

Descriptive and Analytical Study of Knowledge, Attitudes, and Practices (KAP) in Nursing Process (NP) in Senegalese Hospitals in 2025

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Abstract

Introduction: The nursing process is central to the quality and continuity of care, but its application remains uneven. **Objective:** To study knowledge, attitudes, and practices related to the nursing process in eight (08) hospitals in northern Senegal in 2025. **Methods:** This is a descriptive and analytical cross-sectional multicenter study (n = 103) conducted from July 15 to August 31, 2025, in hospitals in northern Senegal among nurses. Data were collected using a questionnaire, extracted in Excel format, and imported into R software for analysis. Arithmetic mean, standard deviation, and frequencies were used for description. Self-administered questionnaires (sociodemographics, knowledge, attitudes, practices, organizational factors) were validated and pre-tested. **Results:** Average age 34.9 years (± 6.5); 67% women; 75.8%; 10 years of seniority. Specific NP training 53.4%; Poor knowledge of DSI (22.3%). Regular application 23.3% (rarely/never 49.5%). Implementation 66.7% and evaluation 62.5% dominated; diagnosis 41.7% and planning 37.5% lagged behind. Lack of continuing education 93.2%; 93.2% consider information and communications technology very useful and 100% would like to see it strengthened. In the multivariate analysis, pediatrics was positively associated (ORa 29.96; p = 0.036) as was seniority <5 years (ORa 95.36; p = 0.032), while provider status was negatively associated (ORa 0.03; p = 0.018). **Conclusion:** Adherence to the NP is high despite limited knowledge of it, and systematization remains low, especially for diagnosis and planning. Implementation studies are needed to measure the effects, costs, impacts, and conditions for success.

Keywords

Knowledge-Attitudes-Practices (KAP), Nurses, Nursing Process

1. Introduction

The nursing process is a methodical process of analysis and problem solving, designed to organize a series of operations geared toward individualized, continuous care tailored to a patient's needs. It provides a framework for identifying, prioritizing, and addressing issues relevant to the role, then evaluating the effects in a documented and traceable manner [1]. It structures clinical decisions, adapts interventions to each patient, and ensures the evaluative continuity of care.

Beyond its clinical usefulness, nursing process (NP) is the subject of debate in practice and teaching. Designed as a problem-solving tool, it also engages the profession in a scientific dynamic, as it organizes concepts, diagnoses, evidence, and documentation around a common language [2].

Nursing practice requires constant vigilance. The multiplicity of actions, decisions, and assessments exposes practitioners to errors that could harm patients. This requirement for caution becomes crucial when experienced clinicians supervise novices: quality and safety depend on supervised environments, explicit protocols, and sustained educational support [3]. In this context, a systematic approach appears to be a pillar of quality. Without it, optimizing quality and meeting needs remains uncertain. Advances in biomedical science reinforce the need for scientific methods applied to nursing practice; the NP is part of this movement, providing an operational framework for clinical reasoning and outcome assessment [4]. The provision of adequate care also requires an organization capable of articulating common standards and variability in situations. It calls on the collective competence of the team, adherence to a comprehensive approach, and constant adjustment to the specificities of patients, services, and contexts. The quality and continuity of care are based on a structured clinical approach and an organization that mobilizes the team's expertise and interprofessional coordination in order to adapt interventions to the individual needs of the patient [5] [6]. Such an organization creates the conditions for consistent and shared use of NP, from initial collection to reassessment, and promotes interprofessional coordination. In terms of training, the NP is taught as an iterative sequence of steps that are mobilized cyclically throughout the follow-up [7]. The tool is aimed at students and professionals to support traceable care and communicable. This structure aligns objectives, actions, and assessment criteria, while consolidating the scientific identity of the profession. Nursing practice integrates clinical, educational, and organizational logic: it structures action, formalizes nursing thinking, and provides a common framework for documenting and assessing quality. Debates do not invalidate its relevance; they highlight the need to strengthen continuing education, clinical supervision, information systems, and a culture of evaluation in order to

ensure safe care pathways and better-justified decisions.

The nursing process remains an essential lever for organizing and bringing coherence to clinical practice. It supports better planning of interventions and ensures continuity of care. However, its implementation is still hindered by organizational constraints that limit its full application. In Senegal, although the nursing process is included in initial training curricula, its appropriation by professionals remains incomplete. This reality constitutes the rationale for the present study [8].

The objective of this work is to study the knowledge, attitudes, and practices of the nursing process in Senegalese hospitals in 2025.

