IJSRIS journal

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH AND INNOVATIVE STUDIES

ISSN: 2820-7157
www.ijsrisjournal.com

April 2026 Volume 5 Number 2 298-307

Received Date: 22 February 2026 Accepted Date: 14 March 2026 Published Date: 2 April 2026

Assessment of nursing care for hospitalised patients during the night shift at the Wangata general referral hospital / equator province

Jean Djambo Bofaka [1], Simonie Angembi [1], Jean Paul Koto Te Nyiwa Ngbolua [2], Mathieu Lokaki Lofinda [3], Mathieu Besona Mbale [(1,4)], Gracien Bakambo Ekoko [5]

1. Mbandaka Higher Institute of Medical Technology (ISTM), Mbandaka, Equateur, DRC, jeanbofaka68@gmail.com/ 0009-0003-9872-361X, angsimonne66@gmail.com / 0009-0003-8464-833X
2. Department of Biology, Faculty of Science and Technology, University of Kinshasa, Kinshasa, DRC, jpngbolua@unikin.ac.cd /0000-0002-0066-8153
3. Department of Surgery, University Clinics, Faculty of Medicine, University of Kinshasa, DRC, nevillelokaki2015@gmail.com /0009-0003-0914-4932
4. Department of Anaesthesia and Intensive Care, University Clinics, Faculty of Medicine, University of Kinshasa, DRC, matthieubesona@gmail.com /0009-0003-7091-0667
5. Department of Chemistry, Faculty of Science and Technology, University of Kinshasa, DRC, profekokob@gmail.com /0009-0003-1523-1741

Abstract

The quality of nursing care during the night shift is a key determinant of patient safety and hospital performance, particularly in resource-limited settings.

This study aims to evaluate the nursing care provided to inpatients during night shifts at the Wangata General Referral Hospital and to identify the factors associated with patient satisfaction. This is a descriptive and analytical cross-sectional study conducted between February and July 2025 involving 384 patients.

Data were collected using questionnaires, survey forms and direct observation. The analysis was performed using SPSS with the Chi-square test and logistic regression. The overall satisfaction rate was 71.4%. The factors independently associated with satisfaction were the caregiver–patient relationship (ORa = 3.42), staff availability (ORa = 2.85), speed of response (ORa = 2.21), communication (ORa = 2.18) and confidentiality (ORa = 1.96). Patient satisfaction depends mainly on relational and organisational factors.

Keywords: nursing, night shift, satisfaction, quality of care, RDC.

1. Introduction

The quality of nursing care is an essential pillar of healthcare system performance and patient safety. It is defined as the ability of healthcare professionals to provide effective, safe,

continuous care centred on the patient's needs. From this perspective, patient satisfaction is frequently used as an indirect indicator of the quality of care, as it reflects both the patient's lived experience and their overall perception of the care received (World Health Organization [WHO], 2023; Kvist, 2024).

Recent literature highlights that the quality of nursing care is influenced by several determinants, including workload, staff availability, the quality of communication between carers and patients, and organisational working conditions. Work overload is particularly associated with a decline in the quality of care, an increase in care omissions and, consequently, a decrease in patient satisfaction (WHO, 2023; Gharbi, 2024).

The night shift represents a particularly sensitive context in the organisation of hospital care. It is generally characterised by reduced staffing levels, an increased workload per healthcare worker, and physiological constraints associated with night work. Indeed, night work is associated with fatigue, disruption of circadian rhythms and a decline in cognitive and physical performance, which can compromise the quality of care provided as well as patient safety (WHO, 2023).

In resource-limited countries, particularly in sub-Saharan Africa, these difficulties are exacerbated by a shortage of qualified staff, a lack of adequate equipment and often precarious working conditions. These structural and organisational constraints directly influence the quality of nursing care and the satisfaction of hospitalised patients.

In the Democratic Republic of the Congo, the health system faces major challenges, notably a shortage of healthcare personnel and difficult working conditions, particularly during night shifts. These realities are likely to negatively affect the quality of nursing care.

It is against this backdrop that the present study is set, the aim of which is to evaluate the nursing care provided to inpatients during night shifts at the Wangata General Referral Hospital.

