



## Patient Dignity in Coronary Care: Psychometrics of the Persian Version of the Patient Dignity Inventory

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### Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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### ABSTRACT

**Aim:** The Patient Dignity Inventory (PDI) is a valid and reliable questionnaire. This questionnaire was created by Chochinov in 2002 and is used to measure various sources of distress related to the dignity of patients. The present study investigated the characteristics of items, reliability and validity measurements, and the application of the PDI for Persian-speaking cardiac patients.

**Place and Duration of Study:** The study was performed in Kerman, Iran in 2014.

**Methodology:** The PDI was translated into Persian. Then, it was distributed among 220 cardiac patients along with another 4 questionnaires related to anxiety, depression, hopelessness, and quality of life. Cronbach's coefficient alpha was calculated and principal component analysis and correlation analysis were performed. Construct validity was assessed using these validated questionnaires: the Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), Beck Hopelessness Scale (BHS), and SF-36 Health Survey.

**Results:** Factor analysis supported 4 dimensions, including the loss of human dignity, emotional

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distress and uncertainty, changes in ability and mental image, and loss of independence. The loading factors ranged between 0.5 and 0.83. The Cronbach's alpha of the questionnaire was high at 0.85, and those of the 4 dimensions were also high, ranging between 0.80 and 0.91. A desirable correlation was found between the Persian version of the Patient Dignity Inventory (PDI-P) and the 4 other questionnaires.

**Conclusion:** This tool can be useful in measuring coronary patients' dignity and the distress associated with dignity that these patients comprehend, and it can be used in Persian-speaking countries.

*Keywords: Dignity; distress; patient dignity inventory; coronary care.*

## 1. INTRODUCTION

The word 'dignity' comes from the Latin words dignitus meaning competence and dignus meaning value [1]. An easy meaning of human dignity is the inherent value given to a person by virtue of being human [2].

In recent years, the importance of dignity-preserving care has gained worldwide recognition [3]. Much attention has been paid to respecting patients and the dignity-related distress experienced by them [4,5]. These issues are also of much importance in the field of nursing and have been referred to in nursing courses worldwide [6]. Several studies have shown that nurses play the most important role in maintaining patients' dignity [6,7]. Iran is not exempt from dealing with this issue. Although there has long been an interest in dignity-preserving nursing care in Iran, it was officially adopted in 2010 in concurrence with the approval of the Nursing Ethics Guideline. In this guideline, moral principles, including dignity-preserving care, were expressly defined. Since the approval of this guideline, dignity-preserving care has been of greater importance in Iran [8].

Hospitalization has always been associated with a high level of stress, which can be physical, mental, emotional, and / or environmental [5,9]. These stresses can affect a patient's dignity. No studies have been performed in Iran on dignity-related stress or how to measure it. Moreover, the existing and applied measurement tools were unable to investigate all aspects of this stress; they could only measure some of its aspects, such as anxiety, depression, and despair [10,11]. Some studies in other countries have noted the relationship of physical and mental stress with dignity [12,13]. Most of these studies have focused on patients nearing death or patients requiring palliative care [14,15]. In a qualitative study conducted in 2002, Chochinov et al. [16] used semi-structured interviews with patients,

and themes and sub-themes were found. Using these sub-themes, a model for dignity was created which was used in health systems. Chochinov's model consisted of 3 main categories: 1. factors that cause or are related to disease, 2. external or social factors, and 3. psychological considerations [16]. From these categories, 25 questions were derived. These 25 questions studied dignity-related stress in patients. Thus, the Patient Dignity Inventory (PDI) was developed. Its reliability and validity were examined [5]. This questionnaire was translated into German and Italian, and its validity and reliability were confirmed [9,13].

A lot of studies have measured distress related to the dignity of patients. For example Chochinov in 2009 used this questionnaire to measure distress in 253 terminally ill patients. Patients reported an average of 5.74 problems, including physical, psychological, existential, and spiritual challenges [17].

