Brief Methdological Report

Dignity and Psychosocial-Related Variables in Advanced and Nonadvanced Cancer Patients by Using the Patient Dignity Inventory-Italian Version

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Abstract

Context. The Patient Dignity Inventory (PDI) is a valid and reliable instrument to measure dignity, as a state of physical, mental, social, and spiritual well-being in palliative care patients and an essential dimension for a comprehensive patient-centered approach.

Objectives. We examined the factor structure and correlation of the Italian version of the PDI (PDI-IT) with psychosocial variables among advanced and nonadvanced cancer outpatients in two Italian centers.

Methods. In a sample of 194 patients, principal component analysis, reliability analysis (Cronbach's coefficient alpha), and correlation analysis of the PDI-IT were performed. Concurrent validity was evaluated with respect to the Italian versions of Patient Health Questionnaire-9 (PHQ-9), as a measure of depression, the Mini-Mental Adjustment to Cancer-Hopelessness Scale, as a measure of dysfunctional coping, and the Demoralization Scale (DS-IT), as a measure of demoralization.

Results. Three factors were extracted by exploratory factor analysis, which accounted for 64.38% of the variance, namely existential distress (Cronbach's $\alpha = 0.95$), psychological distress (Cronbach's $\alpha = 0.88$), and physical distress (Cronbach's $\alpha = 0.81$), with a Cronbach's α coefficient for the PDI-IT total score of 0.96. PDI-IT factors were significantly intercorrelated and shared between 42% and 53% of the variance. Higher scores on all the PDI-IT factors and PDI-IT total were found among patients who were clinically depressed (PHQ-9) and among those who were demoralized on the DS-IT. Significant correlations were also found between all PDI-IT and the DS-IT, PHQ-9, and the Mini-Mental Adjustment to Cancer-Hopelessness Scale.

Conclusions. The study confirmed that the PDI-IT is a valid instrument to be applied in oncology and measuring three factors, namely existential, psychological, and physical distress, as core dimensions of dignity, to be monitored and treated in clinical settings.   J Pain Symptom Manage 2017;53:279—287. © 2016 Published by Elsevier Inc. on behalf of American Academy of Hospice and Palliative Medicine.

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Introduction

Dignity as a basic dimension for a comprehensive patient-centered approach aimed at promoting a state of physical, mental, social, and spiritual well-being has been the object of an increasing number of studies.[1–3] In the model developed by Chochinov et al.,[4] dignity consists of three main dimensions, specifically illness-related concerns (e.g., concerns related to symptoms of physical and psychological distress, functional capacity) that threaten or impinge on the individual sense of dignity; the dignity-conserving perspectives and practices (e.g., continuity of the self, role preservation, maintenance of pride, hopefulness); and the social aspects of dignity (e.g., social support, burden to others, aftermath concerns).

On this background, the Patient Dignity Inventory (PDI) has been devised as a novel, reliable, and valid self-report questionnaire, which can easily assess the primary domains of dignity-related distress in patients who are terminally ill.[5] Factor analysis of the original PDI resulted in a five-factor solution, including symptom distress, existential distress, dependency, peace of mind, and social support, accounting for 58% of the overall variance. The PDI could assist clinicians to routinely detect end-of-life dignity-related distress and promote proper intervention. In fact, by using the PDI, one or more previously unreported concerns were found in 76% of the cases, and in 81% of instances, clinicians reported that the PDI facilitated their work.[6]