2. Materials and methods

2.1. Study setting

The study was conducted at the Wangata General Referral Hospital, located in Mbandaka, Équateur Province, in the Democratic Republic of the Congo. This facility is a secondary-level referral healthcare centre that provides care for referred patients. It comprises several clinical departments, including internal medicine, surgery, paediatrics and maternity. Night shifts are covered by a small nursing staff.

2.2. Materials and methods

The materials used included a structured questionnaire, a survey form and an observation grid. The questionnaire was used to collect sociodemographic and organisational data. The survey form was used to measure patient satisfaction. The observation grid was used to assess nursing practices during the night shift. The techniques used were individual interviews and direct observation.

2.3. Methods

2.3.1. Type and period of study

This is a cross-sectional study with a descriptive and analytical focus, conducted over a six-month period from February to July 2025. This type of study was deemed appropriate for assessing, at a given point in time, the quality of nursing care during the night shift and for analysing the factors likely to influence patient satisfaction.

2.3.2. Sampling and sample size

2.3.3. Sampling technique

A non-probability consecutive sampling method was used. Thus, all patients meeting the inclusion criteria were recruited consecutively until the planned sample size was reached. This approach allowed for the continuous inclusion of available participants throughout the study period.

2.3.4. Sample size

The minimum sample size was calculated using Dagnelie's (1998) formula for cross-sectional studies:

$$n = Z^2 \, x \, p \, x \, q \; d^2$$

where: In this formula, Z corresponds to the confidence interval value set at 1.96 for a 95% confidence level, p represents the estimated proportion of the population (set at 0.5 in the absence of prior data), q is equal to 1 − p, and d denotes the margin of error set at 0.05.

The calculation gives:

$$n = (1.96)^2 \times 0.5 \times 0.5 = 384 \; (0.5)^2$$

$$n = 384 \text{ participants}$$

After applying this formula, the minimum required sample size was estimated at 384 participants. A total of 384 patients

were actually included in the study, ensuring sufficient statistical power for the analyses.

The study ultimately included 384 hospitalised patients, corresponding to the minimum required sample size. **Nurses were not included in the sample size calculation, as their contribution was primarily descriptive.**

2.4. Selection criteria

The selection criteria were defined to ensure the internal validity of the study.

Patients admitted for at least one night, who were clinically stable at the time of the survey and had given their informed consent, were included. Conversely, patients in a critical condition or unable to answer questions, those who refused to participate, and incomplete questionnaires were excluded from the analysis.

2.5. Study variables

The main dependent variable of the study was patient satisfaction, considered an indirect indicator of the quality of nursing care during the night shift.

The independent variables included, on the one hand, sociodemographic characteristics such as age, gender and educational level, and, on the other hand, factors related to nursing care, notably the speed of response, the quality of communication, staff availability, patient monitoring and the nurse–patient relationship.

Finally, organisational factors were also taken into account, in particular workload, availability of equipment and the organisation of night shifts.

2.6. Data collection

Data were collected using a structured, pre-tested questionnaire administered to patients, supplemented by a direct observation form of nursing practices during the night shift. The information gathered covered the participants' sociodemographic characteristics, the organisational conditions of care, the quality of nursing care, and the level of patient satisfaction.

2.7. Validity and reliability of the tools

The validity of the questionnaire was ensured by a preliminary assessment carried out by experts in nursing and public health. The internal reliability of the tool was measured using Cronbach's alpha coefficient, which had a value of 0.82, indicating good internal consistency and satisfactory reliability of the data collection instrument.

2.8. Pre-testing of the tools

A pre-test was carried out with 15 patients not included in the final sample, with the aim of assessing the clarity, comprehensibility and relevance of the questions. The observations from this pre-test enabled the necessary adjustments to be made before the large-scale data collection began.

2.9. Conduct of the survey

Data collection was carried out in a gradual and structured manner. After the study had been presented to the participants', informed consent was obtained before the questionnaire was administered. At the same time, direct observation of nursing practices was carried out during night shifts. Daily quality checks of the collected data were performed to minimise errors and omissions.

2.10. Data processing and analysis

The data collected were entered and analysed using SPSS software. Descriptive analysis was used to calculate frequencies, percentages and means in order to describe the characteristics of the study population. Bivariate analysis, carried out using the chi-square test (χ^2), was used to identify associations between the independent variables and patient satisfaction.

