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Translation, Cultural Adaptation and Psychometric Validation of the Italian Version of the Dignity in Care Scale for Nurses

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ABSTRACT

Aim: To translate, culturally adapt and validate the Dignity in Care Scale for Nurses (DISC-N) into the Italian language.

Design: A national multicentre cross-sectional study.

Methods: Translation and cultural adaptation followed recognised guidelines for health measurement instruments. Content validity was assessed through expert review. Structural validity, item performance, reliability, construct validity and measurement invariance were examined in a national sample of registered nurses and nursing students.

Results: A total of 1385 registered nurses and 905 nursing students from 14 regions and one Autonomous Province participated in this study. The Italian DISC-N showed excellent content validity, a coherent six-domain structure, and strong reliability for the total scale and its domains. Measurement invariance was supported across gender, age and professional role, indicating that comparisons across these groups are appropriate. Construct validity was supported by positive associations with ethical climate.

Conclusions: The Italian DISC-N is a culturally appropriate and psychometrically robust instrument for evaluating dignity-preserving nursing practice in Italian clinical and educational settings.

Implications for the Profession and Patient Care: The scale can support professional development, undergraduate education and quality improvement by helping organisations assess, monitor and strengthen dignity-preserving care.

Impact: This study addressed the absence of an Italian instrument for assessing nurses' perceptions of dignity-preserving care. The main finding is that the Italian DISC-N provides a valid and reliable measure for nurses and nursing students. The findings will affect clinical educators, nurse managers, researchers and healthcare organisations seeking to promote person-centred and dignity-preserving care.

Reporting Method: The study was reported according to the Consensus-based Standards for the selection of health Measurement Instruments reporting guideline.

Patient or Public Contribution: No patient or public contribution.

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What Does This Paper Contribute to the Wider Global Clinical Community?

- By enabling systematic assessment of dignity-preserving nursing behaviours, the scale can support quality-improvement initiatives aimed at strengthening patient care and identifying circumstances in which patients' dignity may be at risk.
- The scale can be used in clinical governance, undergraduate nursing education and professional development to identify areas where dignity-preserving practices should be strengthened.
- Evidence of measurement invariance supports fair comparison across nurses and nursing students, helping educators, managers and researchers monitor dignity-related care across different professional groups.

1 | Introduction

The World Health Organization, in its *Human rights and health* fact sheet, affirms the obligation of States to adopt a human right-based approach to health, ensuring access to services without discrimination and with full respect for human dignity (World Health Organization (WHO) 2023).

In this regard, the World Health Assembly (WHA74) has adopted resolutions committing Member States to ensure equal-quality care based on free and informed consent, in full respect of human rights, dignity and autonomy (World Health Assembly 2021). The concept of human dignity has been, and continues to be, a primary focus across multiple disciplines, including nursing, medicine, sociology, psychology, law, theology, philosophy and ethics. This interdisciplinary approach has generated a substantial body of literature (Fuseini 2022; Upenieks 2022; Ferdynus 2024; De Beer et al. 2024). In the promotion and protection of human rights, dignity is often regarded as an expression of the very essence of the person, an innate, inviolable and inalienable characteristic of every human being (Sabatino et al. 2014). It represents a fundamental concept in ethics, whose main attributes can be summarized in four dimensions: intrinsic (personhood), relational/behavioural (sociality), respect and autonomy (Franco et al. 2020).

In the literature, the term 'dignity' is used to convey widely different meanings, with distinct ontological connotations that can nonetheless be linked to current ethical debates and challenges in healthcare (Ferdynus 2024).

Within this framework, the *Code of Ethics for Nurses* issued by the International Council of Nurses (ICN) emphasizes the central role of dignity in care, linking it to the universal rights of every individual and extending it to the dignity of professionals, while also addressing future implications arising from scientific and technological developments (ICN 2021).

In the context of care provision, dignity acquires crucial importance, particularly in care pathways for patients in advanced or terminal stages (Kanno et al. 2019). Dignity-related distress,

together with depression, hopelessness, dependency and uncontrolled symptoms, may be associated with the desire for hastened death (Rodin et al. 2007) (Chochinov et al. 2008). Recent research also suggests that patients and nurses share many understandings of dignity, although they may differ in the emphasis given to specific aspects of care. For instance, an integrative review found more similarities than differences between patients' and nurses' perspectives, with autonomy, communication, privacy and organisational aspects recurring across both perspectives. Confidentiality, however, was more prominent in healthcare professionals' accounts (Stephen Ekpenyong et al. 2021). These findings highlight the multidimensional nature of dignity in nursing practice and the importance of considering both patients' expectations and professionals' responsibilities.

In nursing care, dignity is not only multidimensional but also an essential and inseparable aspect of the person's identity (Chua et al. 2022). Among its defining attributes are the recognition of the patient, protection of privacy, autonomy, confidentiality, altruism, human respect and attention to caregivers. In this regard, dignity serves as a key indicator of care quality, independent of the context (Chua et al. 2022). This centrality is framed within the broader international focus on personalized care and the promotion of a holistic, person-centred approach (Bagnasco et al. 2025). Importantly, respect should therefore be understood as an attribute through which dignity is recognised and preserved rather than as a synonym for dignity (Franco et al. 2020). Similarly, person-centred care represents a broader approach to care that is provided for the expression of dignity, but the two concepts are not interchangeable (Franco et al. 2020).