2. Methodology

2.1. Study Framework

The study was conducted in eight (08) hospitals (Saint-Louis, Louga, Linguère, Richard-Toll, Ndioum, Ourosogui, Matam, and Agnams) covering northern Senegal with a total population of approximately 3,165,639 inhabitants [9]. These sites have varying levels of healthcare provision. The Lieutenant-Colonel Mamadou Diouf Regional Hospital (Saint-Louis) is the region's main facility, at the crossroads of healthcare flows between the river valley and the coast. It provides general care and specialized referrals. It has a capacity of more than 240 beds and covers all medical and surgical specialties [10]. The Amadou Sakhir Mbaye Regional Hospital Center in Louga serves a vast agro-pastoral area, acting as a referral center for the districts of Koki, Sakal, and Keur Momar Sarr. The health directory lists 138 beds, supported by medical and surgical services and maternity and pediatric activities. The Magatte Lo de Linguère Level 1 Public Health Facility is located in the heart of Ferlo, a sparsely populated area with widely dispersed settlements. The facility serves as a primary hospital and stabilization center prior to transfer. It has a capacity of 52 beds. The Richard-Toll Level 1 Public Health Facility supports an industrial and sugar-producing area. It has a bed capacity of 71. It is located in the Saint Louis region, 108 km from the city of Saint Louis. The Ndioum EPS 1 was historically built to structure healthcare provision in the Podor department and handles obstetric and medical cases. It has a capacity of 112 beds. The Ourosogui Regional Hospital Center, at the crossroads of the routes to Fouta and the Mauritanian border, provides medical, surgical, and maternity care, serving as a hub for the Matam region. It has a capacity of 118 beds. The Matam hospital completes the referral system in an area with significant healthcare accessibility constraints and has a capacity of 66 beds. Finally, in Agnams, the Abdoul Cissé Kane hospital (level 1), inaugurated in 2021, improves local access for neighboring communities. The facility was commissioned with 71 beds, a maternity ward, an operating theater, and a hemodialysis center, constituting a critical resource for the treatment of emergencies and pathologies in the northeast of the country [11]. **Figure 1** below shows the distribution map of public hospital facilities in the northern zone.

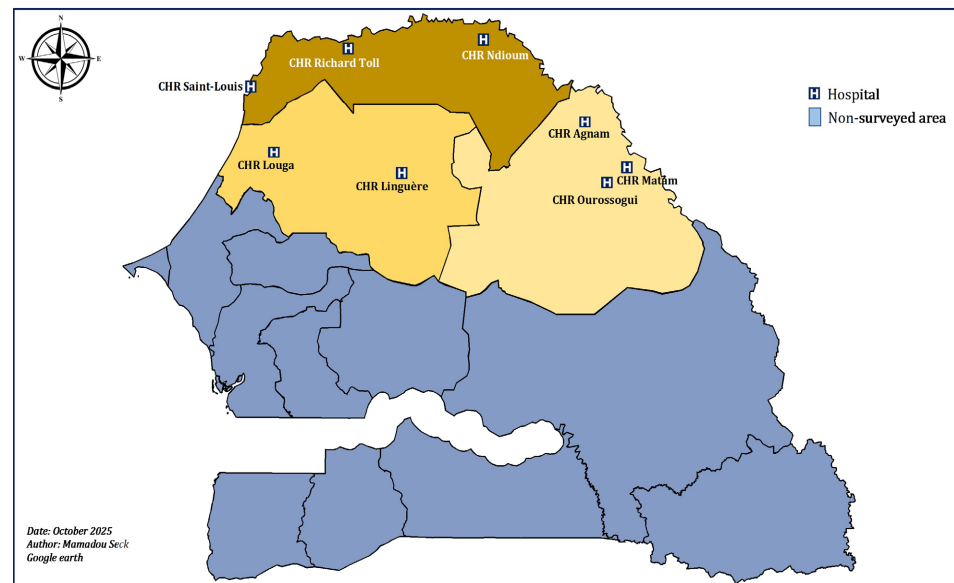


Figure 1. Map showing the distribution of public hospitals in the northern region.

2.2. Type and Period of the Study

This is a descriptive cross-sectional study conducted from July 15 to August 31, 2025, in hospitals in Saint Louis, Louga, Linguère, Richard Toll, Ndioum, Ourosogui, Matam, and Agnams, among nurses.

2.3. Inclusion Criteria

All nurses who had been working for at least one year in one of the hospitals in the northern region and who agreed to participate in the study were included.

