

# Assessment of Students and Graduates' Perceptions on Effectiveness of Nursing Curriculum and their Preparedness in A Selected School of Nursing and Midwifery in Rwanda

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## Abstract

The study aimed to evaluate the perceptions of students and graduates regarding the effectiveness of the nursing curriculum at the School of Nursing and Midwifery, College of Medicine and Health Sciences, University of Rwanda, in preparing them for professional practice. Two key research questions were addressed: the extent to which the curriculum prepares students and graduates as nurse professionals, and specific areas where they feel more or less prepared. Guided by constructivist theory and utilizing a cross-sectional design, the study sampled 153 respondents (61.7%) from a population of 248, including 90 students and 47 graduates. Findings revealed that a robust theoretical foundation in essential areas is crucial for nursing practice readiness. Most nursing-specific modules were deemed highly relevant, and all functional modules were considered significant for developing generic skills. The curriculum delivery was characterized by student-centered strategies, with students expressing moderate satisfaction with the assessment process. The mean preparedness score for students was (3.56), indicating that (85.8%) felt moderately prepared for their future careers, while the mean score for graduates was (3.85), showing that (63.8%) felt well-prepared.

**Keywords:** Nursing Education, Nursing Curriculum, Effectiveness, Perceptions.

## 1. Introduction

Globally, governments recognize the necessity of maintaining a sustainable source of health professionals who are trained to address current and future patient safety and quality care issues. According to the

National Advisory Council on Nurse Education and Practice, employers require registered nurses to be well-prepared to work effectively upon hiring, willing to engage in continuous learning, and adaptable to the needs of their working environments [1]. However, the healthcare industry acknowledges that nursing schools alone cannot fully prepare nurses. Therefore, mechanisms for employers to provide feedback to nursing schools about the competencies of their graduates are essential [1].

Increasing emphasis is being placed on preparation programs that address the needs of new nurses and their prospective employers. Swanklin (2008) highlighted that while the public may not be deeply concerned with the specifics of nursing education, they desire nurses who are knowledgeable, possess strong communication and interpersonal skills, are capable of shared decision-making, and are attentive to patients' needs, placing the patient at the center of all nursing practice [2]. Nursing education must maintain a strong linkage with the field, integrating both classroom learning and clinical experiences to meet the current demands of health services [3]. Despite new graduates feeling prepared with necessary knowledge, preceptors and management often find gaps in specific skills that could have been better practiced during schooling or clinical training [4].

In Rwanda, the training of nurse's dates back to the colonial period, with many nursing schools established by religious institutions. Recently, significant progress has been made by the Government of Rwanda to enhance the quality of education for nurses and midwives in both public and private schools [5]. Despite these efforts, Rwanda faces a critical shortage of health workforce personnel, which has impacted the quality of healthcare services and outcomes [6]. In 2013, the Ministry of Health of Rwanda reported a significant disparity in the number of healthcare professionals, emphasizing the need for better training and educational programs [7]. There is a pressing need for continuous improvement in nursing education to develop competent nurses who can meet the demands of the healthcare system effectively.

## 2. Problem Statement

Nursing is a practice-oriented profession that requires a blend of theoretical knowledge and practical skills to ensure effective patient care. The primary goal of pre-registration nurse education is to produce nurses who are "fit-for-practice" with competence in cognitive, psychomotor, and affective domains. Clinical competence is deemed the ultimate goal of nursing education, yet evidence indicates that newly qualified nurses often lack critical knowledge and skills necessary for essential patient care, resulting in stress and difficulties in their practice [8]. This disparity raises significant concerns about the adequacy of current nursing education programs in bridging the gap between theoretical learning and clinical practice.

Research suggests that new nursing graduates feel adequately prepared theoretically but find themselves lacking specific clinical skills required in real-world healthcare settings [1]. This gap prompts questions about the factors influencing the effectiveness of nursing education and the role of educational programs in developing clinical competence. Employers seek nurses who are well-equipped to work in diverse healthcare environments, capable of providing both traditional nursing care and additional services like case management and health promotion. Therefore, it is vital to evaluate nursing curricula from the perspectives of students, graduates, and academic staff to understand its impact on preparedness for professional practice. In Rwanda, where there is a pressing need for competent nurses, this assessment is crucial for enhancing nursing education and ensuring that graduates are well-prepared to meet the demands of the healthcare sector.

### 3. Objectives of study

1. To evaluate the effectiveness of the nursing curriculum based on the perceptions of students and graduates regarding their preparedness.
2. To identify the areas in which nursing students and graduates (nurse professionals) feel more and less prepared.

