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Relationship between Self-care Behaviors and Inherent Dignity and their Predictors in the Elderly with Chronic Heart Failure

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Abstract--- Introduction: *Self-care is one of the most important strategy to control heart failure that can increase patients' independence and satisfaction and maintain their respect and dignity in the family and society. The present study aimed to investigate the relationship between self-care behaviors and inherent dignity and their predictors in the elderly with chronic heart failure (CHF).*

Methodology: *A cross-sectional study was conducted on 109 elderlies visiting the cardiology clinics affiliated with the Golestan University of Medical Sciences in 2019. The participants were selected based on convenience sampling and the data were collected using a clinical and demographic information form, inherent dignity Questionnaire (IDQ), and the European Heart Failure Self-Care Behavior Scale (EHFSCBS). The obtained data were statistically analyzed in SPSS-16 by using descriptive statistics (mean, standard deviation, relative frequency, and absolute frequency) and inferential statistics (univariate and multiple linear regression, the independent t-test, the Mann–Whitney U test, one-way ANOVA, and the Kruskal-Wallis test) at the 0.05 level of significance. intrinsiv*

Results: *The mean score of self-care behaviors and inherent dignity was equal to 22.42±2.52 and 121.44±9.89, respectively. The results showed that there was a poorand insignificant correlation between self-care behaviors and inherent dignity (r=0.07, p=0.42). Among the predictors of self-care behaviors in the elderly with CHF, age in both regression models and educational attainment in the univariate linear regression modelwere statistically significant and thus were identified as the predictors of self-care behaviors in such patients.*

Conclusions: *Although the mean scores of self-care behaviors and inherent dignity were evaluated good, there was a poor and insignificant relationship between these two variables. In addition, variables such as age, ethnicity, insurance coverage, and educational attainment were identified as the predictors of self-care behaviors and inherent dignity in such patients.*

Keywords--- *Elderly, Chronic Heart Failure, Self-care, Inherent Dignity.*

I. INTRODUCTION

The growth of the world's older population is one of the most important economic, social, and health challenges of the 21st century [1]. According to UN forecasts, the world's older population will increase from 5.10% in 2007 to 8.21% in 2050 [2]. Based on the data published by the Statistical Center of Iran and other studies, it is estimated that more than 10% of Iran's population will be aged 60 and over in 2021 [1].

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This figure will exceed 30% by 2050[3]. Aging is a process characterized by decreased function and independence, increased risk of diseases, increased need for care, and a higher level of vulnerability [4]. Aging significantly increases the risk of developing chronic diseases [5]. Chronic illness refers to diseases that last longer than 3 to 6 months [6]. CHF is one of the most common chronic diseases among the elderly that cause re-admission in hospital [7] [8].

Heart failure is considered a complicated clinical syndrome and a chronic, progressive, and debilitating disorder [9]. Nearly 15 million people worldwide are afflicted with heart failure [10]. In Iran, the prevalence of heart failure is estimated to be 3500 in every 100,000 people among the whole population and 6-10% among people aged over 65 years [11]. This disorder increases the hospitalization rate, medical costs, and mortality among the elderly. Some studies have shown that CHF not only affects patients but also involves families and society [12].

There are many ways for controlling CHF, one of which is self-care. It is very necessary for patients with CHF to adhere to self-care behaviors [13]. Self-care is a practice in which one uses their knowledge, skills, and abilities as a resource to independently take care of their health [14]. The World Health Organization (WHO) defines self-care as the ability of individuals, families and communities to promote, maintain health, prevent disease and cope with illness with or without the support of a health care provider [15].

Since CHF has more effects on one's social and family relationships compared to other chronic diseases [16], it seems that self-care behaviors can help CHF diseases to maintain their health and well-being and increase their adaptation. In addition, self-care behavior can reduce the disabilities and symptoms, medical costs, and hospitalization rates caused by CHF [17].