An increasing number of studies using the PDI are available, showing the importance of dignity both in cancer and noncancer palliative care settings. Similarities in the dignity-related problems reported by cancer patients and care home residents was shown by Hall et al.,[7] suggesting a common existential pathway leading toward death for malignant and nonmalignant diseases. Poor dignity has been associated with both physical (e.g., lack of energy, pain, shortness of breath) and psychological symptoms (e.g., anxiety, sadness, irritability), with psychological distress correlating with all dignity dimensions.[8] In a more recent study, Chochinov et al.[9] showed that patients with advanced chronic medical diseases and institutionalized frail elderly face unique challenges as they move toward the end of life and that the PDI can help in understanding the intricacies of distress and how they differ across different groups of patients. Also, the PDI was found to be helpful in showing that physicians tend to have a limited vision of dignity, wherein they consider the physical aspects of suffering most influential in preserving dignity, whereas caregivers tend to underline the significant role of psychosocial aspects in preserving dignity at the end of life.[10] Given the importance of preserving dignity in health care systems, the PDI has been translated and validated in several countries to test its role from a cross-cultural perspective. Studies carried out in Italy,[11] Germany,[12] The Netherlands,[13] and Spain[14] have shown the PDI to have good psychometric properties. More specifically, in a previous Italian study[11] of nonadvanced cancer patients, convergent validity was found between the PDI-IT and depression, as measured by the Hospital Anxiety and Depression Scale, spirituality, as measured by the 12-Item Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale, and cancer symptoms, as measured by the Edmonton Symptom Assessment System. Confirmatory data were reported in the Spanish study[14] that also compared the PDI (PDI-s) with the Hospital Anxiety and Depression Scale, the Edmonton Symptom Assessment System, and the 12-Item Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale. Likewise, evidence for concurrent validity of the German version of the PDI (PDI-G) was established by significant associations between PDI-G scales and concurrent measures of distress, including the Distress Thermometer, the Patient Health Questionnaire-9 (PHQ-9), the Generalized Anxiety Disorder seven-item scale Demoralization, the Beck Hopelessness Scale, the Short Form Supportive Care Needs Survey, the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30, and Life Attitude Profile-Revised Scale.[13,15] In all these cross-cultural studies, the original five-factor structure of the PDI was not confirmed, with a four-factor solution found in the PDI-G, a three-factor solution in the PDI-s, and only one-factor solution in the PDI-IT.

On these premises, the aim of the present study was to extend previous research on the use of the PDI-IT, by exploring psychosocial dimensions that were not examined in the previous Italian study, and by evaluating the PDI-IT in both advanced and nonadvanced cancer patients. In particular, the purposes were to re-examine the psychometric properties of the scale, and to explore the relationship between dignity and a set of psychosocial variables, which included depression, demoralization, and patients' styles of coping with cancer.

Methods

The study was carried out during a four-week period at the Units of Clinical Oncology of two Italian hospitals, namely the Sant'Andrea University Hospital in Rome and the Sant'Anna University Hospital in Ferrara, Italy.

Inclusion criteria were aged 18 years and older and 70 years and younger; cancer diagnosis (all stages) at least one year after diagnosis; Karnofsky Performance

Status Scale ≥80; the absence of cognitive disorders, as clinically evaluated during the visit (i.e., orientation in time, space, person, context), and through medical data (e.g., the absence of brain metastases).

A convenience sample of patients were recruited at cancer outpatient clinics and day hospitals and asked to complete a booklet of questionnaires in a private space after their visit. All the patients were informed about the aims of the study, and each provided written informed consent. Ethical approval of the study was obtained from the Ethical Review Committee for Human Research of the participating institutions.

Instruments

The PDI[5] was used to assess the construct of dignity. The PDI is a 25-item self-report questionnaire. Respondents are asked to indicate how much of a problem or concern these have been for him or her within the last few days. Each item is rated on 1−5 Likert scale (from 1 = not a problem to 5 = an overwhelming problem) with higher scores indicating higher perceived dignity-related distress. The original PDI contains five factors, including symptom distress, existential distress, dependency, peace of mind, and social support, with a PDI total score showing excellent internal consistency (α = 0.93). The Italian version in its translated, culturally adapted, and validated (explorative and confirmatory factor analyses, convergent and divergent validity) form was used.[11] As detailed elsewhere,[11] all the usual procedures for translation (forward and back translations between English and Italian language by independent and mother-tongue translators) were followed.

The Demoralization Scale (DS)[16] was used to assess demoralization. It consists of 24 items rated on five-point Likert scales (from 0 = never to 4 = all the times) examining issues related to demoralization. The Italian version of the scale (DS-IT) consisted of four factors, including disheartenment, sense of failure, loss of meaning and purpose, and dysphoria,[17] with a total score (α = 0.94; range 0−96) obtained by summing up the single subscale scores. Following the scoring system proposed by other authors,[18,19] the DS-IT used the cutoff score based on the mean ± SD to identify three categories, specifically low demoralization (score < 9.54), moderate demoralization (score 9.55−37.64), and high demoralization (score > 37.65).

