

Involvement of Nurses in Scientific Research in a Hospital Setting in the City of Lubumbashi in the DRC: Obstacles and Enabling Factors

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Abstract

Introduction: Nursing is an important link in the healthcare chain. Excessive workload is often associated with a decline in the quality of care provided and a compromise in patient safety. The overall objective of the study was to contribute to the promotion and improvement of nursing research by nurses at Gécamines Sud Hospital, Jason Sendwe General Referral Hospital, and the university clinics of Lubumbashi. **Methods:** This descriptive, cross-sectional study explored the participation of nurses in Lubumbashi in scientific research using questionnaires and interviews. It identified barriers such as lack of training and resources, as well as enabling factors such as institutional support and personal motivation. Analysis of the collected data made it possible to propose recommendations to strengthen nurses' participation in research, thereby improving the quality of care and evidence-based practice. We used Epi-Info 7 software and Excel for in-depth data coding and analysis. **Results:** In this study, we found that 93.3% of nurses do not conduct scientific research. Barriers to scientific research include: 37.7% lack financial resources, 23.2% lack time to conduct research, 17.9% lack institutional support, 10.2% lack internet access, and computer incompetence. Regarding factors that promote scientific research, 75% of those conducting research report that computer competence is the main factor for optimal nursing research. **Conclusion:** It appears that the lack of financial resources, time, internet access, and institutional support remains a barrier to scientific research in nursing and the acquisition of computer skills. The availability of necessary resources and capacity building will improve the level of implementation of scientific research in nursing.

Keywords

Obstacles, Contributing Factors, Scientific Research, Nurse, Hospital Environment, City of Lubumbashi

1. Introduction

Research is a field where new information is constantly emerging [1]; Applying research to nursing practice is necessary for hospital systems to improve outcomes and the nursing profession [2]. Nursing research is the body of work carried out and/or conducted by nurses to develop professional knowledge and improve nursing practice [3]. Faced with the challenges posed by the issue of quality of care and the demands of the workplace, nurses must update their knowledge and skills in order to meet the expectations of patients and their loved ones, on the one hand, and of the health administration, on the other [4]. Nurses may have a positive attitude towards research-based practice, but its transfer to clinical practice often remains slow [5]. This is due to various factors that influence nurses to successfully transfer and implement research findings into practice, such as lack of financial support, understaffing, poor communication, and nurses' over-reliance on physicians to make decisions regarding patient care [6]. Lack of accessibility to information and IT tools is an obstacle that encourages the use of informal knowledge [7]. The existence of advanced practice nurses, leaders or mentors is often mentioned as a facilitating factor [8].

Lack of knowledge and skills among nurses represents a major barrier to the implementation of evidence-based practices (EBPs) [9]. Nurses report rarely using search results. They report being unfamiliar with or finding it difficult to use databases such as PubMed and CINAHL (Gagnon, 2009), some studies have also found that nurses confuse «Doing Research» with «Using Research Findings» [10]. Lack of rewards for conducting nursing research, as well as institutional incentives for developing research skills, were considered barriers to the implementation of evidence-based practices [11]. Lack of adequate access to computers was considered by 66% of nurses as an organizational barrier to implementing evidence-based practices [12], showed that nurses agreed that lack of internet access at work (72%), workload (70%), and shortage of nursing staff (78.3%) were the main barriers to implementing evidence-based practices. However, in the specific context of hospitals in Lubumbashi, DRC, this involvement may be limited by various barriers, despite the presence of potentially enabling factors. This study aims to explore these barriers and enabling factors, in order to propose recommendations to strengthen the participation of nurses in scientific research in this context. Understanding the challenges and opportunities will help optimize the contribution of nurses to the advancement of knowledge and improvement of care practices in Lubumbashi. The specific objectives of this study were to analyze the sociodemographic characteristics of