Self-care can also increase patients' independence and satisfaction and maintain their respect and dignity in the family and society [11]. Dignity is a concept related to being a human and refers to maintaining one's independence and self-esteem and interacting with others while doing everyday life activities. Recognition and promotion of patients enhance their confidence in the family and society and increase their satisfaction with the care provided [11].

The highest dignity of all human beings should be respected in the family and society [18, 19]. The burden of disease in patients with chronic diseases may gradually be accompanied by a sense of diminished dignity and mental injury, along with a reduced quality of life [20].

It seems that demographic characteristics should be seriously taken into account when discussing the importance of self-care behaviors in the elderly and maintaining their independence and dignity. This means that demographic factors such as age, gender, occupation, and so on may contribute to predicting self-care behaviors and the inherent dignity of elderly patients with CHF.

Given the significance of this type of research on vulnerable groups, the present study aims to investigate the relationship between self-care behaviors and inherent dignity and their predictors in the elderly with CHF.

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II. METHODS AND MATERIALS

A cross-sectional study was conducted on 109 elderlies visiting the cardiology clinics affiliated with Golestan University of Medical Sciences in 2019. The participants were selected based on convenience sampling. The inclusion criteria were as follows:

- Being aged 60-75 years;
- Diagnosis of CHF and its class by a cardiologist;
- An EF (ejection fraction) of equal to or smaller than 45 in echocardiography performed by a cardiologist;
- Providing an informed consent form to participate in the study;
- No history of psychological disorders (e.g. dementia, Alzheimer's, and amnesia); and
- The ability to understand the Farsi language.

After briefing the participants on the study objectives and procedure and obtaining an informed consent form, the demographic and clinical information form, EHFSCBS, and IDQ were distributed among the participants to fill them out with the help of the author.

EHFSCBS consists of 12 items that are scored based on a 5-point Likert scale (from totally agree to totally disagree). On may obtain a score ranging between 12 and 60 on this scale, and a score of 12-28, 29-44, and 45-60 indicates good, moderate, and poor levels of self-care, respectively. This scale has been used in many studies to measure self-care behaviors of patients with heart failure and its reliability has been reported to be 0.8 [21].

IDQ measures inherent dignity in three subscales, including inherent dignity in the family inherent dignity in society, and inherent dignity in medical settings, based on a 6-point Likert scale (totally agree, agree, relatively agree, relatively disagree, disagree, and totally disagree). The minimum and maximum scores on this scale are 24 and 144, respectively, and higher scores represent a higher level of inherent dignity. The reliability of IDQ using Cronbach’s alpha was estimated at 0.94 [16].

The data were statistically analyzed in SPSS-18 using descriptive statistics (mean, standard deviation, relative frequency, and absolute frequency) and inferential statistics (univariate and multiple linear regression, the independent t-test, the Mann–Whitney U test, one-way ANOVA, and the Kruskal-Wallis test) at the 0.05 level of significance.

Ethical Consideration

The present paper was extracted from a master’s thesis in Geriatric Nursing approved by the Ethics Committee of Golestan University of Medical Sciences (IR.GOUMS.REC.1398.033).

III. RESULTS

The participants included 52 women and 57 men (a total of 109) with a mean age of 64.27 years. The data showed that 64.2% of the participants were married and 42.2% of them belonged to Fars ethnicity (Table 1).

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Table 1: Frequency Distribution and Percentage of the Participants' Demographic and Clinical Characteristics