The PHQ[20] in its nine-item version (PHQ-9) was used to assess clinical depression. The PHQ-9 is derived from the Primary Care Evaluation of Mental Disorders (PRIME-MD), and it is based on the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* criteria for major depressive disorder. Each item is rated on a four-point Likert scale (from 0 = not at all to 3 = nearly every day). A cutoff point of ≥10 was used as recommended for the screening of

depression.[21] The PHQ-9 has been validated in Italian studies to assess depression.[22,23]

The Mini-Mental Adjustment to Cancer (Mini-MAC) Scale, Hopelessness-Helplessness (HH) factor was used to assess dysfunctional coping in response to cancer. It was extracted from the Mini-MAC Scale[24] and consists of eight items (e.g., I feel completely at a loss about what to do; I feel there is nothing I can do to help myself; I feel that life is hopeless), each measuring the tendency to adopt a hopeless and helpless coping style, on four-point Likert scale (from completely disagree to completely agree, range 8−32). The scale has been validated in several Italian studies with cancer patients, showing good psychometric properties (α = 0.92).[25,26]

The patient's sociodemographic and medical information were gathered from each patient's clinical chart.

Statistical Analysis

To investigate the underlying PDI-IT structure, we used an exploratory factor analysis using the principal-factor method with orthogonal varimax rotation. This approach is consistent with the method used in previous PDI validation studies[11,13,14] carried out in both advanced and nonadvanced cancer patients. The Kaiser-Meyer-Olkin measure of sampling adequacy was calculated. Item analysis included mean, SD, skewness, and kurtosis. Internal consistency was estimated by calculating Cronbach's coefficient alpha for each scale. Concurrent validity was analyzed using Pearson's correlation coefficient. *t*-Test and analysis of variance were used to determine the differences between groups. The Statistical Package for Social Sciences, version 20 (IBM Corp., Armonk, NY), was used for analysis, with level of statistical significance set at $P < 0.05$.

Results

A total of 210 patients meeting the inclusion criteria were approached over the study period. Of these, 13 declined participation (response rate 93.8%) for several reasons (five for no interest in the study, seven for other commitments or lack of time, and one for healthy reasons) and three had missing measures not allowing to evaluate the tests. The final sample was composed by 194 subjects. The clinical and demographic characteristics of the participants of the study are presented in Table 1.

Factor Structure and Internal Consistency of the PDI-IT

The Kaiser-Meyer-Olkin measure of sample adequacy was 0.94 ($P = 0.001$), indicating that the factor analysis was appropriate. Principal component analysis

(Varimax rotation with Kaiser normalization) identified three factors, all of which had eigenvalues ≥1.0. Table 2 shows the sums of squared loadings after rotation. In combination, these three components explain 64.38% of the variance. Factor loadings after rotation are represented in Table 3.

The first factor, named *existential distress*, consisted of 13 items, of which four (Items 12, 13, 14, and 18) of the original PDI-existential distress factor, three (Items 15, 16, and 17), belonging to the original PDI-peace of mind factor, three (Items 21, 22, and 25) belonging to the original PDI-social support factor, and one (Item 9) belonging to the original PDI-symptom distress factor. The second factor, named *psychological distress*, comprised eight items inclusive of four items (Items 5, 6, 7, and 8) of the original PDI-symptom distress factor, two (Items 4 and 11) of the original PDI-existential distress factor, and one item (Item 20) of the original PDI-dependency factor. The third factor, named *physical distress*, consisted of four items, of which two of the original PDI-dependency factor (Items 1 and 2) and one of

Table 1
Sociodemographic and Clinical Data

Variables	
Sex, *n* (%)	
Male	63 (32.5)
Female	131 (67.5)
Age (yrs)	55.1 ± 10.8 (range 28−70)
Education (yrs), *n* (%)	
Elementary school	20 (10.4)
Middle school	34 (17.5)
High school	93 (47.7)
University	47 (24.2)
Marital status, *n* (%)	
Married	103 (53.1)
Never married	78 (40.2)
Widowed	6 (3.1)
Separated/divorced	7 (3.7)
Occupation, *n* (%)	
Employed	62 (31.9)
Unemployed	16 (8.2)
Student	31 (15.9)
Housewives	50 (25.7)
Retired	34 (17.5)
Other	1 (0.5)
Cancer site, *n* (%)	
Breast	85 (43.8)
Gastrointestinal	56 (28.4)
Respiratory	28 (14.7)
Genitourinary	18 (9.3)
Other	7 (3.6)
Stage, *n* (%)	
Local/locoregional disease	97 (50)
Metastatic	97 (50)
Time since first diagnosis (yrs) (mean ± SD, range)	2.16 ± 2.58 (1−16 yrs)
Karnofsky score (Mean, SD)	93.78 ± 7.94
Treatment,[a] *n* (%)	
No therapy	47 (24.2)
Chemotherapy (alone)	91 (46.9)
Radiotherapy (alone or + chemotherapy)	159 (81.9)

[a]Mixed treatments included.