2.4. Exclusion Criteria

- Be on extended leave or not currently practicing at one of the hospitals in the northern zone.
- Incomplete questionnaires and participants absent during the sampling will also be excluded from the study.
- Not agree to participate in the study.

2.5. Sampling

This was a comprehensive study. All individuals who met the selection criteria were interviewed, *i.e.* All nurses meeting the inclusion criteria were invited. A total of 103 agreed to participate.

2.6. Data Collection Procedure

The questionnaire comprised 36 items were developed and tested to identify knowledge, attitudes, and practices related to NP. It consisted of four parts: one on the participant's sociodemographic information (06 items), one on knowledge (14 items), one on attitudes (06 items), and one on practices (10 items).

Content validity was established by expert review, and reliability was confirmed through a pre-test (Cronbach's $\alpha = 0.82$). Scores were expressed as percentages and classified according to thresholds established in the literature, were: knowledge (good $\geq 75\%$, moderate 60% - 74%, poor $< 60\%$), attitudes (positive $\geq 80\%$, moderate 60% - 79%, negative $< 60\%$), and practices (good $\geq 75\%$, partial 50% - 74%, insufficient $< 50\%$). This categorization allows assessment of the actual appropriation of the nursing process and identification of gaps between theoretical knowledge and its practical application [12]-[14]. This tool was digitized using the *Open Data Kit (ODK)* and loaded onto the investigators' Android tablets. The investigators were trained on the data collection tool and ethical considerations. During data collection, the data collected was instantly saved on the ONA online server.

2.7. Data Processing

The data was extracted in the form of an Excel file before being imported into R software for statistical analysis. The arithmetic mean, standard deviation, and frequencies were used for the description.

2.8. Ethical Considerations

This study was approved by the Senegalese National Health Research Ethics Committee (CNERS) under note No. 00000150/MSAS/CNERS/SP dated June 13, 2025.

Participants were informed of the objectives of this study and informed consent was obtained by signature. The study was anonymous and the information collected was only accessible to members of the research team.

3. Results

3.1. Sociodemographic

The participation rate was 93.64% of the 110 nurses working at the study sites, 103 agreed to participate in the study.

The sample consisted of 103 nurses, mostly female (67%), with an average age of 34.9 years (± 6.5). The majority held a state nursing diploma (76.7%); those with a bachelor's degree (19.4%) and a master's degree (2.9%) were in the minority.

Professional experience was generally limited, with 75.8% having less than ten years of professional experience. Three-quarters were active in various departments, mainly in medicine (19.4%), general medicine (16.5%), and pediatrics (14.6%).

Administratively, hospital contract workers (34%) and service providers (28.2%) were in the majority, followed by civil servants (17.5%).

Geographic coverage: The area included the eight regional hospitals in the northern zone, with a concentration in Louga, Saint-Louis, and Ndioum.

All sociodemographic data on participants are presented in **Table 1** below.

Table 1. Sociodemographic data (N = 103).

Variables	Modalities	Absolute frequencies (n)	Relative frequencies (%)
Gender			
	Female	69	67
	Male	34	33
Level of education			
	State nursing diploma	79	76.7
	Bachelor's degree in nursing	20	19.4
	Master's degree in nursing	3	2.9
	Senior health Technician	1	1
Years of professional experience			
	Less than 5	36	35
	5 - 10	42	40.8
	11 - 15 years	20	19.4
	16 - 20	3	2.9
	Over 20	2	1.9
Current service			
	Medicine	20	19.4
	General medicine	17	16.5
	Pediatrics	15	14.6
	Surgery	13	12.6
	Maternity	3	2.9
	Other	35	34
Administrative status			
	Contract Hospital	35	34
	Service provider	29	28.2
	Contractual MSAS	14	13.6
	Civil servant	18	17.5
	Intern	7	6.8
Structure			
	Louga Hospital	21	20.4
	Saint-Louis Hospital	20	19.4
	Ndioum Hospital	18	17.5
	Matam Hospital	16	15.5
	Ourosogui Hospital	10	9.7
	Richard Toll Hospital	7	6.8
	Agnams Hospital	6	5.8
	Linguère Hospital	5	4.9

