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RESEARCH ARTICLE (ORIGINAL)

The influence of the nursing practice environment on missed care and individualized care

A influência do ambiente de prática de enfermagem nos cuidados omissos e na individualização dos cuidados

La influencia del ambiente de la práctica de enfermería en los cuidados omitidos y en la individualización de los cuidados

Filipe Manuel Paiva-Santos [1, 2]
https://orcid.org/0000-0003-0962-6635

Teresa Margarida Almeida Neves [2]
https://orcid.org/0000-0002-1053-4909

Filipa Isabel Quaresma Santos Ventura [2]
https://orcid.org/0000-0001-5722-5612

João Paulo de Almeida Tavares [3]
https://orcid.org/0000-0003-3027-7978

António Fernando Salgueiro Amaral [2]
https://orcid.org/0000-0001-9386-207X

[1] Portuguese Oncology Institute of Coimbra, Coimbra, Portugal

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

[3] University of Aveiro, Aveiro, Portugal

Corresponding author
Filipe Manuel Paiva-Santos
E-mail: filipesantos@esenfc.pt

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Abstract
Background: The nursing practice environment (NPE) influences the quality of care, person-centered care, and patient safety. More specifically, providing safe care includes not leaving care left undone.
Objective: To analyze the influence of the NPE on missed care and individualized care.
Methodology: A quantitative, descriptive, and correlational study was conducted in three inpatient wards of an oncology hospital in Portugal. Nurses' perceptions of the NPE were assessed using the Practice Environment Scale of the Nurse Work Index. Nurses were also asked to identify types of care missed during their last shift due to lack of time. Inpatients' perceptions of individualized care were assessed using the Individualized Care Scale Patient.
Results: The sample consisted of 66 nurses and 40 inpatients. The overall NPE was rated as unfavorable. The ward with an environment in the favorable threshold reported less missed care. Inpatients perceived care as individualized.
Conclusion: The identified NPE may call into question the quality of care.

Keywords: nursing practice environment; person-centered care; missed care; quality of care; nursing research

Resumo
Enquadramento: O ambiente de prática de enfermagem (APE) influencia a qualidade dos cuidados de saúde, a prática de cuidados centrados na pessoa e a segurança dos doentes. Concretamente, prestar cuidados seguros engloba não deixar cuidados omissos.
Objetivo: Analisar a influência do APE nos cuidados omissos e na individualização dos cuidados.
Metodologia: Estudo quantitativo, descritivo e correlacional, desenvolvido em três serviços de internamento de um hospital de oncologia em Portugal. A perceção dos enfermeiros acerca do APE foi avaliada pela Practice Environment Scale of the Nurse Work Index, sendo-lhes também solicitado que identificassem os cuidados omissos do último turno por falta de tempo. A perceção das pessoas internadas acerca da individualização dos cuidados prestados foi avaliada recorrendo à Individualized Care Scale Patient.
Resultados: Participaram 66 enfermeiros e 40 pessoas internadas. O APE global foi avaliado como desfavorável. O serviço com ambiente no limiar favorável reportou menos cuidados omissos. As pessoas internadas perceberam os cuidados como sendo individualizados.
Conclusão: O APE identificado pode colocar em causa a qualidade dos cuidados prestados.

Palavras-chave: ambiente de prática de enfermagem; cuidados centrados na pessoa; cuidados omissos; qualidade dos cuidados de saúde; investigação em enfermagem

Resumen
Marco contextual: El ambiente de la práctica de la enfermería (APE) influye en la calidad de los cuidados de salud, en la práctica de los cuidados centrados en la persona y en la seguridad del paciente. En concreto, proporcionar cuidados seguros implica no dejar cuidados omitidos.
Objetivo: Analizar la influencia del APE en los cuidados omitidos y la individualización de los cuidados.
Metodología: Se trata de un estudio cuantitativo, descriptivo y correlacional desarrollado en tres unidades de hospitalización de un hospital oncológico de Portugal. La percepción de los enfermeros sobre el APE se evaluó mediante la Practice Environment Scale of the Nurse Work Index, y también se les pidió que identificaran los cuidados omitidos en el último turno por falta de tiempo. La percepción de los pacientes internos sobre la individualización de los cuidados se evaluó mediante la Individualized Care Scale Patient.
Resultados: Participaron 66 enfermeros y 40 pacientes internos. El conjunto del APE fue evaluado como desfavorable. El servicio con un ambiente en el umbral favorable notificó menos cuidados omitidos. Los pacientes internos perciben los cuidados como algo individualizado.
Conclusión: El APE identificado puede poner en peligro la calidad de los cuidados prestados.

