

Original

Spanish version of the Nursing Managers' Work Perception Scale: translation, cross-cultural adaptation and psychometric validation



Estefanía Coello Gonçalves Canedo^{a,b,c,*}, Paula San Martín González^b, Natália Quintero Flórez^b,
María Manuela Ferreira Pereira da Silva Martins^c

^a Department of Nursing, Faculty of Nursing and Physiotherapy, University of Salamanca, Salamanca, Spain

^b Department of Nursing, Faculty of Health Sciences, Pontifical University of Salamanca, Salamanca, Spain

^c Abel Salazar Biomedical Sciences Institute, University of Porto, Porto, Portugal

ARTICLE INFO

Article history:

Received 9 July 2025

Accepted 20 August 2025

Available online 24 October 2025

Keywords:

Exploratory factor analysis

EPTGE

Instrument validation

Leadership

Nurse management

ABSTRACT

Objective: To assess the reliability and validity of the Spanish version of the Nursing Managers' Work Perception Scale (EPTGE).

Method: A cross-sectional, methodological study was conducted with 140 nurse managers. Descriptive statistics, internal consistency (Cronbach's alpha), and exploratory factor analysis (EFA) with Varimax rotation were applied. Kaiser-Meyer-Olkin (KMO) and Bartlett's tests assessed sample adequacy.

Results: An excellent internal consistency was found (Cronbach's alpha = 0.961). KMO was 0.906; Bartlett's test was significant ($p < 0.001$). EFA revealed eight components explaining 66.86% of the total variance, consistent with the original scale structure.

Conclusions: The Spanish version of the EPTGE demonstrates to be a valid and reliable instrument to assess nursing management activities.

© 2025 SESPAS. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Versión española de la Escala de Percepción del Trabajo de Gestión en Enfermería: traducción, adaptación cultural y validación psicométrica

RESUMEN

Objetivo: Evaluar la fiabilidad y la validez de la versión española de la Escala de Percepción del Trabajo de Gestión en Enfermería (EPTGE).

Método: Se realizó un estudio transversal y metodológico con 140 profesionales de enfermería gestores. Se aplicaron estadísticas descriptivas, consistencia interna (alfa de Cronbach) y análisis factorial exploratorio (AFE) con rotación Varimax. La adecuación muestral se evaluó mediante las pruebas de Kaiser-Meyer-Olkin (KMO) y de esfericidad de Bartlett.

Resultados: La consistencia interna fue excelente (alfa de Cronbach = 0,961). El valor KMO fue 0.906 y la prueba de Bartlett fue significativa ($p < 0.001$). El AFE reveló ocho componentes que explicaron el 66,86% de la varianza total, en consonancia con la estructura original de la escala.

Conclusiones: La versión española de la EPTGE demuestra ser un instrumento válido y fiable para evaluar las actividades de gestión en enfermería.

© 2025 SESPAS. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la CC BY-NC-ND licencia (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Palabras clave:

Análisis factorial exploratorio

EPTGE Validación de instrumentos

Liderazgo

Gestión en enfermería

Introduction

Nursing leadership and management have gained increasing relevance in recent decades, driven by the need to ensure more effective, safer, and patient-centered health systems. The World Health Organization highlights the strengthening of nursing leadership as a strategic priority to achieve universal health coverage, reduce inequalities, and improve the quality of care.^{1,2} In line with this vision, the International Council of Nurses affirms that nurse managers and leaders must be empowered to participate in

decision-making at all levels of the healthcare system, promoting efficiency, ethical integrity, and sustainability.³

Historically, nursing management focused on staff supervision and the organization of care-related tasks.⁴ However, this role has evolved towards a more strategic vision, encompassing resource planning, coordination of multidisciplinary teams, continuous quality improvement, patient safety, and the implementation of healthcare policies.⁵ This shift has positioned nursing leadership as a key competency that directly impacts clinical outcomes, team satisfaction, talent retention, and workplace climate.⁴⁻⁶ Numerous studies have shown that transformational and participative leadership styles in nursing are associated with higher care quality, lower staff turnover, and increased organizational commitment.^{4,7,8} However, developing and reinforcing these competencies requires

* Corresponding author.