3.2. Knowledge of the Nursing Process

Table 2 below provides information on knowledge of the NP. Just over half of nurses (53.4%) report having received specific training on the NP. Among them, a large majority (92.7%) say they are familiar with the steps of the process. Correct identification of the first step remains incomplete, with 45.5% citing assessment, but 30.9% thinking of implementation, and 7.3% stating that they do not know. Similarly, knowledge of the exact number of stages in the NP process is limited: 41.8% mention five stages, while 38.1% give an incorrect answer or say they do not know the answer. These results reflect a lack of understanding of the methodological foundations. The majority correctly identify the purpose of nursing diagnosis (96.4%), planning (90.9%), and final evaluation (89.1%). This indicates a satisfactory understanding of the objectives, even if a minority confuse them with medical acts (prescriptions, laboratory results). Nursing diagnosis is widely perceived as a scientific method (83.6%), but 10.9% continue to associate it with intuition, indicating a partially empirical view. Almost all respondents (94.5%) consider NP to be mandatory in healthcare facilities, and 100% express a desire for continuing education, reflecting strong motivation and a desire for improvement.

At the end of the study, only 22.3% of participants demonstrated a good understanding of the comprehensive nursing process, while 77.7% of nurses surveyed were deemed to have insufficient knowledge. This clearly reveals a large gap between the transferability of knowledge from the training received and its actual acquisition.

Table 2. Knowledge of the nursing process.

Variables	Modalities	Absolute frequencies (n)	Relative frequencies (%)
Specific training completed on the NP (n = 103)			
	No	48	46.6
	Yes	55	53.4
Knowledge of the stages of dDSI (n = 55)			
	No	4	7.3
	Yes	51	92.7
First stage of the NP (n = 55)			
	Assessment	25	45.5
	Implementation	17	30.9
	Nursing diagnosis	6	10.9
	Don't know	4	7.3
	Planning	3	5.5
Purpose of nursing diagnosis (n = 55)			
	Identify the patient's actual or potential health needs and problems	53	96.4
	Make a medical diagnosis	2	3.6

Continued

Role of the care planning stage (n = 55)		
Establishing clear and measurable care goals	50	90.9
Analysis of laboratory results	3	5.5
Development of pharmacological treatment	2	3.6
Objective of the final assessment in the NP (n = 55)		
To measure the achievement of defined care objectives	49	89.1
Complete patient follow-up	3	5.5
Review medical prescriptions	2	3.6
Don't know	1	1.8
Number of stages in the NP (n = 55)		
Three	9	16.4
Four	14	25.5
Five	23	41.8
Six	2	3.6
Don't know	7	12.7
Preliminary assessment essential in IT departments (n = 55)		
False	53	96.4
True	2	3.6
Main basis of the IT department (n = 55)		
A scientific method of problem solving	46	83.6
The nurse's intuition	6	10.9
Medical observation only	2	3.6
Don't know	1	1.8
Mandatory nature of the NP in all healthcare facilities (n = 55)		
False	3	5.5
True	52	94.5
Main objective of the IT department (n = 55)		
Provide individualized care	33	60
Apply medical prescriptions	15	27.3
Ensure continuity of care	5	9.1
Reducing the nursing workload	1	1.8
Don't know	1	1.8
Desire for continuing education in IT management (n = 55)		
Yes	55	100
No	0	0
Overall knowledge level (n = 103)		
Good knowledge	23	22.3
Insufficient knowledge	80	77.7

Figure 2 below shows that there is a significant lack of knowledge about standardized tools: 70.9% cannot name a reference system, and only 21.8% mention North American Nursing Diagnosis Association (NANDA).

