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A new tool to assess patients' comfort during hospitalization: The Hospital Discomfort Risk questionnaire

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Abstract

Aim: We aimed to develop a tool for the assessment of the risk of patient discomfort in Spanish hospital wards.

Background: Several studies described tools to assess comfort but most are long and complex.

Methods: Cross-sectional study performed in three phases ((a) initial design; (b) refinement and psychometric testing; and (c) internal validation of the Hospital Discomfort Risk [HDR] questionnaire).

Results: A voluntary expert panel proposed the HDR questionnaire. Internal consistency and factorial analysis were investigated in 270 (53.7% men, mean age 57.33 ± 18.7 years) inpatients. Based on the Cronbach's α, three items were removed to the final 8-item version of the questionnaire. The HDR questionnaire showed a good predictive ability for identifying the risk of discomfort (c-index: .897, 95% CI 0.854–0.930; $p < .001$).

Conclusions: The HDR questionnaire could be useful for identifying inpatients at risk of discomfort, but further prospective studies should externally validate these results.

Implications in Nursing Management: Nurses are the healthcare professionals with better access to patients and the first in identifying complications of hospitalization. Patients' discomfort could be routinely assessed during hospitalizations using the HDR questionnaire. Nurse managers should play an important role in this accomplishment, by promoting its use and knowledge among the nurse staff.

KEYWORDS
comfort, hospitalization, nursing, risk assessment

1 | BACKGROUND

Comfort is a subjective feeling which could be significantly different depending on the patient and the situation. To date, several studies have developed tools and self-report scales to asses comfort and patient satisfaction in different contexts such as a hospital ward (Alves-Apóstolo, Kolcaba, Cruz-Mendes, & Calvário-Antunes, 2007;

Cheng & Lai, 2010; Hanzeliková, López-Muñóz, & Fusté-Moreno, 2017; Lorente, Losilla, & Vives, 2017; Montalvo et al., 2015; Nelson et al., 2014; Verheyen, Theys, Allonsius, & Descamps, 2011; You et al., 2013).

A good example is the Kolcaba scale, a validated questionnaire used to measure comfort, especially useful in healthcare facilities (Alves-Apóstolo et al., 2007; Kolcaba, 1994; Uribe, Torrado, &

Acevedo, 2015). This scale is still widely used by health researchers, due to its completeness, psychometric properties and reliability. However, it is long and complex. Other schemes have been described to be used specifically in hospitals. Thus, the comfort scale was designed to evaluate comfort in paediatric intensive care units (Ambuel, Hamlett, Marx, & Blumer, 1992). Another self-made scale measuring thermal comfort was used in different wards in health facilities in Belgium (Verheyen et al., 2011), whereas other instruments have measured comfort related to chronic pain (Shinde et al., 2014), in reanimation/ICU units (Kalfon et al., 2010) or psychiatric wards (Betemps, 1999).

During the last years, patient comfort during hospitalization is gaining attention. Indeed, it is associated with lower admissions and readmissions rates, higher patient satisfaction, shorter hospitalization periods and higher cost–benefit ratios (Lorente et al., 2017; Rodríguez, Dackiewicz, & Toer, 2014).

Given the relevance of the patient perceived comfort, it was necessary to design a specific and reliable tool to accurately assess comfort in hospitalization wards and, particularly, the risk of discomfort. The aim of this study was to develop and validate a simple and user-friendly tool for the assessment of the risk of patient discomfort in Spanish hospitalization wards.

2 | METHODS

This is a cross-sectional study carried out between 1 January 2017 and 31 April 2017.

The study was performed in three different phases. The first phase was the initial design of the questionnaire and involved a panel of voluntary experts. The second phase was the refinement and psychometric testing of the questionnaire, whereas the third phase was the internal validation of the questionnaire in hospitalized patients from different hospitals.

2.1 | Phase I: Initial design of the questionnaire

For the initial design of the questionnaire, a panel of 10 voluntary experts was included. These experts were be registered nurses with at least 5 years of experience in hospitals wards. All of them were interviewed and informed individually about the study. Items composing the first version of the questionnaire were obtained according to the scientific literature and the main factors influencing patient comfort as the discretion of the expert panel. Eleven questions were finally included in a self-reported questionnaire (Table S1). For simplicity, this questionnaire was named as Hospital Discomfort Risk (HDR) questionnaire.