E-mail address: ecoellogo@usal.es (E. Coello Gonçalves Canedo).

valid and reliable tools that allow for their objective and ongoing assessment.^{4,9}

Despite growing international recognition of the importance of evaluating nursing leadership and managerial performance, few validated instruments are currently available. Filomeno et al.,¹⁰ in their recent systematic review identified ten instruments to measure nurse manager competencies at different hierarchical levels. However, none of them were validated for Spanish-speaking contexts. This gap limits the implementation of evidence-based strategies for leadership development and hinders the design of targeted management training programmes.^{5,10,11}

In this context, and according to Orts-Cortés et al.¹² reflections, there remains an urgent need for culturally adapted tools to assess nurse managerial roles from a professional, ethical, and organizational perspective within the Spanish healthcare system.

The Nursing Managers' Work Perception Scale (EPTGE), developed in Portugal, by Martins and Gonçalves,⁹ provides a robust framework for assessing performance in key management domains. The original scale includes 42 items across eight dimensions and has demonstrated strong psychometric properties in Portuguese healthcare settings.⁹ Its adaptation to the Spanish context is essential to align leadership evaluation with both international standards and local realities.

The translation and cultural adaptation of tools such as the EPTGE help to address this gap by ensuring not only linguistic equivalence but also cultural relevance. Psychometric validation is necessary to confirm that the scale retains its statistical integrity and theoretical structure in the new setting.

Therefore, the aim of this study was to translate, culturally adapt, and validate the EPTGE scale for the Spanish context, providing a rigorous and specific tool to assess nurse managers' performance, promote quality improvement, and support alignment with institutional policy and international benchmarks.

Methods

Study design

A two phases cross-sectional study was conducted between May 2024 and April 2025. The first phase involved the translation and cross-cultural adaptation of the EPTGE scale into Spanish, ensuring both linguistic and conceptual equivalence. The second phase, consisted of the psychometric validation of the adapted version. Formal authorisation was obtained from the authors of the scale before starting the study.

First phase

The Beaton et al.^{13,14} cross-cultural adaptation guidelines were followed, including direct translation, back-translation, expert committee consensus version, and quality of translation analysis, involving scale pretesting. Special attention was given to semantic, idiomatic, conceptual, and experiential equivalence in the Spanish context.

1) Translation (from Portuguese to Spanish)

The translation was performed independently by two bilingual nurses, both native Portuguese speakers, fluent in Spanish language. Following an exhaustive analysis and including a cultural adaptation. The similar meaning of the original scale items was guaranteed.

2) Synthesis (orphan)

A synthesis of both translations was developed through expert consensus with the research team, producing the first reconciled version ([Supplementary Material 1](#)).

3) Back translation (from Spanish to Portuguese)

Subsequently, the synthesis document was blindly translated by two additional bilingual nurses who had no prior knowledge of the original instrument.

4) Expert committee review

The back translation versions were reviewed by the authors and the expert panel, to ensure conceptual fidelity and to finalise a pre-test version of the scale ([Supplementary Material 2](#)). Allowing the verification of the translation validity and certifying the meaning replication of the original version items.

5) Pretesting

A pre-test study was performed to conclude this first phase. It was carried out with a panel of ten Spanish nursing faculty members unfamiliar with the EPTGE. They were requested to evaluate item clarity, cultural relevance, and terminology adequacy. Minor revisions were made based on their feedback. The translation was specifically adapted for use in Spain and is not generalisable to other Spanish-speaking countries.

Second phase

1) Psychometric validation

A non-probabilistic snowball sampling method was performed. Eligible participants were registered nurses in managerial or leadership roles working in Spanish healthcare institutions. Data collection was carried out via an online survey distributed between December 2024 and April 2025, with the support of the Spanish Association of Nurse Managers and the General Spanish Nursing Council. Preceded by a virtual Free and Informed Consent Form, consisting of an explanation of the research page and a data authorization request.

The survey included a sociodemographic and professional questionnaire (gender, age, academic degrees, area of expertise, years of professional nurse practice, years of nurse management practice, years in the current service and nature of the institution of filiation), and the second consensus version of the EPTGE scale ([Supplementary Material 3](#)).

