



Original Article

Characterization of nurses' work methods: The analysis of a Portuguese hospital

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ABSTRACT

Background & Aim: Providing nursing care occurs through work methods that ensure the organization and implementation of care: the functional work method, the teamwork method, the individual work method, or the reference nurse work method. This study aims to identify work methods that nurses adopt in a Portuguese hospital.

Methods & Materials: A cross-sectional study was conducted in a hospital in northern Portugal. A non-probabilistic convenience sampling technique was used, and 627 nurses were enrolled. Data were collected between March and April 2023 using the "Nurses' Work Methods Assessment Scale." The Statistical Package for the Social Sciences was used to perform descriptive and inferential statistics, using the Mann-Whitney, Kruskal-Wallis, and Spearman's correlation tests.

Results: The individual method predominated, followed by the functional and teamwork methods. A lower adherence to the nurse reference method was observed. The variable "work context" was the most significant for the four working methods. In the individual method, the frequency of the variable "condition in which the profession is practiced" was higher in specialist nurses and, particularly, rehabilitation nursing specialists. The frequency of using the individual method is also higher when nurses have a master's degree and training in nursing care organization methodology.

Conclusion: The highest frequencies of the individual method are related to the level of training, suggesting the influence of training in adopting working methods in clinical practice. Although the reference nurse method points to better satisfaction of clients' needs, nursing practice environments sometimes have inadequate conditions for its operationalization.

Introduction

Client safety and quality of health care has been, in the last decades, one of the main challenges of health systems, related to multiple factors, such as technical and scientific advances, complexity of care, and the need to meet clients' growing expectations for increasingly efficient health services (1, 2). In

health care, the work of nurses in providing nursing care should be based on standards and practices that promote the necessary guidelines to decrease error, increase safety, and satisfy clients' needs. Building evidence-based standards improves the efficiency and effectiveness of organizations' structures and

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processes, increasing outcomes, facilitating service evaluation, and providing high-quality care (3).

Several international organizations and institutions, as well as national ones, of which the Ordem dos Enfermeiros in Portugal (the Portuguese Nursing Council) is an example, have been alerting to the need to sustain nursing care in quality standards so that a process of continuous improvement drives professional practice. The operationalization of these standards directs the role of nurses towards people and society in general. According to the profession's regulatory act, throughout their professional performance, nurses act in an enduring search for maximum effectiveness in the organization of nursing care, using methodologies for organizing nursing care that promote quality (4).

Nurse's working methods are related to the way nurses plan, organize, and implement care, the way clients are assigned to professionals in various settings, their competencies, and the expected outcomes (5, 6). It can also be conceptualized as the framing of nursing care based on nurses' independent or collaborative approaches to providing nursing care to meet clients' real needs (7, 8). Nurses' working methods have evolved from a mechanistic logic, focusing on labor division, towards a more integrative, interprofessional, evidence-based, and client-centered approach. In an international investigation, the authors confirmed the existence of four working methods adopted by nurses, one being task-oriented and the others directed towards client-centeredness (6).

Concerning the functional method, mechanical logic, the distribution of work consisted of standardized tasks for nurses, who achieved proficiency through the systematic repetition of techniques, in which the target of the action was not the client but the task (6). Client-centered working methods include the Individual Method, the Team Method, and the Reference Nurse Method. The individual method is characterized by a total client care approach, in which a single nurse takes full responsibility for caring for a group of clients during a shift. Note that the organization of

nursing care reflects the needs of the client, who is the focus of care (6, 9). In the team method, all nursing care is provided under the leadership of a nurse, the team leader, who plans the care, assigns clients to nurses based on acquired skills and makes the most of the available resources (3, 6). In the Reference Nurse method, a nurse is responsible for planning, executing, and evaluating nursing care, from admission to discharge, for one or more clients to meet their needs (10). Each Reference Nurse works in partnership with other nurses, using delegated interventions in their absence, guaranteeing continuity of care. All nurses can take on both roles, but the Reference Nurse coordinates and supervises nursing care during hospitalization (9, 11).

Regardless of the working method adopted, some factors may be decisive in the organization of the nurse's work, namely, the theoretical underpinning of professional practice, the nurse's workload, the characteristics of nursing teams, nurses' skills and competencies, as well as the entrenched institutional culture, which should be directed towards the quality and safety of care (5, 9, 12).