The purpose of the current study was to evaluate the psychometric properties of the Persian version of the PDI questionnaire (PDI-P) in cardiac patients undergoing treatment and receiving palliative care. In future research, this questionnaire can be used in Persian-speaking countries.

## 2. MATERIALS AND METHODS

This study was part of a larger study related to a PhD thesis carried out in 2014. In this study, 220 patients admitted to the cardiac intensive care unit of hospitals affiliated with the Kerman University of Medical Sciences in Iran were selected using simple random sampling. The inclusion criteria included admittance to a cardiac intensive care unit, consciousness, the ability to speak Persian, and the willingness to participate in the study. Patients who were hospitalized for the first time in the intensive care unit were excluded from the study. A total of 200 of the 220 patients participated in the study (20 incomplete

questionnaires), so the response rate was 90.9%.

Data collection tools consisted of a demographic characteristics evaluation form and the Patient Dignity Inventory. First, the PDI was directly translated into Persian by two professors who were fluent in English. Then, by two other professors fluent in English, it was translated back into English. Subsequently, it was compared with the original Persian translation and was accepted. The PDI contains 25 items and has 5 dimensions including Symptom Distress, Existential Distress, Dependency, Peace of Mind, and Social Support [5].

Based on patient responses, each question obtained a score between 1 and 5. A score of 1 indicated the absence of any problems, a score of 3 or higher represented severe problems, and a score of 5 indicated the existence of an overwhelming problem associated with patient dignity [5]. In order to measure construct validity, the participants completed the Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), Beck Hopelessness Scale (BHS), and SF-36 Health Survey. The BAI is a scale with the necessary reliability and validity (validity = 0.72 and reliability = 0.83). It comprises 21 questions, and each item is scored as 0 indicating no symptoms, 1 meaning mild symptoms, 2 indicating average symptoms, or 3 representing severe symptoms. The scores are summed; the total score ranges from 0 to 63 [18].

The BDI also has the necessary reliability and validity. It consists of 21 questions, and the score of each question ranges between 0 and 3 with total scores ranging from 0 to 63 [19].

The BHS consists of 20 questions. One should read each item and give an answer of right or wrong. This questionnaire measures 3 dimensions of hopelessness (feeling towards the future, lack of interest or loss of motivation, and expectations). The score obtained from the questionnaire ranges between 0 and 20, and a higher score is a sign of desperation [20].

The SF-36 Health Survey is a valid and reliable questionnaire. It consists of 36 questions and 8 subscales, and each subscale consists of 2 to 10 items. The subscales of this questionnaire are: physical functioning (PF), role impairment due to physical health (RP), role impairment due to emotional health (RE), energy / fatigue (EF), emotional well-being (EW), social functioning

(SF), pain (P), and general health (GH). As a result of merging the subscales, 2 general subscales of physical and mental health were achieved. In this questionnaire, lower scores indicated lower quality of life and vice versa [21].

## 2.1 Validity

To measure the validity of the questionnaire used in this study, the 2 methods of structural validity and face validity were used. The objective of assessing face validity was to understand the participants' views regarding the appearance of the questionnaire and assess the level of difficulty in comprehending the concept, relevance, and false perceptions of uncertainty. For this purpose, the questionnaire was given to 20 patients with different educational levels. The aim of assessing the structural validity was to determine the extent of the consistency of the questionnaire's structure with its primary objective.

## 2.2 Statistical Analysis

A principal component analysis was done on the 25 Items of the PDI-P with orthogonal varimax rotation. The KMO and Bartlett's test of sphericity were used to assess the appropriateness of doing a factor analysis. Selecting factors for rotation was based on the study by Chochinov et al. Reliability was evaluated using internal consistency of the questionnaire and by calculating Cronbach's alpha coefficient, and construct validity was analyzed using Pearson's correlation coefficient.

## 2.3 Participants

A total of 200 patients, 117 male and 83 female, participated in the study. The mean age was  $59 \pm 17$  years. Table 1 shows the demographic characteristics of the participants.