Table 2
Rotated Factor Loading for PDI-IT

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	7.33	29.35	29.33
2	5.40	21.58	50.94
3	3.36	13.44	64.38

PDI-IT = Italian version of the Patient Dignity Inventory.

the original PDI-symptom distress factor (Item 3). Four items that did not load on any of the five factors of the original PDI loaded into the existential distress factor (Item 19, not feeling in control; Item 23, not being able to fight the challenges of illness), the psychological distress factor (Item 24, not being able to accept the way things are), and the physical distress factor (Item 10, not being able to continue usual routines).

Cronbach's α coefficients of the PDI-IT, according to the current factor analysis, indicated good level of internal consistency, specifically existential distress (α = 0.95), psychological distress (α = 0.88), and physical distress (α = 0.81), with a Cronbach's α coefficient for the PDI-IT total score of 0.96.

Analyses showed high intercorrelations among the identified dimensions of the PDI-IT (Table 4). The existential distress factor shared 53% of the variance with psychological distress factor and 50% with the physical distress factor, which in turn shared 42% of the variance with the psychological distress factor. Also high statistically significant correlations were found between the individual PDI-IT factors and the PDI-IT total (Table 4).

Association of Dignity with Psychosocial Variables

Significant correlations were found between all the PDI-IT factors and PDI-IT total, with the Mini-MAC HH, PHQ-9, and DS-IT (both the single dimensions and DS-IT total) (Table 5). These findings were confirmed when analyzing the differences on the mean scores of the PDI-IT according to the cutoff on the PHQ-9 (cases of depression vs. noncases) (Table 6). Also significant differences on the mean scores of the PDI-IT were found according to the cutoff of the DS-IT (no demoralization vs. moderate demoralization vs. severe demoralization) (Table 6).

Association of Dignity with Sociodemographic and Medical Variables

There was no significant relationship of the PDI-IT scores with sociodemographic variables, including sex, marital status, education, and age, besides a small negative correlation indicating higher scores on the PDI-existential score among older patients ($r = -0.14$, $P = 0.03$). No correlation or

Table 3
Item and Scale Characteristics (PCA, Varimax-Rotated Three-Factor Solution) of PDI-IT

