Assessing the Effectiveness of the In-Person Nursing Education System in Guyana

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Abstract

This study evaluates the effectiveness of the traditional in-person nursing education system provided by Health Sciences Education, Ministry of Health, Guyana. Employing a mixed-methods approach, the research integrates both quantitative and qualitative methodologies to comprehensively assess the system's strengths and limitations. Data were collected from four hundred (401) nursing students who responded to a survey focusing on key aspects such as teaching methodologies, resource availability, and alignment with the evolving healthcare needs of the country. As Guyana's healthcare system rapidly expands, the demand for competent nursing professionals has intensified. Ensuring that nursing education effectively prepares graduates to meet these demands is critical. This evaluation provides essential insights for educators and policymakers to enhance nursing training programmes. The findings reveal both strengths and significant gaps in the current system, particularly in areas related to curriculum relevance, faculty development, and resource allocation. Based on the results, this study recommends curriculum enhancement, faculty capacity-building, and improved resource allocation to better equip nursing graduates for real-world healthcare challenges. Strengthening the nursing education framework is essential to sustaining high-quality healthcare services in Guyana.

Keywords: Curriculum Development, Faculty Training, Healthcare Education, In-Person Learning, Nursing Education, Nursing Pedagogy.

Introduction

Nursing education is fundamental in preparing competent healthcare professionals who can address diverse medical challenges. In Guyana, the traditional in-person nursing education system remains the primary mode of instruction, emphasizing face-to-face interactions and hands-on training. However, with the evolving landscape of healthcare, it is crucial to evaluate the effectiveness of this educational model in meeting contemporary demands. Guyana has made tremendous progress in the areas of healthcare and nursing education since gaining independence in 1966 [1]. The effectiveness of in-person nursing education is often measured by student preparedness for real-world clinical settings, mastery of nursing concepts, and adaptability to healthcare changes [2]. In the Caribbean context, researchers have noted disparities in nursing education quality due to limited access to updated resources, faculty shortages, and insufficient clinical training opportunities [3]. These challenges necessitate a critical evaluation of Guyana's in-person nursing education system.

This study aims to address the research question: How effective is the current in-person, traditional approach to nursing education in Guyana?

Despite ongoing efforts to enhance nursing education, such as various curricular revisions

and faculty training initiatives, the outcomes have not yet produced the quantity and, in some instances, the quality of nursing graduates. Existing solutions, including the incorporation of advanced teaching methodologies and increased resource allocation, have shown mixed results in terms of their impact on student preparedness. The Government of Guyana recently announced the plan to build six (6) new hospitals [4]. Considering this major expansion, there would be a significant increase in the number of healthcare workers required to make these new hospitals operational and to provide quality healthcare.

The objective of this study is to comprehensively assess the effectiveness of the in-person nursing education system in Guyana by analyzing teaching methodologies, resource availability, the alignment of the curriculum with healthcare needs and identifying its strengths and weaknesses. The study aims to provide actionable recommendations for curriculum enhancement, faculty development, and resource improvement by leveraging quantitative and qualitative data.

The novelty of this work lies in its focused analysis of the traditional nursing education system in a specific regional context, which has been underexplored in the existing literature. By identifying key areas for improvement and proposing targeted interventions, this study seeks to contribute significantly to advancing nursing education in Guyana, ultimately improving the quality of healthcare delivery and patient outcomes in the country.

Materials and Methodology

This study employed a sequential explanatory mixed-methods research design, which integrated both quantitative and qualitative research methods. Quantitative information was collected using structured, objective-type questions, while qualitative data were gathered through essay-type questions in the survey completed by student nurses in Guyana.

Surveys are helpful in research because of their unique ability to gather information unavailable from other sources. The survey method represents a simple procedure that can gather an extensive amount of information from a large group of individuals at a particular time [5]. Participants rated various aspects of the nursing education system from 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire had three (3) sections- section 1 collected demographic data, section 2 comprised objective-type questions, and section 3 comprised essay questions. The survey assessed instructional effectiveness, resource adequacy, curriculum alignment with healthcare needs, and overall strengths and weaknesses of the system.

Population

The research population comprised five hundred fifty-six (556) Nursing Assistant students in the Government Schools of Nursing. The population was from all ten (10) administrative regions of Guyana, considering both urban and rural settings to ensure a representative sample.