As the study was performed in Spanish hospitals, the questionnaire was designed in Spanish and was translated into English for the present manuscript. The translation was done by an English native speaker with experience in translation of scientific texts. Importantly, the English version of the HDR questionnaire is an exact translation of the content included in the original Spanish version.

2.2 | Phase II: Refinement and psychometric testing of the questionnaire

The HDR questionnaire was provided to 270 patients hospitalized in medical–surgical wards from 6 different hospitals of the Region de Murcia (south-eastern Spain). We included patients ≥18 years, who were hospitalized at least one day. We only excluded those patients suffering any disorder or handicap that could difficult answering and understanding the study and/or the questionnaire. Importantly, hospitals with different bed occupancy were included, according to the cluster classification of the number of beds in hospital wards (Ministerio de Sanidad & Servicios Sociales e Igualdad, 2007). All patients included fulfilled the self-reported HDR questionnaire of 11 items. This questionnaire was then refined by testing the internal consistency. Items not reaching the minimum level of item–total correlation or completed data were removed. After that, a factorial and a new internal consistency analyses were performed.

2.3 | Phase III: Internal validation of the questionnaire

Finally, we tested the predictive performance and clinical usefulness of the HDR questionnaire for the identification of the risk of discomfort in the 270 inpatients included in the study.

2.4 | Statistical analysis

Categorical variables are presented as absolutes frequencies (percentages), while continuous variables are presented as mean ± SD (standard deviation) or median (interquartile range, IQR), as appropriate. The Kolmogorov–Smirnov test was used to check for normal distribution of continuous data.

The Cronbach's α was used to analyse the internal consistency, being 0.7 the minimum desirable score. Items were rejected if they fulfilled at least one of the following criteria: item–total correlation below 0.3 and/or more than 20% of missing or unclear responses.

An exploratory factor analysis (EFA) was performed to examine the structure, the relationship between variables and the construct validity. Principal components analysis (PCA) with varimax rotation was performed to determine factor loadings. Prior to this analysis, Kaiser–Meyer–Olkin (KMO) and Bartlett's sphericity tests were carried out to assess the suitability of the data for the EFA (Yong & Pearce, 2013).

The Pearson correlation coefficient was used to assess correlation between items present in the scale, whereas Student's t test was performed to compare mean scores in the HDR according to gender and hospital size.

Receiver operating characteristic (ROC) curves were used to investigate the predictive ability of the score, both as continuous and as categorical. The Youden index was used to determine the score with the best combination of sensitivity and specificity, in order to establish a cut-off value between low risk and high risk of discomfort.

We estimated the clinical usefulness and the net benefit of the HDR questionnaire by using the decision curve analysis (DCA), as was proposed by Vickers, Cronin, Elkin, and Gonen (2008). The DCA shows the clinical usefulness of a model based on a continuum of potential thresholds for an endpoint (*x*-axis; i.e., discomfort in the present study) and the net benefit of using the model to stratify patients at risk (*y*-axis) relative to assuming that no patient will have the endpoint. In this study, the prediction model (HDR questionnaire) is represented by a red line. Those models that are the farthest away from the slanted dashed black line (i.e., assume all endpoints) and the horizontal black line (i.e., assume none endpoint) at a particular threshold probability demonstrate the higher net clinical benefit.

All *p*-values < .05 were accepted as statistically significant. Statistical analysis was performed using SPSS 21.0 (SPSS, Inc), MedCalc v. 16.4.3 (MedCalc Software bvba) and STATA v. 12.0 (Stata Corp) for Windows.

3 | RESULTS

The HDR questionnaire proposed by the voluntary experts included eleven questions in a self-reported questionnaire. Each answered item was scored in a range from 1 to 5 points (being 1 the most positive and 5 the most negative). The final version of the HDR questionnaire covers values from 11 to 55 points. A higher score in the HDR questionnaire showed a higher risk of discomfort.