Dimensions and Items	Factor Loadings			Items Characteristics					
	F1	F2	F3	Mean	SD	Item Total Correlation	Alpha If Removed	Skewness	Kurtosis
Existential distress (21.5 ± 11.27) (explained variance 29.33%) (α = 0.95)									
15. Feeling that I have not made a meaningful and lasting contribution during my lifetime	0.83			1.59	1.06	0.84	0.94	1.81	2.27
12. Not feeling worthwhile or valued	0.76			1.63	1.06	0.79	0.94	1.52	1.1
14. Feeling that life no longer has meaning or purpose	0.75			1.75	1.14	0.85	0.94	1.49	1.16
21. Not feeling supported by my community of friends and family	0.74			1.61	1.06	0.76	0.94	1.62	1.51
25. Not being treated with respect or understanding by others	0.73			1.58	1.03	0.73	0.94	1.83	2.56
13. Not being able to carry out important roles (e.g., spouse, parent)	0.71			1.77	1.17	0.81	0.94	1.4	1.09
17. Concern that my spiritual life is not meaningful	0.71			1.49	0.89	0.65	0.95	1.88	2.91
22. Not feeling supported by my health care providers	0.69			1.64	1.06	0.71	0.95	1.62	1.63
16. Feeling I have unfinished business (e.g., things left unsaid, or incomplete)	0.68			1.86	1.11	0.75	0.94	1.19	0.52
19. Feeling that I do not have control over my life	0.63			1.92	1.16	0.79	0.94	1.19	0.39
18. Feeling that I am a burden to others	0.57			0.85	1.1	0.76	0.94	1.24	0.64
23. Feeling like I am no longer able to mentally fight the challenges of my illness	0.53			1.97	1.14	0.69	0.95	1.06	0.15
9. Not being able to think clearly	0.51	0.51		1.79	1.06	0.70	0.95	1.11	0.17
Psychological distress (15.57 ± 6.26) (explained variance 21.58%) (α = 0.88)									
8. Worrying about my future		0.77		2.34	1.11	0.71	0.87	0.46	−0.68
7. Feeling uncertain about my illness and treatment		0.77		1.19	1.05	0.73	0.87	0.59	−0.53
5. Feeling depressed		0.69		2.04	1.05	0.74	0.87	0.82	−0.09
6. Feeling anxious		0.68		2.12	.98	0.67	0.87	0.58	−0.35
11. Feeling like I am no longer who I was		0.67		2.38	1.18	0.73	0.87	0.51	−0.79
4. Feeling that how I look to others has changed significantly		0.63		1.74	0.89	0.56	0.88	1.14	0.98
24. Not being able to accept the way things are		0.61		1.95	1.06	0.71	0.87	0.88	−0.08
20. Feeling that my illness and care needs have reduced my privacy	0.43	0.44		1.75	0.95	0.44	0.89	1.28	1.07
Physical distress (5.93 ± 3.03) (explained variance 13.44%) (α = 0.81)									
1. Not being able to carry out tasks associated with daily living (e.g., washing myself)			0.81	0.5	0.87	0.73	0.72	1.83	2.97
3. Experiencing physically distressing symptoms (e.g., pain, nausea)			0.64	2.11	0.97	0.55	0.79	0.79	0.144
2. Not being able to attend to my bodily functions independently (e.g., needing assistance with toileting-related activities)			0.62	1.3	0.84	0.61	0.78	2.91	7.75
10. Not being able to continue with my usual routines		0.47	0.57	1.98	1.08	0.66	0.75	0.96	0.02
PDI total (21.01 ± 18.81) (explained variance 64.38%) (α = 0.96)									

PCA = principal component analysis; PDI-IT = Italian version of the Patient Dignity Inventory.
Mean from 1 = not a problem to 5 = an overwhelming problem.

differences were found with respect to medical variables, specifically site or stage of cancer, Karnofsky score, and anticancer treatment (see Table 5 for details).

Discussion

This study aimed to further investigate the factor structure and the psychometric properties of the PDI-IT in a sample of 194 patients with advanced and nonadvanced cancer.

The results of the exploratory PDI-IT factor analysis demonstrated a three-dimensional factor structure explaining 64.4% of the variance. The factor solution in

Table 4
Intercorrelations of the PDI-IT Factors (Pearson's r)

Factors	Existential	Psychological	Physical	Total
Existential	1			
Psychological	0.74[a]	1		
Physical	0.71[a]	0.65[a]	1	
Total	0.96[a]	0.88[a]	0.81[a]	1

[a]$P < 0.01$.

Table 5
Correlations of the PDI-IT with Psychosocial, Age and KPS, and Differences on the PDI-IT Between Groups According to Gender, Stage, and Type of Treatment

	Existential Distress	Psychological Distress	Physical Distress	Total
Psychological/Performance Measures				
PHQ-9	0.33**	0.55**	0.43**	45*
DS-IT				
Disheartenment	0.37**	0.69**	0.32**	0.41**
Meaninglessness	0.35**	0.44**	0.26**	0.28**
Failure	0.23*	0.35**	0.15	0.28**
Dysphoria	0.37*	0.52**	0.26*	0.43**
Total	0.42**	0.66**	0.33**	0.53**
Mini-MAC HH	0.25**	0.52**	0.33**	0.36**
Karnofsky score	0.06	−0.001	−0.11	0.01
Sociodemographic and Clinical Data				
Age	−0.14*	−0.06	−0.03	−0.11
Gender				
Male ($n = 63$)	22.3 ± 11.9	15.18 ± 6.67	6.27 ± 3.5	43.73 ± 20.43
Female ($n = 131$)	21.2 ± 10.9	15.75 ± 6.1	5.78 ± 2.79	42.67 ± 18.1
Stage				
Nonadvanced ($n = 97$)	22.4 ± 12.5	16.7 ± 7.1	5.9 ± 3.3	43.9 ± 21.4
Advanced ($n = 97$)	20.6 ± 9.9	15.5 ± 5.4	6 ± 2.8	42.1 ± 15.9
Chemotherapy				
Yes ($n = 91$)	21 ± 11.6	15.2 ± 6.6	5.6 ± 3.1	41.9 ± 20.1
No ($n = 47$)	21.9 ± 10.9	15.9 ± 5.9	6.2 ± 2.9	44 ± 17.7
Radiotherapy				
Yes ($n = 159$)	20.9 ± 11.2	15.2 ± 6.2	5.8 ± 3.1	41.9 ± 18.9
No ($n = 47$)	24 ± 11.2	17.3 ± 6.3	6.5 ± 2.7	47.9 ± 17.8

