Referência
REVISTA DE ENFERMAGEM | JOURNAL OF NURSING

RESEARCH ARTICLE (ORIGINAL)

Psychometric evaluation of a Satisfaction Scale for chronic patients receiving outpatient care

Avaliação das propriedades psicométricas de uma Escala Satisfação de doentes crónicos seguidos em ambulatório

Evaluación de las propiedades psicométricas de una Escala de Satisfacción para pacientes crónicos atendidos en consultas ambulatorias

Ana Almeida Ribeiro [1, 2, 3, 4]
https://orcid.org/0000-0001-8952-6778

Maria Adriana Henriques [2, 5, 6]
https://orcid.org/0000-0003-0288-6653

Madalena Cunha [3, 4, 7, 8]
https://orcid.org/0000-0003-0710-9220

[1] Higher School of Health Jean Piaget of Viseu, Nursing, Viseu, Portugal

[2] Nursing School of Lisbon, Nursing Research, Innovation, and Development Center of Lisbon (CIDNUR), Lisbon, Portugal

[3] Health Sciences Research Unit: Nursing (UICISA: E), Nursing School of Coimbra (ESEnfC), Coimbra, Portugal

[4] Sigma Theta Tau International - Phi Xi Chapter, Coimbra, Portugal

[5] Faculty of Medicine, University of Lisbon, Lisbon, Portugal

[6] Environmental Health Institute (ISAMB), Lisbon, Portugal

[7] Higher School of Health, Nursing, Viseu, Portugal

[8] University of Minho, Child Studies Center (CIEC - UM), Portugal

Corresponding author
Ana Isabel de Almeida Ribeiro Fernandes da Rocha
E-mail: anaalmeidaribeiro@hotmail.com

Abstract

Background: Patient satisfaction is a pivotal indicator of the quality and effectiveness of healthcare services delivered.

Objective: Psychometrically validate the Patient Satisfaction Scale, developed by the Quality Commission of a hospital unit in the north of the country and currently in use at the institution.

Methodology: Exploratory and confirmatory factor analysis was conducted with a sample of 231 chronic disease patients receiving outpatient care at the referred unit.

Results: Two main components emerged - Quality of care and satisfaction of healthcare service users and Infrastructure and service logistics. The scale demonstrated robustness, achieving a Cronbach's Alpha of 0.97.

Conclusion: This research notably advances healthcare in Portugal by introducing a validated tool for future evaluations, aiming at the continuous improvement of healthcare service quality.

Keywords: patient satisfaction; psychometrics; quality assurance, health care; validation study

Resumo

Enquadramento: A satisfação das pessoas que utilizam os cuidados de saúde é um indicador crucial da qualidade e eficácia dos serviços prestados.

Objectivo: Validar psicometricamente a Escala de Satisfação dos Utentes, desenvolvida pela Comissão de Qualidade de uma unidade Hospitalar no norte do país e atualmente em uso na instituição.

Metodologia: Procedeu-se à análise fatorial exploratória e confirmatória, com uma amostra de 231 pessoas com doença crónica, em acompanhamento na consulta externa, da referida unidade.

Resultados: Emergiram dois componentes principais - Qualidade de atendimento e satisfação das pessoas que utilizam os cuidados de saúde e infraestrutura e logística do serviço. A escala mostrou-se robusta, com um Alfa de Cronbach de 0,97.

Conclusão: Este estudo contribui de forma relevante para a área da saúde em Portugal, disponibilizando um instrumento validado para avaliações futuras, com vista à melhoria contínua da qualidade dos serviços de saúde.

Palavras-chave: satisfação do paciente; análise psicométrica; qualidade dos cuidados de saúde; estudo de validação

Resumen

Marco contextual: La satisfacción de los usuarios de la asistencia sanitaria es un indicador esencial de la calidad y eficacia de los servicios prestados.

Objetivo: Validar psicométricamente la Escala de Satisfacción del Paciente, desarrollada por la Comisión de Calidad de una unidad hospitalaria del norte del país y actualmente en uso en la institución.

Metodología: Se realizó un análisis factorial exploratorio y confirmatorio sobre una muestra de 231 personas con enfermedades crónicas en seguimiento en el servicio de consultas externas de dicha unidad.

Resultados: Surgieron dos componentes principales, Calidad de la asistencia y satisfacción de los usuarios de la asistencia sanitaria, e Infraestructura y logística del servicios. La escala demostró ser sólida, con un alfa de Cronbach de 0,97.