3.1 | Psychometric testing and internal validation of the HDR questionnaire

The internal consistency of the HDR questionnaire and a factorial analysis was investigated with the answers of inpatients from the real-world clinical practice. Each participant answered the questionnaire by him/herself, and if the participant was unable to fill out the form, the researcher completed the questionnaire by asking the questions orally to the patient. However, no patient reported difficulties in completing the questionnaire and none of the responses were missing or not clear. This cohort included 270 patients (145 [53.7%] men, mean age 57.33 ± 18.7 years) from six different hospitals (90 patients from hospitals with reduced bed occupancy, 180 from hospitals with extended bed occupancy) with medical–surgical wards (Table 1).

The Cronbach's α of the questionnaire was 0.687, and three items were under 0.3 in item–total correlation: "1. How would you rate the relationship with your hospital room companion?" (.226), "8. Would you consider that you are receiving enough and comprehensive information about the medical tests planned and/or performed to you?" (−.099) and "10. In overall, do you consider that you are receiving the appropriate information about your treatment?" (−.073) (Table 2). Therefore, these items were removed and, after that, the Cronbach's α was calculated again with a result of .745. Thus, the initial 11-item questionnaire was reduced to the final 8-item version of the HDR questionnaire (Table S2). Apart from the items removed, no other

TABLE 1 Baseline characteristics

	N = 270
Male sex, *n* (%)	145 (53.7)
Age (years), mean ± *SD*	57.33 ± 18.7
Body mass index (k/m^2), mean ± *SD*	26.5 ± 5.0
Marital status, *n* (%)	
Single	57 (21.1)
Married or partner	150 (55.6)
Divorced	37 (13.7)
Widowed	26 (9.6)
Hospitalization stay (days), mean ± *SD*	6.9 ± 7.8
Hospital size, *n* (%)	
Extended bed occupancy	180 (66.7)
Reduced bed occupancy	90 (33.3)
Main reason for hospitalization, *n* (%)	
Medical condition	169 (62.6)
Surgical intervention	101 (37.4)

Abbreviation: *SD*, standard deviation.

items were modified. The KMO index of the final HDR questionnaire was .713, and the Bartlett's test of sphericity was below .001, both confirming an appropriate EFA. After the factor analysis, no items had a factor loading below .5, so none were discarded (Table 3).

The mean HDR score obtained from the questionnaire was 21.13 ± 4.14. Males presented significantly lower score compared to females (20.65 ± 4.02 vs. 21.69 ± 4.22, *p* = .040), whereas hospitals with reduced bed occupancy also showed lower score in comparison with hospitals with extended bed occupancy (20.00 ± 3.77 vs. 21.69 ± 4.21, *p* = .001). Also, a significant negative correlation between the HDR score and age (*r* = −0.132, *p* = .030) was observed.

Of note, two different dimensions were found in the HDR score. Dimension 1 "environment" was composed by six items and explained 39.1% of the total variance, whereas dimension 2 "information" included two items and explained 21.6% of the total variance. Mean scores in the dimension "environment" were lower than in dimension "information". Nevertheless, when the internal consistency of both dimensions was analysed, Cronbach's α showed a result of .776 for "environment" and .794 for "information" (Table 3).

3.2 | Predictive performance of the HDR score and clinical usefulness

Receivers operating characteristic curve confirmed that the HDR score had a good predictive ability for identifying patients at risk of discomfort, with a c-index of .897 (95% CI 0.854–0.930, *p* < .001; Figure 1). According to the Youden index, a score of 20 showed the best combination of sensitivity and specificity. Thus, we established the cut-off value for "at risk of discomfort" as a score >20. When we performed the ROC curve with the HDR score as categorical still showed a good predictive ability for identifying patients at risk of discomfort, with a c-index of 0.817 (95% CI 0.743–0.891, *p* < .001; Figure 1). The DCA

TABLE 2 Internal consistency analysis of the first 11-item version of the questionnaire

Item	Item–total correlation
1. How would you rate the relationship with your hospital room companion?	.226
2. How would you rate the hospital facilities and equipment?	.542
3. In overall, how would you rate your hospital room?	.586
4. How noisy would you consider your hospital room?	.460
5. How comfortable would you consider your hospital bed?	.422
6. Would you consider that the healthcare staff ensures a comfortable environment at bedtime? (For example, by providing the appropriate level of temperature and dark)	.521
7. Would you consider that the healthcare staff employs the appropriate amount of time to provide you with comfort?	.436
8. Would you consider that you are receiving enough and comprehensive information about the medical tests planned and/or performed to you?	−.099
9. If you would do not receive the above information…, how much would it bother you?	.317
10. In overall, do you consider that you are receiving the appropriate information about your treatment?	−.073
11. If you would perceive a lack of information about your treatment…, how much would it bother you?	.311
Cronbach's α of the HDR score	.687

Note: Each item in the HDR questionnaire is scored in a range from 1 to 5 points. A higher score in the HDR questionnaire indicates a higher discomfort risk.