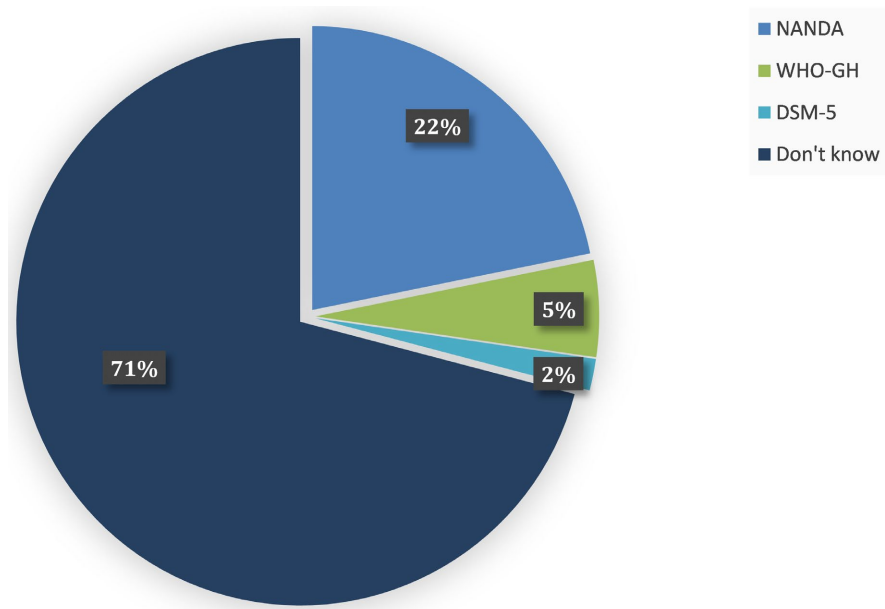


Figure 2. Knowledge of standardized tools in the nursing process.

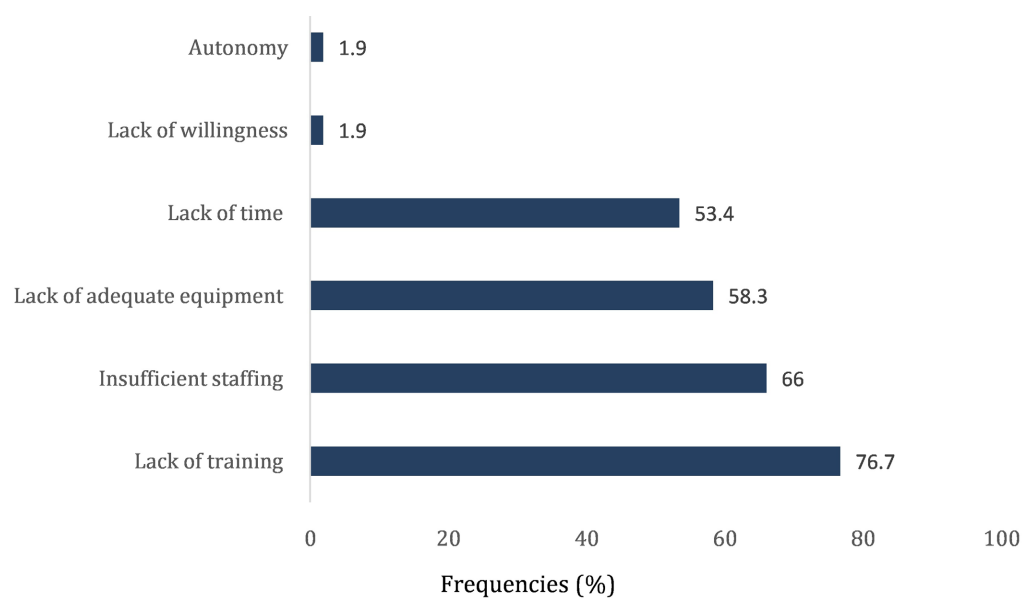
3.3. Attitudes towards the Nursing Process

Table 3 below shows that the majority of respondents say they are very motivated (67%) or motivated (27.2%) to apply the NP, representing nearly 95% of positive opinions. The low proportion of participants who are not very motivated or not motivated at all (5.8%) indicates that individual acceptance is largely favorable. The impact of the NP on the quality of care is almost unanimously recognized: 97.1% believe that it improves quality “a lot,” and 2.9% believe that it improves it “a little.” No respondents consider that it has no effect, which shows widespread confidence in its added value. A very large majority (95.1%) consider IT to be “very important,” reinforcing its status as a central tool in nursing practice. Only 4.8% consider it to be moderately or slightly important, which remains marginal. Perceptions are much less favorable when it comes to organizational support: only 32% feel they have managerial support and 38.8% note the involvement of supervisors. This reflects a gap between individual motivation and a lack of institutional support. When overloaded, only 35.9% continue to apply the NP, while 64.1% abandon it.

Figure 3 below provides information on the barriers to the application of the NP. The main obstacles are structural and organizational: lack of continuing education (76.7%), lack of staff (66%), lack of equipment (58.3%), and lack of time (53.4%). On the other hand, “willingness” (1.9%) and “autonomy” (1.9%) are almost never cited, showing that the barriers are less related to attitudes than to working conditions.

Table 3. Attitudes towards the nursing process.