Conclusión: Este estudio contribuye de forma relevante a la asistencia sanitaria en Portugal y proporciona un instrumento validado para futuras evaluaciones, con el objetivo de mejorar continuamente la calidad de los servicios sanitarios.

Palabras clave: satisfacción del paciente; análisis psicométrico; calidad asistencial; estudio de validación

Introduction

The level of satisfaction among people who use healthcare services has emerged as an important indicator in evaluating the quality of healthcare, not only reflecting the patient perspective but also the clinical outcomes achieved (Freitas et al., 2016). The process of evaluating healthcare services has evolved over time. Earlier observations from the 20th century, for instance, concentrated primarily on the clinical recovery of patients (Hooker et al., 2019). However, over time, there has been a shift in focus towards a more holistic and person-centered approach, which takes into account the experience, expectations, and perceptions of the care provided (Freitas et al., 2016; Han et al., 2022). This illustrates that satisfaction is a multifaceted concept and requires ongoing assessment in order to adapt to the evolving needs and expectations of people who use healthcare services. The advent of new models and instruments for measuring satisfaction underscores the importance of comprehensively evaluating their validity and reliability (Kirby et al., 2021). In this sense, this research aims to psychometrically validate the Patient Satisfaction Scale, developed by the Quality Committee of a Hospital Center in northern Portugal. The aim is to provide a robust tool for evaluating and improving the quality of care provided.

Background

The satisfaction of people who use healthcare services has emerged as an essential indicator in evaluating the quality of healthcare, reflecting a profound transformation in the way health systems perceive and value users' experiences (Gavurova et al., 2021). This satisfaction, which is complex and multifaceted, is often analyzed in terms of two distinct dimensions: technical quality, which pertains to the precision of procedures, and functional quality, which refers to the manner in which care is provided. This distinction is becoming increasingly pertinent as the demand for high standards of healthcare intensifies (Jun et al., 2021).

However, satisfaction with healthcare services is not merely an indicator; rather, it serves as a barometer for the overall health of medical systems. This is because it measures the alignment between users' expectations and preferences and the care they receive. The consequence of this alignment is an increase in trust between those who use healthcare services and the health teams, which in turn strengthens the bonds of loyalty and improves the satisfaction of healthcare professionals (Gavurova et al., 2021; Mühlbacher & Stolk, 2023).

This phenomenon is further accentuated by the recent shift in approach towards users, who have increasingly assumed more inclusive and participatory roles in decision-making processes, as observed by Touati et al. (2022). However, assessing satisfaction is not a simple process. Elements such as effective communication, courtesy, and environmental conditions contribute to determining ove-

rall satisfaction (Gavurova et al., 2021; Tiperneni et al., 2022). The literature argues that tools such as this scale are crucial for capturing user feedback in a structured way to enable continuous improvement of healthcare services. Furthermore, this satisfaction is dynamic, influenced by constant variables in the vast and ever-changing healthcare landscape. The pivotal role of people who use healthcare services in this context is further substantiated by the growing emphasis on evaluating healthcare services based on their capacity to meet the expectations of their users (Duc Thanh et al., 2022). The user-centered approach is not a passing fad; it is supported by trends such as the emergence of user-reported measures, which place user experience and perceptions at the center of the care process (Mühlbacher & Stolk, 2023).

In summary, as the healthcare sector evolves, ensuring high satisfaction among people who use healthcare services is not only desirable, but essential. This satisfaction not only shapes perceptions of healthcare quality, but also plays a critical role in building robust quality management systems that can guide healthcare organizations toward excellence.

Research question

Is the Patient Satisfaction Scale valid and reliable for assessing patient satisfaction in the context of outpatient healthcare?

Methodology

Conducting this study required adopting a rigorous approach to the psychometric validation and characterization of the Patient Satisfaction Scale, adapting it to the reality of Portuguese people with chronic diseases receiving outpatient care.

Strict ethical procedures were followed, with the approval of the Ethics Committee of the institution where the study was conducted (Ref. No. 03/20/05/2019). When applying the instrument, self-determination, privacy, and confidentiality were ensured. Informed consent was obtained from the participants.