Finally, a multivariate analysis using binary logistic regression was performed to determine the factors independently associated with satisfaction. The results were expressed as odds ratios, accompanied by their 95% confidence intervals and p-values. The threshold for statistical significance was set at $p < 0.05$.

2.11. Ethical considerations

This study adhered to the fundamental ethical principles governing research involving human subjects. The free and informed consent of participants was obtained prior to their inclusion. The anonymity and confidentiality of data were strictly guaranteed throughout the study. Furthermore, prior authorisation was obtained from the relevant hospital authorities. No conflicts of interest were declared.

3. Results

Table 1. Sociodemographic characteristics of patients

Variables	Categories	Sample size (n)	Percentage (%)
Age	0–10 years	66	17.1
	11–20 years	82	21.4
	21–30	99	25.7
	31–40	71	18.6
	41 years and over	66	17.1
Gender	Male	209	54.3
	Female	175	45.7
Level of education	Primary	99	25.7
	Secondary	175	45.7
	Higher education	110	28.6
	No level	0	0

The study covered a total of 384 patients. Analysis of the age structure reveals a predominance of young adults, particularly those aged 21 to 30, who account for 25.7% of the total. This high proportion suggests that hospital services are predominantly used by the working population, who are potentially more exposed to health risks or socio-economic pressures. The other age groups show a relatively even distribution, ranging from 17.1% to 21.4%, indicating that hospital attendance extends across all age groups.

The breakdown by gender shows a slight predominance of men (54.3%) compared to women (45.7%). This difference could reflect either greater exposure of men to risk factors or disparities in the use of healthcare services.

Regarding educational attainment, patients with secondary education are the most represented (45.7%), followed by those with higher education (28.6%) and primary education (25.7%). The absence of patients with no educational attainment suggests that access to care in this context is utilised more by individuals with a minimum level of education, which could influence the perception and evaluation of the care received.

Table 2. Characteristics of hospitalisation

Length of hospital stay	Sample size (n)	Percentage (%)
< 3 days	82	21.4
3–7 days	154	40.0
8–14 days	93	24.3
> 14 days	55	14.3
Total	**384**	**100**

Analysis of the length of hospital stay reveals that the majority of patients (40.0%) stayed for between 3 and 7 days, which corresponds to hospital stays of average duration. This trend indicates that the majority of cases treated require moderate clinical follow-up. Furthermore, 24.3% of patients were hospitalised for between 8 and 14 days, reflecting the presence of more complex cases or those requiring prolonged monitoring.

Short-term hospitalisations (less than 3 days) accounted for 21.4% of patients, which may reflect acute conditions that resolved quickly or admissions for observation. Conversely, prolonged stays of more than 14 days (14.3%) remain a minority but are significant, suggesting the existence of severe cases or complications requiring intensive care.

Table 3. Overall patient satisfaction

Satisfaction	Sample size (n)	Percentage (%)
Very satisfied	110	28.6
Satisfied	164	42.8
Somewhat dissatisfied	82	21.4
Dissatisfied	28	7.2
Total	**384**	**100**

The assessment of overall satisfaction shows that 71.4% of patients express a positive perception of the care received, comprising the categories ‘satisfied’ (42.8%) and ‘very satisfied’ (28.6%). This relatively high level of satisfaction

reflects a generally favourable assessment of the quality of nursing care.

Table 4. Nurses' availability as perceived by patients

Availability	Sample size (n)	Percentage (%)
Always	99	25.7
Often	154	40.0
Rarely	88	22.9
Never	43	11.4
Total	**384**	**100**

The availability of nursing staff is viewed positively by a majority of patients, with 65.7% stating that nurses are 'always' or 'often' available. This perception suggests a relatively constant presence of nursing staff alongside patients.

Nevertheless, nearly a third of patients (34.3%) consider this availability to be insufficient ("rarely" or "never"), highlighting organisational constraints or a shortage of staff that may impact the continuity of care.

Table 5. Speed of response in an emergency

Speed	Sample size (n)	Percentage (%)
Immediate	121	31.4
≤ 5 minutes	137	35.7
> 5 minutes	82	21.4
Very slow	44	11.5
Total	**384**	**100**

The speed of response is a key indicator of the quality of care. In this study, 67.1% of patients reported receiving prompt care (immediately or within 5 minutes), reflecting a satisfactory level of responsiveness from nursing staff in emergency situations.