nurses who participated in the survey, to determine the proportion of nurses involved in research in the selected hospitals (Gécamines Sud Hospital, Jason Sendwe General Reference Hospital and the University Clinics of Lubumbashi in the city of Lubumbashi), to identify the barriers to nursing research in hospitals (Gécamines Sud Hospital, Jason Sendwe General Reference Hospital and the University Clinics of Lubumbashi in the city of Lubumbashi) and to identify the factors favoring nursing research in hospitals (Gécamines Sud Hospital, Jason Sendwe General Reference Hospital and the University Clinics of Lubumbashi in the city of Lubumbashi). Lubumbashi is a large mining city in the Democratic Republic of Congo with a hospital system characterized by limited infrastructure and insufficient human resources, which differs from more developed contexts where nurses' participation in research is better structured. This specificity underscores the importance of the study in understanding local barriers and adapting strategies for promoting nursing research to this particular context. The article has been proofread and edited to improve flow, consistency, and clarity, eliminating repetition and simplifying some language. The general objective of the study is to contribute to the promotion and improvement of nursing research by nurses in three hospitals in Lubumbashi (Gécamines Sud Hospital, Jason Sendwe General Reference Hospital and Lubumbashi University Clinics).

The specific objectives are:

- To analyze the sociodemographic characteristics of the nurses who participated in the survey.
- Determine the proportion of nurses involved in research in the selected hospitals.
- Identify barriers to nursing research in these hospitals.
- To identify factors that promote nursing research in these hospitals.

To clarify the objective of the study, the explicit research questions are as follows:

- What is the proportion of nurses involved in scientific research in the main hospitals in Lubumbashi?
- What are the obstacles encountered by nurses in getting involved in scientific research in hospitals in Lubumbashi?
- What are the factors that promote or facilitate the participation of nurses in scientific research in these hospitals?
- What are the sociodemographic characteristics of nurses that influence their involvement in scientific research?

2. Methods

2.1. Study Framework

Our study took place at Gécamines Sud Hospital, Jason Sendwe Provincial Referral Hospital, and university clinics in Lubumbashi (**Figure 1** and **Figure 2**).

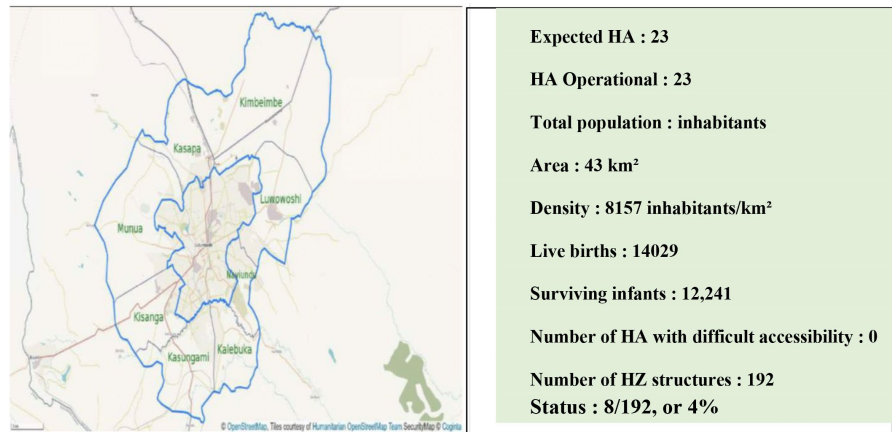


Figure 1. Mapping of the hunting zones of Lubumbashi and Mumbunda Map legend.

- **Blue borders:** Limits of health zones (ZS) in Lubumbashi.
- **Labeled areas:** Names of main districts or administrative divisions (e.g. Kimbeimbe, Kasapa, Munua, Kisanga, Kasongami, Kalebuka, Luwowoshi, Nyunzu).
- **Road network:** The main roads and trails connecting the different areas within the health zones.

Base map source: OpenStreetMap, courtesy of the OpenStreetMap Humanitarian Team.