Variable		*Frequency*	*Percentage*
Gender	Female	52	47.7
	Male	**72**	**52.3**
Marital status	Married	**70**	**64.2**
	Widowed	35	32.1
	Divorced	4	3.7
Ethnicity	Fars	**46**	**42.2**
	Turkmen	23	21.1
	Sistani	22	20.2
	Others	18	16.5
Lifestyle	Alone	5	4.6
	With a spouse	**69**	**63.3**
	With children	23	21.1
	In a retirement home	3	2.8
	With others	9	8.3
Educational attainment	Illiterate	34	31.2
	Elementary school	**37**	**33.9**
	Guidance or high school	22	20.2
	Associate's or bachelor's degree	13	11.9
	Master's degree or PhD	3	2.8
Job status	Housewife	36	33.5
	Retired	**42**	**38.5**
	Disabled	29	26.6
	Others	2	1.8
Income level	No income	17	15.6
	Low income	4	3.7
	Moderate income	5	46.8
	Good income	**37**	**33.9**
Insurance coverage	Social Security Organization	**39**	**35.8**
	Basic health insurance	21	19.3
	The Armed Forces Social Security Organization	13	11.9
	Rural insurance	33	30.3
	Urban insurance	3	2.8
Body mass index (BMI)	Underweight	1	0.9
	Normal	45	41.3
	Overweight	**63**	**57.8**
Ejection fraction (EF)	Smaller than 45	**64**	**58.7**
	Equal to 45	45	41.3
CHF class	Class II	**64**	**58.2**
	Class III	38	34.5

The mean score of self-care behaviors and inherent dignity was equal 22.42±2.52 and 121.44±9.89, respectively. Spearman's Rank correlation coefficient showed that there was a poor and insignificant correlation between self-care behaviors and inherent dignity (p=0.42) (Table 2).

Table 2: The Mean Scores of Self-care Behaviors and Inherents Dignity and the Relationship between these Two Variables in Elderly Patients with CHF

Variable	*Mean*	*Standard deviation*	*Maximum*	*Minimum*	*Correlation coefficient*	*P-value*
Self-care behaviors	42.22	522.	29	16	0.07	0.42
Inherent dignity	44.121	9.89	140	97		

The results indicated that the mean score of inherent dignity in the family was higher than that of society and medical settings (Table 3).

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Table 3: The Mean Score of Inherent Dignity Dimensions in Elderly Patients with CHF

Variables	*Mean*	*Standard deviation*	*Maximum*	*Minimum*
Inherent dignity in the family	51.09	4.33	54	38
Inherent dignity in society	35.23	5.68	45	18
Inherent dignity in medical settings	35.11	3.61	42	24

The results demonstrated that most of the participants following a good level of self-care (Table 4).

Table 4: Frequency Distribution of Self-care Score in Elderly Patients with CHF

Self-care behaviors level	*Frequency*	*Percentage*
Good	108	99.1
Moderate	1	0.9

Among the predictors of self-care behaviors in the elderly with CHF, age in both univariate and multiple linear regression models and educational attainment in the univariate linear regression model were statistically significant and were identified as the predictors of self-care behaviors in such patients (Table 5). This means that the level of adherence to self-care behaviors among elderly patients the CHF increases with the increase in their age and educational attainment. In addition, ethnicity and insurance coverage were statistically significant in the univariate and multiple linear regression models and were identified as predictors of inherent dignity in such patients.

Table 5: Investigation of the Factors Affecting the Mean Score of Self-care Behaviors in Elderly Patients with CHF based on Univariate and Multiple Linear Regression Models