1.1 | Existing Tools and Measurement Gaps

Several validated tools in other contexts assess dignity from different perspectives and therefore capture distinct aspects of the construct. For example, the *Patient Dignity Inventory* (PDI) assesses dignity-related distress in patients receiving palliative care (Chochinov et al. 2008), and an Italian version has been validated in oncology patients (Ripamonti et al. 2012). Other instruments address dignity from the perspective of healthcare professionals. Piredda et al. recently developed the *Nurses' Professional Dignity Scale* (Piredda et al. 2025), which focuses on nurses' own perception of professional dignity. However, professional dignity and dignity-preserving nursing practice represent related but distinct constructs. The former concerns the dignity experienced by nurses in their professional role, whereas the latter concerns the behaviours and practices through which nurses recognise, protect and preserve patients' dignity during care. The DISC-N was specifically developed to assess this latter construct. To our knowledge, no validated Italian instrument specifically assessing nurses' self-reported dignity-preserving practices directed towards patients was available. This represents an important measurement gap, as a culturally adapted and psychometrically sound instrument could support the assessment of dignity-preserving nursing practice in both clinical and educational settings. It also contributes to raising awareness of the nurse's central role in providing person-centered care. This assessment is also a fundamental aspect for the growth and training of nursing students, and it is something that must be

invested in throughout the process of competence development starting from the undergraduate programs (Macaden et al. 2017; Cetintas et al. 2021; Stikholmen et al. 2022).

1.2 | Aim

The aim of this study was to translate and validate the Dignity in Care Scale for Nurses (DISC-N) into Italian (Lin and Tsai 2019), in order to provide a reliable tool for assessing care quality in terms of promoting and protecting the dignity of patients.

2 | Methods

2.1 | Study Design

This was a multicentre, national cross-sectional study conducted to translate, culturally adapt and psychometrically validate the Italian version of the DISC-N (Lin and Tsai 2019). This manuscript presents preliminary analysis of a broader cross-sectional study aiming at describing ethical aspects of nursing care in Italy. Descriptive findings regarding participants' scores on dignity-preserving nursing practice, including comparisons across professional and clinical subgroups, are beyond the scope of the present psychometric validation study and will be reported in a separate publication focusing on the substantive results of the broader project. The report of this study was written according to COSMIN reporting guidelines (Gagnier et al. 2021) (Table S1).

2.2 | Participants

Participants included registered nurses and undergraduate nursing students. Nursing students were included because dignity-preserving competencies are cultivated from the early stages of professional socialisation, and undergraduate clinical placements represent a key setting for their development (Macaden et al. 2017; Cetintas et al. 2021; Stikholmen et al. 2022). Because the original validation of the DISC-N was conducted among registered nurses, and its applicability to nursing students had not been previously established, this extension of use was tested empirically through measurement invariance analysis across professional role (nurses vs. students; see Measurement Invariance and Results), which confirmed equivalent factor structure and item functioning between groups. Inclusion criteria were: aged ≥ 18 years, fluent in Italian, being engaged in direct clinical practice (for nurses) or having completed at least one clinical practical traineeship (for undergraduate students). A convenience sampling strategy was adopted across clinical and academic settings. In line with COSMIN recommendations, a minimum of seven participants per item was required to ensure robust analysis of internal structure. Given the scale's 36 items, the minimum target sample size was set at ≥ 252 participants.

2.3 | Instrument

The Dignity in Care Scale for Nurses (Lin and Tsai 2019) (DISC-N) is a self-report instrument designed to assess how

nurses maintain patients' dignity in clinical settings. The DISC-N was originally developed by Lin and Tsai in Taiwan (2019) in a sample of 610 registered nurses, with the aim of providing a psychometrically robust, discipline-specific measure of dignity-preserving nursing practice (Lin and Tsai 2019); conceptually, its six domains reflect a multidimensional understanding of dignity encompassing communication, confidentiality, timely responsiveness, autonomy, environmental safety and protection of wellbeing, consistent with contemporary nursing ethics conceptualisations of dignity (Sabatino et al. 2014; Franco et al. 2020). It comprises 36 items grouped into six theoretical domains: use communication skills to provide emotional support (CSES); Ensure confidentiality of personal information (CPI); Provide patient care needs promptly (PCNP); Respect for patient's autonomy (RPA); Provide a safe environment for the patient (SEP); and Protect the patient's well-being (PPWB). Responses are rated on a five-point Likert scale ranging from 1 ('never') to 5 ('always'). The total score of the DISC-N is obtained by summing the responses to all 36 items (range 36–180). Subscale scores are calculated by dividing the sum of item scores within each domain by the number of items, yielding values between 1 and 5. Higher scores indicate a higher frequency of dignity-preserving behaviours in clinical practice. In the validation study, the internal consistency coefficient for the total scale was $\alpha = 0.93$, while for the subscales it ranged from 0.70 to 0.94 (Lin and Tsai 2019). Permission for translation was obtained from the original author. The translation process followed the European Organisation for Research and Treatment of Cancer (EORTC) Guidelines (EORTC, 2017) (Kuliš et al. 2017). The procedure comprised five phases: (1) forward translation; (2) reconciliation; (3) back translation; (4) back translation review and harmonisation; and (5) testing. The pre-final version was reviewed and approved by the instrument's original developer before testing procedures commenced.

2.4 | Instrument—Additional Measure

Construct validity was assessed using the Hospital Ethical Climate Survey (Maffoni et al. 2021) (HECS), an externally validated instrument measuring nurses' perception of the ethical climate of their workplace. Ethical climate refers to shared perceptions of organisational practices, procedures and norms that guide how ethically relevant situations and decisions are addressed. This construct was considered conceptually appropriate for hypothesis testing because dignity-preserving nursing practice does not occur independently of the clinical context, but is enacted within an organisational and relational environment that may support or constrain ethically appropriate patient care (Maffoni et al. 2021). The HECS consists of 15 items rated on a 5-point Likert scale and covers key dimensions of ethical climate, including relationships with peers, managers, physicians and the organization. The scale has demonstrated good psychometric properties in previous studies, including in Italian samples (Maffoni et al. 2021).

2.5 | Data Collection

Data was collected using a digital questionnaire distributed via QR code through LimeSurvey (LimeSurvey 2023) and it was

conducted between April and June 2025. Demographic variables collected included age, gender, educational level, years of clinical experience, current work setting and professional role (registered nurse or nursing student). For nursing students, academic year was recorded to enable stratified analysis across different educational stages. Participants accessed the survey through institutional distribution channels and completed it anonymously within approximately 10–20 min.