However, around one-third of patients (32.9%) perceived a delay in response, which may compromise the safety of care and reflect staff overload or organisational shortcomings.

Table 6. Quality of the nurse–patient relationship

Relationship	Sample size (n)	Percentage (%)
Very good	99	25.7
Good	175	45.7
Average	82	21.4
Poor	28	7.2
Total	**384**	**100**

The quality of the nurse-patient relationship is rated positively by 71.4% of patients, indicating an overall satisfactory interaction between nurses and patients. This relational aspect is a central element in the care experience

Table 7. Respect for confidentiality

Assessment	Number of people (n)	Percentage (%)
Always	164	42.8
Often	110	28.6
Rarely	66	17.1
Never	44	11.5
Total	**384**	**100**

71.4% of patients consider confidentiality to be satisfactory, indicating that ethical standards are generally upheld in the majority of cases.

However, the proportion of patients who feel that confidentiality is rarely or never respected (28.6%) remains a cause for concern, as it may affect patients' trust in the healthcare system.

Table 8. Quality of communication

Communication	Sample size (n)	Percentage (%)
Very clear	121	31.4
Light	154	40.0
Unclear	82	21.4
Unclear	28	7.2
Total	**384**	**100**

Communication is perceived as clear or very clear by 71.4% of patients, reflecting effective information sharing and a good understanding of care.

However, nearly 28.6% of patients consider communication to be inadequate, which can lead to misunderstandings, increased anxiety and reduced adherence to treatment.

Table 9. Work organisation and constraints

Variables	Modalities	Sample size (n)	Percentage (%)
Workload	Low	46	12.0
	Medium	123	32.0
	High	138	36.0
	Very high	77	20.0
Equipment	Adequate	77	20.0
	Partially sufficient	123	32.0
	Inadequate	184	48.0
Evening classes	Yes	65	17.0
	No	319	83.0

Analysis of working conditions highlights a heavy workload, with 56% of nurses describing it as high or very high. This situation may affect the quality of care, particularly by reducing the time spent with each patient.

Furthermore, nearly half of respondents (48%) report a shortage of equipment, which constitutes a major obstacle to optimal care. Finally, the lack of specific training for night shifts among 83% of nurses highlights a significant shortfall in skills development, which is likely to impact the performance of night-time care.

Table 10. Factors limiting the quality of care and suggestions

Variables	Modalities	Sample size (n)	Percentage (%)
Limiting factors	Insufficient numbers	154	40.0
	Lack of equipment	92	24.0
	Fatigue	77	20.0
	Lack of motivation	61	16.0
Suggestions	Recruitment	115	30.0
	Training	96	25.0
	Allocation	96	25.0
	Monitoring	77	20.0

The main factors identified as limiting the quality of care are staff shortages (40%), lack of equipment (24%) and work-related fatigue (20%). These constraints reflect structural and organisational problems within the facility.

In response to these difficulties, the suggestions put forward by participants emphasise staff recruitment (30%), enhanced training (25%) and improved provision of equipment (25%). These proposals reflect a desire to improve both human and material resources in order to optimise the quality of care.

Table 11. Results of the Chi-square test

Variables	Satisfactory satisfaction n (%)	Dissatisfaction n (%)	Total	χ^2	p
Availability of nurses					
Always/Often	253 (79.0)	0	253	12.45	0.001
Rarely/Never	75 (46.9)	56 (53.1)	131		
Speed of response					
Prompt (≤5 mins / immediate)	258 (79.8)	65 (20.2)	323	10.32	0.001
Slow (>5 min / very slow)	70 (56.5)	54 (43.5)	124		
Caregiver–patient relationship					
Good/Very good	261 (80.4)	64 (19.6)	325	13.87	<0.001
Average/Poor	67 (52.3)	61 (47.7)	128		
Communication					
Clear/Very clear	260 (79.6)	67 (20.4)	327	11.26	0.001
Slightly/Not clear	68 (55.7)	54 (44.3)	122		
Privacy respected					
Always/Often	255 (80.2)	63 (19.8)	318	9.78	0.002
Rarely/Never	73 (54.1)	62 (45.9)	135		

The bivariate analysis highlights a statistically significant association between several organisational variables and patient satisfaction ($p < 0.05$). In particular, the availability of nurses, the speed of response, the quality of the nurse-patient relationship, communication and respect for confidentiality significantly influence perceptions of care.