2) Instrument

The EPTGE was developed by Martins and Gonçalves,⁹ to assess and analyse nurse managers' performance within the healthcare units, their staff and the general population. The final Portuguese version is structured with eight dimensions unfolded by management activities performed by nurse managers/leaders, recognised by the Portuguese nurse manager advanced skills and referred by the Portuguese Council of Nurses.⁹

This psychometric instrument consists of 42 items (activities) distributed by the eight dimensions: Planning, organisation, management and control (10 items), Professional, ethical and legal practice (6 items), Quality and safety management (7 items), Professional development (4 items), Political intervention and advisory (5 items), Quality of care insurance (4 items), Practical training coordination (3 items), and Nursing activities management (3 items).⁹ Items are rated on a four-point Likert scale (1 = never, 4 = always), with total scores ranging from 42 to 168. The EPTGE

scale is a reliable instrument that has been applied in different Portuguese studies.^{9,15}

3) Statistical analysis

Data analysis was conducted with IBM SPSS, with a significance level of $p < 0.05$. Construct validity was assessed through exploratory factor analysis (EFA) using principal component analysis with Varimax rotation. Sampling adequacy was evaluated using the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. Factor retention followed Kaisers' criterion (eigenvalue > 1), and internal consistency was measured with Cronbach's alpha.

4) Ethical considerations

The study was performed in accordance with the principles of the Declaration of Helsinki (revised 2013) and was approved by a Spanish local University ethics committee (041.10.2024). Participation was voluntary and anonymous, and informed consent was obtained from all participants.

Results

First phase

Both translated versions showed a high degree of semantic equivalence, with only minor lexical variations that did not modify the original meaning of the items. Discrepancies were addressed through expert discussion and the clearest and most contextually appropriate expressions were selected by consensus. No major changes were required after harmonisation, and the final version retained all 42 items from the original scale.

Second phase

1) Demographic and work-related characterisation

The sample consisted of 140 nurse managers or in formal leadership roles, working in Spain Healthcare System. Most participants were female (81.4%) with ages ranging from 24 to 72 years (mean: 46.54; standard deviation [SD]: 9.499). The average years of professional experience as a registered nurse was 23.22 (SD: 9.529), and in managerial or leadership roles, 8.47 years (SD: 7.326).

2) Descriptive statistics of the EPTGE

All Likert scale points were answers covered, confirming the adequacy of the response format and item variability (Table 1). An excellent internal consistency was found, with a Cronbach's alpha coefficient of 0.961 and 0.963 when calculated based on standardised items, indicating high reliability.

The mean scores ranged from 2.70 to 3.54, suggesting generally high self-perceived engagement with the listed managerial activities. The highest mean score was observed at the "Cares about nursing and patient values" item (mean: 3.54; SD: 0.541), and the "Take part in the definition and implementation of the institutional health policies" (mean: 2.70; SD: 0.862) item, was the lowest mean score found. The SD ranged from 0.541 to 0.981, indicating moderate variability across answers, with some items like "Participates in shift handover" (0.981) showing greater dispersion.

Sample adequacy was confirmed with a KMO value of 0.906, indicating excellent suitability for factor analysis. Bartlett's test of sphericity was also significant ($\chi^2 = 4032.017$; $df = 861$; $p < 0.001$), supporting the factorability of the correlation matrix.

Additionally, EFA was conducted through principal component analysis with Varimax rotation. Eight components with eigenvalues greater than 1 were extracted, explaining 66.86% of the total variance, in alignment with the original structure of the Portuguese version. Most items demonstrated strong factor loadings and communalities ranging between 0.534 and 0.768, indicating that the items were well-represented by the underlying factors (Tables 2 to 4).

Discussion

The Spanish version of the EPTGE demonstrated excellent internal consistency (Cronbach's alpha = 0.961), consistent with the psychometric properties of the original Portuguese scale, which also reported alpha coefficients above 0.90.⁹ This confirms the internal homogeneity of the instrument and supports its reliability, capturing the multidimensional nature of nurse management activities.

Construct validity was supported through EFA, which extracted eight components accounting for 66.86% of the total variance. This structure aligns with the original factor configuration,⁹ suggesting conceptual equivalence and structural robustness in the Spanish adaptation. The strong communalities and factor loadings further confirm the adequacy of the internal structure.

At the item level, the highest mean score was observed for "Cares about nursing and patient values" (mean: 3.54; SD: 0.541), reflecting a strong ethical commitment among Spanish nurse managers. Similar trends were found in the scoping review of managerial competences, in which "caring for people" and "being visionary" emerged as key leadership attributes.¹¹ Similarly, items related to professional development and team motivation, such as "Motivates the nursing team to self-training" and "Promotes team commitment and motivation", also scored highly, reflecting the integration of transformational leadership traits in daily nurse management.⁶

Conversely, the lowest mean score was associated with the item "Take part in the definition and implementation of the institutional health policies" (mean: 2.70; SD: 0.862), suggesting limited engagement of nurse managers in higher-level strategic decision-making. This gap reflects broader challenges in healthcare governance, where nurses are often excluded from policymaking processes. Trend documented in previous literature, who identified a lack of time, knowledge, and organisational support as barriers to nurses' participation in policy development.¹⁶ Similarly, an Ethiopian study reported that 58% of nurse managers were excluded from strategic decision, largely due to inadequate managerial support and poor feedback mechanisms.¹⁷

Moderate variability was observed across several items, with "Participates in shift handover" (SD: 0.981), possibly reflecting variations in institutional practices or expectations, and organisational culture, and underscores the need to contextualise managerial roles based on local operational structures, and care delivery models.