### 4. Methodology

The study was conducted at the University of Rwanda, College of Medicine and Health Sciences, School of Nursing and Midwifery, specifically within the General Nursing department, during the 2015/2016 academic year. Employing a cross-sectional design, data were gathered from second to fourth-year students in the Bachelor of Science in Nursing program, nurse professionals who graduated between 2013 and 2015, and academic staff. Data collection occurred both at the university and nearby health centers and hospitals where graduates were employed. The sample included 123 students, 13 academic staff, and 112 graduates. Quantitative data from questionnaires were analyzed using SPSS with descriptive statistics and Pearson's product-moment correlation to assess perceptions of curriculum effectiveness and core competencies. Qualitative data analysis was conducted to identify themes related to curriculum competencies, teaching-learning strategies, and student preparedness.

### 5. Result and Discussion

The following results were obtained:

#### 5.1 Table 1: Students' perceptions about relevancy of foundation modules in nursing curriculum

Item statement	N	Mean	SD
General anatomy and physiology	88	3.67	0.496
Principles of Biomedical Sciences	90	3.08	0.622
Behavioral Sciences	89	2.94	0.591
Community Health Nursing	84	3.34	0.65454
Patho-physiology	90	3.48	0.722
Tropical & Communicable Diseases	89	3.28	0.78

Table 1 provides an overview of nursing students' perceptions regarding the relevancy of various foundational modules in their nursing curriculum. The analysis reveals that General Anatomy and Physiology is considered highly relevant, with a mean score of (3.67) and a low standard deviation of (0.496), indicating a strong consensus among students. In contrast, Principles of Biomedical Sciences and Behavioral Sciences are perceived as less relevant, with mean scores of (3.08) and (2.94), respectively, and moderate standard deviations showing some variability in students' opinions. Community Health Nursing is viewed as fairly relevant, scoring a mean of (3.34) with a standard deviation of (0.655). Both Patho-physiology and Tropical & Communicable Diseases are also considered relevant, with mean scores of (3.48) and (3.28), though they exhibit higher standard deviations of (0.722) and (0.780), respectively, indicating a broader range of perceptions. Overall, foundational modules such as General Anatomy and Physiology and Patho-physiology are seen as particularly valuable, while Behavioral Sciences is viewed

as less essential. The variability in responses highlights differences in how students perceive the importance of these modules in their nursing education.

**Table 2. Students’ perceptions about relevancy of specific modules in nursing curriculum**

Item statement	N	Mean	SD
Fundamentals of nursing	90	3.46	0.656
Pharmacology	90	3.37	0.741
Medical surgical nursing	90	3.63	0.55
Reproductive health	89	3.6	0.75
Fundamentals of community health	90	3.06	1
Normal midwifery	90	3.41	0.717
Abnormal Midwifery	90	3.23	0.72
Specialized Nursing	90	2.93	1
Mental Health Nursing	90	2.93	1
Pediatric Nursing	90	3.32	0.7
Health Assessment	90	3.71	0.48

The data presented in the table 2 provide insights into nursing students' perceptions of various nursing modules based on mean scores and standard deviations. Health Assessment is perceived as the most relevant module, with the highest mean score of (3.71) and a low standard deviation of (0.48), indicating strong agreement among students on its importance. Following closely are "Medical-Surgical Nursing and Reproductive Health, with mean scores of (3.63) and (3.60), respectively, suggesting these modules are also seen as highly relevant, though with slightly more variability in perceptions as indicated by their standard deviations of (0.55) and (0.75).

Modules like Fundamentals of Nursing, Pharmacology, and Normal Midwifery are viewed as moderately relevant, with mean scores of (3.46), (3.37), and (3.41), respectively. These modules exhibit some variability in student perceptions, reflected in their standard deviations (0.656, 0.741, and 0.717). In contrast, Abnormal Midwifery, Specialized Nursing, and Mental Health Nursing are perceived as less relevant, with lower mean scores of (3.23, 2.93), and (2.93), respectively, and higher standard deviations of (0.72, 1.00), and (1.00), indicating significant variation in how students value these modules.

Fundamentals of Community Health and Pediatric Nursing also receive moderate relevance ratings, with mean scores of (3.06) and (3.32), respectively, and show a broader range of opinions as reflected in their standard deviations (1.00) and (0.70). Overall, the data reveal that while some modules like Health Assessment and Medical-Surgical Nursing are viewed as highly important, others such as Specialized Nursing and Mental Health Nursing are seen as less central to the nursing curriculum, highlighting variability in students' perceptions of module relevance.

**Table 3. Students perceptions about modules to develop functional skills**

Item statement	N	Mean	SD
Information and computer skills	88	33	0.5519
Language	88	32	0.6856
Health measurement and research	88	31	0.9025

Nursing leadership and mentorship	84	33	0.5672
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Table 3 presents students' perceptions of various modules designed to develop functional skills, measured by mean scores and standard deviations.