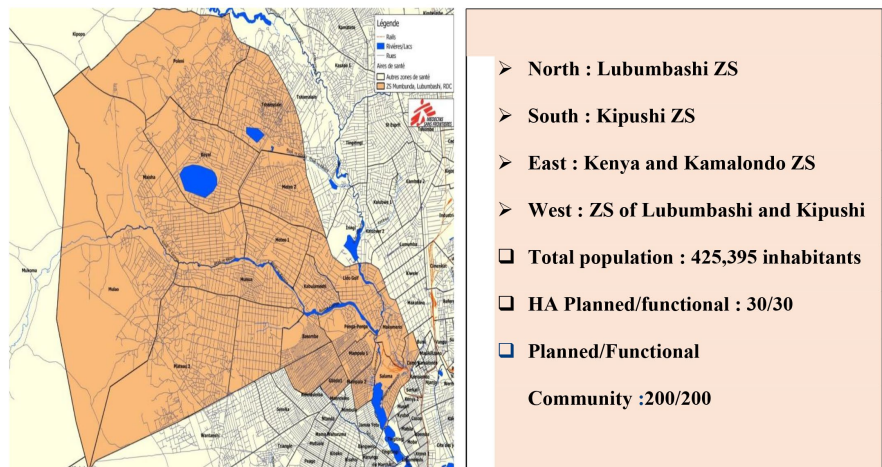


Figure 2. Mapping of the hunting zones of Lubumbashi and Mumbunda.

2.2. Type of Study and Period of Study

We conducted a cross-sectional descriptive study, during the period from February 27 to July 31, 2024.

2.3. Population Studied

All nurses employed in selected healthcare facilities.

➤ Inclusion criteria

Any nurse present during the study period and those who agreed to participate freely in the study.

➤ **Non-inclusion criteria**

Any nurse from the selected hospitals who was unavailable and/or absent at the time of our study visit and any nurse who did not work in all three hospitals.

2.4. Sampling, Sample and Sample Size

We used purposive sampling, including all nurses present in the three targeted hospitals at the time of the study, for a total of 60 nurses. This choice was explained by the desire to capture the reality on the ground without arbitrary exclusion, taking into account logistical constraints and participant availability. No formal sample size calculation was performed, but the chosen size is consistent with that of similar exploratory studies conducted in comparable hospital settings. The study opted for purposive sampling, that is, non-probability sampling where participants are selected according to specific criteria and based on their availability at the time of the survey. This method is particularly suitable in this context for several reasons:

- **Logistical constraints:** The study took place in three specific hospitals in Lubumbashi, with a limited and easily identifiable target population. Including all nurses present at the time of the study allowed for maximizing participation without arbitrarily excluding relevant profiles, while taking into account the limited human and material resources for data collection.
- **Contextual representativeness objective:** The aim was not to generalize to the entire country, but to describe the reality of research participation in these specific hospitals, taking into account their organizational and structural specificities. Purposive sampling thus allows for a faithful reflection of the diversity of situations encountered in these establishments.
- **Exploratory nature of the study:** In a context where little data exists on the subject and where participation in research is low, it is relevant to include all available actors to obtain as complete a panorama as possible of the obstacles and favorable factors in these hospital structures.
- **Accessible population size:** Since the target population was limited (60 nurses present in the three hospitals), it was realistic and relevant to include all available people, which strengthens the descriptive validity of the results without requiring formal sample calculation.

In the context of this study, “research participation” is defined as the active involvement of a nurse in conducting, carrying out, or contributing to a scientific nursing research project. This includes the following:

- The design or conduct of clinical or organizational studies relating to nursing care.
- The collection, analysis or interpretation of data as part of a research project.
- The writing or co-writing of reports, articles or scientific presentations on topics related to nursing care.

- Participation in working groups, committees or specific training on nursing research.

It is important to distinguish this active participation from the simple use of research results in daily practice, which is not considered here as a direct involvement in the production of scientific knowledge. The study specifies that confusion between «Doing Research» and «Using Research Results» sometimes exists among nurses, hence the need to clearly define this criterion.

2.5. Data Collection

We used the interview technique using a pre-established questionnaire that we pre-tested.

➤ Management (Creation of masks, storage and processing of data) and analysis of data

We used Epi-Info 7 and Excel software for data coding, entry, and in-depth analysis. Data governance was ensured through the implementation of master data management policies and procedures to ensure data quality, compliance, and efficiency. This included data lifecycle management, defining roles and responsibilities, and ensuring regulatory compliance. The questionnaire was developed based on a literature review and adapted to the local context. It was pre-tested with a small group of five nurses not included in the final sample to ensure clarity and relevance. Semi-structured interviews were conducted qualitatively. Qualitative data analysis followed a thematic approach, identifying key themes related to barriers and facilitators to the research. Quantitative data were processed with Epi-Info 7 and Excel, using descriptive statistics.