## 3. RESULTS

The Kaiser-Meyer-Olkin measure (KMO) showed the sampling adequacy for principal component analysis (0.89). Bartlett's Test of sphericity ( $\chi^2 = 3275.47$  and  $P < 0.001$ ) showed that the relationship between the items was significantly large. Although the selection of factors for rotation was based on Chochinov's model, the four-factor model using eigenvalue and scree plot was the best derived model, which constituted 72% of the total variance. Table 2

shows the 25 items after rotation and identifies which items were placed in which of the four factors. Each of the 25 items was placed in one of the four factors. Each factor was named according to the recommendations of several experts who gathered together. The four factors were named "loss of human dignity", "emotional distress and uncertainty", "changes in ability and mental picture", and "loss of independence".

### 3.1 Reliability

The internal consistency of the questionnaire was acceptable. Correlation between items in all cases was over 0.5. The Cronbach's alpha for the whole questionnaire (25 items) was 0.85. It was also calculated for each of the aspects; loss of human value = 0.86, emotional distress and uncertainty = 0.91, change in ability and mental picture = 0.82, and loss of independence = 0.80.

### 3.2 Face Validity

In a qualitative study of validity with questions of patients regarding specific characteristics of this sector, some items required slight modifications.

### 3.3 Construct Validity

To determine construct validity, the correlation of the Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), Beck Hopelessness Scale (BHS), and SF-36 Health Survey with the PDI-P was measured. Table 3 shows the

significantly positive relationship between the overall score of the PDI-P and their factors with the BAI ( $r = 0.86, p < 0.001$ ), BDI ( $r = 0.82, p < 0.001$ ), and BHS ( $r = 0.91, p < 0.001$ ). A negative correlation was noted between the total score of the PDI-P and all dimensions of the SF-36 Health Survey ( $r = - 0.75, p < 0.01$ ).

## 4. DISCUSSION

Measuring dignity and concerns in relation to dignity is important because of its numerous applications in the treatment and care of patients, especially patients with chronic conditions like heart disease. There was a great need for a valid and reliable questionnaire for use in Iran. The PDI is short and easy to translate. It has also been reported as easily translated into other languages, such as German and Italian [9,13].

The present study supports the Persian version of the PDI and concerns related to dignity in Iranian society and among cardiac patients. Factor analysis strongly supported the 4 dimensions; however, Chochinov identified 5 dimensions [5]. The German version of the PDI, after factor analysis, also consisted of 4 dimensions [9]. The items and their place in each dimension were similar to the present study. It seems that these 4 dimensions will suffice and 5 dimensions are not needed. In a study by Ripamonti in Italy, only one factor was loaded [11].

**Table 1. Demographic characteristics of patients**

Sample characteristics		N	%
Gender	Male	117	58.5
	Female	83	41.5
Married	Yes	172	86
	No	28	14
Occupational status	Employed	61	30.5
	Unemployed	42	21
	Retired	24	12
	Housewife	73	36.5
Education level	None or primary	135	67.5
	High school	41	20.5
	College	19	9.5
	Postgraduate	5	2.5
Diagnosis	MI(Myocardial infarction)	25	12.5
	Heart fauler	47	23.5
	ACS(Acute coronary syndrome)	128	64

**Table 2. Factor loading for items of PDI-P**

No.	Items	Factor 1	Factor 2	Factor 3	Factor 4
1	Not able to perform tasks of daily living				0.83
2	Not able to attend to bodily functions				0.81
3	Physically distressing symptoms			0.67	
4	Feeling how you look has changed			0.71	
5	Feeling depressed		0.59		
6	Feeling anxious		0.77		
7	Feeling uncertain		0.79		
8	Worried about future		0.75		
9	Not being able to think clearly		0.65		
10	Not being able to continue usual routines			0.68	
11	Feeling no longer who I was			0.62	
12	Not feeling worthwhile or valued	0.73			
13	Not able to carry out important roles	0.57			
14	Feeling life no longer has meaning or purpose	0.66			
15	Feeling have not made meaningful contribution	0.71			
16	Feeling of unfinished business	0.58			
17	Concerns regarding spiritual life	0.76			
18	Feeling a burden to others		0.61		
19	Not feeling in control	0.59			
20	Reduced privacy	0.61			
21	Not feeling supported by friends	0.67			
22	Not feeling supported by health care providers	0.74			
23	Not being able to fight the challenges of illness		0.74		
24	Not being able to accept the way things are		0.63		
25	Not being treated with respect	0.68			