Variables	Modalities	Absolute frequencies (n)	Relative frequencies (%)
Level of motivation to apply the NP (n = 103)			
	Highly motivated	69	67.0
	Motivated	28	27.2
	Not very motivated	4	3.9
	Not at all motivated	2	1.9
Do you think that IT improves the quality of care (n = 103)			
	Yes, significantly	100	97.1
	Yes, somewhat	3	2.9
Level of importance of the NP (n = 103)			
	Very important	98	95.1
	Moderately important	3	2.9
	Not very important	2	1.9
Effective support from line managers (n = 103)			
	No	70	68
	Yes	33	32
Effective involvement of service supervisors (n = 103)			
	No	63	61.2
	Yes	40	38.8
Consideration of the IT department in the event of excessive workload (n = 103)			
	Yes	37	35.9
	No	66	64.1

**Figure 3.** Barriers to the application of the nursing process.

3.4. Nursing Process Practices

Table 4 below provides information on the regular use of the NP, which remains limited, with only 23.3% of nurses reporting that they practice it in their department, compared to 76.7% who admit that they do not apply it regularly. In terms of frequency, 40.8% say they use it “often”, but only 9.7% “always,” while 49.5% use it “rarely” or “never”, indicating incomplete systematization. Among the 24 nurses who said they applied NP, the most commonly followed steps were implementation (66.7%) and evaluation (62.5%). Nursing diagnosis (41.7%) and planning (37.5%) were less commonly used, reflecting a partial adoption of the approach. Assessment forms (54.4%) and written protocols (37.9%) are the most frequently cited tools. The use of digital technology remains marginal (11.7%), and a minority still operate without support or verbally. A standardized register is mentioned by only 1.9%, limiting traceability. Continuing education is lacking in almost all cases (93.2%). In addition, collection materials are only available in 40.8% of departments, complicating implementation. However, all participants (100%) express a need for reinforcement, primarily through practical workshops (64.1%) and continuing education sessions (63.1%). Finally, 93.2% consider the integration of information and communication technologies (ICT) into the NP to be very useful, demonstrating a strong appetite for the modernization of practices.

Table 4. Nursing process practices.

Variables	Modalities	Absolute frequencies (n)	Relative frequencies (%)
Regular application of the NP in your department (n = 103)			
	No	79	76.7
	Yes	24	23.3
Which steps do you apply regularly? (n = 24)			
	Implementation	16	66.7
	Evaluation	15	62.5
	Nursing diagnosis	10	41.7
	Planning	9	37.5
	Don't know	1	4.2
Frequency of application of the NP (n = 103)			
	Never	17	16.5
	Rarely	34	33
	Often	42	40.8
	Always	10	9.7
Tools used in implementing the NP (n = 103)			
	Assessment forms	56	54.4
	Written protocols	39	37.9
	Computerized documents	12	11.7
	No tools exist	4	3.9
	Verbally	8	7.8

Continued

Care record	2	1.9
Difficulties in implementing the NP (n = 103)		
No	11	10.7
Yes	92	89.3
Availability of continuing education or IT department updates (n = 103)		
No	96	93.2
Yes	7	6.8
Availability of data collection tools (n = 103)		
No	61	59.2
Yes	42	40.8
Usefulness of integrating ICT into the IT department (n = 103)		
Not useful	2	1.9
Moderately useful	5	4.9
Very useful	96	93.2
Types of training desired (n = 103)		
Practical workshops	66	64.1
Continuing education sessions	65	63.1
Conferences and seminars	45	43.7

A large majority (89.3%) report difficulties in implementation. The most frequently cited are lack of material resources (78.3%), lack of time (67.4%), and insufficient collaboration with the team (52.2%). Lack of training or unfamiliarity with the NP are mentioned by only a minority, suggesting that the obstacles are primarily organizational. **Figure 4** below illustrates these difficulties.

