

# A Survey of Nurse Informatics Competencies of Professional Nurses in Clinical Practice Public Hospitals in South Africa

Loretta le Roux<sup>a1</sup>, Million Bimerew<sup>b</sup>, Jennifer Chipps<sup>c</sup>

<sup>a,b,c</sup>*University of the Western Cape, Faculty of Community and Health Sciences, School of Nursing, Cape Town, South Africa*

ORCID ID: Loretta le Roux <https://orcid.org/0000-0003-3639-063X>

**Abstract.** Competence in Nursing Informatics (NI), is vital for efficient nursing care in today's technologically-enabled healthcare environment. In South Africa, little is known on the competence of professional nurses in clinical practice in nursing informatics. **Methods:** This study used a cross-sectional descriptive survey to examine self-rated competence in nursing informatics among 205 nurses in clinical practice across two hospitals in the Western Cape. The TANIC© scale was used to rate the skills of participants in computer literacy, clinical information management, and information literacy. **Results:** The highest rating was received for computer literacy, approaching a 'comfortable' competency level. Lower scores were received for clinical information management and information literacy, indicating 'novice' to 'advanced beginner' levels. **Conclusion:** The study showed that practicing nurses have a limited level of nursing informatics competence, especially in the domains of clinical information management and information literacy. These findings support the need for educational programmes to extend beyond basic computer skills and prioritize continuous professional development in nursing informatics.

**Keywords:** Nursing Informatics, Competency, Educational Preparation, Professional nurses, Technology

## 1. Introduction

In South Africa there is a little understanding of nurse's informatics competencies in clinical practice, particularly in professional nurses' competence in three important domain areas, namely, computer literacy, information literacy, and clinical information management. Differences in competency levels may be due to factors such as inconsistent training in health technology, age, prior technology exposure, training and support [1; 2; 3]. Some universities in South Africa teach components of NI, however, the focus is mostly on computer literacy [2]. With a lack of data on the nursing informatics competencies in South Africa, this study examined the self-rated

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<sup>1</sup> Corresponding author: Loretta le Roux, Email: [lroux@uwc.ac.za](mailto:lroux@uwc.ac.za), University of the Western Cape, Faculty of Community and Health Sciences, School of Nursing, Cape Town, South Africa

competence in nursing informatics among professional nurses practicing in clinical settings at two public hospitals in the Western Cape, South Africa.

## **2. Methods**

A cross-sectional descriptive survey of professional nurses in two public hospitals in the Cape Metropole, Western Cape, examined nursing informatics competency among 1119 professional nurses. Quota sampling ensured proportional representation with a sample size of 287 nurses. The TANIC© scale, assessed computer literacy (CL), clinical information management (CIM), and information literacy (IL) competencies, across novice to proficient levels [4]. Descriptive analysis with Chi-square tests and Independent Samples Wilcoxon U Tests explored associations between demographic variables and nursing informatics competencies.

## **3. Results**

Out of 287 respondents, 72.5% (n=208) completed the questionnaire, with 205 questionnaires included for analysis. Most respondents were female (91.2%), average age being 40.0 years, with 49% under 40; and 59% with a nursing diploma. 88.8% held non-managerial roles; while 18.3% reported training in health technology. Respondents rated the computer literacy domain significantly higher (2.63/4 [95%CI 2.5-2.76]), with average ratings approaching the 'comfortable' competency range. This was followed by clinical information management (2.09/4 [95%CI 1.95-2.23]), and information literacy (2.05/4 [95%CI 1.92-2.17]), with average ratings located in the 'novice' to 'advanced beginner' competency range. Degree-trained nurses generally rated higher across all domains compared to diploma-trained nurses, with fluctuating competency levels noted in subdomains, specifically among diploma-trained nurses.

## **4. Conclusions**

Low levels of NI competence, varying between the Diploma and Degree-trained nurses, support nurse education to extend beyond basic computer skills and prioritize continuous professional development in nursing informatics.

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