2.5.1 | Ethical Considerations

Informed consent was obtained from all participants prior to their involvement in the study, and the ethical recommendations outlined in the Declaration of Helsinki were followed at all times (WMA 2013).

Participants were also asked to confirm their consent to participate and for data processing after reading an accompanying letter detailing the study's purpose. Data collection was done anonymously, and a random ID was assigned directly by LimeSurvey. LimeSurvey was configured not to collect IP addresses or other technical tracking identifiers. This study was approved by the Ethical Committee of Liguria Region on approval number 478/2024—dB id 14,275 of 10/02/2025.

2.6 | Data Analysis

Descriptive statistics were used to describe the sociodemographic and clinical characteristics of the sample. Skewness and kurtosis were calculated to determine the distribution of the items in the DISC-N scale. No missing data were reported for the DISC-N scale; thus a complete case analysis was performed. All analyses were performed using R (version 4.5.1).

2.6.1 | Content Validity

The pre-final Italian version was pilot-tested with 10 participants to assess item clarity and comprehensibility. The instrument was administered in paper format for expert evaluation. In accordance with EORTC guidelines (Kuliš et al. 2017), a report was produced for each administration, detailing inclusion/exclusion criteria and qualitative feedback from experts regarding item clarity. Inter-rater agreement on item clarity was assessed using the percent agreement, with values > 80% considered indicative of excellent agreement. Items appropriateness was assessed using the Content Validity Index (CVI), following COSMIN recommendations (Gagnier et al. 2021). A panel of 10 experts (clinicians, academics and researchers) independently rated the relevance of each item using a four-point scale. Item-level CVIs (I-CVI) were calculated, along with the scale level CVI (S-CVI/Average).

2.6.2 | Structural Validity

Because the DISC-N had an established six-factor measurement structure in the original validation study, confirmatory factor analysis (CFA) using the Diagonally Weight Least Squares

(DWLS) estimator was selected as the primary approach to structural validity. The objective was to evaluate whether the hypothesised original structure was reproduced in the Italian version rather than to derive a new factor solution using an exploratory, data-driven approach. A six-factor model was tested based on the original theoretical framework. Model fit was assessed using the following indices (Kline 2023): Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA, 90% CI), and Standardised Root Mean Square Residual (SRMR). Conventional cut-off values were adopted to evaluate model adequacy: CFI and TLI ≥ 0.95 , RMSEA ≤ 0.08 (with values ≤ 0.05 indicating close fit) and SRMR ≤ 0.08 . In line with common practice in CFA, chi-square statistics (χ^2 , degrees of freedom and p -value) were also reported, although this index is highly sample-size dependent and is no longer considered a decisive criterion for construct validity. Explained variance, standardized factor loadings and coefficients of determination (R^2) were computed.

Following confirmation of the factorial structure of the DISC-N through CFA, a Graded Response Model (GRM) was applied within an Item Response Theory (IRT) framework (Samejima 1962). The IRT approach complemented the CFA by providing a detailed view of item performance, identifying the trait ranges where each factor and its items are most informative, and clarifying potential areas for refinement in future applications of the scale. Separate GRMs were estimated for each factor and model evaluation focused on three main aspects: (1) Item discrimination, slope parameters (a) and their significance, describing the ability of each item to distinguish respondents along the latent continuum; (2) Item difficulty (thresholds), location parameters (b) and associated standard errors, examined through boundary and category characteristic curves to assess ordered response functioning; and (3) Item and test information, item information functions (IIFs) and test information functions (TIFs), summarizing measurement precision across different levels of the latent trait. We also evaluated local independence by employing Yen's Q3 statistic, which measures the correlation between the residuals of item pairs, with residual correlations above > 0.20 considered indicative of potential local dependence (Christensen et al. 2017) and monotonicity was evaluated using Loevinger's H coefficient. Global model fit was examined using limited-information M2 statistics and associated fit indices, when estimable.

2.6.3 | Marginal and Empirical Reliability

Marginal and empirical reliability were computed within the item response theory framework. Marginal reliability was computed as a global index of measurement precision, while empirical reliability was estimated using the Expected A Posteriori (EAP) approach that reflects the precision of ability estimates of participants.

2.6.4 | Internal Consistency

Internal consistency of the scale and its subscales was assessed using composite reliability coefficient (Lai 2021), considering

the multidimensional structure of the DISC-N. A coefficient of 0.70 or higher indicates an adequate internal consistency, while a coefficient of 0.80 or higher indicates an optimal internal consistency. Corrected item–total correlations were computed as a descriptive indicator of item discrimination, complementing the CFA and IRT analyses. Values ≥ 0.30 were considered acceptable.

2.6.5 | Construct Validity

Construct validity was assessed through hypothesis testing. The hypothesis was that the DISC-N had positive correlation with the Hospital Ethical Climate Survey (Maffoni et al. 2021) (HECS) scale, considering both the entire dimension and each factor of both instruments. To test these hypotheses, Pearson's correlation coefficient (two-tailed) was used, with values 0.10–0.29 considered a small effect, 0.30–0.49 a moderate effect, and ≥ 0.50 as a strong effect.