Information and Computer Skills has a mean score of (3.33) and a standard deviation of (0.5519). This indicates that students generally view this module as relevant and beneficial for developing their technical skills. The relatively low standard deviation suggests a consensus among students regarding its importance. Language scores a mean of (3.32) with a standard deviation of (0.6856). This module is also considered relevant, but with slightly more variation in student perceptions compared to Information and Computer Skills. This variability could reflect differing levels of perceived importance among students. Health Measurement and Research has a mean score of (3.31) and a higher standard deviation of (0.9025). This suggests that while the module is perceived as important, there is considerable variation in how students value it. Some students find it highly relevant, while others see less value in it, as indicated by the broader range of responses.

Nursing Leadership and Mentorship scores a mean of (3.33) and a standard deviation of (0.5672). Students generally regard this module as relevant, similar to Information and Computer Skills, with a relatively low standard deviation indicating consistent perceptions of its value.

Overall, the data reveal that modules aimed at developing functional skills, such as Information and Computer Skills, Language, and Nursing Leadership and Mentorship, are viewed as relevant by students, though with some variability in perceptions, particularly for Health Measurement and Research.

**Table 4. Adequacy of module content and theoretical/practical hours distribution**

Nursing Specific Modules	Adequacy of Curriculum Theoretical content			Satisfaction with Theoretical Hours			Satisfaction with Practical Hours		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Fundamentals of Nursing	84	36	0.57623	90	3.38	0.773	90	29	126
Pharmacology	84	34	0.64037	90	3.07	1	90	32	750.28
Medical Surgical Nursing	84	32	0.88947	89	2.9	0.769	90	31	113
Reproductive Health	84	33	0.90347	90	3.41	0.777	90	30	115
Fundamentals of Community health	81	25	15	90	2.81	1	87	29	137
Normal Midwifery	84	32	108	89	3.34	0.783	90	30	136
Abnormal Midwifery	84	31	112	90	3.34	0.737	90	29	129
Specialized Nursing	78	24	151	90	2.94	1	90	23	157
Mental Health Nursing	78	21	174	87	3	1	90	29	486
Pediatric Nursing	84	30	117	90	3.46	0.876	90	25	142

Health Assessment	84	31	100	90	3.53	0.737	90	32	0.92712
Clinical placement				86	3.24	0.839	89	34	0.76804

The research data indicates that most nursing modules, including Fundamentals of Nursing, Pharmacology, Medical-Surgical Nursing, and Reproductive Health, are perceived as having adequate curriculum content, with mean scores ranging from (3.25) to (3.36). However, Specialized Nursing and Mental Health Nursing modules received notably lower adequacy scores, with means of (2.94) and (3.00), respectively.

Satisfaction with theoretical hours shows considerable variation across different modules. Higher satisfaction levels were reported for Pediatric Nursing (mean = 3.46) and Health Assessment (mean = 3.53), suggesting a positive perception of these modules' theoretical components. In contrast, Pharmacology and Specialized Nursing had lower satisfaction scores for theoretical hours, with means of (3.07) and (2.94), respectively.

Regarding practical hours, satisfaction is generally moderate. Health Assessment received the highest satisfaction score (mean = 3.71), followed by Reproductive Health (mean = 3.15). Conversely, modules such as Fundamentals of Nursing and Specialized Nursing had lower satisfaction scores, with means of (2.91) and (2.93), respectively.

Overall, while the adequacy of content is largely viewed as satisfactory, there is significant variability in satisfaction with both theoretical and practical hours. Modules like Fundamentals of Community Health, Specialized Nursing, and Mental Health Nursing highlight areas where improvements could be made in content delivery and practical training to enhance overall student satisfaction.

**Table N0.5: Students’ perceptions about learning methods and assessment for foundational, specific and functional modules**

Variables	Level of satisfaction about teaching and learning			Level of satisfaction about Assessment process		
	N	Mean	SD	N	Mean	SD
General Anatomy and Physiology	90	3.34	0.603	90	3	0.7482
Principles of Biomedical Sciences	90	3.08	0.674	90	2.87	0.753
Behavioral Sciences	90	3	0.581	90	2.83	0.585
Community Health Nursing	87	3.18	0.601	83	3.1	0.821
Patho-physiology	90	3.27	0.614	90	3.21	0.841
Fundamentals of Nursing	85	3.2	0.76183	85	3.4	0.77604
Pharmacology	85	3.3	0.6289	85	3.2	0.77297
Medical Surgical Nursing	83	3.2	0.59383	85	3.2	0.88165
Reproductive Health	80	3.2	0.72871	85	3.3	0.87575
Fundamentals of Community Health	77	2.8	1.15	85	2.4	1.42
Normal Midwifery	82	3.1	0.9297	85	3.1	1.22
Abnormal Midwifery	82	3.1	0.73907	85	2.9	1.26
Specialized Nursing	75	2.8	1.20	85	2.4	1.64
Mental Health Nursing	75	2.8	1.15	82	2.1	1.78
Pediatric Nursing	79	3.1	0.74934	85	2.7	1.37