PDI-IT = Italian version of the Patient Dignity Inventory; KPS = Karnofsky Performance Status; PHQ-9 = Patient Health Questionnaire-9; DS-IT = Italian version of the Demoralization Scale; Mini-MAC HH = Mini-Mental Adjustment to Cancer Hopelessness-Helplessness Scale.
*$P < 0.05$; **$P < 0.001$.

this analysis revealed different item clusters compared with the original scale by Chochinov et al.,[5] which consisted of five factors. The first factor, which we defined *existential distress*, consisted of 13 items related to the dimensions of existential suffering and meaninglessness (e.g., I am a burden to others; not a meaningful and lasting contribution during my lifetime, treated with respect or understanding by others, worthwhile or valued). These items are variously represented in the original PDI scale in the existential distress, peace of mind, social support, and symptom distress factors. The second dimension of the PDI-IT was labeled *psychological distress* and consisted of eight items related to psychological symptoms (e.g., uncertain about the future; depression; anxiety; inability to cope; my illness and care needs have reduced my privacy), which in the original PDI loaded on the symptom distress, existential distress, and dependency factors. The third dimension labeled, *physical and performance distress*, consisted of four items associated with physical symptoms (e.g., pain, nausea; able to attend bodily functions; inability to carry out tasks associated with daily living; inability to continue with usual routines) that in the original PDI loaded on the dependency and symptom distress factors. Similar results were reported in the German and Spanish versions of the PDI that identified different factors with respect to the original PDI. More specifically, the PDI-IT had significant overlapping and the factors identified in the

PDI-G.[12] The existential distress factor of the PDI-IT consisted of the same items that loaded on a factor coined loss of sense of worth and meaning in the PDI-G. The psychological distress factor of the PDI-IT (eight items) and the factor called anxiety and uncertainty (seven items) in the PDI-G had six items in common. Four of the physical distress factors of the PDI-IT overlapped with six items of two factors of the PDI-G physical symptom distress and body image and loss of autonomy. There was also overlap between the items loading on the existential distress and psychological distress factors of the PDI-IT with those loading on the existential and psychological distress factors of the Spanish version, PDI-S, which also reported a three-factor structure.[14] In contrast, the data of our study are in disagreement with the first Italian validation study,[11] in which one factor only was found loading highly on all the 25 items (>0.45) and explaining 48% of the variance (Cronbach's α = 0.96). The one dimensionality was considered by the authors as depending both on cultural differences about ways of conserving dignity in illness and on the less advanced stages of the sample.[11] However, because in our study, both nonadvanced and advanced cancer patients participated and no difference was shown between these two groups, further research in more representative samples is necessary to understand the reasons of the aforementioned difference within the same country.

Table 6
Mean Differences Between PDI-IT Factors According to PHQ-9 Caseness and Demoralization

PHQ-9 and DS-IT Caseness	Existential Distress	Psychological Distress	Physical Distress	Total
PHQ-9				
Case (≥10) (n = 40, 20.6%)	26.1 ± 12.1	20.15 ± 6.59	7.55 ± 3.1	53.8 ± 19.26
Noncase (≤9) (n = 154, 79.4%)	20.3 ± 10.8	14.38 ± 5.6	5.92 ± 3.1	40.2 ± 17.7
	$F = 8.75$, df = 1, $P = 0.004$	$F = 31.1$, df = 1, $P = 0.001$	$F = 15.21$, df = 1, $P = 0.001$	$F = 18.04$, df = 1, $P = 0.001$
DS-IT Scale				
No demoralization (n = 27, 13.9%)	13.77 ± 2.42	9.6 ± 2.1	4.11 ± 1.18	27.48 ± 4.12
Moderate demoralization (n = 134, 69%)	20.7 ± 10.4	15.04 ± 5.27	5.94 ± 2.95	41.7 ± 16.92
Severe demoralization (n = 33, 17%)	21.5 ± 11.27	22.6 ± 5.93	7.39 ± 3.63	61.03 ± 19.6
	$F = 22.6$, df = 2, $P = 0.001$	$F = 50.9$, df = 2, $P = 0.001$	$F = 9.41$, df = 2, $P = 0.001$	$F = 32.8$, df = 2, $P = 0.001$

PDI-IT = Italian version of the Patient Dignity Inventory; PHQ-9 = Patient Health Questionnaire-9; df = degrees of freedom; DS-IT = Italian version of the Demoralization Scale.