*The highest factor loading listed in the table; PDI-P = Persian version of the Patient Dignity Inventory*

**Table 3. Relationship between overall score of PDI-P and their factors with BAI, BDI, BHS and SF-36 health survey**

Scale	PDI-P	Factor1	Factor2	Factor 3	Factor 4	p value
BAI	0.86	0.78	0.96	0.87	0.84	< 0.001
BDI	0.82	0.80	0.83	0.82	0.85	< 0.001
BHS	0.91	0.93	0.89	0.90	0.92	< 0.001
SF-36	- 0.75	-0.73	-0.77	-0.83	-0.67	< 0.001

*PDI-P = Persian version of the Patient Dignity Inventory; BAI= the Beck Anxiety Inventory; BDI= Beck Depression Inventory; BHS= Beck Hopelessness Scale*

Symptoms of distress that were of physical and mental origins were named “source of distress” by Chochinov [16]. In the present study, due to the changed items that were loaded in this factor, it was named “changes in ability and mental image.” Sautier, in Germany, [9] selected the name “suffering from physical symptoms and changes in mental picture.” In the present study, the items loaded on this dimension also had a slight change in comparison with the items loaded in the Sautier study, and therefore, the name of this dimension was changed. In the study by Chochinov, [5] items such as annoying symptoms, anxiety and depression and feelings

of uncertainty, fear of the future, and inability to think properly were called “distress symptoms.” In the present study, however, feelings of depression and anxiety, uncertainty, fear of the future, feeling of inability to cope with the challenges of illness, inability to accept what is, feeling of being a burden, and inability to think properly were placed in the second dimension of emotional distress and failure to accept the disease. In a study by Sautier et al. [9] all of these items except the 2 items of feeling of being a burden and inability to think properly were placed in the same dimension. Furthermore, the item “the illness and care have invaded my

privacy” was also placed in the same dimension in the study by Sautier. Nevertheless, in the present study, this item was placed in the first dimension. Sautier named this dimension “anxiety and uncertainty.” Since the items loaded in this factor were similar to the study by Sautier, it seems that Iranian culture is closer to German culture than to Canadian culture. In the dimension of loss of human value, 10 items were placed. This number seemed to be much, but in the study by Sautier, [9] 12 items were placed in the first dimension.

Overall, the present study was more similar to the Sautier study than that of Chochinov. In this respect, the impact of cultural differences cannot be ignored. Since a standard metric for measuring correlation did not exist, the present study used several questionnaires that seemed to be correlated [22,23]. Construct validity showed a strong correlation between these tools and the PDI-P. Thus, it can be concluded that the problems associated with dignity can affect the quality of life of patients and cause mental health problems including depression, anxiety, and despair. This showed the importance of a tool which can measure problems associated with dignity. This tool is suitable for serious diseases and until now has been used mainly in cancer patients. This study showed that the PDI is also useful for other illnesses, such as heart disease.

This study had a number of limitations. One important limitation was that the study population was not homogeneous and patients participating in the study had various heart conditions. Another limitation was that some cardiac patients, due to the severity of their disease, did not participate. One potential limitation of this study was the generalizability of the findings to other patients in Iran.

## 5. CONCLUSION

This tool can be useful in measuring coronary patients' dignity and distress associated with the dignity that these patients comprehend, and it can be used in Persian-speaking countries. It is recommended that the use of this tool be evaluated for other non-cardiac patients in Iran.

## ETHICAL APPROVAL

Ethical principles were taken into consideration, and the approval of the Ethical Committee of the Kerman University of Medical Sciences was obtained. All participants completed a consent form.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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