2.6.6 | Measurement Invariance

Measurement invariance was evaluated through multi-group CFA, testing sequential levels of invariance (configural, metric, scalar and strict) across three grouping variables: age, gender and professional role (registered nurses vs. nursing students). Given the ordinal nature of the DISC-N items, threshold invariance was evaluated before metric invariance, using theta parameterisation and the Wu–Estabrook identification approach for ordered categorical indicators (Wu and Estabrook 2016). This step tested the equality of response-category thresholds across groups before progressively constraining factor loadings, item intercepts and residual variances. Model fit was assessed by comparing fit indices (CFI, TLI, RMSEA) and chi-square difference tests ($\Delta\chi^2$), along with degrees of freedom and associated *p*-values. Model invariance was primarily evaluated using changes in incremental fit indices, with $\Delta\text{CFI} \leq 0.010$ and $\Delta\text{RMSEA} \leq 0.015$ considered supportive of invariance. Given the high correlations among first-order factors, a second-order confirmatory factor analysis was tested to evaluate the presence of an overarching dignity construct. The six-factor model was used for the interpretation and reporting of item-level factor loadings, explained variance and reliability indices, while the second-order model was used to evaluate whether the six first-order domains could be accounted for by an overarching dignity construct.

3 | Results

3.1 | Sample Characteristics

The sample included 1385 nurses and 905 nursing students (total $n = 2290$) from 14 regions and one Autonomous Province in Italy. Most participants were female (overall 80.17%), with a slightly higher proportion of women among nurses than students. Nurses were older (mean age 40.44 years, SD 11.39) compared with nursing students (mean age 24.33 years, SD 6.51), reflecting expected differences in career stage. Christianity was

the most commonly reported religion in both groups, although a larger proportion of students reported atheism compared with nurses. Work experience applied only to the nurse subgroup (mean 17.15 years, SD 12.21). Among students, most were enrolled in their first (37.35%) or second (33.37%) year of training. Approximately three-quarters of students reported that nursing was their first-choice degree. Regarding job-related attitudes, most respondents reported being satisfied with their work (overall 61.92%). However, levels of strong satisfaction differed, with 32.38% of students reporting being completely satisfied compared with 14.95% of nurses. Among nurses, intention to leave the current hospital (23.10%) or the profession entirely (18.56%) was notable, while this item did not apply to students. All results are shown in Table 1.

3.2 | Content Validity Results

Following the EORTC translation guidelines (2017), the Italian DISC-N achieved full semantic and cultural equivalence, with no item requiring modification. Cognitive interviews conducted with 10 participants showed a 100% completion rate and high levels of item comprehensibility, with a mean completion time of 8.2 min, supporting the feasibility of the instrument. The content validity assessment was performed by a panel of 10 nursing experts (6 women, 4 men; mean age 41.1 years), with a mean professional experience of 17.4 years (range 12–20). Experts were affiliated with Palliative Care, Oncology, Internal Medicine and Nursing Research units and had established expertise in clinical ethics and the evaluation of patient-reported outcome measures. Percentage agreement among experts was excellent, reaching 97.8% for relevance and 86.5% for clarity, with 88.9% of items achieving unanimous agreement for relevance, indicating a high level of consensus regarding item appropriateness and comprehensibility. All 36 items met the recommended threshold for item-level content validity (I-CVI ≥ 0.78) for relevance, with values ranging from 0.90 to 1.00, and 32 items (88.9%) receiving unanimous endorsement. For clarity, 34 items (94.4%) achieved I-CVI values ≥ 0.78 (range 0.70–1.00). Scale-level indices further supported excellent content validity, with S-CVI/Ave values of 0.99 for relevance and 0.96 for clarity, both exceeding the recommended cutoff of 0.90 (Polit and Beck 2006).

3.3 | Confirmatory Factor Analysis

Skewness, kurtosis, mean, standard deviation, response category proportion, *R*-square and the DISC-N factor loadings are reported in Table 2. Item #12 ('maintaining patient confidentiality') showed the highest endorsement ($M = 4.79$, $SD = 0.49$) and exceeded the ceiling threshold of 80%, reaching 82.5%. Items 26, 27 and 35 (related to environmental safety) displayed more normal distributions with lower ceiling effects (31.6%–35.8%), providing adequate response variability.

Item-level factor loadings and coefficients of determination (R^2) reported in Table 2 refer to the second-order confirmatory factor analysis model. All loadings are standardized estimates derived from the hierarchical model, with R^2 values indicating the proportion of item variance explained by their respective first-order latent factors.

TABLE 1 | Sociodemographic characteristics of the samples included (N = 2290).

	Nurses (N = 1385)	Nursing students (N = 905)	Overall (N = 2290)
Gender			
Female	1133 (81.81%)	703 (77.68%)	1836 (80.17%)
Male	237 (17.11%)	192 (21.22%)	429 (18.73%)
Other	0 (0.00%)	0 (0.00%)	0 (0.00%)
Prefer not to say	0 (0.00%)	0 (0.00%)	0 (0.00%)
Missing	15 (1.1%)	10 (1.1%)	25 (1.1%)
Age (Mean (SD))	40.44 (11.39)	24.33 (6.51)	34.07 (12.54)
Religion			
Christianity	1000 (72.20%)	580 (64.09%)	1580 (69.00%)
Atheism	294 (21.23%)	235 (25.97%)	529 (23.10%)
Other	91 (6.57%)	90 (9.94%)	181 (7.90%)
Work experience (Mean (SD))	17.15 (12.21)	NA (NA)	17.15 (12.21)
Year of the nursing program currently attended			
First	0 (0.00%)	338 (37.35%)	338 (14.76%)
Second	0 (0.00%)	302 (33.37%)	302 (13.19%)
Third	0 (0.00%)	236 (26.08%)	236 (10.31%)
Out-of-course	0 (0.00%)	29 (3.20%)	29 (1.27%)
Missing	1385 (100%)	0 (0%)	1385 (60.5%)
What's the nursing degree your first choice?			
First choice	0 (0.00%)	687 (75.91%)	687 (30.00%)
Second choice	0 (0.00%)	218 (24.09%)	218 (9.52%)
Missing	1385 (100%)	0 (0%)	1385 (60.5%)
Work satisfaction			
Completely unsatisfied	29 (2.09%)	7 (0.77%)	36 (1.57%)
Unsatisfied	291 (21.01%)	45 (4.97%)	336 (14.67%)
Satisfied	858 (61.95%)	560 (61.88%)	1418 (61.92%)
Completely satisfied	207 (14.95%)	293 (32.38%)	500 (21.83%)
Intention to leave			
No	808 (58.34%)	0 (0.00%)	808 (35.28%)
Yes, my hospital	320 (23.10%)	0 (0.00%)	320 (13.97%)
Yes, the profession	257 (18.56%)	0 (0.00%)	257 (11.22%)
Missing	0 (0%)	905 (100%)	905 (39.5%)
DISCN global score (Mean (SD))	152.83 (17.98)	159.39 (19.16)	155.42 (18.73)
CSES (Mean (SD))	4.36 (0.51)	4.51 (0.53)	4.42 (0.52)
CPI (Mean (SD))	4.35 (0.57)	4.41 (0.63)	4.37 (0.60)
PCNP (Mean (SD))	4.40 (0.51)	4.48 (0.57)	4.43 (0.54)
RPA (Mean (SD))	3.94 (0.77)	4.20 (0.78)	4.04 (0.78)