Nursing leadership competency have been strongly associated with job satisfaction and retention. Mirzaei et al.¹⁸ reported that resource allocation, support, and quality control explained 87.3% of the variance in job satisfaction and 81.3% in intention to leave. Furthermore, some studies found that nurse manager turnover is associated with the increases of adverse events, such as pressure ulcers and falls,¹⁹ proving the managerial stability and competence impact on care outcomes.^{18,19} These findings reinforce the value of measuring and strengthening leadership competencies to improve retention and quality of care.

The validated Spanish EPTGE version, offers a reliable and valid tool for assessing nurse manager competencies across multiple domains. It offers a foundation for targeted training, performance evaluation, and leadership development strategies aligned with the

Table 1
Descriptive statistics of the scale.

Dim	A	As manager/leader you. . .	Never		Sometimes		Very often		Always	
			n	%	n	%	n	%	n	%
Planning, organisation, management and control	A1	Supervises the scheduled care delivery	4	2.9	36	25.7	72	51.4	28	20.0
	A2	Develops continuous quality improvement plans	1	0.7	26	18.6	81	57.9	32	22.9
	A3	Participates in shift handover	17	12.1	37	26.4	49	35.0	37	26.4
	A4	Assesses nursing performance	5	3.6	16	11.4	70	50.0	49	35.0
	A5	Creates, supports and develops cohesion, team spirit and the workplace atmosphere, managing conflicts	0	0.0	8	5.7	56	40.0	76	54.3
	A6	Promotes team commitment and motivation (global vision)	2	1.4	2	1.4	63	45.0	73	52.1
	A7	Ensures planning, organisation, coordination and evaluation of quality support services	4	2.9	12	8.6	76	54.3	48	34.3
	A8	Acts as multi- and intradisciplinary team trainer	1	0.7	30	21.4	68	48.6	41	29.3
	A9	Promotes and assesses the nursing and other staff satisfaction	4	2.9	25	17.9	78	55.7	33	23.6
Professional, ethical and legal practice	A10	Creates and preserves cooperative team working conditions	2	1.4	12	8.6	68	48.6	58	41.4
	A11	Cares about nursing and patient values	0	0.0	3	2.1	58	41.1	79	56.4
	A12	Discusses with the team ethical issues related to care	1	0.7	16	11.4	79	56.4	44	31.4
	A13	Controls patient privacy and individuality respect	0	0.0	8	5.7	57	40.7	75	53.6
	A14	Ensures legal conditions for care and professional practice	0	0.0	8	5.7	61	43.6	71	50.7
	A15	Discusses care decisions with nursing staff	2	1.4	15	10.7	84	60.0	39	27.9
	A16	Promotes clinical decision-making	2	1.4	14	10.0	73	52.1	51	36.4
	A17	Provides and guarantees necessary means and resources for the care provision	1	0.7	4	2.9	76	54.3	59	42.1
	A18	Contributes to good practice development through the appropriate material resources of the unit use	2	1.4	7	5.0	67	47.9	64	45.7
Quality and safety management	A19	Ensures safe environments identifying and managing risks and introducing corrective actions	1	0.7	7	5.0	70	50.0	62	44.3
	A20	Manages patients, families and team serious clinical situations	7	5.0	22	15.7	60	42.9	51	36.4
	A21	Coordinates the staff recruitment and integration process while undertaking a referral role	2	1.4	9	6.4	77	55.0	52	37.1
	A22	Makes decisions to ensure the best care for patients	2	1.4	9	6.4	69	49.3	60	42.9
	A23	Adapts material resources to needs, considering cost-benefit ratio	0	0.0	17	12.1	65	46.4	58	41.4
	A24	Promotes evidence-based nursing	1	0.7	21	15.0	53	37.9	65	46.4
	A25	Promotes formal and informal staff training	2	1.4	7	5.0	63	45.0	68	48.6
	A26	Encourages nursing staff to self-train	0	0.0	10	7.1	52	37.1	78	55.7
	A27	Provides practice reflection opportunities to promote staff commitment to their own skills management	3	2.1	36	25.7	64	45.7	37	26.4