Sampling Technique

The sampling technique used for this study is stratified random sampling. Stratified random sampling involves dividing the population into homogeneous subgroups, or strata, based on specific characteristics relevant to the research objectives. Subsequently, random samples are drawn from each stratum, ensuring a proportional representation of each subgroup within the sample. This technique offers several advantages, including increased precision, enhanced representativeness, and the ability to compare subgroups within the population [6].

By stratifying the nursing student population based on relevant variables such as students' geographical location, the researcher ensured that the sample adequately represented the diversity within the target population.

Questionnaires were sent via email and WhatsApp using Google Forms to four hundred forty-seven (447) students from all the administrative regions in Guyana who were enrolled in the nursing assistant training programme. This represented eighty per cent (80%) of the student population. The sample size was stratified based on the student population from each administrative region. The hinterland regions, specifically regions 1, 7, 8, and 9, had a smaller student population than the coastland regions, namely regions 2, 3, 4, 5, 6, and 10. The researcher used the entire population, one hundred per cent (100%) from the hinterland regions and eighty per cent from the coastland regions. This stratified approach adequately represented the student population regardless of geographical location. Web-based surveys are gaining popularity in the field of health research, as they offer several advantages over traditional paper-based surveys. Three key advantages are: (i) access to unique populations, in this instance, a large group of participants that are spread over a wide geographical area (ii) time, in terms of distribution and completion; and (iii) cost, in terms of saving on printing and postage costs [7].

Ethical Consideration

Students' participation in this study was optional. The instrument was carefully designed to ensure the confidentiality of the participants' identities, allowing participants to provide objective responses. Additionally, the researcher's expertise in the subject matter provided valuable insights, uncovering subtle connections that might not be immediately evident to others, thereby enriching the depth of the analysis.

Demographic Characteristics of Respondents

The table below shows a synopsis of the demographic statistics of the respondents to the questionnaire.

Table 1. Demographic Characteristics of the Student Sample

Variables	Type	Frequency (Number)	Percentage
Gender	Male	39	9.7
	Female	362	90.3
Geographic location	Rural	76	19
	Urban	325	81
Age	18-25	215	53.6
	26-30	82	20.4
	31-35	59	14.7
	36-40	45	11.2

Four hundred and one (401) usable questionnaires were received from students. The demographic data highlight key characteristics of the study population, including a predominantly female, urban-based sample with a significant proportion of younger participants. The table above shows that 90.3 % of the respondents were female, while 81%

were students from urban areas in Guyana. More than half, 53.6 %, were between the ages of 18 and 25.

Results and Discussions

Quantitative Analysis of Data

The instrument was designed to collect data on the in-person nursing training programme using ten (10) objective-type items. The responses were input into SPSS and analysed using descriptive statistics, such as means, standard deviations, and mode, providing a comprehensive view of the strengths and weaknesses of the existing system.

Table 2 shows the summary analysis of the mean and standard deviation for each of the ten (10) questions on the survey form.

Table 2. Mean and Standard Deviation from Sample

No.	Question	Mean	Standard Deviation
1	The in-person nursing education system in Guyana is effective in preparing students for the nursing profession.	2.96	1.286
2	The teaching methodologies used in nursing education in Guyana are effective in promoting learning and understanding of nursing concepts	2.83	1.286
3	The resources available for nursing education in Guyana are adequate and provide students with the necessary learning materials.	2.65	1.248
4	The in-person nursing education system in Guyana adequately addresses the evolving healthcare needs of the population	2.15	1.148
5	The in-person nursing education system in Guyana adequately prepares students for real-world healthcare challenges.	2.43	1.310
6	The current nursing education system in Guyana has clear strengths that contribute to student success.	3.63	0.99
7	The weaknesses in the current nursing education system hinder student learning and preparedness for practice.	3.67	0.989
8	The strengths of the current system outweigh its weaknesses.	2.76	1.125
9	The weaknesses identified in the current system can be addressed effectively to improve nursing education.	3.34	1.175
10	The current nursing education system in Guyana provides a solid foundation for student learning and development.	3.96	0.853

Evaluating the in-person nursing education system in Guyana yields significant insights into its effectiveness and areas for improvement. Respondents rated the effectiveness of the system in preparing students for the nursing profession with a mean score of 2.96 (SD = 1.286), indicating moderate concerns regarding its adequacy. This aligns with findings from similar studies conducted in other developing countries, where traditional education models often struggle to meet contemporary healthcare demands [8].