(Continues)

TABLE 1 | (Continued)

	Nurses (N = 1385)	Nursing students (N = 905)	Overall (N = 2290)
SEP (Mean (SD))	4.12 (0.81)	4.45 (0.74)	4.25 (0.80)
PPWB (Mean (SD))	4.06 (0.68)	4.41 (0.65)	4.20 (0.69)

Then, CFA was conducted to confirm the factorial structure of the DISC-N as in the previous validation study. The six-factor model CFA displayed an optimal fit: ($\chi^2(579)=4725.186$, $p<0.001$; RMSEA=0.056 (90% CI=0.054–0.057), $p<0.001$; CFI=0.990, TLI=0.989, SRMR=0.053). All factor loadings were statistically significant and >0.50 , with 92% (33/36) ≥ 0.70 . The correlations among factors were high and all above 0.65. Thus, a second-order hierarchical model incorporating the first-order factors was subsequently tested as displayed in Figure 1. This model confirmed fit indices and factor loadings >0.80 : ($\chi^2(588)=5033.819$, $p<0.001$; RMSEA=0.057 (90% CI=0.056–0.059), $p<0.001$; CFI=0.989, TLI=0.989, SRMR=0.055).

3.4 | Measurement Invariance Testing

Multi-group confirmatory factor analysis evaluated measurement invariance across demographic subgroups using sequential constraint testing. Given the ordinal nature of the DISC-N items, threshold invariance was tested before metric, scalar and strict invariance. Full measurement invariance was confirmed using combined criteria ($\Delta\text{CFI} \leq 0.010$, $\Delta\text{RMSEA} \leq 0.015$).

Measurement invariance across gender was evaluated using a multigroup CFA approach. The configural model demonstrated excellent fit, supporting equivalence of the factor structure across gender groups. Threshold invariance was supported, with no meaningful deterioration in model fit ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=-0.002$). Constraining factor loadings to equality (metric invariance) did not result in any deterioration of model fit ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=-0.001$), indicating that items contributed similarly to the latent constructs across groups. Scalar invariance was also supported, with fit indices remaining stable ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=0.000$), allowing for meaningful comparisons of latent means. Finally, the strict invariance model showed no decline in model fit ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=0.000$), confirming equality of residual variances across gender.

Regarding professional role (nurses vs. nursing students), the configural model showed excellent fit to the data, indicating that the factorial structure was equivalent across groups. Threshold invariance was supported ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=-0.002$). Imposing equality constraints on factor loadings (metric invariance) resulted in no meaningful changes in model fit ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=0.000$), supporting metric invariance. Scalar invariance was subsequently tested by constraining item intercepts and showed stable model fit ($\Delta\text{CFI}=-0.001$; $\Delta\text{RMSEA}=0.003$). Finally, the strict invariance model also showed only minor changes

in fit ($\Delta\text{CFI}=-0.002$; $\Delta\text{RMSEA}=0.003$), confirming strict invariance.

Regarding age, configural model demonstrated excellent fit, supporting equivalence of the factor structure across age groups. Threshold invariance was supported ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=-0.002$), and metric invariance resulted in negligible changes in fit indices ($\Delta\text{CFI}=0.000$; $\Delta\text{RMSEA}=0.000$), remaining well within recommended thresholds. Scalar invariance was subsequently tested with stable model fit ($\Delta\text{CFI}=-0.001$; $\Delta\text{RMSEA}=0.001$). Finally, the strict invariance model also showed limited deterioration in fit indices ($\Delta\text{CFI}=-0.001$; $\Delta\text{RMSEA}=0.002$), confirming strict invariance.

3.5 | Item Response Theory Analysis

Before conducting the Graded Response Model analyses, the main assumptions of the model were evaluated. Unidimensionality was confirmed for each factor of the DISC-N through exploratory factor analysis. In addition, the assumption of local independence was assessed by examining residual correlations (Yen's Q3 statistic) (Christensen et al. 2017), which indicated no substantial item-level dependencies, except for one item pair (disc16–disc17; Q3=0.24). Given the large sample size and satisfactory CFA fit indices, this dependency was considered negligible for the purposes of item-level IRT evaluation. Finally, the monotonicity assumption was verified using Loevinger's H coefficient, which ranged from 0.42 to 0.76, indicating strong scalability. Limited-information M2 analyses indicated acceptable global fit for the CSES and PPWB subscales, whereas CPI, PCNP and RPA showed poorer global fit indices. For the SEP subscale, global fit could not be estimated due to sparse response distributions, and model adequacy was assessed using item-level diagnostics. Given the large sample size and skewed response patterns, global fit results were interpreted cautiously.