Palavras clave: ambiente de la práctica de enfermería; atención dirigida al paciente, omisión de cuidados; calidad de la atención de salud; investigación en enfermería

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Introduction

The concern with the quality of health services is evident in health policies and organizations, but the literature identifies several factors that may jeopardize this quality, such as an unfavorable nursing practice environment (NPE; Amaral et al., 2014; Lake et al., 2019). As a result of an unfavorable NPE, patient safety and individualized care are jeopardized (Amaral et al., 2014; Lake et al., 2019). Thus, this study aimed to analyze the influence of the NPE on missed nursing care (MNC) and individualized care. We are unaware of any Portuguese studies on the influence of the NPE, as assessed using the Practice Environment Scale of the Nurse Work Index (PES-NWI), on MNC or any national or international studies on the relationship between the NPE, as assessed using the PES-NWI, and inpatients' perceptions of individualized care, as assessed using the Individualized Care Scale Patient (ICSP). It is the first study conducted in Portugal exclusively in oncology settings. The study of the NPE in specific settings is critical because the type of organization can influence the NPE (Lake, 2002).

Background

The NPE is known to influence the quality of health care, particularly through its association with patient safety and person-centered care (Lake et al., 2019).

Several factors influence the NPE, such as the decentralization of decision-making, a strong nurse leadership, the recognition of nurse autonomy, adequate human resources, and the acceptance of nurses' contribution to health outcomes (Lake et al., 2019). Institutions with a favorable NPE have better outcomes for inpatients (fewer falls, medication errors, healthcare-associated infections, and pressure ulcers), for staff (higher job satisfaction, lower burnout, and lower intention to change jobs), and for organizations (shorter hospital stays and lower mortality rates; Jesus et al., 2015).

Providing safe care entails providing all necessary care given that the omission of nursing care has negative consequences on health outcomes, such as poorer quality of care, lower patient satisfaction and nurses' job satisfaction, and increased adverse events, hospital length of stay, and hospital readmissions (Chaboyer et al., 2021). Moreover, it contributes to a negative societal image of nurses (Paiva et al., 2021).

MNC are defined as care that is delayed, partially completed, or not completed at all (Chaboyer et al., 2021). The most frequent MNC items are those related to nurses' autonomous interventions, such as patient positioning, educating the patient and family, discharge planning, emotional and spiritual support, hygiene care, documentation of care, and monitoring signs and symptoms (Chaboyer et al., 2021). The main reasons for MNC are lack of nurses, lack of time, ineffective delegation, poor work environment, nurses' habits, denial of error, lack of professional attachment, lack of resources or inadequate resources (skill mix), lack of material resources, poor teamwork, and poor communication (Chaboyer et al., 2021).

Individualized care is at the basis of the current health quality policies, in which the person is seen as a partner in the planning, delivery, and assessment of care. It focuses on promoting autonomy and self-care (Amaral et al., 2014) and considers patients' personal needs, clinical conditions, personal history, and preferences in the decision-making processes (Rodríguez-Martín et al., 2022). Individualized care increases patient satisfaction and therapeutic adherence, improves autonomy, disease self-management, quality of life, and capacity for self-care, and facilitates the health-illness transition (Rodríguez-Martín et al., 2022).

This study aims to analyze the influence of the NPE on both MNC and individualized care. To answer this general objective, the following specific objectives were identified: To assess nurses' perceptions of the NPE; to characterize the MNC reported by nurses; to analyze the association between the NPE and the MNC; to assess inpatients' perceptions of individualized care received; and to analyze the association between the NPE and inpatients' perceptions of individualized care received.

Research question

What is the influence of the NPE on missed care and individualized care?

Methodology

A quantitative, descriptive, and correlational study was conducted in the medical specialty wards of an oncology hospital in Portugal. The nonprobability consecutive sample consisted of nurses and inpatients. Nurses in management positions and nurses with less than one year of professional experience in the current ward were excluded. Inpatients younger than 18 years old, with cognitive impairment, or unable to read and write were excluded. Data were collected between November 2017 and February 2018.