Regarding concurrent validity, interesting results were found when exploring the relationship between the PDI-IT and other psychosocial and distress variables, namely, depression, demoralization, and hopelessness. By examining the differences between clinically depressed and nondepressed patients (cases, PHQ-9 ≥10, vs. noncases), we demonstrated that cases had higher scores on all scores of the PDI-IT factors and on the total PDI-IT. This was confirmed by correlation analysis between the PHQ total score and the PDI-IT single and total scores. Taken together, these findings confirm previous studies carried out in other countries, showing a correlation between the construct of dignity and clinical depression, although in our study depression was more strongly related to the dimensions of psychological distress and physical distress of the PDI-IT than existential distress.

With respect to demoralization, as a construct separated from clinical depression,[27–29] significant statistical correlations were found between the PDI-IT and the DS-IT, in its dimensions of disheartenment (indicating a sense of discouragement about life, loneliness, hopelessness, and helplessness), meaninglessness (measuring loss of role and purposes in life), failure (underlying feelings of loss of worth and pride in one's own life), and dysphoria (indicating psychological distress symptoms, including guilt, irritability, and regret). However, the physical distress dimension of the PDI-IT showed the weakest correlation, although statistically significant, with demoralization. The association between the two different constructs of dignity and demoralization was confirmed when examining the differences between patients who resulted not demoralized and those who were moderately or severely demoralized. In fact, higher levels of PDI-IT existential distress, psychological distress, and physical distress were found relative to the grade of demoralization severity (moderate vs. severe demoralization). More research however is needed to explore the interface and connection between demoralization and dignity. In a recent study carried out on palliative care patients, Vehling and Mehnert[15] showed that loss of dignity significantly mediated 81% of the effect of the number of physical problems on demoralization, whereas demoralization mediated 53% of the association between physical problems and loss of dignity. This suggests a possible conceptual link between existential concerns (loss of dignity) and existential distress (demoralization), which are salient in understanding existential suffering in patients with cancer.

The interpretation of the relationship between PDI-IT and a dysfunctional coping mechanism, such as hopelessness (Mini-MAC HH Scale), also merits further investigation. In our study, hopelessness was highly correlated with psychological distress of the PDI-IT ($r = 0.52$) and less with the physical distress

($r = 0.32$) and existential distress ($r = 0.25$). This result seems to indicate that a coping mechanism, such as the tendency to adopt a giving-up response to cancer and hopeless-helpless attitudes, does reflect psychological distress symptoms, but less other dimensions of dignity, such as existential distress and loss of meaning, that merit extreme attention in health care settings.[30]

The strength of this study is that it establishes the psychometric integrity of the PDI-IT and does so in both nonadvanced and advanced cancer patients, showing how this scale can be applied beyond the confines of palliative care. This is also the first Italian study examining the relation between dignity and demoralization, both of which have been the focus of attention in clinical settings in terms of prevalence, negative impact on quality of life, and role in increasing suffering of patients with severe medical disorders, including cancer.[31]

In terms of study limitations, our analysis should be replicated in a larger population of cancer patients with more representative cancer sites, different stages, including palliative care, and different settings, including inpatient units, hospice, and home care services. Furthermore, more research is needed regarding other psychosocial dimensions that could possibly be related to dignity, such as personality traits and spiritual variables that may have a bearing on this construct.[15] Also more data should be gathered regarding how dignity impacts quality of life and desire of death hastened, as reported in several studies,[32,33] throughout the trajectory of the illness.

In conclusion, the PDI-IT was confirmed to be a valid and psychometrically sound instrument that validated in cross-cultural studies may help health care professionals become alert to the emotional, spiritual, and existential issues subsumed within the concept of dignity[34] and routinely assess, monitor, and treat this dimension and its course over time in patients affected by life-threatening diseases.

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