Given the close relationship that the organization of nurses' work assumes in different care contexts, it is essential to consider adopting one or more working methods to address the multiple aspects of the nurses' work process. The organizational culture, the leadership style of the nurse manager, and the resources and characteristics of the different nursing professionals should be considered, not forgetting the implications that may arise for the client, for the nurses themselves, and for the institutions (6). It is also essential to highlight the role of nursing management in the different contexts of clinical practice. Given the nurse manager's skills and the relevance of their intervention with the teams, it is possible to see that they play a fundamental role in identifying the working methods in use, as well as ensuring the adoption of working methods capable of responding to the real needs of the clients (13).

The Portuguese Nursing Council recommends using the Reference Nurse Working Method to organize nurses' work to promote quality nursing care. However, this

method may not always be applicable. Some Portuguese hospitals lack standards to implement guidance to nurses' work organization. On the other hand, no previous research was found on this topic, nor did instruments allow adequate characterization of how nurses plan, organize, and implement nursing care. In light of the challenges related to the management of nurses' work in hospitals and their crucial role in maintaining high standards of care, a study was undertaken in Portugal, which resulted in the development of the Nurses' Work Methods Assessment Scale (NWMAS) (14). This tool allows for the identification of the work methods nurses adopt in a hospital environment. It can be valuable for nursing management, as it helps to define guiding strategies for nurses in providing care, aiming to improve the quality of nursing care and ensure patient safety. (14). For this reason, this study was developed to identify the work methods that nurses adopt in a Portuguese hospital. These results will support nursing managers in the decision-making process for better nursing care organizations.

Methods

A cross-sectional study, reported according to Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)®, from EQUATOR (15), was developed in a hospital center in the northern region of Portugal.

A non-probabilistic convenience sampling technique was used to select the participants. The inclusion criteria were being a nurse in professional practice and working in the hospital for six months or more in the departments of medicine and medical specialties, surgery and surgical specialties, or intensive care medicine and emergency.

Data collection occurred between March and April 2023, with an accessible population of 1071 nurses. After applying the inclusion criteria outlined, 627 nurses were enrolled (58.5% of the hospital's population). The researchers went to the different care scenarios and, in cooperation with the nurse managers, gave each participant the informed consent and the data collection instrument. Two

envelopes were used for the participant to place the questionnaire after completion. These envelopes were unidentified. After being informed about the research objectives and procedures, the nurses signed the informed consent, declaring their voluntary participation in the study. Confidentiality and anonymity were guaranteed in using and disseminating the information collected.

The data were collected using a questionnaire consisting of two parts: I - referring to the socio-demographic and professional characterization of the participants; II - consisting of the NWMAS (12), and the answers were Likert-type, ranging from 1 to 5, corresponding to 1 (never), 2 (rarely), 3 (sometimes), 4 (often) and 5 (always). The NWMAS has an overall Cronbach's alpha of 0.846 and comprises five dimensions. Four of the five dimensions of the scale refer to the four traditional working methods adopted by nurses in the hospital context: the "team working method" dimension with seven items, the "reference nurse working method" dimension with five items, the "individual working method" dimension with six items and the "functional method" dimension with five items. The fifth dimension relates to "good practices in the organization of work," with only two statements agreeing with the scientific methodology nurses use in nursing care, namely the nursing process (14). It is important to note that the nurses' prevailing working method is defined by the highest mean achieved in a given dimension, i.e., the highest mean in the "reference nurse's working method" dimension points to this method as the one most used by the participants (14, 16).

The statistical program Statistical Package for the Social Sciences® (SPSS®), version 29.0, was used to process the data. Given the nature of the variables and the objectives of the study, descriptive and inferential statistics were used, using the Mann-Whitney, Kruskal-Wallis, and Spearman Correlation statistical tests, with $p < 0.05$ as the critical significance value for the results.

This study is part of a broader investigation entitled "Working methods of nurses in hospital settings: contributions to

quality and safety,” authorized by the Ethics and Health Committee of the Centro Hospitalar Universitário São João and authorization number 421-21.

Results

The population consisted of 1071 nurses, of which 627 completed the questionnaire, and 23 did not complete the questionnaire and, therefore, were not included in the analysis. Of the 627 participants, 77.4% were women, married or in a civil partnership (61.4%), with a mean age of 38.6 years (standard deviation 8.25). The work context with most participants was the

medical department (49.1%). Regarding academic degrees, the majority were graduates (86.4%), with the professional category of nurses (70.2%). Regarding specialist nurses, specialist nurses in rehabilitation predominated (44.8%), followed by specialist nurses in medical-surgical nursing (37.1%).