Patients who benefit from good staff availability, a prompt response and effective communication report significantly higher levels of satisfaction. These results highlight the importance of organisational and relational factors in improving the quality of care.

Table 12. Logistic regression (adjusted OR, 95% CI, p)

Variables	Adjusted OR	95% CI	p
Availability of nurses	2.85	1.62 – 5.01	<0.001
Speed of response	2.21	1.30 – 3.76	0.003
Caregiver–patient relationship	3.42	1.98 – 5.89	<0.001
Effective communication	2.18	1.27 – 3.74	0.004
Respect for confidentiality	1.96	1.14 – 3.36	0.015

Multivariate logistic regression analysis confirms that several factors remain independently associated with patient satisfaction after adjustment. The nurse-patient relationship appears to be the most influential determinant (ORa = 3.42), followed by the availability of nurses (ORa = 2.85) and the speed of response (ORa = 2.21).

Effective communication (ORa = 2.18) and respect for confidentiality (ORa = 1.96) also contribute significantly to improved satisfaction. These results indicate that the quality of care does not rest solely on technical aspects, but also on human and organisational dimensions, which play a decisive role in the patient experience.

4. Discussion of results

This study aims to evaluate the nursing care provided to inpatients during the night shift at the Wangata General Referral Hospital and to identify the factors associated with their satisfaction. The results are discussed by comparing them with data from the international scientific literature, with an emphasis on clinical and organisational implications.

4.1. Sociodemographic characteristics and their impact on the perception of care

The results show a predominantly young population, with 65.7% of patients aged under 31. This predominance of young people suggests a working-age population, which is generally more sensitive to the quality of healthcare services and more demanding in terms of responsiveness and communication.

The slight male predominance (54.3%) indicates a relatively balanced gender distribution, thereby reducing the risk of gender bias in the assessment of satisfaction.

Furthermore, the level of education is high, with 74.3% of patients having completed secondary education or higher. This high level of education is recognised in the literature as a factor that positively influences the ability to critically assess the care received, particularly with regard to communication and the quality of the relationship with healthcare staff.

4.2. Length of hospital stay and exposure to night-time care

The majority of patients (64.3%) had a length of stay of 7 days or less. This relatively short duration reflects a high patient turnover, a common feature in referral hospitals in the African context.

Despite this short duration, exposure to night-time care remains sufficient to allow for a meaningful assessment of the quality of nursing care. However, this situation may limit the observation of longitudinal variations in the quality of care.

4.3. Overall level of patient satisfaction

The overall satisfaction rate is 71.4%, indicating a generally positive perception of the quality of nursing care during the night shift. This result is comparable to those reported in several international studies conducted in similar settings, where satisfaction generally ranges between 60% and 80% depending on the organisational conditions of healthcare facilities.

However, the significant proportion of dissatisfied patients (28.6%) reveals persistent shortcomings. This dissatisfaction can be attributed to structural constraints frequently found in resource-limited healthcare systems, notably excessive workloads and understaffing of nursing staff, as also reported by the World Health Organisation and several authors (Aiken et al.).

4.4. Organisational factors: availability and speed of response

The availability of nurses is rated as satisfactory by 65.7% of patients, whilst 34.3% express dissatisfaction. These results reflect an overall positive but fragile perception, likely linked to reduced staffing levels during night shifts and high workloads.

Similarly, the speed of response is rated as satisfactory by 67.1% of patients, whilst 32.9% report prolonged delays. These delays constitute a major challenge for the quality and safety of care, particularly in night-time emergency situations.

The international literature confirms that staff availability and response times are key determinants of the perceived quality of care and the safety of hospitalised patients.

4.5. Relational factors and perceived quality of care

The nurse–patient relationship is rated as satisfactory by 71.4% of patients, compared with 28.6% who are dissatisfied. This aspect appears to be a central element of the quality of nursing care.