The moderate evaluation of the system's effectiveness calls attention to the gap between educational outcomes and healthcare environment demands [9, 10]. Studies have demonstrated that a strong emphasis on clinical practice and hands-on experience during nursing education significantly correlates with improved preparedness for professional roles [11]. Therefore, reevaluating the existing curricular structure, teaching strategies, and resource allocations is essential to enhance the program's effectiveness. Additionally, fostering partnerships between nursing schools and healthcare facilities could facilitate the curriculum's alignment with current industry practices, ensuring that nursing graduates are competent, confident, and ready to meet the demands of the healthcare sector [12]. Multimedia offers educators and students limitless opportunities for effective teaching and learning. By carefully considering the pedagogical strengths and limitations of multimedia, it can be utilised to its maximum potential, achieving the status of a 'New Educational Technology tool.' [13].

Regarding teaching methodologies, the mean score of 2.83 (SD = 1.286) suggests that while some strategies may be effective, there is substantial room for enhancement to foster better learning outcomes [14]. The use of digital educational resources has been highlighted as a beneficial pedagogical approach, improving supervision and assessment during clinical placements [15]. A strong awareness of how healthcare systems operate, clinical experience and expertise in patient care are all requirements for aspiring nurse educators [16]. Studies have shown that early clinical exposure and interactive learning experiences significantly enhance students' understanding of nursing roles and responsibilities [17]. However, the effectiveness of these methodologies is often hampered by inadequate faculty support and resources, which can lead to a suboptimal learning environment [18].

The adequacy of resources received a mean score of 2.65 (SD = 1.248), highlighting a critical gap in the availability of essential learning materials. This corroborates previous research indicating that resource availability significantly impacts nursing education quality [19]. Resources are a critical component of nursing education, and the results indicate a perceived shortage in this area. The lack of adequate clinical facilities, teaching materials, and qualified faculty can severely limit the quality of education provided [20]. In resource-constrained settings, such as Guyana, the availability of essential resources is paramount for effective nursing education. Studies have documented that insufficient resources can hinder the implementation of comprehensive nursing curricula and affect the overall quality of education [21]. The use of adaptability and innovation in teaching to meet the evolving demands of healthcare education for educators seeking to implement effective and forward-thinking teaching strategies in nursing and health profession programmes is important for improved educational outcomes [22].

The evaluation of the system's ability to address the evolving healthcare needs of the population was particularly concerning, with a mean score of 2.15 (SD = 1.148). This suggests that the challenges identified are widespread and systemic rather than localised to specific institutions or individual experiences. It further emphasises that the perceived shortcomings are consistent across various stakeholders, making it a critical area for targeted reform. This

finding aligns with the literature that emphasizes the necessity for nursing education to adapt to meet modern health challenges, as seen in the work of McCarthy et al. [23]. For instance, integrating theoretical knowledge with practical application is crucial, as noted in studies where students expressed concerns about the lack of such integration, leading to a theory-practice gap [24].

Furthermore, the curriculum must adapt to contemporary healthcare challenges, which require ongoing evaluation and updates to ensure relevance [25]. Similarly, the low mean score of 2.43 (SD = 1.310) regarding the preparation of students for real-world healthcare challenges indicates a disconnect between educational outcomes and practical application, a common theme in nursing education critiques [26].

Conversely, respondents acknowledged the strengths of the current system, with a mean score of 3.63 (SD = 0.99), indicating recognition of its contributions to student success. Moreover, a mean score of 3.67 (SD = 0.989) emphasized that existing weaknesses hinder student learning and preparedness, suggesting urgent reforms to balance these strengths and weaknesses [27]. This suggests that outdated curricula, insufficient clinical training, and limited resources may affect overall preparedness. It also indicates that many students experience challenges that impact their ability to transition effectively into professional nursing roles.