TABLE 3 Exploratory factor analysis, internal consistency analysis and mean score for each item of the Hospital Discomfort Risk (HDR) questionnaire

| Item	Factor loading	Mean (SD)	Corrected item–total correlation	Range	Cronbach's α
Dimension 1: Environment				6–28	.776
How would you rate the hospital facilities and equipment?	.774	2.03 (0.81)	.534	1–5	
In overall, how would you rate your hospital room?	.807	2.08 (0.80)	.578	1–5	
How noisy would you consider your hospital room?	.690	2.18 (0.99)	.449	1–5	
How comfortable would you consider your hospital bed?	.651	2.56 (0.99)	.440	1–5	
Would you consider that the healthcare staff ensures a comfortable environment at bedtime? (For example, by providing the appropriate level of temperature and dark)	.750	1.86 (0.71)	.516	1–4	
Would you consider that the healthcare staff employs the appropriate amount of time to provide you with comfort?	.681	2.03 (0.71)	.420	1–4	
Dimension 2: Information				2–10	.794
If you did not receive enough and comprehensive information about the medical tests planned and/or performed to you…, how much would it bother you?	.899	4.15 (1.00)	.335	1–5	
If you would perceive a lack of information about your treatment…, how much would it bother you?	.904	4.24 (0.86)	.315	1–5	
Cronbach's α of the HDR score					.745

Note: Each item in the HDR questionnaire is scored in a range from 1 to 5 points. A higher score in the HDR questionnaire indicates a higher discomfort risk.

graphically shows that the net benefit, and thus the clinical usefulness, of the HDR questionnaire was appropriate (Figure 2).

4 | DISCUSSION

The present study aimed to design a simple tool to assess patients' comfort during hospitalization. The final HDR questionnaire includes only eight questions and was validated in hospitalized patients from up to six different hospitals and demonstrated to have high content and construct validity, good internal consistency and good predictive ability for identifying patients at risk of discomfort. Although the HDR score could be completed by health professional by asking directly to patients, whenever possible, it should be completed by patients themselves, given the subjective nature of the comfort concept.
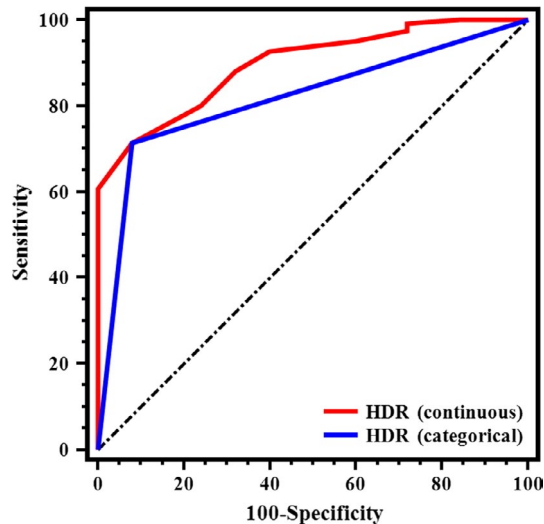
FIGURE 1 Receiver operating characteristic curves of the Hospital Discomfort Risk score as continuous and as categorical [Colour figure can be viewed at wileyonlinelibrary.com]

FIGURE 2 Decision curve analysis [Colour figure can be viewed at wileyonlinelibrary.com]

The HDR score analyses two different dimensions that affect the risk of discomfort in hospitals. The dimension "environment" expresses the risk of discomfort related to factors presented in the hospital environment such as the bedroom, the facilities and equipment or the staff. The noise is also kept in mind in the dimension "environment", and it has been described as one important factor influencing comfort. This particular noise not only comes from machinery but also comes from the staff (Buxton et al., 2012; Fillary et al., 2015). Another relevant variable influencing comfort is the way that health professionals treat the patient. Protocols stimulating good practices in patient comfort and welfare are the cornerstone to avoid discomfort (Walsh, 2017).