Variable		*Univariate*			*Multiple*		
		Coefficient	*Standard deviation*	*P-value*	*Coefficient*	*Standard deviation*	*P-value*
Gender		0.32	0.48	0.5	0.97	0.93	0.23
Age		0.11–	0.05	**0.04**	0.24 -	08.0	**004.0**
Marital status	Married to divorced	1.38	1.3	0.29	-1.36	2.2	53.0.
	Widowed to divorced	1.65	1.33	.210	1.07	1.68	0.52
Number of children	1-3 to more than 7	0.04	1.06	0.96	34.–0.	1.37	0.79
	4-7 to more than 7	0.08	1.01	0.99	0.73	1.23	0.53
Ethnicity	Turkmen to Fars	0.3	0.64	0.64	0.15–	0.95	0.87
	Sistani to Fars	0.82	0.65	0.21	0.21	1.52	0.84
	Others to Fars	0.63	0.7	0.73	0.04	0.93	0.95
Lifestyle	Alone to with others	0.17–	1.42	0.52	3.1	1.99	.12 0
	With a spouse to with others	0.32–	0.32	0.71	0.71	1.76	0.72
	With children to with others	0.34–	1	0.73	1.35–	1.31	0.3
	In a retirement home to with others	2.44–	1.7	0.15	2.14–	.87	0.25
Educational attainment (a high school diploma or under)		1.44–	0.67	**0.03**	2.14–	1.19	0.07
Job status	Retired to others	0.5–	1.83	0.87	0.13–	2.31	0.95
	Disabled to others	0.32	1.85	0.86	1.37	2.33	0.55
	Housewife to others	0.08	1.84	0.96	0.07	2.56	0.97
Income level	Low to no income	0.48	4.11.4	0.73	0.42	1.86	0.8
	Moderate to no income	1.07	0.7	0.13	0.82	1.04	0.43
	Good to no income	0.39	0.75	0.59	1.6	1.26	0.2
Insurance coverage	Social security to urban insurance	0.1–	1.53	094	1.19–	1.85	0.52
	Basic health insurance to urban insurance	0.71–	1.58	0.56	0.56–	1.91	0.62
	The armed forces insurance to urban insurance	0.12–	1.64	0.63	1.56	1.84	0.4
	Rural insurance urban insurance	0.18–	1.54	0.9	1.54	1.89	0.49
BMI		0.23	0.47	0.41	0.55	0.69	0.42
EF		0.56–	0.49	0.52	0.34–	0.34	0.56
CHF class	Class III to Class II	0.97	0.51	0.06	0.83	0.7	0.23
	Class IV to Class II	0.17	0.94	0.58	1.53	1.29	0.29
Duration of disease		0.11–	0.1	0.19	0.79–	0.12	0.54

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The study results also indicated that the mean score of inherent dignity was higher in participants from Fras ethnicity than those from other ethnicities (Table 6).

Table 6: Investigation of the Factors Affecting the Mean Score of Inherent Dignity in Elderly Patients with CHF based on Univariate and Multiple Linear Regression Models

Variable		*Univariate*			*Multiple*		
		Coefficient	*Standard deviation*	*P-value*	*Coefficient*	*Standard deviation*	*P-value*
Gender		2.6	1.89	0.17	1.12-	3.27	0.73
Age		0.32	0.21	0.13	0.34	0.28	0.23
Marital status	Married to divorced	7.1	5.07	0.16	1.39	7.49	0.85
	Widowed to divorced	5.06	5.2	0.33	6.23-	5.94	0.29
Number of children	1-3 to more than 7	3.51-	4.12	0.13	2.94	4.82	0.85
	4-7 to more than 7	0.32	3.9	0.95	4.95	4.32	0.53
Ethnicity	Turkmen to Fars	5.45	2.34	0.22	4.36	3.34	0.19
	Sistani to Fars	10.07	2.37	**0.001<**	11.56	3.56	**0.002**
	Others to Fars	721	2.54	**0.006**	8.48	3.29	**0.01**
Lifestyle	Alone to with others	0.4	5.35	0.34	12.24	7	0.08
	With a spouse to with others	2.31	3.51	0.51	3.86	6.22	0.53
	With children to with others	1.21	3.89	0.85	6.35	4.62	0.17
	In a retirement home to with others	7.66	6.61	0.24	8.42	6.6	0.2
Educational attainment (a high school diploma or under)		4.17	2.6	0.11	1.06	4.2	0.8
Job status	Retired to others	10.81-	7.04	0.12	.14	8.15	0.26
	Disabled to others	6.37-	7.11	0.37	10.39-	8.22	0.18
	Housewife to others	1.19-	7.07	0.11	-10	9.02	0.27
Income level	Low to no income	5.1-	5.48	0.35	9.23	5.39	0.12
	Moderate to no income	3.37	2.76	0.22	4.93	3.69	0.18
	Good to no income	2.05	2.98	0.97	4.55	4.44	0.3
Insurance coverage	Social security to urban insurance	15.66	5.67	**0.007**	12.73	6.52	0.52
	Basic health insurance to urban insurance	1.28	5.48	0.05	12.56	6.72	0.06
	The armed forces insurance to urban insurance	16.74	6.06	**0.007**	14.09	6.59	**0.03**
	Rural insurance urban insurance	6.17	5.17	**0.003**	14.39	6.64	**0.03**
BMI		3.49-	1.82	0.05	3.81-	2.45	0.12
EF		**0.007**	1.93	0.99	0.33	2.83	0.83
CHF class	Class III to Class II	3.44	2.03	0.09	2.92	2.48	0.24
	Class IV to Class II	2	3.69	0.59	0.29	4.59	0.94
Duration of disease		0.17	0.36	0.39	0.03	0.44	0.38