A non-probability convenience sample included 231 patients with rheumatoid arthritis (RA) or human immunodeficiency virus (HIV), all of whom were regularly monitored in outpatient consultations. Inclusion criteria were: adults diagnosed with RA or HIV, excluding those who were hospitalized or did not attend consultations regularly.

The satisfaction scale used in this study was not developed by the authors but by the hospital's quality committee and has been in use at the institution for several years. This scale was adopted because it was the one to which patients were accustomed and was chosen to ensure continuity in the assessment of patient satisfaction. The scale consists of 17 items covering areas such as service and support, information, opening hours, respect, waiting time, environment, and overall satisfaction. No

details were obtained on the specific reasons why the Quality Committee constructed the scale. However, the psychometric analysis of this study sought to assess its internal consistency and factor structure. The rating scale is Likert-type, with higher scores indicating greater satisfaction.

The statistical analysis was carried out using IBM SPSS Statistics software, version 20.0, focusing on the study of the psychometric properties of the scale. First, an exploratory factor analysis (EFA) was performed according to the Kaiser criterion (Kaiser, 1959) to identify the underlying dimensions of patient satisfaction. A varimax orthogonal rotation was applied to simplify the interpretation of the identified components. A confirmatory factor analysis (CFA) was then performed to validate the structure of the scale, ensuring that the items corresponded to the identified dimensions. The internal consistency of the scale was evaluated using Cronbach's alpha coefficient, which demonstrated the robustness of the instrument. The results of the factor analysis, including the emerging dimensions, are detailed in the Results section.

Results

Sample
The sample of 231 individuals was distributed as follows: 60.2% (*n* = 139) people with RA and 39.8% (n = 92) with HIV infection, followed in a hospital unit in northern Portugal. The mean age was 57.6 years (SD = 13.76) and ranged from 23 to 86 years. Of the total, 42.9% were men and 57.1% were women. Regarding marital status, the majority, 50.2%, were married, 22. 5% were single, 16% were widowed and 11.3% were divorced.

Geographically, 71% lived in rural areas and the rest in urban areas. In terms of education, the diversity was remarkable, ranging from 1.7% illiterate to 0.4% with a master's degree and various intermediate levels of education (Table 1).

Table 1

Demographic and Socioeconomic Characteristics of the Sample

Variable	*N*	%
Gender		
- Male	99	42.9
- Female	132	57.1
Marital Status		
- Single	52	22.5
- Married/de facto relationship	116	50.2
- Divorced/separated	26	11.3
- Widowed	37	16.0
Geographical area		
- Rural	164	71.0
- Urban	67	29.0
Education		
- Illiterate	4	1.7
- Literate	9	3.9
- Elementary school	99	42.9
- 6th grade	37	16.0
- 9th grade	35	15.2
- Secondary school	19	8.2
- Bachelor's degree	24	10.4
- Master's or postgraduate degree	4	1.7

Note. N = Sample; % = Percentage.

Descriptive analysis
The descriptive analysis of the data covered various areas of patient satisfaction, including service and support, information, opening hours, respect for privacy, waiting time, environment, and overall satisfaction. These areas were assessed individually, and the results showed high levels of satisfaction in all parameters.

Service and support: The operational assistants obtained

41.1% totally satisfied, followed by 29.9% very satisfied and 28.1% satisfied. In the case of nurses and physicians, both professions received predominantly positive responses, with more than 50% saying they were totally satisfied. Administrative staff obtained a similar score, with 39.8% totally satisfied.

Information: Clear communication is essential. Almost half of the respondents were totally satisfied with the information provided by physicians about the state of health, medication, or tests, while around a quarter were very satisfied. Follow-up instructions, on the other hand, were very satisfactory, with 46.3% totally satisfied.

Opening hours: The majority of respondents were positive about opening hours, with 33.8% being totally satisfied.

Respect: Respect for privacy is crucial in any healthcare environment. Both operational assistants, nurses, physicians, and administrative staff scored over 40% in overall satisfaction, with few dissatisfied respondents.

Waiting time: Waiting time generated mixed feelings, with 20.3% totally satisfied, but also with a significant percentage, 20.8%, saying they were not very satisfied.

Environment: Satisfaction with the environment, including comfort, facilities, and signage, was mostly positive, with more than half of respondents satisfied in each category.

Overall Satisfaction: Overall, patients showed a high level of satisfaction with the care they received, with more than a third totally satisfied.

This analysis indicates that the care provided largely meets the expectations of the people who use healthcare services, although there are areas for improvement (Table 2).