Table 1
(Continued)

Dim	A	As manager/leader you. . .	Never		Sometimes		Very often		Always	
			n	%	n	%	n	%	n	%
Political intervention and advisory	A28	Participates in Institutional health policy definition and implementation	9	6.4	52	37.1	51	36.4	28	20.0
	A29	Participates in the units' strategic planning	4	2.9	26	18.6	73	52.1	37	26.4
	A30	Produces service reports	8	5.7	36	25.7	61	43.6	35	25.0
	A31	Develops and undertakes department projects, involving himself and the staff in those actions	1	0.7	30	21.4	71	50.7	38	27.1
	A32	Participates in working groups and committees in the field of clinical and non-clinical risk management	4	2.9	31	22.1	59	42.1	46	32.9
Quality of care insurance	A33	Analyses patient risks related to the care and unit conditions	3	2.1	18	12.9	84	60.0	35	25.0
	A34	Ensures safe staffing in accordance with the professional quality standards	4	2.9	11	7.9	79	56.4	46	32.9
	A35	Analyses and assesses the quality of care provided and implements corrective actions	2	1.4	22	15.7	64	45.7	52	37.1
	A36	Develops, applies, evaluates and updates procedures to guide equipment and materials handling	1	0.7	17	12.1	69	49.3	53	37.9
Practical training coordination	A37	Organises and promotes nursing meetings	3	2.1	20	14.3	74	52.9	43	30.7
	A38	Provides guidance on the most complex care	3	2.1	23	16.4	77	55.0	37	26.4
	A39	Ensures formal communication procedures between staff and other collaborators	4	2.9	14	10.0	74	52.9	48	34.3
Nursing activities management	A40	Calculates required nursing workforce according to the service conditions	3	2.1	11	7.6	55	39.3	71	50.7
	A41	Allocates and plans nursing according to care intensity and complexity, by pre-determined methods to anticipate the number of care hours required	10	7.1	25	17.9	67	47.9	38	27.1
	A42	Allocates nurses according to patients' needs	6	4.3	19	13.6	58	41.4	57	40.7

A: activity; Dim: dimension.

Table 2
Factor structure and commonalities.

Dim	A	F.1	F.2	F.3	F.4	F.5	F.6	F.7	F.8	Commonalities
PODC	A1	.495	.015	.536	.205	-.231	.308	.057	.109	.737
	A2	.558	.158	.311	-.182	-.284	.134	.008	.198	.604
	A3	.274	-.148	.332	.414	.277	.022	-.041	.389	.609
	A4	.631	-.018	.409	.149	-.048	.202	-.024	.254	.696
	A5	.688	-.266	-.244	-.074	-.137	-.243	-.093	.123	.711
	A6	.694	-.187	-.104	-.151	-.054	-.314	.120	.145	.687
	A7	.691	-.103	.028	.069	-.331	.015	-.234	-.015	.658
	A8	.644	.131	.038	-.130	-.171	-.107	-.152	-.198	.553
	A9	.708	.016	.064	.034	-.217	-.109	-.105	.192	.613
	A10	.771	-.051	-.101	-.068	-.320	-.117	-.095	.029	.738
PELP	A11	.668	-.146	-.098	-.224	-.064	-.015	-.041	.022	.534
	A12	.687	-.106	-.023	-.129	-.108	-.019	-.292	-.056	.601
	A13	.704	-.246	.007	.017	-.053	.182	.089	-.207	.643
	A14	.740	-.142	-.087	-.026	-.146	.118	.003	-.184	.645
	A15	.650	-.106	.090	-.095	-.279	.113	-.319	-.195	.682
	A16	.599	.009	.237	.022	.171	.203	-.251	-.281	.629
QSM	A17	.738	-.339	-.118	.017	-.124	-.046	.212	.017	.736
	A18	.681	-.336	.107	.120	.098	-.059	.300	-.055	.708
	A19	.706	-.165	-.089	-.091	-.032	-.138	.330	.052	.674
	A20	.598	-.371	.273	.042	.194	-.214	.122	-.207	.713
	A21	.671	-.156	-.052	.046	.120	-.176	.079	.049	.534
	A22	.675	-.279	.109	.233	.044	-.034	.156	-.098	.637
PD	A23	.653	-.020	-.118	.189	-.179	-.145	.259	.094	.606
	A24	.643	.107	-.013	-.434	.199	.218	.044	-.011	.702
	A25	.686	-.036	-.084	-.375	.223	.198	-.067	.233	.768
	A26	.594	-.134	-.110	-.365	.160	.266	.086	.233	.674
	A27	.651	.356	.048	-.242	.167	.108	-.043	.130	.670
PIA	A28	.490	.523	-.146	.189	-.068	.053	.191	.103	.625
	A29	.542	.458	-.091	.171	-.172	.062	.270	.135	.666
	A30	.508	.577	.119	.007	.030	-.103	-.011	-.003	.618
	A31	.595	.489	-.061	-.084	-.069	-.047	.204	-.212	.696
QCI	A32	.478	.462	.060	-.196	.114	-.197	.244	-.312	.693
	A33	.692	-.049	.264	.123	.090	.186	.092	-.289	.701
	A34	.614	.026	-.399	.066	.109	.175	-.052	.092	.596
	A35	.771	.018	.009	-.035	.225	.184	.113	.010	.693
PCT	A36	.736	-.003	-.059	-.027	.192	.022	-.079	-.125	.605
	A37	.635	.369	.137	.158	.029	-.311	-.250	.067	.747
	A38	.596	.073	.393	.091	.333	-.268	-.120	-.021	.721
NAM	A39	.657	.101	.036	.043	.225	-.351	-.298	.101	.718
	A40	.592	-.022	-.539	.090	.204	.007	-.168	.113	.731
	A41	.533	.209	-.392	.497	-.031	.176	-.071	-.053	.768
	A42	.515	-.040	-.423	.439	.151	.201	-.130	-.160	.745