2.6. Ethical and Administrative Considerations

The confidentiality of the collected data and the anonymity of the participants were respected, in accordance with fundamental ethical principles, such as those set out in the Declaration of Helsinki, and taking into account the national guidelines for the ethical review of research involving human subjects in the DRC. Data collection was authorized using a form issued by the School of Public Health, countersigned by the heads of the hospitals concerned. Data collection was carried out while respecting the anonymity of the respondents and the confidentiality of the responses.

3. Results

3.1. Analysis of the Sociodemographic Characteristics of Nurses

In view of **Table 1**, the most represented age group was that of 46 - 55 years, or 38.30% of nurses, the average age was 51.7 ± 7.5 years with extremes of 28 to 68 years. The majority of nurses (56.60%) were registered nurses, 88% of whom were managers and 12% of whom were department heads. In 63.30% of cases, the nurses had between 21 and 35 years of experience.

Table 1. Distribution of respondents according to the sociodemographic characteristics of nurses.

Age group	Effective	Percentage
28 - 45 years old	13	21.70
46 - 55 years old	23	38.30
56 - 65 years old	22	36.70
> 65 years old	2	3.30
Marital status		
Married	43	71.70
Widow or widower	17	28.30
Education level		
Registered nurses	8	13.33
Registered Nurses	34	56.60
Secondary school nurses	18	30
Professional experience (in years)		
5 - 20 years old	12	20
21 - 35 years	38	63.30
36 - 45 years	10	16.70

3.2. Proportion of Nurses Involved in Research

According to **Table 2**, 93.30% of nurses do not conduct scientific research. The high proportion (93.3%) of nurses not involved in research, and the main obstacles identified (lack of financial resources, time, institutional support). The statistical methods used are mainly descriptive, adapted to the size and type of sample.

Table 2. Distribution of nurses according to whether or not they do nursing research.

Looking for a nurse	Effective	Percentage
No	56	93.30
Yes	4	6.70
Total	60	100.00

3.3. Identifying Barriers to Nursing Research in Hospitals

According to **Table 3**, 89.28% of respondents state that the lack of financial resources is the factor that prevents them from conducting nursing research, while 76.78% mention the lack of will and institutional support (35.71%). Nevertheless, the results are discussed in relation to similar studies, particularly on organizational and individual obstacles to nursing research, confirming the general trends while highlighting the specificities of the Lubumbashi context.

Table 3. Distribution of nurses according to barriers to nursing research.

Obstacles to Nursing Research	Number of employees (n = 56)	Percentage
Lack of will	43	76.78
Lack of motivation	45	80.35
No internet access	36	36.28
Computer incompetence	36	36.28

Continued

Lack of time	41	73.21
Lack of financial resources	50	89.28
Lack of institutional support	20	35.71

3.4. Identification of Factors Promoting Nursing Research in Hospitals

It is evident from this table that 75.00% of respondents state that computer skills are the main factor that facilitates nursing research, as shown into the results of **Table 4**.

Table 4. Distribution of nurses according to factors promoting nursing research.

Settings	Number of employees (n = 4)	Percentage
Easy access to the Internet	2	50
Computer skills	3	75
Interprofessional collaboration	1	25
Personal interest	1	25

4. Discussion

4.1. Sociodemographic Characteristics of Nurses

Our results show that the most represented age group was 46 - 55 years, or 38.30% of nurses. Women predominated with 91.70% of nurses and the sex ratio was 0.09. These results are contrary to the results of [7], where the mean age was 41.49 years (± 11.39 years), 62.2% were women with a sex ratio of 0.6, and the mean number of years of experience was 18.08 years (± 11.44 years). The majority of nurses (56.60%) had a higher education level. Nursing academy and higher education positively influence evidence-based practice among nurses [11]. In fact, studies show that the higher the level of education, the more nurses report knowing the steps of evidence-based practice (EBP) and feeling empowered to implement it [2].