It was also found that the mean time of professional practice of the participants was 15.7 years, the time of professional practice in the current service was 9.9 years, and the time of professional practice in the specialty area was 4.7 years. The socio-demographic and professional characteristics of the study participants are shown in Table 1.

Table 1. Socio-demographic and professional characteristics of participants (N=627)

Variables	Values
Gender n (%)	
Male	142 (22.6%)
Female	485 (77.4%)
Age (Years)	
Average	38.6
Minimum	24
Maximum	62
Standard deviation	8,25
Civil status n (%)	
Single	212 (33.8%)
Married or in a civil partnership	385 (61.4%)
Divorced	29 (4.6%)
Widower	1 (0.2%)
Academic degree n (%)	
Bachelor	2 (0.3%)
Graduation	542 (86.4%)
Master	82 (13.1%)
Doctorate	1 (0.2%)
Work context n (%)	
Medical department	308 (49.1%)
Surgery department	191 (30.5%)
Department of intensive care and emergency medicine	128 (20.4%)
Condition of employment n (%)	
Nurse	440 (70.2%)
Nurse specialist	187 (29.8%)
Length of time working in the sector (Years)	
Average	15.7
Minimum	2
Maximum	40
Standard deviation	8.17
Length of professional experience in the current service (Years)	
Average	9.93
Minimum	1
Maximum	37
Standard deviation	8.39
Area of Expertise n (%)	
Medical-surgical nursing	72 (37.1%)
Rehabilitation nursing	87 (44.8%)
Mental health and psychiatric nursing	5 (2.6%)
Maternal and obstetric health nursing	7 (3.6%)
Community health nursing	23 (11.8%)

Variables	Values
Time of professional practice in the area of expertise (Years)	
Average	4.77
Minimum	1
Maximum	26
Standard deviation	4.66
Training on the methodology of the organization of nursing care n(%)	
Yes	79 (12.6%)
No	548 (87.4%)

About the nurses' working methods, in general, there was a predominance of the Individual Working Method, followed by the Functional Working Method. On the other hand, there was low adherence to the Reference Nurse Working Method. Regarding the Teamwork Method dimension, the best-scoring item was related to patients' care needs being met by a team of nurses with different levels of competence (item 5). The worst-scoring item was "the team leader discusses with the nurse's strategies for involving the family/family caregiver in the planning and implementation of care" (item 7). Concerning the Reference Nurse Working Method, the item "in the absence of the patient's reference nurse, care is provided by the nurses' associated' with them" (item 9) had the highest mean. The reference nurse validates the item "the reformulation of care planning" (item 12) obtained the lowest score.

In the Individual Work Method, the highest mean was the activity "monitoring the

same patients throughout a shift ensures more humanized and personalized nursing care" (item 14). The activity "during the planning and implementation of nursing interventions, I always ensure the involvement of the caregiver/family caregiver" (item 18) scored the lowest. As far as the Functional Working Method is concerned, the activity "during the shift, there are nursing interventions that I carry out for all the patients admitted to the service" (item 19) had the highest score. On the other hand, the activity "I feel that my work is recognized by carrying out standardized interventions" (item 22) scored worst.

In the Good Work Organization Practices dimension, the best-scoring activity was "The focus of my work is the design and implementation of patient care during the shift" (item 25).

The dimensions and respective items of the NWMAS and the mean per item and dimension are shown in Table 2.

Table 2. Mean values per item and each dimension of the nurses' work methods assessment scale

Dimension of the nurses' work methods assessment scale	Items	Average per item	Average per dimension
Teamwork method	1	2.57	2.81
	2	2.60	
	3	2.83	
	4	2.85	
	5	3.37	
	6	2.90	
	7	2.55	
Work method by reference nurse	8	1.72	1.92
	9	2.56	
	10	1.80	
	11	1.83	
	12	1.70	
Individual work method	13	4.19	3.90
	14	4.40	
	15	4.30	
	16	3.73	
	17	3.58	
	18	3.18	
Functional work method	19	3.94	3.31
	20	3.06	
	21	3.30	
	22	2.66	
	23	3.59	
Good work organization practices	24	2.97	3.46
	25	3.96	

After the descriptive analysis, we conducted an inferential analysis to identify statistical differences that could prove crucial to the study by crossing socio-demographic and professional variables with the dimensions of the scale.

