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Advancing Healthcare Equity: The Impact of Decentralised Nursing and Allied Health Education in Guyana

Chandroutie Persaud-Bahadur[1*] and S. P. Sreekala[2]
[1]*Public Health, Texila American University, Guyana*
[2]*Centre for Research and Development (CFRD), School of Management, KPR College of Arts Sciences and Research, Coimbatore, India*

Abstract

Decentralised nursing education has emerged as a pivotal strategy for addressing workforce shortages and promoting equitable access to quality healthcare. This article analyses the impact of decentralised nursing and clinical and technical programmes offered through the Ministry of Health in Guyana and how they can help address shortages of healthcare workers and promote equitable access to quality healthcare. Attempts to increase diversity within the healthcare profession have resulted in more ethnically diverse students enrolling on nursing education programmes. One of the critical challenges faced by nursing and clinical education programmes in Guyana is the limited capacity of centralised institutions to accommodate many students. As a result, there is a need to explore alternative methods of delivering nursing and clinical education to meet the increasing health sector demand. Decentralised nursing and clinical education provide a solution to this challenge by bringing nursing and clinical education programmes closer to the communities in need. The paper uses empirical evidence collected from 2019 -2024 on four (4) decentralised training programmes: the nursing assistant, community health worker, pharmacy assistant, and medical laboratory technician training programmes. It examines the reasons behind decentralised education, its implementation in Guyana, and its various impacts on nursing practice, education, and healthcare outcomes. The rapid expansion in healthcare facilities throughout Guyana would demand an increase in the number of healthcare workers trained. This research has significant findings that show the impact of decentralising nursing and clinical education, which could be deemed one of the main sources of increasing the number of healthcare workers, improving healthcare accessibility, empowering local communities, and strengthening its health workforce.

Keywords: *Clinical and Technical Training, Decentralised Nursing Education, Healthcare Equity, Healthcare Workforce, Hinterland Regions.*

Introduction

Guyana has a land area of 214,969 km2 (83,000 sq mi) and is located on the northern coast of South America, bordered by Venezuela, Suriname, and Brazil. With a population of approximately 790,000 people, Guyana is considered one of the least populated countries in the region. Guyana is divided into ten (10) administrative regions, with local authorities in each region [1].

Healthcare disparities, geographic locations, and workforce shortages are significant challenges to delivering quality healthcare services in Guyana and other regions worldwide. The emergence of decentralised nursing and clinical and technical education as a promising solution to address these issues is of utmost importance, as it provides nursing education and clinical training programmes closer to underserved communities, thereby

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****Corresponding Author: chandroutiebahadur@gmail.com***

addressing healthcare disparities with a sense of urgency.

Despite its relatively small population, the country's geographical landscape challenges the delivery of healthcare services and nursing and clinical education. With its diverse terrain ranging from coastal plains to dense rainforests, accessing education and healthcare services across the country can be difficult, particularly in remote regions such as regions 1, 7, 8, and 9. This is reflected in the low recruitment rate of persons from the hinterland region to nursing and clinical and technical training programmes.

However, decentralised nursing education initiatives aim to address these disparities by establishing training programmes in various locations, catering to the needs of underserved communities. This would allow for the training of nurses in remote and underserved areas [2].

Decentralised nursing education refers to an approach where nursing education is spread across multiple locations or institutions, often involving regional campuses or community-based learning centres, rather than being concentrated in a single central institution. This model aims to make nursing education more accessible, responsive to local health needs, and adaptable to specific community contexts, especially in rural or underserved areas [3].

This approach ensures a more evenly distributed healthcare workforce and enhances accessibility to education and healthcare services for the population spread across different geographic areas of Guyana. By decentralising nursing education, Guyana can increase access to education and healthcare services for its population, particularly those in rural and remote areas.

This article analyses the impact of decentralised nursing and clinical and technical health education programmes in Guyana, including their implementation strategies and transformative effects on nursing practice, education, and healthcare outcomes.

Background

In Guyana, both public and private institutions are responsible for providing health and medical care. The public health care system is highly decentralised, and the Regional Democratic Councils and Regional Health Authorities administer these services, with oversight from the Ministry of Local Government and Regional Development. While the government is the primary financier of public health care, contributions from the donor community are also significant. The Ministry of Health is instrumental in advising and coordinating public healthcare organisations to ensure that public health services align with the government's National Health Plan. Guyana's national referral hospital is the Georgetown Public Hospital. There are eight (8) Regional Hospitals, nineteen (19) District Hospitals, two (2) Cottage Hospitals, one hundred and forty-four (144) Health Centres, and two hundred and five (205) Health posts across the country [4].