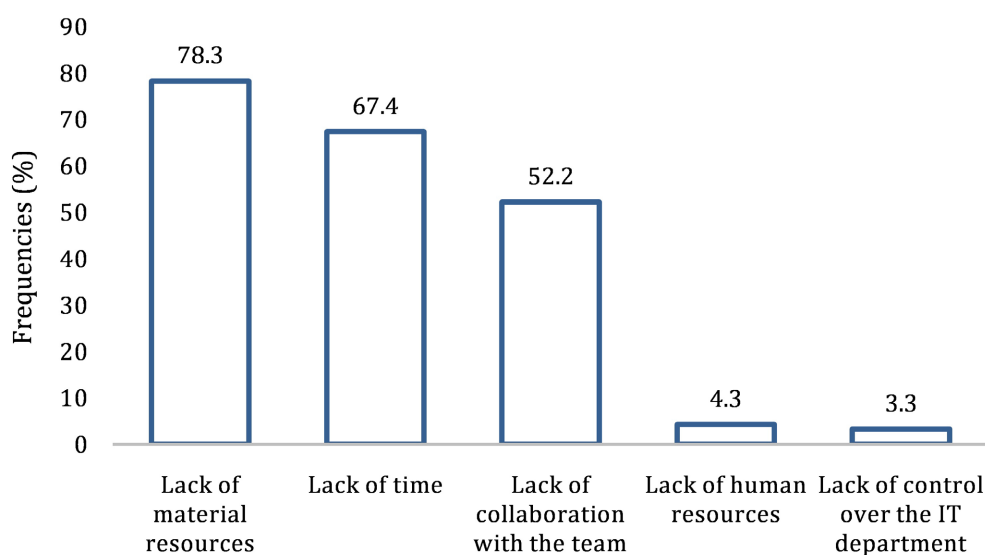


Figure 4. Difficulties in applying the nursing process.

3.5. Logistic Regression

The multivariate analysis in **Table 5** reveals the differentiated relationships between nurses' sociodemographic and professional variables and their knowledge, attitudes, and practices related to the NP.

With regard to gender, there is an indication that men are more likely to adhere to the NP (Ora = 3.51; 95% CI = 0.54 - 22.7); however, the association is not statistically significant.

On the other hand, the department of assignment appears to have a significant effect. Nurses specializing in pediatrics are significantly more likely to have a better understanding of NP (Ora = 29.96; 95% CI=1.25 - 715.94; p = 0.036), supporting the idea that this service facilitates its adoption.

Less experienced nurses, *i.e.*, those with less than five years of experience, were much more likely to apply or be familiar with NP (Ora = 95.36; 95% CI = 1.49 - 6089.24; p = 0.032).

Finally, it appears that the administrative situation is a determining factor. Providers are much less likely to use the NP (Ora = 0.03; 95% CI = 0 - 0.55; p = 0.018).

Table 5. Logistic regression.

		crude OR (95% CI)	crude P value	adj. OR (95% CI)	adj. P value
Gender	Male vs Female	1.37 (0.44,4.29)	0.587	3.51 (0.54, 22.7)	0.187
Level of education: ref. = State nursing diploma					
	Bachelor of Science in Nursing	0.18 (0.03, 0.98)	0.048	0.13 (0.4.43)	0.255
	Master's degree in nursing	0 (0, Inf)	0.991	0 (0. Inf)	0.994
Current department: ref. = Other					
	Surgery	0.85 (0.19, 3.71)	0.825	1.08 (0.1, 12.06)	0.947
	Medicine	0.63 (0.12, 3.47)	0.6	1.62 (0.11, 23.79)	0.724
	General medicine	1.27 (0.18, 9.02)	0.812	0.35 (0.03, 4.66)	0.426
	Pediatrics	6.77 (0.73, 62.86)	0.093	29.96 (1.25, 715.94)	0.036
Years of professional experience: ref. = 11 - 15 years					
	5-10	2.53 (0.59, 10.86)	0.21	12.49 (0.6, 258.15)	0.102
	Under 5 years	1.56 (0.39, 6.25)	0.534	95.36 (1.49, 6089.24)	0.032
	Over 20 years	1.17 (0.06, 22.94)	0.919	0.14 (0.136.64)	0.572
Administrative status: ref. = Contractual Hospital					
	Contractual MSAS	0.15 (0.02, 1.01)	0.05	0.04 (0.1.91)	0.10
	Civil servant	0.2 (0.03, 1.24)	0.084	0.07 (0.1.22)	0.06
	Service provider	0.22 (0.05, 1.08)	0.06	0.03 (0.0.55)	0.018
	Intern	1.25 (0.1, 15.11)	0.861	1.26 (0.04, 41.59)	0.899

4. Discussion

4.1. Socio-Demographics and Education

The results highlight gradients related to experience, status, and service. Nurses

with less than 5 years of seniority are more likely to be familiar with and/or apply the nursing process. This finding is consistent with the recent update of curricula and the “freshness effect” of learning observed when NP content is taught explicitly and reinvested in clinical practice [15]. Conversely, contractual insecurity is associated with less application, probably due to more irregular access to continuing education, audit feedback, and supervision opportunities, which are often cited as determinants of NP practices [1] [4]. Finally, assignment to pediatrics appears to be favorable, which is consistent with more protocol-based units equipped with standardized tools, contexts already associated with better systematization of the approach in the region [15].