Concerning gender, marital status, and age, no statistically significant differences were found. Regarding the academic level, it was found that the mean frequency of the Individual Work Method dimension was higher for nurses with a master's degree compared to nurses with a bachelor's degree. About the work context, it was possible to see that in the dimension of the Teamwork Method, the mean frequency of nurses in the Emergency and Intensive Care Department is higher than in the other services. In the Work Method by Reference Nurse and Individual Work Method dimensions, we found that the mean frequency of nurses from the Medicine Department Services is higher. In the Functional Working Method dimension, it was found that the average frequency of nurses in the Emergency and Intensive Care Department was higher than in the other departments. Finally, in the Good Work Organization Practices dimension, it was found that the mean frequency of nurses from the Surgery Department Services is the highest, followed by the Medicine Department Services and the Emergency and Intensive Care

Medicine Department Services. Next, we sought to find statistically significant differences between the variable condition in which the profession is practiced and the scale dimensions, with a significant result for the Individual Work Method dimension with a higher mean frequency for specialist nurses. Also, this variable had a statistical association between the condition in which the participant works and the Functional Working Method dimension, with the average frequency being higher for the professional nurse category.

There were no statistically significant differences regarding the variables time in the profession and time in the current service.

Regarding the area of specialization and the different scale dimensions, there were statistically significant differences for the Individual Working Method dimension, with a higher mean frequency for nurses specializing in Rehabilitation Nursing. There were no statistically significant differences regarding the variable time spent working in the specialty area. Regarding training in nursing care organization methodology, there were statistically significant differences between the dimensions of the Individual Work Method and Good Work Organization Practices. Table 3 shows the analysis of the significance of the different socio-demographic and professional variables and the dimensions of the scale.

Table 3. Significance of the different socio-demographic and professional variables and the nurses' work methods assessment scale dimensions

Socio-demographic and professional variables	Teamwork method	Work method by reference nurse	Individual work method	Functional work method	Good work organization practices
Gender	0.339*	0.155*	0.061*	0.357*	0.451*
Civil status	0.460**	0.097**	0.140**	0.627**	0.296**
Age	0.903***	0.059***	0.838***	0.527***	0.009***
Academic degree	0.663*	0.717*	0.005*	0.287*	0.079*
Work context	<0.001**	0.010**	<0.001**	0.027**	<0.001**
Condition of employment	0.232*	0.055*	0.007*	0.017*	0.193*
Length of time working in the sector	0.760***	0.371***	0.822***	0.212***	0.059***
Length of professional experience in the current service	0.061***	0.730***	0.106***	0.082***	0.213***
Area of expertise	0.071**	0.350**	0.007**	0.293**	0.187**
Time of professional practice in the area of expertise	0.051***	0.973***	0.488***	0.762***	0.967***
Training on the methodology of the organization of nursing care	0.265*	0.225*	<0.001*	0.058*	0.023*

*Mann-Whitney test; **Kruskal-Wallis test; ***Spearman correlation

Discussion

The organization of nursing care is a determining aspect of the quality and safety of nursing care. The adoption of a work method by the nurse guarantees the design, organization, and execution of nursing care, regardless of the care context. The Portuguese Nursing Council recommends adopting methodologies for the organization of nursing care that promote quality (4), and the Reference Nurse Work Method is consensually pointed out as the ideal, capable of responding to the client's needs and guaranteeing satisfaction with the care provided (10, 16, 17).

Despite this, our study revealed a predominance of the individual work method, followed by the functional method, with less adherence to the reference nurse method. It is essential to highlight that participants recognized the individual work method as a work strategy in which the nurse is involved and able to respond to the patient's needs, but only in that work shift, and interruptions in care may occur in subsequent shifts. Nurses with specialty and master's degrees had higher frequencies in the individual work method. This reinforces the need to invest in the training of professionals to capacitate them to use methods that enable more personalized and safe care, focusing on client and family satisfaction and, essentially, on professional autonomy (18).

The fragmentation of care, typical of the functional working method (19), was found in our study and stems from the various tasks performed by different nurses throughout a work shift. Some factors may contribute to the high frequency of the functional method, namely the forms of organization and division of labor in the profession. Historically, nursing care was task-oriented and fragmented, with less emphasis on patient satisfaction and management (6).