On the other hand, the dimension "information" of the HDR score evaluates the risk of discomfort concerning the perception of bad praxis in the provision of relevant information to the patient (regarding tests and treatment). Legally and ethically, patients should be properly informed about every decision during their hospitalization. First, it is important for their whole involvement in their own health, and second, because this empowerment allows them to decide the best option freely (Kelle Silva, Roberto dos Santos Marins, Cerqueira Nascimento Nobre, da Silva Frazão, & de Oliveira Santa Rosa, 2014). This aspect is usually underestimated in the assessment of patient's comfort and satisfaction, and the implementation of models of care centred in the patient should be a priority (Epstein & Street, 2011; Nelson et al., 2014).

With regard to the relationship between the score in the HDR questionnaire and categorical variables, we found significant results in the comparison of mean scores according to gender and to hospital size. According to the mean HDR score, males in our study felt more comfort than females. These outcomes are not aligned with a similar study where women perceived more comfort than men, particularly from health professionals (Silva-Fhon et al., 2015). Concerning the hospital size, the higher mean HDR score observed in big hospitals could be related to poor implementation of humanistic models of health care in
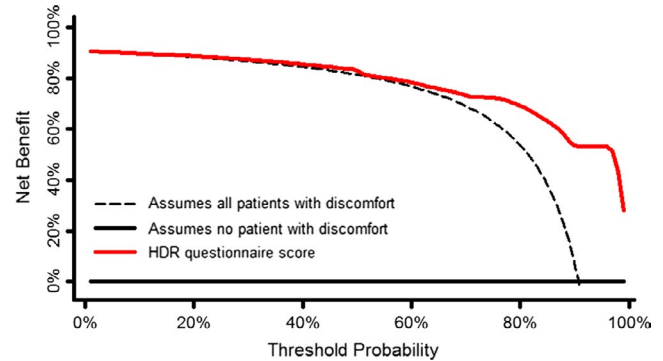
these types of hospitals. As we commented above, patient-centred care has shown promising results in terms of satisfaction, in both patients and health professionals (Epstein & Street, 2011; Nagington, Walshe, & Luker, 2015; Nelson et al., 2014). Finally, older patients perceived more comfort than younger patients. These results reflect a higher resilience in older people, or at least more experience, especially about hospitalization stays (Gooding, Hurst, Johnson, & Tarrier, 2012).

5 | LIMITATIONS

Our study has some limitations that we must acknowledge. First, the HDR score was derived and internally validated in different hospitals but in one region of Spain (Murcia). For this reason, there is a clear necessity to validate our results also in other regions and countries. Further prospective studies in other Spanish regions and abroad are warranted to externally validate the HDR questionnaire in order to implement it in clinical practice. Of note, the external validations performed in future should only include the final 8-item HDR questionnaire. In addition, longer follow-up during external validations will allow investigating associations between the HDR questionnaire and admission rates, hospitalization duration and cost–benefit ratio.

Second, the high mean age of the participants could also represent a bias. Therefore, it is not proved if our results would be valid in young patients so further studies in this particular population are also needed. However, hospitalized patients tend to be older, and that is why in our opinion the HDR score could be useful in most of the target population it was designed for.

6 | CONCLUSION

This study has demonstrated that the novel HDR questionnaire, a simple and user-friendly tool, could be useful for identifying patients at risk of discomfort during hospitalization. Further prospective studies should be performed in order to externally validate the preliminary results of this study and to investigate the predictive performance of the questionnaire in independent cohorts.

7 | IMPLICATIONS FOR NURSING MANAGEMENT

In last few years, patients' comfort during hospitalization is gaining attention since it is associated with lower admissions and readmissions rates, higher patient satisfaction, shorter hospitalization periods and higher cost–benefit ratios. To date, several studies have developed tools and self-report scales to assess comfort and patient satisfaction in different contexts, but most are complex and only a few were made considering to the hospital environment. In the present study, we aimed to develop and validate a new tool for the assessment of the risk of patient discomfort in hospital wards. The novel HDR questionnaire that we present in this study is a simple and user-friendly tool that may help to reliably assess the inpatient's discomfort. Nurses play a key role in the management of hospitalized patients. They are usually the healthcare professionals nearest to patients, and this is often translated into a higher level of confidence reported by them. For these reasons, nurses are also healthcare professionals with better access to patients and often the first in identifying potential complications derived from hospitalization. Pending external validations, the HDR questionnaire could be routinely provided during hospitalizations, in the same way that other tools and clinical risk scales are used with different objectives. Clinical nurse managers play an important role in this accomplishment, by promoting the use and knowledge of the HDR questionnaire among the nurse staff.