The GRM provided informative item-level results across all six subscales, although global model fit was heterogeneous across domains. Measurement precision was concentrated primarily between $\theta=-4$ and $\theta=0$, indicating that measurement precision for those with average or high levels of the underlying construct is limited. Inspection of the item probability functions (Figures S1–S18) indicated adequate category functioning across items, with response categories showing proper ordering and distinct peaks along the latent trait continuum, except for a few items where the second response category did not emerge as the most probable response at any point along the latent trait continuum (e.g., item 19). For all items, higher response categories became increasingly probable as trait levels increased, supporting the monotonic structure assumed by the Graded Response Model. Moreover, the item information functions

TABLE 2 | Descriptive statistics of the DISC-N ($N = 2290$).

Item	Mean	SD	Skewness	Kurtosis	Pct-1	Pct-2	Pct-3	Pct-4	Pct-5	Loading	R-Squared
1	4.4	0.74	-1.13	1.06	0.2	1.3	9.8	35.2	53.5	0.79	0.62
2	4.3	0.77	-1.18	1.94	0.7	1.7	9.7	42.6	45.3	0.63	0.39
3	4.58	0.64	-1.5	2.34	0.1	0.7	5.5	29	64.7	0.77	0.59
4	3.98	0.97	-0.76	0.02	1.4	6.7	19.8	37.1	35.1	0.74	0.54
5	4.38	0.78	-1.19	1.12	0.3	1.7	11.2	32.4	54.2	0.81	0.65
6	4.69	0.6	-2.26	6.57	0.3	0.6	3.4	21.3	74.4	0.64	0.41
7	4.49	0.68	-1.34	1.97	0.2	0.9	6.7	33.6	58.6	0.81	0.65
8	4.3	0.81	-1.09	0.98	0.4	2.7	11.7	37	48.1	0.82	0.66
9	4.33	0.77	-1.08	1.08	0.3	2.1	10.3	39	48.3	0.84	0.71
10	4.61	0.66	-1.95	4.66	0.4	0.6	5.5	24.2	69.3	0.73	0.54
11	4.55	0.66	-1.54	2.76	0.3	0.7	5.9	29.9	63.3	0.75	0.56
12	4.79	0.49	-2.88	10.99	0.2	0.1	2.3	14.8	82.5	0.79	0.63
13	4.54	0.74	-1.93	4.36	0.7	1.7	5.7	26.7	65.2	0.7	0.48
14	4.25	0.85	-1.11	1.02	0.6	3.9	11.3	38.6	45.6	0.72	0.52
15	4.73	0.55	-2.39	7.03	0.2	0.4	3	18.5	77.9	0.8	0.64
16	3.65	1.38	-0.65	-0.89	10.7	13.3	14.2	23.7	38.1	0.7	0.49
17	4.28	1.04	-1.51	1.59	3	5.7	9.1	25.2	57	0.77	0.59
18	4.15	0.95	-1.17	1.15	2	4.2	13.8	36.3	43.6	0.79	0.62
19	4.32	0.78	-1.14	1.45	0.6	1.8	10.7	38.8	48.1	0.82	0.67
20	4.38	0.83	-1.57	2.8	1.3	2	9	32.4	55.4	0.71	0.51
21	4.57	0.63	-1.59	3.66	0.3	0.3	4.3	31.9	63.1	0.69	0.47
22	4.57	0.65	-1.74	4.17	0.4	0.5	4.8	29.7	64.5	0.7	0.49
23	4.61	0.63	-1.82	4.65	0.4	0.4	4.1	28.5	66.6	0.75	0.56
24	4.36	0.85	-1.58	2.77	1.4	2.8	7.8	34.1	53.9	0.77	0.59
25	4.02	0.99	-0.88	0.21	1.6	6.8	17.4	36.1	38.2	0.84	0.71
26	3.79	1.19	-0.73	-0.47	5	12.2	17.3	29.7	35.8	0.75	0.56
27	3.68	1.2	-0.59	-0.63	5.5	12.7	21.4	28.5	31.8	0.78	0.6
28	4.35	0.9	-1.52	2.1	1.5	3.3	10.3	28.4	56.5	0.72	0.51
29	4.14	0.98	-1.13	0.81	1.8	5.8	13.4	34.6	44.5	0.9	0.81
30	4.18	0.93	-1.16	1.08	1.5	4.7	12.8	36.6	44.5	0.91	0.84
31	4.42	0.8	-1.63	3.13	1	2.1	7.2	33.2	56.5	0.85	0.72
32	4.35	0.73	-1.04	1.28	0.3	1.2	9.6	41	47.9	0.82	0.67
33	4.22	0.97	-1.42	1.79	2.5	4.6	9.4	35.6	47.9	0.74	0.55
34	4.13	0.99	-1.13	0.83	2.1	5.6	13.8	34.7	43.9	0.76	0.57
35	3.71	1.17	-0.61	-0.58	4.7	12.9	20.4	30.4	31.6	0.76	0.58
36	4.59	0.72	-2.25	6.22	1	1.1	4.7	24	69.1	0.7	0.48

Abbreviation: pct, percentage of each response category.

(Figures S1–S18) revealed that most items contribute maximal information at the lower end of the trait, with few items offering meaningful discrimination at higher levels. Given that the

primary aim of the IRT analyses was exploratory and descriptive, these patterns were interpreted as informative of scale functioning rather than as grounds for item revision or removal.