IV. DISCUSSION

The study results showed that the mean score of self-care behaviors in elderly patients with CHF was at a good level, which is consistent with the findings of Saeed Pour *et al*. (2017) [10]. However, Mansouriyeh *et al*. (2018) and Payman *et al*. (2018) reported a moderate mean score of self-care behaviors [21, 22]. This difference can be attributed to differences in education, culture, facilities, and some features of patients.

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The mean score of inherent dignity among the participants was also evaluated good, which is consistent with the findings of Bagheri *et al*. (2015) [23] but inconsistent with the results of Amininasab *et al*. (2017). The inherent dignity of elderly patients with CHF seems to be threatened by some factors such as disease prolongation, difficulties with treatment, frustration, taking multiple medicines, and dependence on others [19].

The results demonstrated that there was a poor and insignificant relationship between self-care behaviors and inherent dignity among elderly patients with CHF. This is consistent with the findings of Kassing *et al*. (2016), Aghamohammadi *et al*. (2017), and Ghasemi *et al*. (2017) [5, 24, 25] but inconsistent with the results of Bagheri *et al*. (2018) and Mansouriyeh *et al*. (2018). It seems that the concept of old age dignity in some societies is not associated with self-care and independence and other concepts such as social and family support and care for the elderly are more involved in promoting their dignity [21, 26].

The mean score of inherent dignity in the family was higher than that of society and medical settings, which means the higher inherent dignity of elderly patients with CHF in the family environment. This is consistent with the findings of Bagheri *et al*. (2015). The family still seems to be an important element in Iranian culture [23]. However, Moraveji *et al*. (2015) reported that the highest mean score of the inherent dignity of elderly patients was related to medical settings [27]. This difference can be attributed to the prolonged process of treatment and frequent admission to medical centers.

Among the predictors of self-care behaviors in the elderly with CHF, age in both univariate and multiple linear regression models and educational attainment in the univariate linear regression model were statistically significant and thus were identified as the predictors of self-care behaviors in such patients. This means that the level of adherence to self-care behaviors among elderly patients the CHF increases with the increase in their age and educational attainment, which is consistent with the findings of Payman *et al*. (2018). It seems that the need for self-care and the focus on health problems increase as people get older. In addition, patients with a higher level of educational attainment are more aware of their disease and the required care. That is why age and educational attainment can be regarded as predictors of self-care behaviors [22].

Among the predictors of inherent dignity in the elderly with CHF, ethnicity and insurance coverage were statistically significant in both regression models and, thus, were identified as predictors of inherent dignity. This is consistent with the findings of Bagheri *et al*. (2015) and Mansouriyeh *et al*. (2018). Ethnic diversity is very prominent and undeniable in some parts of Iran, such as Golestan Province in northern Iran. Moreover, the provision of different basic and supplemental insurance packages can promote social support for the elderly [21][26].

V. CONCLUSIONS

Although the mean scores of self-care behaviors and inherent dignity were evaluated good, there was a poor and insignificant relationship between these two variables.

In addition, variables such as age, ethnicity, insurance coverage, and educational attainment were identified as the predictors of self-care behaviors and inherent dignity in such patients, which reveals the importance of demographic variables in this regard. Future studies on this subject are recommended to take into account the role of mediating variables.

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Conflict of Interest: None

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