Nurses were asked to complete a questionnaire with a set of questions for sociodemographic characterization, a scale to assess the NPE, and a set of questions about the last shift with 13 possible MNC items. The NPE was assessed using the Practice Environment Scale of the Nurse Work Index (PES-NWI), translated and validated for the Portuguese population (Amaral et al., 2012). This scale consists of 32 items divided into five dimensions: Nurse Participation in Hospital Affairs; Collegial Nurse-Physician Relations; Nursing Foundations for Quality of Care; Staffing and Resource Adequacy; and Nurse Manager Ability, Leadership, and Support of Nurses (Amaral et al., 2012). The PES-NWI uses a 4-point Likert-type scale. Mean scores below 2.5 indicate an unfavorable NPE and those above indicate a favorable NPE. The overall internal consistency is 0.89 and the dimensions range from 0.79 to 0.89 (Amaral et al., 2012).

With regard to MNC, the nurses were asked to identify the care missed in their last shift due to lack of time

out of a list of 13 possible care items: adequate patient surveillance; skin care; oral hygiene; pain management; comfort/talk with patients; educating patients and family; treatments/procedures; administer medications on time; prepare patients and families for discharge; adequately document nursing care; develop or update nursing care plans; planning care; and frequent changing of patient position. This list was used in other studies on missed care in Portugal, such as the RN4Cast Portugal study (Braga et al., 2018).

Inpatients were asked a set of questions for sociodemographic characterization. Their perceptions of individualized care received were assessed using the Individualized Care Scale Patient (ICSP), translated and validated for the Portuguese population (Amaral et al., 2014). This scale consists of two subscales: patients' perceptions of nurses' activities intended to support patient individuality in care (ICSP-A) and patients' perception of individuality in care provided (ICSP-B). Each subscale has 17 items divided into three dimensions: clinical situation; personal life situation; and control over care-related decisions (Amaral et al., 2014). The ICSP-A has an internal consistency of 0.93 (dimensions range from 0.85 to 0.86) and the ICSP-B has an internal consistency of 0.86 (dimensions range from 0.65 to 0.85). The ICSP is a Likert-type scale scored from 1 to 5. The higher the score, the better the inpatients' perceptions of individualized care (Amaral et al., 2014).

Descriptive and inferential statistics were used for data analysis. Based on normality test results, parametric tests (two-sample *t*-test and ANOVA) or non-parametric tests (Mann-Whitney test or Kruskal-Wallis test) were used. Correlations between variables were analyzed using Spearman's correlation coefficient. The significance level used for the statistical tests was 0.05.

The study was authorized by the Board of Directors and approved by the Ethics Committee of the hospital where it was conducted.

Results

The sample consisted of 66 nurses and 40 inpatients. Most of the nurses were women (83.3%), with a mean age of 39.95 years (*SD* = 8.87) and had been working in the profession for 16.94 years (*SD* = 8.46). Most of them had an undergraduate degree (89.4%) and 13.8% had received the title of specialist from the *Ordem dos Enfermeiros* [Portuguese nursing regulator]. They were distributed across three wards: 36.4% in ward A, 36.4% in ward B, and 27.3% in ward C. On average, they had been working in these wards for 10.94 years (*SD* = 7.26). Overall, nurses perceived the NPE as unfavorable (*M* = 2.48, *SD* = 0.24), without statistically significant differences across wards ($F(2) = 1.361$; $p = 0.264$). Despite this, nurses in ward B perceived the NPE as being in the threshold for a favorable NPE (*M* = 2.53, *SD* = 0.23). Overall, nurses in all wards perceived the dimension related to the nursing foundations for quality of care as favorable. However, overall, all other dimensions had an unfavorable perception, with the lowest score in the dimension related to staffing and resource adequacy (*M* = 2.19; *SD* = 0.48). Table 1 shows nurses' perceptions of the NPE in more detail.

Table 1

Nurses' perceptions of the nursing practice environment

	Ward A		Ward B		Ward C			All wards		
	M	*SD*	*M*	*SD*	*M*	*SD*	*p*	*M*	*SD*	α
PES-NWI	2.46	0.25	2.53	0.23	2.41	0.23	0.26	2.48	0.24	0.79
NPHA	2.31	0.32	2.13	0.31	2.28	0.32	0.11	2.24	0.32	0.66
NFQC	2.84	0.20	2.89	0.28	2.89	0.25	0.75	2.87	0.24	0.52
NMALSN	2.37	0.58	2.71	0.43	2.21	0.55	0.01	2.45	0.55	0.73
SRA	1.98	0.29	2.57	0.40	1.96	0.46	0.00	2.19	0.48	0.72
CNPR	2.49	0.46	2.24	0.43	2.17	0.37	0.04	2.31	0.44	0.70

Note. PES-NWI = Practice Environment Scale of the Nurse Work Index; NPHA = Nurse participation in hospital affairs; NFQC = Nursing foundations for quality of care; NMLSN = Nurse manager ability, leadership, and support of nurses; SRA = Staffing and resource adequacy; CNPR = Collegial nurse-physician relations; *M* = Mean; *SD* = Standard deviation; *p* = p-value; α = Cronbach's alpha.