ETHICAL APPROVAL

Reference CEIC 01/15. Hospital Clínico Universitario Virgen de la Arrixaca. The study protocol was approved by an accredited Ethics and Research Committee from one of the hospitals and complies with the 1964 Declaration of Helsinki. All patients gave informed consent before their inclusion in the study.

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REFERENCES

Alves-Apóstolo, J. L., Kolcaba, K., Cruz-Mendes, A., & Calvário-Antunes, M. T. (2007). Development and psychometric evaluation of the Psychiatric In-patients Comfort Scale (PICS). *Enfermeria Clinica*, *17*(1), 17–23. https://doi.org/10.1016/S1130-8621(07)71760-6

Ambuel, B., Hamlett, K. W., Marx, C. M., & Blumer, J. L. (1992). Assessing distress in pediatric intensive care environments: The COMFORT Scale. *Journal of Pediatric Psychology*, *17*(1), 95–109. https://doi.org/10.1093/jpepsy/17.1.95

Betemps, E. J. (1999). A self-administered instrument to measure psychiatric discomfort of persons with serious mental illness. *Psychiatric Services*, *50*(1), 107–108. https://doi.org/10.1176/ps.50.1.107

Buxton, O. M., Ellenbogen, J. M., Wang, W., Carballeira, A., O'Connor, S., Cooper, D., … Solet, J. M. (2012). Sleep disruption due to hospital noises: A prospective evaluation. *Annals of Internal Medicine*, *157*(3), 170–179. https://doi.org/10.7326/0003-4819-156-12-201208070-00472

Cheng, W. L. S., & Lai, C. K. Y. (2010). Satisfaction scale for community nursing: development and validation. *Journal of Advanced Nursing*, *66*(10), 2331–2340. https://doi.org/10.1111/j.1365-2648.2010.05373.x

Epstein, R. M., & Street, R. L. (2011). The values and value of patient-centered care. *Annals of Family Medicine*, *9*(2), 100–103. https://doi.org/10.1370/afm.1239

Fillary, J., Chaplin, H., Jones, G., Thompson, A., Holme, A., & Wilson, P. (2015). Noise at night in hospital general wards: A mapping of the literature. *British Journal of Nursing (Mark Allen Publishing)*, *24*(10), 536–540.

Gooding, P. A., Hurst, A., Johnson, J., & Tarrier, N. (2012). Psychological resilience in young and older adults. *International Journal of Geriatric Psychiatry*, *27*(3), 262–270. https://doi.org/10.1002/gps.2712

Hanzeliková, A., López-Muñóz, F., & Fusté-Moreno, R. (2017). Perfil socio-demográfico de los cuidadores de los pacientes geriátricos hospitalizados mayores de 75 años y su relación con la satisfacción. *Enfermería Global*, *16*(2), 375. https://doi.org/10.6018/eglobal.16.2.249861

Kalfon, P., Mimoz, O., Auquier, P., Loundou, A., Gauzit, R., Lepape, A., … Mallédant, Y. (2010). Development and validation of a questionnaire for quantitative assessment of perceived discomforts in critically ill patients. *Intensive Care Medicine*, *36*(10):1751–1758. https://doi.org/10.1007/s00134-010-1902-9

Kelle Silva, L., Roberto dos Santos Marins, P., Cerqueira Nascimento Nobre, T., da Silva Frazão, I., & de Oliveira Santa Rosa, D. (2014). Ethical implications and decision making in care education process. *Investigación Y Educación En Enfermería*, *32*(2), 236–243. https://doi.org/10.17533/udea.iee.v32n2a06

Kolcaba, K. Y. (1994). A theory of holistic comfort for nursing. *Journal of Advanced Nursing*, *19*(6), 1178–1184. https://doi.org/10.1111/j.1365-2648.1994.tb01202.x

Lorente, S., Losilla, J.-M., & Vives, J. (2017). Instruments to assess patient comfort during hospitalization: A psychometric review. *Journal of Advanced Nursing*, *74*(5), 1001–1015. https://doi.org/10.1111/jan.13495

Ministerio de Sanidad & Servicios sociales e Igualdad (2007). *Estadísticas Sanitarias - Explotación del registro de altas del Sistema Nacional de Salud. Recuperado 27 de abril de 2017*. A partir de http://www.mspsi.es/estadEstudios/estadisticas/cmbd/informes/notasMetodologicas.htm.