Table 2

Patient Satisfaction with Various Aspects of Health Care

Aspect assessed	Totally satisfied (N, %)	Very satisfied (N, %)	Satisfied (N, %)	Little satisfied (N, %)	Dissatisfied (N, %)
Service and support by operational assistants	95, 41.1%	69, 29.9%	65, 28.1%	2, 0.9%	-
Service and support by nurses	120, 51.9%	59, 25.5%	52, 22.5%	-	-
Service and support by physicians	120, 51.9%	60, 26.0%	51, 22.1%	-	-
Service and support by administrative staff	92, 39.8%	61, 26.4%	75, 32.5%	3, 1.3%	-
Information provided by the physician about the health status	115, 49.8%	58, 25.1%	58, 25.1%	-	-
Information about medication and tests	110, 47.6%	61, 26.4%	58, 25.1%	2, 0.9%	-
Follow-up instructions	107, 46.3%	65, 28.1%	59, 25.5%	-	-
Opening hours	78, 33.8%	54, 23.4%	90, 39.0%	9, 3.9%	-
Respect for Privacy by Operational Assistants	95, 41.1%	66, 28.6%	69, 29.9%	1, 0.4%	-
Respect for Privacy by Nurses	120, 51.9%	53, 22.9%	58, 25.1%	-	-
Respect for Privacy by Physicians	122, 52.8%	52, 22.5%	57, 24.7%	-	-
Respect for Privacy by Administrative Staff	95, 41.1%	66, 28.6%	66, 28.6	4, 1.7%	-
Waiting time	47, 20.3%	31, 13.4%	103, 44.6%	48, 20.8%	2, 0.9%
Satisfaction with comfort	61, 26.4%	43, 18.6%	116, 50.2%	10, 4.3%	1, 0.4%
Satisfaction with facilities	56, 26.2%	43, 18.6%	123, 53.2%	7, 3.0%	2, 0.9%
Satisfaction with signage	57, 24.7%	45, 19.5%	118, 51.1%	10, 4.3%	1, 0.4%
Overall Satisfaction with care provided	80, 34.6%	79, 34.2%	71, 30.7%	-	1, 0.4%

Note. N = Sample; % = Percentage.

Psychometric analysis

Reliability was assessed on the basis of the 17 items of the satisfaction scale. The internal consistency, assessed by Cronbach's alpha, showed a remarkable index of 0.97, indicating excellent reliability according to Pestana e Gageiro (2008). When the contribution of each item was analyzed individually (Table 3), it was clear that the scale benefited from the inclusion of most items. Exceptionally, item 13 showed a potential reduction in overall reliability. However, due to its significant correlation (> 0.591) with the total scale, it was decided to retain it and its structure will be assessed in the subsequent factor analysis.

Table 3

Reliability coefficient values (Cronbach's alpha) for each item

		Corrected total item correlation	Cronbach's alpha if the item is excluded
1.	Service and support by operational assistants	0.829	0.968
2.	Service and support by nurses	0.847	0.968
3.	Service and support by physicians	0.841	0.968
4.	Service and support by administrative staff	0.801	0.968
5.	Information provided by the physician about the health status	0.884	0.967
6.	Information about medication and tests	0.874	0.967
7.	Follow-up instructions	0.898	0.967
8.	Opening hours	0.762	0.969
9.	Respect for privacy by operational assistants	0.852	0.967
10.	Respect for privacy by nurses	0.866	0.967
11.	Respect for privacy by physicians	0.877	0.967
12.	Respect for privacy by administrative staff	0.826	0.968
13.	Waiting time	0.591	**0.972**
14.	Comfort	0.705	0.970
15.	Facilities	0.676	0.970
16.	Signage (external and internal)	0.695	0.970
17.	Overall satisfaction with care provided	0.843	0.968

Exploratory factor analysis

An EFA was first conducted to determine the underlying structure of the scale. To ensure that the factor structure was appropriate, several extractions were performed based on the Kaiser criterion (eigenvalue > 1) and observation of the scree plot. Varimax orthogonal rotation was used to optimize the interpretation of the factors.

The suitability of the sample for this analysis was evident, with a KMO index of 0.925 and a significant Bartlett's test of sphericity, confirming the relevance of the correlations between items (Grove et al., 2017).