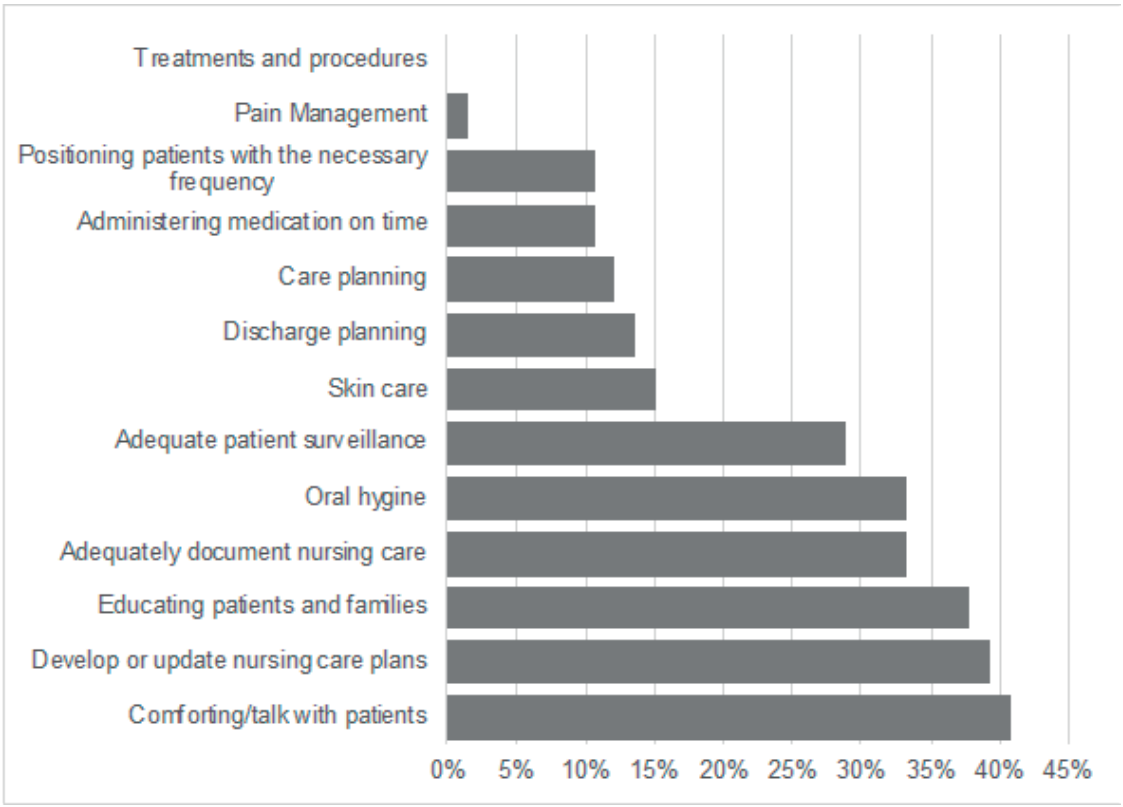
As for nurses' last shift, 42.42% of nurses reported that it was the morning shift. Nurses reported that they had worked more hours than contracted (34.85%) and that most inpatients assigned to them were totally or partially dependent, with an average ratio of 6.45 inpatients per nurse (4.89 in the morning shift, 7.05 in the afternoon shift, and 8.47 in the evening shift). They reported that they had to spend time completing paperwork related to transfers or transportation (30.03%), providing material and equipment (54.55%), and frequently answering telephone calls (56.06%).

The nurses reported having missed 183 care items in their last shift due to lack of time, namely comforting/talking with patients (40.91%), developing or updating

nursing care plans (39.39%), educating patients and family (37.88), adequately documenting nursing care (33, 33%), oral hygiene (33.33%), adequate patient surveillance (28.79%), skin care (15.15%), discharge planning (13.64%), administering medication on time (10.61%), positioning patients with the necessary frequency (10.61%), and pain management (1.52%). Figure 1 shows the distribution of the MNC in more detail.