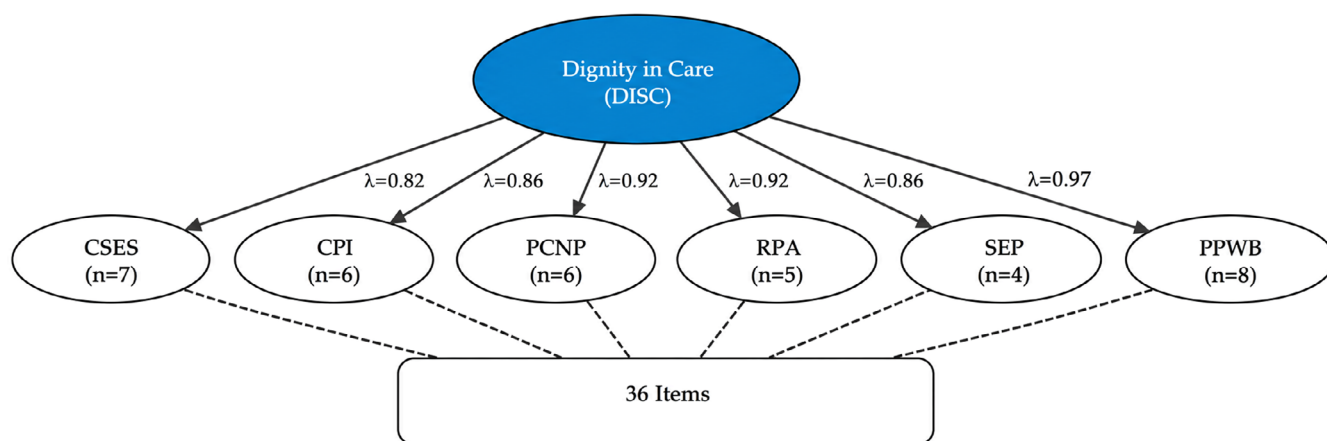


FIGURE 1 | Second-order confirmatory factor analysis model of the Dignity in Care Scale for Nurses (DISC-N), showing standardized factor loadings between the higher-order dignity construct and the six first-order dimensions. The figure shows standardised factor loadings from the higher-order dignity construct to the six first-order dimensions; CSES, use communication skills to provide emotional support; CPI, ensure confidentiality of personal information; PCNP, provide patient care needs promptly; RPA, respect for patient's autonomy; SEP, provide a safe environment for the patient; PPWB, protect the patient's well-being. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jocn.70566)]

Discrimination parameters were moderate to high across all six DISC-N subscales, ranging from 1.307 to 6.440 ($M=2.31$, $SD=0.87$). Threshold parameters were properly ordered across all items, indicating adequate category functioning. Thresholds were primarily located in the lower range of the latent trait (approximately -3.24 to -0.14), suggesting that the scale is more sensitive to lower levels of the construct.

Empirical and marginal reliability results were satisfactory for all DISC-N subscales, ranging respectively from 0.75 to 0.87 and from 0.74 to 0.86.

3.6 | Internal Consistency

Internal consistency was assessed using composite reliability coefficients. High reliability was observed across all DISC-N subscales, with values ranging from 0.823 to 0.918 (CSES = 0.92, CPI = 0.83, PCNP = 0.85, RPA = 0.88, SEP = 0.89, PPWB = 0.82). The composite reliability for the overall 36-item composite was excellent (0.981). The item total correlation ranged from 0.48 (item #12) to 0.80 (item #30).

3.7 | Construct Validity

The total DISC-N score showed a moderate positive correlation with the overall HECS score ($r=0.47$, $p<0.001$), indicating that higher perceptions of dignity-preserving care were correlated with a more positive ethical climate. Among the DISC-N factors, correlations with HECS total scores ranged from $r=0.35$ (CSES factor) to $r=0.45$ (PPWB factor), all statistically significant at $p<0.001$. When examining the two HECS dimensions, the DISC-N total score correlated more strongly with Ethical Vision of Patient Care ($r=0.48$, $p<0.001$) than with Managerial Support ($r=0.37$, $p<0.001$). Similar patterns emerged for individual DISC-N subscales, with coefficients generally higher for Ethical Vision (range $r=0.36$ – 0.46) than for Managerial Support (range $r=0.27$ – 0.35). These findings support the construct validity of the DISC-N.

4 | Discussion

The Italian validation of the DISC-N confirmed the original six-dimensional structure, demonstrating excellent reliability and validity. These findings indicate that Italian nurses conceptualize dignity in a manner largely consistent with colleagues from the original study (Lin and Tsai 2019), supporting the cross-cultural validity of the instrument. Measurement invariance across gender, age and professional role provides additional robustness, allowing meaningful comparisons between subgroups and expanding the potential applications in both clinical and educational settings. This result is particularly relevant in ethical and clinical research, as it supports the application of the DISC-N across diverse populations. Similar evidence was obtained across age groups and professional role, strengthening the methodological robustness of the instrument. Full invariance across all groups therefore allows for meaningful I score comparisons, supporting both clinical evaluation and educational monitoring of dignity-preserving practices.

Furthermore, the IRT analysis confirmed the overall psychometric quality of the items, showing moderate to high discrimination parameters. Test information functions indicated that the scale achieves its highest measurement precision in the low-to-moderate range of the latent trait, making it particularly suitable for distinguishing respondents at lower-to-moderate levels of dignity-preserving practice. Future refinements could enhance sensitivity at the upper end of the trait by incorporating more challenging items.

The original validation by Lin and Tsai (Lin and Tsai 2019) reported a Cronbach's α of 0.93 for the total scale. In the present study, reliability was evaluated using composite reliability in accordance with the multidimensional factor structure. Composite reliability was 0.981 for the total score and ranged from approximately 0.82 to 0.92 across domains. Although very high Cronbach's alpha values have traditionally been considered a possible indication of item redundancy (Tavakol and Dennick 2011), this rule of thumb cannot be directly transferred

as an upper cut-off for model-based composite reliability. Moreover, the high reliability of the overall DISC-N should be interpreted in the context of its length and the substantial shared variance among its six related domains. At the domain level, reliability estimates were less extreme, and the complementary CFA and IRT findings did not provide evidence of widespread redundancy warranting item removal.

Maintaining the original factor structure is particularly noteworthy given the cultural differences between the Taiwanese context in which the instrument was developed and the Italian context. As highlighted by Lin and Tsai (2019), the six identified domains—communication for emotional support, information confidentiality, timely responsiveness to needs, respect for autonomy, safe environment and well-being protection—represent universal dimensions of dignity in nursing care. The replicability of this structure in the Italian context suggests that, despite organizational differences in healthcare systems, the fundamental principles of dignity remain constant across cultures. The stability of the factor structure, confirmed through confirmatory factor analysis and measurement invariance with excellent fit indices, supports the applicability of the instrument for systematic evaluation of dignity-oriented nursing practices. Demonstrating measurement invariance across different subgroups represents a significant methodological contribution compared to the original validation, ensuring that the tool can be used equitably across diverse nursing populations.