A: activity; Dim: dimension; F: factor; NAM: nursing activities management; PCT: practical training; PD: professional development; PELP: professional, ethical and legal practice; PIA: political intervention and advisory; PODC: planning, organisation, management and control; QCI: quality of care insurance; QSM: quality and safety management.

Table 3
Factor extraction and variance.

Component	1	2	3	4	5	6	7	8
Value	5.868	4.290	4.135	3.746	3.103	2.428	2.310	2.200
Variance	13.97%	10.22%	9.85%	8.92%	7.39%	5.78%	5.50%	5.24%
Cumulative per-centage	13.97%	24.19%	34.03%	42.95%	50.34%	56.12%	61.62%	66.86%

Table 4
Rotated component matrix.

Dim	A	1	2	3	4	5	6	7	8
PODC	A1	.147	.278	.201	.048	-.044	.727	-.037	.253
	A2	.141	.424	.345	.296	-.148	.419	.015	.017
	A3	.177	-.159	-.124	.028	.156	.603	.386	.015
	A4	.230	.258	.163	.231	.059	.663	.175	.156
	A5	.562	.469	.026	.240	.236	-.038	.218	-.110
	A6	.646	.309	.167	.278	.054	-.003	.240	-.086
	A7	.298	.647	.126	.096	.221	.233	.107	.106
	A8	.219	.522	.346	.157	.068	-.013	.186	.221
	A9	.354	.482	.254	.177	.142	.285	.236	-.055
	A10	.441	.619	.258	.197	.186	.090	.115	-.008
PELP	A11	.406	.410	.116	.394	.118	.016	.101	.087
	A12	.258	.575	.080	.291	.175	.056	.222	.172

Table 4 (Continued)