While the strengths slightly outweigh the weaknesses, indicated by a mean score of 2.76 (SD = 1.125), there remains a need for a concerted effort to enhance the educational framework to ensure that students receive the highest quality of education. The potential for addressing the identified weaknesses received a more optimistic mean score of 3.34 (SD = 1.175), suggesting that stakeholders believe in the capacity for improvement. Furthermore, the strong foundation for student learning and development was affirmed with a mean score of 3.96 (SD = 0.853), which indicates that despite existing challenges, there is a solid base from which to build and enhance the nursing education system in Guyana [28]. Nursing programmes must align more closely with the dynamic healthcare landscape, incorporating contemporary practices and technologies [29]. While the in-person model is foundational, it must evolve to integrate more flexible and innovative teaching approaches to keep up with advancements in healthcare education.

Qualitative Analysis of In-Person Nursing Education System in Guyana

Data collected in this section was done by asking participants to answer two (2) essay-type questions on the questionnaire. In comparison to the overwhelming responses to section 2 of the questionnaire, section 3 had a reduction in the responses from participants. Based on previous surveys conducted, this trend in responses was expected. Hence, the researcher did not include several essay-type questions.

The analysis was done by looking at general themes gathered from the participants' responses.

Question 1: In your opinion, what aspects of the in-person nursing education system in Guyana contribute positively to your learning experience, and what areas do you believe need improvement?

This qualitative analysis examined the perspectives of 225 nursing students in Guyana on the aspects of in-person nursing education that contribute positively to their learning experience and areas that require improvement. The themes identified from their experiences were categorized into three main areas: Strengths, Challenges, and Suggestions for Improvement.

Strengths

1. **Hands-On Clinical Experience**: A recurrent theme in the responses is the appreciation for the practical training component of the nursing education programme. Many participants emphasized

the value of hands-on clinical experience, which they believe is critical for building confidence and competence in patient care. As one respondent noted, "Having the practical training in our region enhances the skills needed for real-life situations." This sentiment aligns with the literature, which asserts that experiential learning is an effective pedagogical approach in nursing education [30].

2. **Community Health Focus**: The emphasis on community-based training was highlighted as a strength, allowing students to engage with diverse patient populations and real-world health issues. Many students applauded this exposure, indicating that it enhances their cultural competence and prepares them for the specific healthcare challenges faced in Guyana.

3. **Dedicated Faculty**: Respondents expressed appreciation for experienced and committed faculty members who provide valuable mentorship. The presence of knowledgeable instructors fosters a supportive learning environment that encourages students to engage actively in their education.

4. **Collaborative Learning**: Opportunities for interaction among peers during clinical rotations and classroom discussions were noted as beneficial. This interactive environment facilitates the development of critical thinking and communication skills essential for nursing practice [31].

Challenges

Despite the notable strengths, several challenges were also articulated by participants:

1. **Resource Limitations**: A common concern was the inadequate availability of modern learning resources, such as updated textbooks, technology, and simulation labs. Many respondents pointed out that limited access to these resources constrains their learning experience. As one student mentioned, "The clinical lab sessions need more equipment," directly impacting their ability to practice necessary skills effectively.

2. **Teaching Methods and Curriculum Development.** A significant number of students expressed concerns about the effectiveness of teaching methods and the need for curriculum updates. Many believe that the theoretical aspects of their education need enhancement to match evolving healthcare practices. Nursing education has traditionally relied on in-person teaching methodologies that emphasize hands-on clinical training and direct faculty-student interaction [32]. Effective nursing education systems integrate theoretical instruction with practical experience to develop essential competencies [33]. However, several studies highlight challenges associated with resource limitations, outdated curricula, and the need for pedagogical innovations [34].

3. **Time Constraints:** Participants frequently mentioned that the duration of practical sessions is often insufficient for mastering required skills. For instance, a student noted, "The practical session duration is too minimal to learn the required skills adequately." The high demands of full-time employment among students exacerbate this issue, limiting their opportunities for additional practice.

Suggestions for Improvement

Participants offered several constructive suggestions to enhance the nursing education system in Guyana:

1. **Increased Practical Sessions**: Many respondents advocated for more frequent and longer practical sessions in clinical settings to allow students ample time to learn their skills. Recommendations included having "more practical sessions per procedure" and extending the hours spent in clinical placements.