The organization of nursing care also depends on the nurse's perception of their role as a professional and the potential needs identified. It may focus on the patient or the execution of tasks (9). In addition, the workload and the time available to carry out activities during care can hinder the nurse's work. The

presence of these elements in the work process is reflected in the planning and implementation of care (20, 21), particularly with patient and caregiver involvement. Evidence suggests that although nurses recognize the importance of involving families in patient care, resistance among nursing professionals remains prevalent (22). In fact, concerning the individual method, the item related to the family's involvement in the planning and implementation of nursing interventions stands out as the lowest score. Also, the teamwork method found that the discussion between professionals and family/family caregivers for planning and implementing care obtained a lower score, contradicting the evidence that acknowledges the need to involve family members when providing care, regardless of the nurses' work context (23).

Although the individual work method is recognized as the most appropriate (24, 25), the nurse reference method is more effective for clients' multiple and complex needs (17, 26). The current demands in the healthcare sector require professionals who can provide personalized care and are closely linked to the health and disease processes of individuals. Nurses are being sensitized to changes in the organization of care and are adopting the reference nurse work method, both in Portugal and internationally. This method emphasizes individualized approaches and is in line with the evolving healthcare landscape (18, 27).

The choice of a work method, even if it is the reference nurse, does not guarantee, by itself, the safety and quality of nursing care (11, 26) and requires the articulation of many factors, including the availability of professionals committed to the efficient management of the work process that often has different characteristics, depending on the context in which it takes place.

In our study, we identified statistical significance between the work context and the methodologies of organizing nursing care. In the individual method and the reference nurse method, the frequency was higher in the services of the medicine department. The fact that in

these contexts, the patient profile is characterized by presenting several chronic diseases requiring systematic and long-term monitoring determines the option for working methods directed towards the center of the sick person. In addition, in medical department services, in the face of often prolonged hospitalizations, the comprehensive care characteristic of the working methods mentioned above contributes to reducing adverse events and increasing the safety of care provided to clients, as evidenced in a study with nurses from medical-surgical environments in Canada (27).

On the other hand, teamwork and functional work prevailed in the emergency department and intensive care medicine services. The instability of clients in these contexts requires specific skills, possibly not yet developed by all professionals, which, in addition to being reflected in the need for collaboration with other colleagues, can trigger in some shifts assistance more focused on tasks than on the integrality of the sick person (28, 29).

Ultimately, it is possible to identify that the working methods adopted by nurses in the hospital context under study sometimes lead to fragmented and task-focused nursing care, but with some concern about meeting clients' overall needs. These professionals' training and development strategies should direct them towards transitioning from work models, which initially focused on the piecemeal division of labor, to more collaborative organizational practices, sensitive to the needs and health-disease requirements of clients and caregivers/family caregivers.

It is, therefore, essential to qualify nurses to work in different contexts, improving collaboration between peers and maintaining the focus on comprehensive client care. In the institution, the precise definition of the nurses' working method is a strategy advocated by some authors, as it will guide nurses to fully integrate this method into their professional practice (30). However, it is essential to remember that the existence of conditions to adopt the working methods internationally recognized as promoting the quality and safety of care

provided to clients requires intervention and support from management bodies.

Despite the relevance of the results, this study has some limitations. Firstly, it is an observational study carried out in a single institution. Thus, studies in other institutions are suggested to contribute to the validation of the results. Second, the fact that it used a non-probabilistic convenience sampling technique may make it difficult to generalize its findings. However, by providing an initial understanding of the variables studied, the results are highly relevant to nursing and for the managers of institutions, as they allow rethinking strategies to improve nurses' working methods, with repercussions for clients, professionals, and institutions.

Conclusion

This study identified the working methods used by nurses in a hospital setting. The higher frequencies of the individual method among specialist nurses, nurses with a master's degree, and nurses trained in nursing care organization methodology illustrate the influence of training on adopting working methods that qualify professional practice and improve client outcomes. Although the reference nurse method points to better satisfaction of clients' needs, nursing practice environments do not always have adequate conditions for its operationalization. Suppose it is not feasible to adopt this methodology. In that case, the nurses' concern to favor the individual method is notorious, providing comprehensive assistance to the clients assigned to them in each shift. In the institutions, the training of professionals and clear guidance on the recommended working method will ensure more uniformity between the different services in the comprehensive response to the care needs of the clients.

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Conflict of Interest

The authors have no conflict of interest.

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