Health Assessment	82	32	0.63769	85	33	104
Clinical placement	85	32	0.59949	85	344	0.69774
Information and Computer Skills	88	31	0.59154	88	30	0.64286
Language	88	31	0.43369	88	31	0.588
Health Measurement and Research	87	31	0.51391	88	32	0.73064
Nursing Leadership and Mentorship	82	32	0.50427	84	32	0.70243

Table N0. 5 show that Students' perceptions of teaching and learning methods and assessment processes vary across different modules. For General Anatomy and Physiology, the mean satisfaction for teaching and learning is 3.34 (SD = 0.603), while for the assessment process, it is 3.00 (SD = 0.7482). Principles of Biomedical Sciences show a mean satisfaction of 3.08 (SD = 0.674) for teaching and learning and 2.87 (SD = 0.753) for assessment. Behavioral Sciences have means of 3.00 (SD = 0.581) for teaching and learning and 2.83 (SD = 0.585) for assessment. Community Health Nursing scores 3.18 (SD = 0.601) for teaching and learning and 3.10 (SD = 0.821) for assessment. Patho-physiology reports means of 3.27 (SD = 0.614) for teaching and learning and 3.21 (SD = 0.841) for assessment. Tropical & Communicable Diseases receive the highest satisfaction, with means of 3.35 (SD = 0.693) for teaching and learning and 3.29 (SD = 0.864) for assessment. In contrast, Mental Health Nursing has the lowest satisfaction, with means of 2.8 (SD = 1.15) for teaching and learning and 2.1 (SD = 1.78) for assessment. Generally, most modules have a mean satisfaction level around 3.0, indicating moderate satisfaction.

## 6. Discussion

The results of this study provide a comprehensive overview of nursing students' perceptions regarding the relevancy, content adequacy, and satisfaction with theoretical and practical hours of various modules within their curriculum. This discussion will contextualize these findings within the broader landscape of existing research on nursing education. Foundational modules such as General Anatomy and Physiology and Patho-physiology are considered highly relevant by nursing students, with mean scores of (3.67) and (3.48), respectively, aligning with Hagan and Foli's (2019) emphasis on their importance in forming the basis of nursing practice [9]. Conversely, Behavioral Sciences scored lower in perceived relevancy, with a mean of (2.94), consistent with Walker et al. (2016), who found that nursing students often perceive behavioral sciences as less directly applicable to clinical practice [10]. Specific modules like Health Assessment are perceived as highly relevant, with a mean score of (3.71), corroborated by Ross et al. (2014), who highlighted the importance of thorough health assessment skills for effective nursing practice [11]. Medical-Surgical Nursing and Reproductive Health also received high relevancy scores (mean = 3.63 and 3.60), supporting Newton and McKenna's (2007) findings on their importance in preparing students for diverse clinical scenarios [12]. In contrast, Specialized Nursing and Mental Health Nursing were seen as less relevant (mean = 2.93 for both), reflecting the challenges in integrating these specialties into the broader nursing curriculum [12]. Modules aimed at developing functional skills, such as Information and Computer Skills and Nursing Leadership and Mentorship, are viewed as relevant, with mean scores of (3.33), consistent with Smith et al. (2012), who highlighted the need for technical and leadership skills in modern nursing [13]. However, there is notable variability in perceptions of the Health Measurement and Research module, reflected in its higher standard deviation (0.9025), possibly due to differing levels of student engagement and understanding of research methodologies [14]. While the adequacy of content for most modules is viewed as satisfactory (mean scores ranging from 2.94 to 3.53),

there is significant variability in satisfaction with theoretical and practical hours. Health Assessment received the highest satisfaction score for theoretical hours (mean = 3.53) but a lower score for practical hours, aligning with De Guzman et al.'s (2020) findings on the balance between theoretical knowledge and practical application [15]. Satisfaction levels with teaching and learning methods and assessment processes across various modules are moderate, with mean scores around (3.0). Modules such as General Anatomy and Physiology and Tropical & Communicable Diseases received relatively higher satisfaction scores for both teaching and learning methods and assessment processes, in line with Billings and Halstead (2016), who highlighted the importance of effective teaching strategies and assessment methods in enhancing student learning experiences [16].

## 7. Conclusion

The findings of this study indicate that nursing students perceive certain foundational and specific modules as highly relevant, particularly those that are directly applicable to clinical practice. However, there is variability in perceptions of modules related to behavioral sciences and specialized areas of nursing. Additionally, while the adequacy of module content is generally satisfactory, there are disparities in satisfaction with theoretical and practical hours. These insights suggest the need for curriculum adjustments to better align with student perceptions and enhance the overall educational experience. Future research should explore the underlying factors contributing to these perceptions and examine the impact of curriculum changes on student outcomes.

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