Dim	A	1	2	3	4	5	6	7	8
QSM	A13	.478	.332	.091	.243	.230	.164	-.062	.392
	A14	.429	.454	.177	.246	.265	.086	-.031	.290
	A15	.175	.695	.080	.182	.127	.134	.067	.299
	A16	.063	.313	.118	.243	.172	.203	.240	.571
	A17	.713	.312	.081	.226	.215	.131	-.011	.096
	A18	.710	.082	.073	.159	.126	.235	.103	.291
	A19	.692	.177	.252	.286	.095	.067	.048	.049
	A20	.620	.126	-.029	.086	-.045	.128	.305	.440
PD	A21	.543	.173	.138	.225	.205	.090	.280	.106
	A22	.598	.173	.075	.062	.219	.268	.140	.317
	A23	.580	.217	.342	.042	.255	.181	.050	-.056
	A24	.187	.195	.291	.689	.034	.018	.065	.253
	A25	.242	.228	.120	.760	.141	.115	.166	.069
	A26	.309	.150	.061	.722	.112	.128	-.016	.044
PIA	A27	.065	.195	.470	.547	.098	.153	.248	.112
	A28	.098	.054	.672	.105	.334	.178	.038	-.071
	A29	.199	.107	.676	.103	.270	.253	-.036	-.090
	A30	-.014	.161	.669	.140	.074	.130	.306	.090
QCI	A31	.187	.195	.734	.171	.118	-.050	.046	.191
	A32	.190	.045	.688	.160	-.082	-.178	.173	.296
	A33	.346	.205	.241	.162	.151	.300	.083	.579
	A34	.248	.186	.178	.389	.558	.027	.064	.018
PCT	A35	.373	.122	.282	.476	.266	.227	.143	.300
	A36	.326	.257	.219	.351	.292	.045	.265	.321
	A37	.115	.335	.469	.031	.168	.176	.583	.046
	A38	.262	.096	.219	.129	-.025	.248	.638	.331
NAM	A39	.246	.283	.211	.202	.193	.055	.670	.061
	A40	.268	.178	.090	.363	.645	-.124	.229	-.064
	A41	.130	.171	.325	-.025	.769	.134	.032	.072
	A42	.197	.121	.073	.059	.790	.027	.069	.230

A: activity; Dim: dimension; NAM: nursing activities management; PCT: practical training; PD: professional development; PELP: professional, ethical and legal practice; PIA: political intervention and advisory; PODC: planning, organisation, management and control; QCI: quality of care insurance; QSM: quality and safety management.

needs of the Spanish healthcare system. The strong ethical and motivational dimensions observed suggest a solid foundation upon which to build, although structural barriers to policy involvement remain a key area for improvement.

Study limitations

Several limitations should be acknowledged. The use of a non-probabilistic snowball sampling method may have introduced selection bias, limiting the sample representativeness. Additionally, since the EPTGE is a self-report instrument, social desirability bias may be presented by some participants. While the exploratory factor analysis confirms the structural validity, confirmatory factor analysis would provide further validation and improve generalizability, limitations that future research should address. Finally, although the scale demonstrated excellent internal consistency, the high Cronbach's alpha may suggest potential item redundancy within some dimensions. Moreover, the reliability assessment was limited to internal consistency, and the validity analysis was partially assessed in this study. Future studies should address these gaps and explore whether a shortened version of the instrument could maintain psychometric integrity while improving feasibility and response efficiency.

Conclusions

The Spanish EPTGE version demonstrates adequate psychometric properties providing a useful tool to measure, compare and enhance nurse managers' performance. Providing a structured instrument for leadership assessment, talent development, and strategic workforce planning, in the Spanish healthcare context.

Findings highlight the ethical and transformational leadership traits among nurse managers exposing a persistent gap in policy involvement and strategic decision-making. This underscores the need to strengthen the governance role of nurse leaders within

healthcare system, to promote safe, more effective, and person-centered care.

The validated EPTGE scale has broad potential applications in research, education, and clinical practice. Informing leadership development curricula, supporting performance evaluation systems, and facilitating national or international comparisons. Future research should include confirmatory factor analyses, and longitudinal designs, are encouraged to consolidate its utility across diverse healthcare settings.

Availability of databases and material for replication

There is no online material available for replication. For additional content, please contact the author.

Editor in charge

Salvador Peiró.

Transparency declaration

The corresponding author, on behalf of the other authors guarantee the accuracy, transparency and honesty of the data and information contained in the study, that no relevant information has been omitted and that all discrepancies between authors have been adequately resolved and described.

Authorship contributions

E. Coello Gonçalves Canedo: resources, conceptualization, investigation, methodology, data curation, formal analysis, supervision, validation, writing - original draft, writing, review and editing. P. San Martín González: conceptualization, investigation, methodology, data curation, writing original draft. N. Quintero Flórez: conceptualization, investigation, methodology, data cura-

What is known about the topic?

Effective nurse leadership is critical to ensure safe, high-quality, and person-centred care. However, only a few validated instruments exist to assess nursing leadership and managerial activities in Spanish.

What does the study add to the literature?

This study provides the validated Spanish version of the Nursing Managers' Job Perception Scale (EPTGE), offering a reliable and comprehensive tool to assess managerial performance across eight core dimensions. Bridging the identified gap in leadership and managerial activities evaluation among the Spanish reality.

What are the implications of the results?

The validated EPTGE scale enables health institutions to systematically identify strengths and weaknesses in nurse management performance, supporting competency-based development, and guiding leadership training. Supporting its integration into education, research, and workforce development strategies.

tion, writing original draft. M.M. Ferreira Pereira da Silva Martins: conceptualization, methodology, data curation, software, formal analysis, supervision, validation, writing, review and editing.