Montalvo, A., Cabrera, B., Contreras, J., Quiñonez, S., Salem, E., & Serpa, C. (2015). Comfort of patients suffering from cancer hospitalized in two health facilities, Cartagena. *Revista Facultad De Salud De La Universidad Surcolombiana*, *6*(1), 20–26.

Nagington, M., Walshe, C., & Luker, K. A. (2015). Quality care as ethical care: A poststructural analysis of palliative and supportive district nursing care. *Nursing Inquiry*, *23*(1), 12–23. https://doi.org/10.1111/nin.12109

Nelson, K. M., Helfrich, C., Sun, H., Hebert, P. L., Liu, C.-F., Dolan, E., … Fihn, S. D. (2014). Implementation of the patient-centered medical home in the veterans health administration: associations with patient satisfaction, quality of care, staff burnout, and hospital and

emergency department use. *JAMA Internal Medicine*, *174*(8), 1350–1358. https://doi.org/10.1001/jamainternmed.2014.2488

Rodríguez, J., Dackiewicz, N., & Toer, D. (2014). La gestión hospitalaria centrada en el paciente. *Archivos Argentinos De Pediatría*, *112*(1), 55–58. https://doi.org/10.5546/aap.2014.55

Shinde, S. K., Danov, S., Chen, C.-C., Clary, J., Harper, V., Bodfish, J. W., & Symons, F. J. (2014). Convergent validity evidence for the pain and discomfort scale (PADS) for pain assessment among adults with intellectual disability. *The Clinical Journal of Pain*, *30*(6), 536–543. https://doi.org/10.1097/AJP.0000000000000020

Silva-Fhon, J., Ramón-Cordova, S., Vergaray-Villanueva, S., Palacios-Fhon, V., Partezani-Rodrigues, R., Silva-Fhon, J., … Partezani-Rodrigues, R. (2015). Percepción del paciente hospitalizado respecto a la atención de enfermería en un hospital público. *Enfermería Universitaria*, *12*(2), 80–87. https://doi.org/10.1016/j.reu.2015.04.001

Uribe, A., Torrado, I. C., & Acevedo, Y. J. (2015). Confort de los pacientes hospitalizados en el servicio de neurocirugía. *Ciencia Y Cuidado*, *9*(2), 17–25.

Verheyen, J., Theys, N., Allonsius, L., & Descamps, F. (2011). Thermal comfort of patients: Objective and subjective measurements in patient rooms of a Belgian healthcare facility. *Building and Environment*, *46*(5), 1195–1204. https://doi.org/10.1016/j.buildenv.2010.12.014

Vickers, A. J., Cronin, A. M., Elkin, E. B., & Gonen, M. (2008). Extensions to decision curve analysis, a novel method for evaluating diagnostic tests, prediction models and molecular markers. *BMC Medical Informatics and Decision Making*, *8*, 53. https://doi.org/10.1186/1472-6947-8-53

Walsh, C. D. (2017). *An Evidence-Based Educational Intervention for Multidisciplinary Healthcare Professionals to Improve Self-Perceived Knowledge and Comfort to Deliver Quality End-of-Life Care in the Hospital Setting*. Delaware: Wilmington University.

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, *9*(2), 79–94. https://doi.org/10.20982/tqmp.09.2.p079

You, L. M., Aiken, L. H., Sloane, D. M., Liu, K., He, G. P., Hu, Y., Jiang, X. L., … Sermeus, W. (2013). Hospital nursing, care quality, and patient satisfaction: cross-sectional surveys of nurses and patients in hospitals in China and Europe. *International Journal of Nursing Studies*, *50*(2), 154–161. https://doi.org/10.1016/j.ijnurstu.2012.05.003

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.