Figure 1

Missed nursing care in the last shift due to lack of time



Of the 183 reported MNC items, 50.82% were on the morning shift, 33.33% on the afternoon shift, and 15.85% on the evening shift, with statistically significant differences across shifts ($\chi^2(2) = 10.009$; $p = 0.007$). By ward, 48.63% of MNC were reported in ward A, 21.86% in ward B, and 29.51% in ward C, with statistically significant differences across wards ($F(2) = 5.724$; $p = 0.005$). In this sample, 16.67% of nurses missed one care item, 40.92% 2 to 4 care items, 22.74% 5 to 9 care items, and 19.70% missed none of the listed care items.

On average, nurses who perceived an overall favorable NPE missed 2.53 care items and those who perceived an overall unfavorable NPE missed 2.97 care items ($U = 481.50$; $p = 0.446$).

In the ward with a favorable NPE, nurses missed, on average, 1.67 care items, while in the wards with an unfavorable NPE, nurses missed, on average, 3.40 care items ($U = 272.00$; $p = 0.002$).

Data were not collected in ward C due to the patients' clinical situation. More than half of the inpatients were men (52.5%) with a mean age of 64.23 years ($SD = 13.21$). More than half (52.5%) had completed the 4th grade. Most patients had been previously admitted to their ward (90.0%). The mean hospital length of stay at the time of data collection was 14.05 days ($SD = 13.37$). Inpatients' perceptions of individualized care (ICSP-B) were higher ($M = 4.40$, $SD = 0.73$) than inpatients' perceptions of nurses' concern about individualized care (ICSP-A; $M = 3.81$, $SD = 0.73$). In both subscales, the dimension with the highest perception was the one related to the clinical situation and the dimension with the lowest perception was the one related to the personal life situation. Overall, ward A had a higher perception in both subscales than ward B, although without statistically significant differences.

Table 1 shows inpatients' perceptions of individualized care in more detail.

Table 2

Inpatients' perceptions of individualized care (N = 40)

Subscale	Ward A		Ward B			All wards		
Dimension	*M*	*SD*	*M*	*SD*	*p*	*M*	*SD*	α
ICSP-A	3.84	0.65	3.78	0.83	0.775	3.81	0.73	0.89
Clinical situation	4.08	0.64	4.08	0.84	0.996	4.08	0.74	0.80
Personal life situation	3.26	1.04	3.25	1.16	0.981	3.36	1.09	0.74
Control over care-related decisions	3.96	0.71	3.76	0.93	0.587	3.86	0.82	0.77
ICSP-B	4.45	0.46	4.34	0.54	0.516	4.40	0.50	0.84
Clinical situation	4.50	0.46	4.43	0.65	0.989	4.46	0.56	0.85
Personal life situation	4.39	0.58	4.19	0.53	0.271	4.29	0.56	0.44
Control over care-related decisions	4.45	0.59	4.34	0.68	0.599	4.40	0.63	0.82

Note. ICSP-A = Patients' perceptions of nurses' activities intended to support patient individuality in care; ICSP-B = Patients' perceptions of individuality in care provided; *M* = Mean; *SD* = Standard deviation; *p* = p-value; α = Cronbach's alpha.

A moderate, statistically significant correlation was found between inpatients' perceptions of nurses' concern about individualized care and their perception of individualized care received (r_s = 0.667, p = 0.000, N = 40).

No statistically significant differences were found in inpatients' perceptions of individualized care in any of the subscales and dimensions or inpatients' perceptions of individualized care depending on the NPE of the ward where they were hospitalized.

Discussion

This study analyzed the influence of the NPE on missed care due to lack of time and individualized care.

The results of this study show that the NPE is unfavorable, similarly to other studies conducted in Portuguese clinical settings (Jesus et al., 2015; Tavares et al., 2017). Only one study conducted in Portugal revealed a favorable NPE (Amaral & Ferreira, 2013). In contrast to the results obtained, international studies point to favorable NPEs (Choi & Boyle, 2014; Fuentelsaz-Gallego et al., 2013; Hessels et al., 2015). The unfavorable NPE found in this study makes it urgent to promote changes to make this environment more favorable, promoting the quality of care and reducing nurses' burnout and stress.

Therefore, the results of this study highlight the urgency to improve the NPE, since the better the NPE, the better the health outcomes (Jesus et al., 2015).

Similar to other studies, the PES-NWI dimension with the highest scores was 'nursing foundations for quality of care' (Amaral & Ferreira, 2013; Ferreira & Amendoeira, 2014; Hessels et al., 2015; Jesus et al., 2015). However, the internal consistency of this dimension may reveal nurses' concern about highlighting the aspects of quality more as an exposed model than a model in use.