Two factors emerged (Table 4), which together explained 76.3% of the total variance. Factor loadings ranged from 0.59 to 0.91. The first factor, which included items 3, 2, 11, 5, 10, 7, 6, 1, 12, 9, 4, and 17, related to the service and support provided by the different healthcare professionals (operational assistants, nurses, physicians, and administrative staff), as well as the information provided and respect for privacy, and was labeled Service quality and patient satisfaction. The second, which included items 15, 14, 16, and 13 related to infrastructure and service organization, such as the comfort of the facilities, signage, waiting time, and opening hours, was called Infrastructure and Service Logistics. It is important to note that in the rotation process, a minimum factor loading of 0.4 was considered for the inclusion of items in the factors, in accordance with statistical recommendations (Almeida, 2017).

These factors represent central aspects of the user experience and reflect the separation between the quality of the direct service and the logistical and material conditions of the service.

Table 4

Factor analysis for the 17 items with eigenvalue 1

|	Rotation matrix component	
	1 Quality of Service and Satisfaction	2 Infrastructure and Service Logistics
3. Service and support from physicians	0.910	
2. Service and support from nurses	0.896	
11. Respect for privacy by physicians	0.884	
5. Information provided by the physician about the health status	0.878	
10. Respect for privacy by nurses	0.878	
7. Follow-up instructions	0.876	
6. Information on medication and tests	0.868	
1. Service and support from operational assistants	0.786	
12. Respect for privacy by administrative staff	0.776	
9. Respect for privacy by operational assistants	0.774	
4. Service and support from administrative staff	0.759	
17. Overall satisfaction with care provided	0.664	
15. Facilities		0.897
14. Comfort		0.891
16. Signage (External and Internal)		0.869
13. Waiting time		0.670
8. Opening hours		0.593

Confirmatory factor analysis

A CFA was then conducted to validate the structure identified in the EFA.

Due to sample limitations and to optimize statistical power, the same sample was used for the EFA and CFA. The CFA was performed on a single-factor model consisting of 17 observable variables, using the principal components method. Figure 1 details the local fit of the model, including the standardized factor loadings and the reliability of each item. Notably, all items have standardized factor loadings (λ) greater than 0.5, indicating robust factorial validity (Goes et al., 2021; Marôco, 2014). The model showed a good fit for the sample of 231 individuals ($X2/gl$ = 5.838; CFI = 0.928; GFI = 0.807; RMR= 0.084; RMSEA= 0.145). The modification suggestions provided by the IBM® SPSS® Amos v.21.0.0 software indicated that a covariance between items 3 and 5 would be useful. This covariance suggests a possible common variation between the items that is not fully captured by the single factor of the model, an interpretation also supported by Marôco (2014).

Figure 1

Standardized estimates of the dimensions according to the principal components analysis model
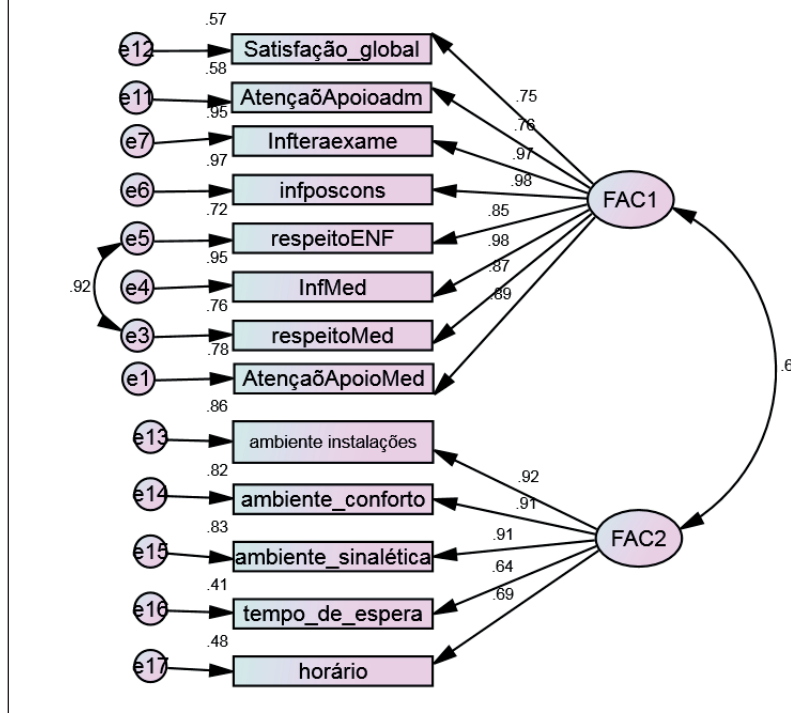
All items showed adequate factor loadings and were grouped into the two main factors previously identified. Differences between analyses were adjusted using varimax rotation and fit indices, resulting in the model that best explained the total variance of the data. This process confirmed that the scale, already in use by the institution, was a reliable instrument for measuring patient satisfaction.