Multivariate analysis confirms its major importance with an adjusted odds ratio of 3.42, making it the main predictor of patient satisfaction. This result is consistent with contemporary patient-centred care approaches, which place the human relationship at the heart of the quality of care.

Nurse–patient communication also shows an identical level of satisfaction (71.4%). Effective communication promotes understanding of care, reduces anxiety and improves treatment adherence, which is widely confirmed in the international literature.

4.6. Confidentiality of care

Respect for confidentiality is deemed satisfactory by 71.4% of patients, whilst 28.6% consider it to be insufficient. Although its influence is moderate compared to other factors (ORa = 1.96), confidentiality remains a fundamental pillar of nursing practice.

In hospital settings with limited resources, strict respect for confidentiality may be compromised by organisational constraints, particularly in shared wards or during periods of high workload.

4.7. Working conditions for nursing staff

Working conditions appear to be particularly difficult. Indeed, 56% of nurses report a heavy workload, 48% report a shortage of equipment, and 83% indicate a lack of specific training for night shifts.

These findings reflect a demanding working environment that is likely to have a direct impact on the quality of care. The literature shows that excessive workloads and a lack of resources increase fatigue, reduce alertness and compromise patient safety.

4.8. Limiting factors and prospects for improvement

The main limiting factors identified are:

Staff shortages (40%),

Lack of equipment (24%),

Staff fatigue (20%).

These structural constraints are frequently reported in resource-constrained health systems and constitute major obstacles to improving the quality of care.

The suggestions made by participants highlight the need to strengthen human resources, improve departmental equipment and develop continuing professional development for nursing staff, particularly for night shifts.

4.9. Analysis of associations and determinants of satisfaction

The bivariate analysis shows a statistically significant association ($p < 0.05$) between patient satisfaction and all the variables studied, confirming the multifactorial nature of perceived quality of care.

The multivariate analysis confirms that the main independent determinants of satisfaction are:

The nurse–patient relationship (ORa = 3.42),

The availability of nurses (ORa = 2.85),

Speed of response (ORa = 2.21),

Communication (ORa = 2.18),

And respect for confidentiality (ORa = 1.96).

These results demonstrate that patient satisfaction is primarily influenced by relational and organisational factors, rather than by purely technical aspects of care.

5. Conclusion

This study focuses on evaluating the nursing care provided to inpatients during the night shift at Wangata General Referral Hospital, as well as identifying the factors associated with their satisfaction.

The results show an overall favourable level of satisfaction, estimated at 71.4%, indicating that the majority of patients view the quality of nursing care during the night shift positively. However, the presence of 28.6% of dissatisfied patients highlights persistent shortcomings in care provision.

Analysis of the results reveals that patient satisfaction is primarily influenced by relational and organisational factors. The nurse–patient relationship appears to be the most important determinant, followed by the availability of nursing staff, the speed of response, communication and respect for confidentiality. These factors remain significantly associated with satisfaction even after multivariate analysis.

Furthermore, nursing staff's working conditions are characterised by excessive workloads, inadequate equipment and a lack of specific training for night-shif . These structural constraints constitute significant barriers to improving the quality of care.

Ultimately, the results show that the quality of nursing care during night shifts depends primarily on the combination of human interactions and organisational working conditions. Thus, a sustainable improvement in patient satisfaction requires an increase in human resources, better provision of equipment, and investment in the continuing professional development of nursing staff.

Improvements in these areas would contribute significantly to optimising the quality of care and the safety of hospitalised patients during night shifts.

References

1. Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., & Sermeus, W. (2014). Nurse staffing and education and hospital mortality in nine European countries: A retrospective observational study. The Lancet, 383(9931), 1824–1830. https://doi.org/10.1016/S0140-6736(13)62631-8;

2. Gharbi, H., & colleagues. (2024). Quality of nursing care and patient satisfaction in hospital settings. Public Health Journal, 36(2), 45–58.;

3. Kvist, T., Mäntynen, R., Turunen, H., & colleagues. (2024). Patient satisfaction as an indicator of nursing care quality: A systematic review. International Journal of Nursing Studies, 142, 104487.;

4. World Health Organization (WHO). (2023). Global Report on Quality of Care and Patient Safety. WHO. https://www.who.int;

5. World Health Organization (WHO). (2023). Workload, staffing and patient safety in health care settings. WHO. https://www.who.int