2. **Enhanced Support Services**: Expanding mentorship programmes and student support services, such as academic counselling and mental health resources, was highlighted as crucial for managing the demands of nursing education. Effective support can contribute to a more resilient student body, better equipped to handle academic pressures.

3. **Technological Upgrades**: Participants expressed a desire for improved technological resources and simulation tools within the nursing programme. Enhanced access to updated equipment would facilitate better learning experiences and prepare students for modern healthcare environments. Nursing programmes must align more closely with the dynamic healthcare landscape, incorporating contemporary practices and technologies [29].

4. **Flexible Learning Models**: The implementation of more flexible learning schedules was suggested to accommodate students with full-time jobs. This could help in promoting a better balance between studies and work commitments, ultimately improving educational outcomes [35]. The benefits of hybrid learning, such as increased flexibility, enhanced student engagement, and improved learning outcomes, should be considered when selecting an integrated approach to curriculum delivery.

The qualitative responses to question 1 illustrate the multifaceted nature of the in-person nursing education system in Guyana. While there are significant strengths, particularly in practical training and supportive faculty, challenges such as resource limitations and curriculum relevance persist. By addressing these areas for improvement, stakeholders can enhance the educational experience and better prepare nursing graduates to meet the evolving demands of the healthcare system.

Question 2: What opportunities do you believe exist for improvement or enhancement within the in-person nursing education system in Guyana?

The in-person nursing education system in Guyana, while providing foundational clinical education, faces notable challenges and opportunities for improvement based on the responses of 203 participants. This qualitative analysis identifies prevalent themes and trends from the feedback, highlighting areas for enhancement and modernization to better meet the demands of 21st-century healthcare. These findings align with global best practices in nursing education, emphasising the importance of adaptive and experiential learning models [36]. Several trends established for question 1 have also been repeated for question 2. The researcher merged these trends, and they were not repeated in the discussion.

Curriculum Revitalization and Modernization

One of the most significant opportunities for improvement identified by participants is the need for curriculum modernization. Many respondents emphasized the necessity to integrate current evidence-based practices, technology, and global best practices into the curriculum. This aligns with findings that advocated for the incorporation of modern educational frameworks in nursing programmes to ensure graduates are well-prepared to cope with contemporary healthcare challenges [37]. The call for updating the curriculum to reflect the latest healthcare trends is essential for aligning nursing training with global standards and ensuring graduates are competitive both locally and internationally. The call for modernization aligns with research that underscores the importance of evidence-based curricula in nursing education [33]. Additionally, participants suggested that nursing programmes should offer more

flexibility, accommodating students from diverse backgrounds, including those in remote areas. These findings align with previous studies highlighting the need for curriculum modernization and improved clinical training [3, 34].

Interdisciplinary and Community-Based Learning

Some participants suggested incorporating interprofessional education (IPE) and community-based learning opportunities. Research indicates that IPE fosters teamwork, communication, and holistic patient care [38]. Collaborations can provide students with practical internship opportunities and exposure to diverse healthcare environments. These partnerships can enhance the quality of training and improve the overall healthcare delivery system within the community [39].

Flexible Training Models

There is also a call for more flexible training models, such as hybrid approaches that blend in-person and online learning. This flexibility is particularly beneficial for students from hinterland regions who may face barriers to attending traditional in-person classes. The importance of flexible learning suggests that hybrid models can engage students more effectively while addressing diverse learning needs [40].

Financial and Institutional Support

A notable concern was financial strain, with many respondents suggesting that nursing student stipends should be increased. Providing financial support aligns with studies that link adequate funding to improved student retention and academic success [41]. Additionally, participants recommended increased institutional investments in classrooms, training equipment, and digital resources to create a more conducive learning environment.

Conclusion

The feedback collected from nursing students in Guyana outlines several actionable opportunities for enhancing the in-person nursing education system. Focusing on curriculum modernization, increased simulation training, faculty development, and flexible training models will position nursing graduates to meet the evolving demands of healthcare. Collaborating with healthcare institutions and improving resource availability are essential to fostering a sustainable and effective nursing education framework in Guyana. Addressing these areas can enhance student competency, improve patient care, and align Guyana's nursing education system with international standards. By implementing strategic reforms, policymakers and educators can ensure a more effective and equitable training system for future nurses.

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