Discussion

It is imperative to interpret the results of this research in the context of the established scientific literature, especially given the specificities of the methodology adopted. The factor analysis identified two main components – Service quality and patient satisfaction, and Infrastructure and service logistics - which are in line with the literature on patient satisfaction, which emphasizes that satisfaction is influenced by both the quality of direct care and the logistical and infrastructural conditions of health services (Goes et al., 2021; Grove et al., 2017). These factors reflect essential dimensions of the patient experience, which is consistent with previous studies assessing patient satisfaction.

The decision to use the same sample for the EFA and CFA was made to optimize statistical power, given the limitations of the sample. Although the literature suggests splitting samples, this choice did not compromise the validity of the results, as demonstrated by the robust fit indices. We are aware of the limitations, but this approach is justified in certain contexts (Marôco, 2014).

Regarding the psychometric analysis, the results showed an excellent internal consistency of the satisfaction scale, with a Cronbach's alpha of 0.97. This value significantly exceeds the usual standards of psychometric evaluation and indicates the remarkable robustness of the instrument in question (Pestana & Gageiro, 2008). Although item 13 showed discrepant behavior, it was retained because it made a positive contribution to the reliability of the scale, with a significant correlation with the total scale, justifying its inclusion. The fact that all items made a positive contribution to reliability reinforces the quality of the instrument.

Finally, the CFA confirmed the proposed bifactor structure, with all items showing standardized factor loadings above the established threshold, thus conferring factor validity to the instrument (Marôco, 2014). Despite differences in the distribution of items, the factors measure the same constructs and the final model was selected to explain the total variance of the data, reinforcing the validity of the instrument. The results highlight the importance of continuing to use this validated instrument for specific assessments of patient satisfaction, ensuring that improvements can be targeted in an informed manner. In addition, the dimensions identified are consistent with the literature, confirming the relevance of the instrument, which has applicability in clinical and research contexts but requires ongoing assessment for refinement.

Conclusion

This study provided an in-depth look at the psychometric evaluation of patient satisfaction, making a significant

contribution to the field of healthcare research in Portugal. Through the rigorous application of factor analysis techniques, both exploratory and confirmatory, the latent structure of the instrument under study was elucidated, revealing its consistency, validity, and multidimensionality. The two identified components, Service quality and patient satisfaction and Infrastructure and service logistics, highlight the complexity and breadth of satisfaction in healthcare contexts. These findings underscore the need for holistic approaches to assessing patient experience.

It is important to highlight the robustness of the scale, as indicated by the Cronbach's alpha of 0.97. The quality of this instrument suggests that it could be a valuable tool in future evaluations and clinical practice, providing detailed insights into areas for improvement in healthcare. However, as with any research, it is important to acknowledge methodological limitations. The decision to use the same sample for both analyses was a conscious one, weighed against the pros and cons, and while justified, is an area that may benefit from additional scrutiny in future studies.

In short, this work not only adds to our understanding of patient satisfaction but also provides a rigorously validated instrument for future applications. Further research in this area is encouraged to continuously improve the quality of healthcare in Portugal and beyond.

Author contributions

Conceptualization: Ribeiro, A. A., Henriques, M. A., Cunha, M.
Data treatment: Ribeiro, A. A.
Formal analysis: Ribeiro, A. A.
Investigation: Ribeiro, A. A.; Henriques, M. A.; Cunha, M.
Methodology: Ribeiro, A. A.; Henriques, M. A.
Project administration: Cunha, M.
Supervision: Henriques, M. A., Cunha, M.
Validation: Ribeiro, A. A., Cunha, M.
Writing – original draft: Ribeiro, A. A.
Writing – review & editing: Ribeiro, A. A.,Henriques, M. A.; Cunha, M.

References

Almeida, S. (2017). *Estatística Aplicada à Investigação em Ciências da Saúde.* . Lusodidacta.

