](#)]. <https://doi.org/10.1097/JCN.0000000000000211>.
- Zamanzadeh V, Valizadeh L, Jamshidi F, Maleki A; Namdar H. Self-care behaviors among patients with heart failure in Iran. *J Caring Sci*. 2012;**1**(4):209–14. [PubMed ID: [25276697](#)]. [PubMed Central ID: [PMC3794621](#)]. <https://doi.org/10.5681/jcs.2012.029>.
- Akyol AD, Cetinkaya Y, Bakan G, Yarali S, Akkus S. Self-care agency and factors related to this agency among patients with hypertension. *J Clin Nurs*. 2007;**16**(4):679–87. [PubMed ID: [17402949](#)]. <https://doi.org/10.1111/j.1365-2702.2006.01656.x>.
- Unsar S, Erol O, Mollaoglu M. The self-care agency in dialyzed patients. *Dialysis Transplantation*. 2007;**36**(2):57–70. <https://doi.org/10.1002/dat.20094>.
- Orem DE, Taylor SG, Renpenning KM. *Nursing: Concepts of Practice*. 6th. St. Louise: Mosby; 2001. p. 253–73.
- Izadi Avanjani FS, Masoudi Alavi N, Akbari H, Saroladan S. Self-Care and its predictive factors in hemodialysis patients. *J Caring Sci*. 2021;**10**(3):153–9. [PubMed ID: [34849359](#)]. [PubMed Central ID: [PMC8609113](#)]. <https://doi.org/10.34172/jcs.2021.022>.
- Artinian NT, Magnan M, Sloan M, Lange MP. Self-care behaviors among patients with heart failure. *Heart Lung*. 2002;**31**(3):161–72. [PubMed ID: [12011807](#)]. <https://doi.org/10.1067/mhl.2002.123672>.
- Bairami S, Fathi Y, Mohammadinasab S, Barati M, Mohammadi Y. Relationship between self-care behaviors and quality of life among hypertensive patients visiting comprehensive health centers in hamadan, Iran. *J Educ Community Health*. 2017;**4**(1):20–7. <https://doi.org/10.21859/jech.4.1.20>.
- Fuladvandi M, Safarpour H, Malekian L, Moayed S, Mahani MA, Salimi E. The survey of self-regulation behaviors and related factors in elderly with hypertension in South-East of Iran. *Health*. 2017;**9**(4):592–600. <https://doi.org/10.4236/health.2017.94042>.
- Baghianimoghadam M, Aivazi S, Mzloomly SS, Baghianimoghadam B. Factors in relation with self-regulation of hypertension, based on the model of goal directed behavior in Yazd city. *J Med Life*. 2011;**4**(1):30–5. [PubMed ID: [21505572](#)]. [PubMed Central ID: [PMC3056420](#)].
- Chin YF, Huang TT, Hsu BR. Impact of action cues, self-efficacy and perceived barriers on daily foot exam practice in type 2 diabetes mellitus patients with peripheral neuropathy. *J Clin Nurs*. 2013;**22**(1-2):61–8. [PubMed ID: [23121425](#)]. <https://doi.org/10.1111/j.1365-2702.2012.04291.x>.
- Warren-Findlow J, Seymour RB, Brunner Huber LR. The association between self-efficacy and hypertension self-care activities among African American adults. *J Community Health*. 2012;**37**(1):15–24. [PubMed ID: [21547409](#)]. [PubMed Central ID: [PMC3179559](#)]. <https://doi.org/10.1007/s10900-011-9410-6>.

19. Bigdeli M, Hashemi S, KHodakarim S, Mafi H, Broodati H, Mousavi M, et al. [Factors affecting the relationship between doctor and patient and their effects on the self-care behaviors of type ii diabetes patients referred to the health houses under the supervision of Abyek Health Center]. *Razi J Med Sci.* 2015;**22**(137). Persian.
20. Bastani P, Hashemi N, Bahrami MA. Correlation of patients' health literacy and physician-patient interaction: A case study in Shahid Faghihi Hospital, Shiraz, 2019. *Quarterly J Manag Strategies Health System.* 2019. <https://doi.org/10.18502/mshsj.v4i1.1095>.
21. Flocke SA, Miller WL, Crabtree BF. Relationships between physician practice style, patient satisfaction, and attributes of primary care. *J Fam Pract.* 2002;**51**(10):835-40. [PubMed ID: [12401151](#)].
22. Chegini Z, Kakemam E, Behforoz A, Lotfollah-Zadeh F, Jafari-Koshki T, Khodayari Zarnag R. Impact of patient communication preferences on the patient trust in physicians: A cross-sectional study in Iranian Outpatient's Clinics. *J Patient Exp.* 2022;**9**:23743735211069800. [PubMed ID: [35024443](#)]. [PubMed Central ID: [PMC8744186](#)]. <https://doi.org/10.1177/23743735211069809>.
23. DeVoe GE, Wallace LS, Fryer GJ. Measuring patients' perceptions of communication with healthcare providers: Do differences in demographic and socioeconomic characteristics matter? *Health Expect.* 2009;**12**(1):70-80. [PubMed ID: [19250153](#)]. [PubMed Central ID: [PMC4918748](#)]. <https://doi.org/10.1111/j.1369-7625.2008.00516.x>.