Although the healthcare system has been highly decentralised for many years, efforts to decentralise education and training opportunities have intensified recently.

The Ministry of Health-Guyana, through its training department, Health Sciences Education (HSE), is responsible for training and providing adequate and competent human resources to meet the demands of the health sector in Guyana. All nursing, clinical, and technical training programmes were traditionally offered centrally at the three Government Schools of Nursing.

The Government Schools of Nursing are as follows:

1. Linden at the Charles Rosa School of Nursing, Region 10.
2. New Amsterdam, at the New Amsterdam School of Nursing, Region 6.
3. Georgetown at three locations: Georgetown School of Nursing, East Street; Annex 1 and Annex 11 in Kingston, Region 4.

Health Sciences Education-Career Booklet [5], training programmes offered by Health Sciences Education, Ministry of Health are:

Nursing Programmes

1. Professional Nursing
2. Nursing Assistant
3. Single Trained Midwifery
4. Post Basic Midwifery
5. Public Health Nursing
6. Medex.

Clinical and Technical Training Programmes-allied Health

1. Patient Care Assistant
2. Pharmacy Assistant
3. Environmental Health Assistant
4. Rehabilitation Assistant
5. Dental Assistant
6. Dentex
7. X-ray Technician
8. Medical Laboratory Technician
9. Audiological Practioner
10. Community Health Worker.

Before 2021, all nursing programmes were offered at the three (3) government schools of nursing, and the clinical and technical programmes were offered only at one training centre in the capital city, Georgetown. No government training institutions or centres outside of these locations catered for decentralised training and the growing need for additional healthcare workers. Limited classroom and accommodation spaces for resident students from remote areas and other regions were among some of the challenges presented during the centralised training programmes. This significantly impacted the number of students selected to pursue training at the respective training schools.

Students from the hinterland regions had to leave their homes, families, and learning environments to go to one of the three training centres on the coastline to pursue a career in health. This had social and financial implications for many students from the hinterland regions since they had to adjust to a different cultural environment, and financial support was needed for their daily expenses. In some instances, sacrifices had to be made by parents leaving their children at home and moving as resident students to pursue their studies to become health workers. This resulted in a high dropout rate of students from the hinterland regions, and over the years, recruiting persons also remains a challenge. After completing their training, some of the students from the hinterland did not want to return to work in their respective communities. They preferred to remain and serve on the coastline rather than returning to serve in their communities.

To address these issues and the rapidly expanding needs of the health sector, the Ministry of Health had several discussions with other government agencies, healthcare providers, regional officials and residents of the hinterland regions to intensify efforts to provide training opportunities in nursing and clinical and technical programmes within these regions. This led to the initial consideration of decentralising nursing and clinical and technical training programmes in the hinterland regions. The successful implementation required finding the necessary resources, including competent faculty and an appropriate venue with the necessary equipment and facilities needed for the successful implementation

In 2018, through its training department, Health Sciences Education, the Ministry of Health commenced its first decentralised Community Health Worker training programme in regions 1 and 9. This programme is designed to provide nursing education to students in rural and remote areas with limited access to education. It allows more persons to be trained and work within their communities and minimises the social, emotional and financial challenges of leaving their homes and families. The decentralised training programmes are also intended to increase the

number of nursing graduates in the country, which will help to address the shortage of nurses.

Research Methodology

The data collection methodology involved thoroughly examining and analysing diverse documents about decentralised nursing education sourced from the Ministry of Health, Guyana, between 2019 and 2024. These documents encompassed published and unpublished materials as well as internal and external documents from educational institutions. Internal data were retrieved from archives within the Health Sciences Education and the Ministry of Health, comprising strategic plans, annual reports, training reports, graduation reports, local statistics, and other pertinent internal documents. The quantitative research method was used to collect and analyse data. Additionally, media reports and other written materials concerning decentralised nursing and clinical education were scrutinised during the specified period.

The documents' evaluation was contextual, considering challenges such as non-electronic storage of materials and non-standardised format for information collection. Key variables were systematically identified and compiled to facilitate comprehension, including year, programme name, training site location, initial student enrolment, local authority involvement, organisational structure, teacher supervision, and technological integration. Quantitative data was collected and reflected in tables and graphs.

Ethical considerations were paramount, and meticulous attention was paid to de-identifying participant data to safeguard confidentiality. Utilising secondary sources bolstered study integrity by enabling result verification. The researcher's familiarity with the subject matter enriched the analysis by revealing nuanced connections not readily apparent to outsiders, thereby augmenting the study's depth and insight.