Duc Thanh, N., My Anh, B. T., Xiem, C. H., Quynh Anh, P., Tien, P. H., Thi Phuong Thanh, N., Huu Quang, C., Ha, V. T., & Thanh Hung, P. (2022). Patient satisfaction with healthcare service quality and its associated factors at one polyclinic in Hanoi, Vietnam. *Int J Public Health*, *67*, 1605055. https://doi.org/10.3389/ijph.2022.1605055

Freitas, M. J. B. d. S. d., Parreira, P. M. D., & Domingues, J. P. M. (2016). Avaliação das propriedades psicométricas da escala satisfação dos clientes com os cuidados de enfermagem no hospital. *Revista de Enfermagem Referência*, Série IV - n.º 10 - jul./ago./set. 2016. http://doi.org/10.12707/RIV16031

Gavurova, B., Dvorsky, J., & Popesko, B. (2021). Patient satisfaction determinants of inpatient healthcare. *Int J Environ Res Public Health*, *18*(21). https://doi.org/10.3390/ijerph182111337

Goes, M., Lopes, M., Marôco, J., Oliveira, H., & Fonseca, C. (2021). Psychometric properties of the WHOQOL-BREF(PT) in a sample of elderly citizens. *Health Qual Life Outcomes*, *19*(1), 146. https://doi.org/10.1186/s12955-021-01783-z

Grove, S., Sutherland, S., & Gray, J. (2017). *The Practice of Nursing Research: Appraisal, Synthesis and Generation of Evidence.* (8th edition ed.). Elsevier.

Han, T., Li, S., Li, X., Yu, C., Li, J., Jing, T., Bai, M., Fang, Y., Qian, K., Li, X., Liang, H., & Zhang, Z. (2022). Patient-centered care and patient satisfaction: Validating the patient-professional interaction questionnaire in China. *Front Public Health*, *10*, 990620. https://doi.org/10.3389/fpubh.2022.990620

Hooker, R. S., Moloney-Johns, A. J., & McFarland, M. M. (2019). Patient satisfaction with physician assistant/associate care: An international scoping review. *Hum Resour Health*, *17*(1), 104. https://doi.org/10.1186/s12960-019-0428-7

Jun, J., Ojemeni, M. M., Kalamani, R., Tong, J., & Crecelius, M. L. (2021). Relationship between nurse burnout, patient and organizational outcomes: Systematic review. *Int J Nurs Stud*, *119*, 103933. https://doi.org/10.1016/j.ijnurstu.2021.103933

Kaiser, H. F. (1959). Computer program for varimax rotation in factor analysis. Educational and Psychological Measurement, 19(3), 413-420. https://doi.org/10.1177/001316445901900314

Kirby, D. J., Fried, J. W., Buchalter, D. B., Moses, M. J., Hurly, E. T., Cardone, D. A., Yang, S. S., Virk, M. S., Rokito, A. S., Jazrawi, L. M., & Campbell, K. A. (2021). Patient and physician satisfaction with telehealth during the COVID-19 pandemic: Sports Medicine Perspective. *Telemed J E Health*, *27*(10), 1151-1159. https://doi.org/10.1089/tmj.2020.0387

Marôco, J. (2014). *Análise de Equações Estruturais: Fundamentos Teóricos, Software & Aplicações*. Pêro Pinheiro.

Mühlbacher, A., & Stolk, E. (2023). Patient-reported satisfaction, experiences, and preferences: Same but different? *Value Health*, *26*(1), 1-3. https://doi.org/10.1016/j.jval.2022.10.005

Pestana, M. H., & Gageiro, J. N. (2008). *Análise de Dados para Ciências Sociais. A Complementaridade do SPSS* (5ª edição revista e corrigida ed.). Edições Sílabo.

Tiperneni, R., Patel, S., Heis, F., Ghali, S., Du, D., Ghali, W., Russo, L., & Granet, K. (2022). HCAHPS: Having constant communication augments hospital and patient satisfaction. *BMJ Open Qual*, *11*(4). https://doi.org/10.1136/bmjoq-2022-001972

Touati, R., Sailer, I., Marchand, L., Ducret, M., & Strasding, M. (2022). Communication tools and patient satisfaction: A scoping review. *J Esthet Restor Dent*, *34*(1), 104-116. https://doi.org/10.1111/jerd.12854