The results of the present study revealed interesting patterns compared to the original validation. While Lin and Tsai (2019) identified Communication Skills for Emotional Support (CSES) as the dimension with the highest mean score (3.77), followed by Confidentiality of Patient Information (CPI) (3.69), our data show a slightly different distribution while remaining consistent with this hierarchy. This alignment suggests that nurses, regardless of cultural context, recognize communication and confidentiality as priority elements in preserving dignity.

The dimension of Promptness of Care (PCNP), which showed the lowest scores in the original validation (3.42), exhibits similar characteristics in our study, confirming that it represents a cross-cutting challenge in nursing practice. As highlighted by Lin and Tsai, the relationship between promptness of care and the perception of dignity during hospitalization is particularly strong, suggesting the need to raise nurses' awareness of the impact that timely responses have on maintaining patient dignity. It is important to emphasize that dignity concerns not only patients but also healthcare professionals themselves. Recent studies have shown that the perception of dignity in the workplace significantly affects nurses' well-being and the quality of care (De Beer et al. 2024). In this regard, the Italian DISC-N can serve as a useful tool not only to monitor person-centered care but also to promote an organizational culture that supports professional dignity. The demonstrated construct validity, evidenced by positive correlations with the ethical climate, underlines the relationship between adequate working environment and behaviours that preserve patient's dignity. This aspect is particularly relevant in the Italian context, where organizational pressures and resource shortages

can compromise the dignity of both patients and healthcare providers (Piredda et al. 2025).

4.1 | Implications for Practice

As observed by Lin and Tsai in the Taiwanese context, difficulties related to privacy protection also emerge in Italy, particularly in hospital settings with multi-bed wards. The Italian validation of the DISC-N confirms that these issues are widespread and require both structural and behavioural interventions. From an applied perspective, the availability of a validated Italian version of the DISC-N allows for the integration of dignity assessment into professional development programs, academic training and quality improvement processes in healthcare.

The adequate construct validity with ethical climate measures suggests that taking into consideration the work environment is essential for enhancing adequate behaviours for enhancing the patient's dignity and future studies should explore this relationship further.

4.2 | Limitations

This study has several limitations. First, a convenience sampling method was used, which may reduce the representativeness of the sample relative to the entire Italian nursing population. In addition, the cross-sectional design does not allow for causal inferences. Finally, the study included only Italian nurses and nursing students, limiting the generalizability of the findings to other cultural contexts.

5 | Conclusion

The Italian DISC-N showed a stable six-domain structure, good reliability and evidence of construct validity in registered nurses and nursing students. It provides an instrument for assessing self-reported dignity-preserving nursing practice in Italian clinical and educational settings. Its use may support education, professional development, and quality-improvement activities specifically focused on the preservation of patient dignity. Further research should examine its performance in representative samples and in longitudinal studies.

Author Contributions

S.M., D.L., M.D.N.: writing – original draft, methodology; A.B., B.M.: conceptualisation, writing – review and editing; E.V., M.T., G.C., D.C., A.D., M.Z., D.F.M., D.R., R.A., G.R., L.S.: writing – review and editing; M.D.N., S.C., D.L.: data curation, formal analysis; A.B., B.M.: supervision.

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Statistical statement: The authors have checked to make sure that our submission conforms as applicable to the Journal's statistical guidelines. The statistics were checked prior to submission by an expert member of the research team with adequate education in the field (Marco Di Nitto). The author(s) affirm that the methods used in the data analyses are suitably applied to their data within their study design and context, and the statistical findings have been implemented and interpreted correctly. The author(s) agree to take responsibility for ensuring that the choice of statistical approach is appropriate and is conducted and interpreted correctly as a condition to submit to the Journal.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Figure S1:** Item probability functions for the Communication Skills for Emotional Support subscale of the DISC-N. **Figure S2:** Item information functions for the Communication Skills for Emotional Support subscale of the DISC-N. **Figure S3:** Test information function for the Communication Skills for Emotional Support subscale of the DISC-N. **Figure S4:** Item probability functions for the Confidentiality of Personal Information subscale of the DISC-N. **Figure S5:** Item information functions for the Confidentiality of Personal Information subscale of the DISC-N. **Figure S6:** Test information function for the Confidentiality of Personal Information subscale of the DISC-N. **Figure S7:** Item probability functions for the Provide Patient Care Needs Promptly subscale of the DISC-N. **Figure S8:** Item information functions for the Provide Patient Care Needs Promptly subscale of the DISC-N. **Figure S9:** Test information function for the Provide Patient Care Needs Promptly subscale of the DISC-N. **Figure S10:** Item probability functions for the Respect for Patient's Autonomy subscale of the DISC-N. **Figure S11:** Item information functions for the Respect for Patient's Autonomy subscale of the DISC-N. **Figure S12:** Test information function for the Respect for Patient's Autonomy subscale of the DISC-N. **Figure S13:** Item probability functions for the Safe Environment for the Patient subscale of the DISC-N. **Figure S14:** Item information functions for the Safe Environment for the Patient subscale of the DISC-N. **Figure S15:** Test information function for the Safe Environment for the Patient subscale of the DISC-N. **Figure S16:** Item probability functions for the Protect the Patient's Well-Being subscale of the DISC-N. **Figure S17:** Item information functions for the Protect the Patient's Well-Being subscale of the DISC-N. **Figure S18:** Test information function for the Protect the Patient's Well-Being subscale of the DISC-N. **Table S1:** General reporting recommendations relevant for all studies on measurement properties.