Conflicts of interest

None.

Funding

Open access funding provided by Universidad de Salamanca.

Acknowledgments

Authors would like to acknowledge the participants for their involvement, cooperation, and contribution to the scale validation, as well as the panel of experts and the nurses who pre-tested the scale. We would also thanks' B. Fernández-Lasquetty Blanc, the Spanish Association of Nurse Managers and the General Spanish Nursing Council for his kindly collaboration at the validation process, sharing the scale in their social networks.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.gaceta.2025.102527](https://doi.org/10.1016/j.gaceta.2025.102527).

References

1. World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership. Geneva: WHO; 2020. (Accessed 2025 Jul 8). Available from: <https://www.who.int/publications/i/item/9789240003279>.
2. World Health Organization. Year of the Health and Care Workers 2021. Geneva: WHO; 2021. (Accessed 2025 Jul 8). Available from: <https://www.who.int/campaigns/annual-theme/year-of-health-and-care-workers-2021>.
3. International Council of Nurses. Nurses: A voice to lead – a vision for future healthcare. Geneva: ICN; 2021. (Accessed 2025 Jul 8). Available from: <https://www.icn.ch>.
4. Canedo E, Fernandes C, Martins MM. Administration, management, and leadership theoretical approaches in undergraduate nurse education: a scoping review. *Millenium J Educ Technol Health*. 2024;2:e35452.
5. Fitzpatrick JJ, Alfes CM. Nurse leadership and management. New York: Springer; 2019.
6. Boamah SA, Spence Laschinger HK, Wong C, et al. Effect of transformational leadership on job satisfaction and patient safety outcomes. *Nurs Outlook*. 2018;66:180–9.
7. Cummings GG, Tate K, Lee S, et al. Leadership styles and outcome patterns for the nursing workforce and work environment: a systematic review. *Int J Nurs Stud*. 2018;85:19–60.
8. Wong CA, Cummings GG, Ducharme L. The relationship between nursing leadership and patient outcomes: a systematic review update. *J Nurs Manag*. 2013;21:709–24.
9. Martins MM, Gonçalves MC. Construction and validation of a manager's perception tool. *Rev Enferm UFPE On Line*. 2021;15:e245192.
10. Filomeno L, Forte D, Di Simone E, et al. Systematic review and psychometric properties analysis of first-, middle-, and top-level nurse manager's core competencies instruments. *J Nurs Manag*. 2024;2:265382.
11. González-García A, Pinto-Carral A, Sanz Villoro J, et al. Nurse manager core competencies: a proposal in the Spanish health system. *Int J Environ Res Public Health*. 2020;17:3173.
12. Orts-Cortés EM, Moreno-Casbas TM, González-María E, et al. Content validity of the Spanish version of the Practice Environment Scale of the Nursing Work Index. *Appl Nurs Res*. 2013;26:e5–9.
13. Beaton DE, Bombardier C, Guillemin F, et al. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*. 2000;25:3186–91.
14. Beaton D, Bombardier C, Guillemin F, et al. Recommendations for the cross-cultural adaptation of the DASH & QuickDASH outcome measures. Toronto: Institute for Work and Health; 2007. (Accessed 2025 Jul 8). Available from: <https://www.dash.iwh.on.ca>.
15. Alferes LPSP, Martins MMFP, Santos MR, et al. Nurse managers in mental health units: from activities to time management. *Rev Rene*. 2022;23:e71282.
16. Hajizadeh A, Zamanzadeh V, Kakemam E, et al. Factors influencing nurses' participation in the health policy-making process: a systematic review. *BMC Nurs*. 2021;20:128.
17. Tazebew C, Mulugeta T, Boka A. Nurse managers' involvement in decision-making and associated factors in selected government hospitals, Addis Ababa Ethiopia: a cross-sectional study. *SAGE Open Nurs*. 2023;9:23779608231157992.
18. Mirzaei T, Ghaffari R, Khazaei S, et al. The relationship of perceived nurse manager competence with job satisfaction and turnover intention among clinical nurses: an analytical cross-sectional study. *BMC Nurs*. 2024;23:10–32.
19. Warshawsky NE, Rayens MK, Stefaniak K, et al. The effect of nurse manager turnover on patient fall and pressure ulcer rates. *J Nurs Manag*. 2013;21:725–32.