4.2. Proportion of Nurses Involved in Research

In this study, we found that 93.30% of nurses are not inclined towards nursing research. Our results are similar to those of Clenet (2014), who found that nurses do not participate in research. However, our results are contrary to those of [7]; where 80.60% of nurses were engaged in nursing research. This is explained by the diversity of environments and fields of study.

4.3. Obstacles to Nursing Research in Hospitals

Our study found that 37.70% of nurses lack financial resources, 23.20% lack time to conduct research, and lack institutional support. Our findings are consistent with those of the study [9], which reflects the lack of financial resources, also revealing the lack of time to devote to research. Both studies converge on a worrying

finding: the lack of financial resources, a recurring problem in the field of nursing. Lack of funding can hinder the adoption of new technologies or new methods of care, thus preventing nurses from keeping up to date with the latest scientific advances. Our study converges on a conclusion similar to that of [13], 2017, where lack of time is a major obstacle for 62.6% of nurses. Approximately 17.90% of nurses do not have the necessary institutional support to carry out their scientific research [14].

The results highlight four main barriers: institutional barriers, lack of knowledge, lack of motivation, and time management. Our results complement this list by specifically highlighting that 17.90% of nurses perceive a lack of institutional support for conducting their research.

Several studies have indicated that only a few nurses participate and implement research in their practices (Mckee, 2017 and Kousar *et al.*, 2017; Kousar, R., Kousar, R., Azhar, M., Waqas, A., & Gilani, S., 2017). Barriers to Research Use in Nursing Practices in Public Hospitals of Lahore, Pakistan. *International Journal of Applied Sciences and Biotechnology*.

The lack of institutional support identified in our study is a key element. This lack of support can manifest itself in the absence of dedicated research resources, time allocated to research, and even recognition of research activity. Researchers often reported having a lot of work to complete during their shifts and lacking time to complete questionnaires. Furthermore, since this research is considered «work,» it would be inadvisable to conduct it outside of working hours.

4.4. Factors Promoting Nursing Research in Hospitals

The majority of respondents did not have access to the Internet and were not proficient in using a computer [15], which highlights the invaluable opportunity offered by the Internet and information and communication technologies. The study of [15] highlights the importance of access to relevant publications via the Internet as a source of innovation. We found that 75% of nurses report that computer skills are the main factor that promotes nursing research. Our results are similar to those of [15] who found that information is now easy to find when one has Oluwatosin, 2014, in a study conducted on the conduct and utilization of research among nurses, as only 21.2% had conducted research, 31.4% had used research findings in clinical practice. *Conduct and Utilization of Research Among Nurses in the Federal Capital Territory, Abuja, Nigeria*. Factors such as time, organizational policy, mentorship, funds, and awareness of research are some of the major factors influencing nurses' involvement in research, while awareness of research findings, time spent reading research findings, support from colleagues, and unpublished research influenced the use of research findings and internet browsing, and internet users are quick to share their knowledge and expertise.

5. Conclusion

In conclusion, this study of 60 nurses in three hospitals in Lubumbashi reveals a

low level of involvement in scientific research. The main obstacles identified are a lack of financial resources, a lack of time, insufficient institutional support, and difficulties accessing the Internet and computer skills. Computer skills are perceived as a key factor in promoting research. These results highlight the need for targeted interventions to overcome these obstacles and strengthen nurses' engagement in research, thereby contributing to the continuous improvement of care and the promotion of evidence-based nursing practice in Lubumbashi.

Author Contributions

Julie Ndayi Kabamba designed the study, analyzed and interpreted the results, Herman Tamubango and Ramazani Mupuluzi collected and analyzed the data, Malonga Kaj Franchoise, Ilunga Mpoyi Tabitha and Bukasa Kashala read and corrected the manuscript, André Ngombe Kaseba also made comments and corrections on all the literature in the manuscript. Manuscript: All. All authors read.

Ethical Approval

This information was obtained from the UNILU Ethics Committee. The anonymity and confidentiality of the information collected were guaranteed and respected.

Boundaries

Limitations of the study include the small sample size, its cross-sectional nature, and the lack of in-depth inferential statistical analysis. These limitations are clearly described. Implications for future research include the need for larger longitudinal studies and the development of targeted interventions to overcome the identified barriers.

Conflicts of Interest

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

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