In terms of training, three areas stand out in the French-speaking world: 1) the rise of university training and common standards, 2) the structuring of continuing education to support clinical reasoning, and 3) the consolidation of clinical leadership and bedside learning environments [16] [17]. The summaries produced by the International Secretariat of Nurses in the French-speaking World (SIDIIEF) show the progress and heterogeneity of nursing training in 14 countries and highlight the effect of professionalization on the adoption of tools such as NP [16]. Work in Quebec emphasizes the initial and ongoing integration of learning (mentoring, feedback, culture of in-service learning) to support clinical judgment and the implementation of weak stages (diagnosis, planning) [17]. These findings highlight the conclusions drawn from this study: recent experience (cohorts trained with explicit NP content) and equipped environments partly explain the differences observed.

4.2. Knowledge and Attitudes

Just over half of nurses report having received specific training in NP, but only 22.3% demonstrate good overall knowledge; in other words, 77.7% have insufficient knowledge of NP. There is a well-documented gap between very positive attitudes and mixed operational mastery (95% of participants recognize the importance of NP). In Mekelle (Ethiopia), 99.5% of respondents had a favorable attitude, but the description of the steps (especially diagnosis and planning) and application at the patient’s bedside remained incomplete [18]. This paradox is less a matter of motivation than of the incomplete transfer of training to actual practice: lack of time, poor local supervision, incomplete equipment, competing priorities [15] [18].

Furthermore, the leadership function is still underestimated by teams: even when IT is perceived as a tool for improving care, the role of the leader (routine implementation, resource allocation, conducting short audits) remains undervalued, hindering the conversion of favorable attitudes into actionable (applicable) skills [19]. The IT approach reminds us that it is the articulation of the stages (assessment, diagnosis, planning, intervention, and re-assessment) that determines continuity, traceability, and security; the best educational resources and reference chapters converge on this point [20] [21].

4.3. Organizational Practices and Obstacles

In the field, regular application of the NP remains limited, with only 23.3% of nurses practicing it. Practice remains fragmented, with implementation and evaluation being more frequently tracked than diagnosis and planning, indicating partial integration of the approach. This fragmentation illustrates the difficulty of fully integrating the process, as already noted by Lara Monod [22]. This configuration has already been observed in sub-Saharan Africa, where non-systematic application coexists with positive attitudes [15] [18]. The main obstacles are structural, particularly under-resourcing, lack of time, and insufficient collaboration. The organizational climate is not conducive to standardization [15]. The reviews recommend 1) strengthening knowledge of critical steps (diagnosis, action plans with measurable objectives), 2) improving working conditions (procedures, supplies, administrative support, ratios), and 3) providing documentation tools to ensure continuity [15].

On the French-speaking side, fieldwork highlights that the quality of care depends on a universalist organization (procedures, roles, continuity) and the ability to ensure safety at night and during busy periods (when most procedural deviations occur). This angle is often highlighted in practice reports and evaluations [23]. In this sense, standardizing media (paper/digital), clarifying chains of responsibility, and developing a culture of supervision are quick levers.

Finally, associations must be interpreted with caution: the sample size and the rarity of certain events result in very wide CIs, consistent with a risk of over- or underestimation. These results are hypotheses that need to be confirmed by more powerful analytical studies (prospective designs, observational measurements *in situ*) and by bedside implementation assessments.

5. Conclusion

This study assesses the implementation of the nursing process (NP) in hospitals in Senegal (northern region). Three ideas stand out. First, experience counts, with nurses with less than five years' experience making greater use of the NP. Second, contractual insecurity hinders adoption, reminding us that harmonization cannot be achieved without job security and supervision. Finally, pediatrics offers fertile ground. In terms of attitudes, acceptance is high, but comfort levels drop when it comes to nursing diagnosis and planning. The problem is mainly organizational: lack of time, high workloads, heterogeneous tools, and insufficient leadership to support clinical reasoning. In practice, NP remains fragmented, with implementation and evaluation being more widely documented than the upstream stages. Based on this observation, recommendations have been made, including 1) implementing simple supports focused on diagnosis and planning; 2) organizing ongoing staff training through short mentoring sessions and micro-audits, prioritizing precarious staff; 3) disseminating the routines of high-performing units. Pragmatic evaluations will measure the effects, costs, and conditions of implementation *in situ*. The challenge is to move from a desired NP to a NP that is visible and

useful to the patient.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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