The PES-NWI dimension with the lowest score was 'staffing and resource adequacy', a result also found in another study conducted in Portugal (Jesus et al., 2015; Neves et al., 2018). Human resources, namely patient-to-nurse ratios, have a direct impact on health outcomes, given that higher ratios lead to worse outcomes, such as hospital-acquired pneumonia, unplanned extubation, respiratory failure, failure to rescue in surgical patients, cardiac arrest, and increased hospital length of stay (Kane et al., 2007).

Nursing activities that are not directly related to caregiving, which were frequently reported in this study (e.g., paperwork related to transfers or transportation, providing material and equipment, frequently answering phone calls), may increase MNC (Aiken et al., 2018).

The MNC identified most frequently in this study are in line with previous studies (Aiken et al., 2018; Braga et al., 2018; Hessels et al., 2015). However, this study found lower percentages of MNC related to 'comfort/talk with patients' and 'pain management'. This aspect may be associated with the specific context of oncology, whose philosophy of care is very much associated with the relief of suffering and an intrinsic concern with pain control in people with cancer. No nurse reported having missed 'treatments and procedures' in the last shift, suggesting that nurses tend to prioritize interdependent care over autonomous interventions.

Even though no statistically significant differences were observed in the total PES-NWI score depending on the ward, it should be noted that there were fewer MNC items in the ward with a favorable NPE (ward B) than in those with an unfavorable NPE. This aspect reinforces the importance of the NPE in the quality of care, especially in patient safety, as Aiken et al. (2018) and Hessels et al. (2015) have already demonstrated. Organizations should invest in improving the practice environment as it is both cost-effective and improves the quality of care (Aiken et al., 2018).

Inpatients' perceptions of nurses' concern about individualized care (ICSP-A) are slightly lower than their perceptions of individualized care received (ICSP-B). In both subscales, the dimension with the best perception

was related to the 'clinical situation' and the dimension with the lowest perception was related to 'personal life situation', similar to another study conducted in Portugal (Amaral et al., 2014). However, Amaral et al. (2014) found higher scores in the ICSP-A and lower scores in the ICSP-B. This variation suggests that the inpatients who participated in this study perceive care as individualized, even if nurses do not pay as much attention to individualization as in the other settings. Compared to the study of Gurdogan et al. (2015), inpatients' perception of individualized care is better in Portugal.

This study has some limitations, such as the sample size and the timeframe for data collection (i.e., immediately after a period of major demonstrations and demands by Portuguese nurses). However, it should be noted that all eligible nurses agreed to participate in this study. This study should be replicated in other oncology settings and with a larger sample to better understand the influence of the NPE, particularly on individualized care. Other limitations relate to the low internal consistency of the PES-NWI dimension 'nursing foundations for quality of care' and the ICSP dimension 'personal life situation' about inpatients' perceptions of individualized care.

Conclusion

The quality of care is increasingly important, mainly because it is associated with person-centered care and patient safety. It is of utmost importance to study the factors influencing the quality of care to identify areas for improvement and, consequently, design specific strategies for each care setting.

This study revealed an overall unfavorable NPE, although one of the wards had a favorable NPE very close to the cutoff point. It identified the dimensions of the NPE that need to be improved, namely in terms of human and material resources. The most frequent MNC items were comforting/talking with patients, developing or updating nursing care plans, educating patients and family, adequately documenting nursing care, oral hygiene, and adequate patient surveillance. It also revealed that the ward with a favorable NPE reported fewer MNC items and that it is in the morning shift that nursing care items are left undone more frequently.

Even with an unfavorable NPE, inpatients perceive care as individualized.

The results found in this study require that the organizations discuss and adopt strategies concerning the nurse-to-patient ratios and their management and organizational culture policies to reduce MNC.

The results of this study were presented to the Board of Directors and the nurses (managers and non-managers) of the hospital where the research was conducted. Some physicians from the wards where the study was conducted also attended the session to present the results.

This study should be replicated in other oncology settings to better understand these results, which should be discussed with the nurses to outline improvement strategies.

Author contributions

Conceptualization: Paiva-Santos, F., Amaral, A.
Data curation: Paiva-Santos, F., Amaral, A.
Formal analysis: Tavares, J., Amaral, A.
Methodology: Paiva-Santos, F., Amaral, A.
Writing – original draft: Paiva-Santos, F.
Writing – review and editing: Paiva-Santos, F., Neves, T., Ventura, F, Tavares, J., Amaral, A.

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Portuguese Oncology Institute of Coimbra.

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