Rationale for Decentralised Nursing Education

Decentralising training refers to moving away from a centralised training approach and distributing it among various locations, communities, or departments. This approach has gained popularity in various fields, including clinical training and corporate settings. Decentralising training allows for a more practical and cost-effective approach to upgrading the skills and knowledge of employees or students [6].

In Guyana, where geographical barriers and healthcare workforce shortages exacerbate health disparities, decentralised education offers a pragmatic solution to bridge the gap between rural and urban healthcare access.

By training nurses in their local contexts, decentralised models aim to cultivate a workforce responsive to community needs and equipped with the skills to deliver culturally competent care, ultimately improving health outcomes among marginalised populations.

In a collaborative project between several countries with rural challenges, "Recruit and retain—making it work," a framework was developed, one of the foundations of which is hiring people with a local connection. This results in greater stability and more culturally sensitive service provision. Previous research has shown that students taking decentralised nursing programmes in Finnmark stayed in the county after graduating and became a stable workforce. Locally recruited nurses are familiar with the local culture, which is often neglected in centrally designed curricula, particularly the Sami perspective [7].

Decentralised nursing education has profoundly impacted nursing practice in Guyana by empowering nurses with the knowledge, skills, and cultural competence needed to deliver comprehensive care. By training nurses in local contexts, decentralised models have fostered a deeper understanding of community needs and cultural considerations, improving patient outcomes and increasing

patient satisfaction. Moreover, decentralised education has facilitated the integration of evidence-based practices and technology into nursing care, further enhancing the quality of care delivered [8].

Decentralized nursing education enhances the learning experience for students by increasing accessibility, particularly for those in rural or underserved areas. By offering programs in decentralized locations, students who may not have the means to travel to a centralized campus can still pursue their studies [9].

For instance, in Northern Norway, decentralized nursing education has successfully recruited students from rural areas, with nearly 87.5% of participants residing in these regions [10]. Decentralised programs have been shown to improve recruitment and retention of nurses in rural and remote areas, addressing healthcare workforce shortages in these communities [11].

Additionally, decentralised nursing education can provide a more diverse range of clinical experiences for students. Students placed in various decentralised locations can gain exposure to different patient populations, healthcare facilities, and community health challenges, ultimately broadening their perspectives and preparing them for a wider range of nursing careers.

The literature found that decentralised training exposed students to everyday situations and a caseload relevant to the needs of the community – an exposure quite different from that at the tertiary teaching complex [12].

Decentralised nursing education can help address nursing shortages in specific regions by training and retaining nurses within those communities. This can have a positive impact on local healthcare systems and improve residents' access to care. Decentralized programs foster culturally competent care by embedding local health challenges and cultural practices into the curriculum. For example, Indigenous-focused nursing education in Canada improved healthcare delivery to Indigenous populations. It is cost-effective for governments and institutions, enabling resource optimization by training healthcare workers in their local regions rather than central facilities [13]. This model of training fosters a better understanding of local health challenges among future doctors, increasing the likelihood that graduates will work in similar underserved areas. It provides culturally competent, community-oriented medical professionals [14]. In the healthcare sector, decentralization empowered regional health authorities to address local health challenges, particularly in underserved rural areas. It provides improved access to healthcare services, higher immunization rates, and a reduction in maternal and child mortality. Decentralized structures enabled better planning, resource use, and service delivery tailored to community-specific health priorities, when properly implemented, can enhance public service delivery and foster equitable development, though it underscores the need for capacity building at local governance levels to maximize these benefits [15].

There is growing evidence that preferential selection of students who grew up in a rural area is associated with increased rural retention. Undertaking substantial lengths of rural training during basic university training or post-graduate training was each associated with higher rural retention, as was supporting existing rural health professionals to extend their skills or upgrade their qualifications [16].

Discussion of Results - Decentralised Nursing Education Training Programme

Table 1 reflects the intake of students for the Nursing Assistant training programme over a six (6) year period, 2019 - 2024. As shown in the table, from 2019 to 2021, the number of nurses trained in these regions was not

significant compared to the needs of these regions.

In 2022, the Ministry of Health launched its first decentralised Nursing Assistant Training Programme conducted in regions 1, 2, and 9. The combined intake of students for Region 1 from 2019 to 2021 was 16. However, in the first decentralised in 2022 alone, the programme had more than the combined total from 2019-2021—an increase of 25 %.

The impact of the decentralised Nursing Assistant Training Programme on student intake is evident in the significant increase in intake in Region 2. The combined student intake from 2019 -2021 for Region 2 was seven (7) students. Due to the decentralisation of the programme, there was a substantial increase of fifty (50) students, representing an increase of 614% in the number of students trained.

A similar pattern was observed for Region 9 and Region 2 over the years 2019-2021. Eight (8) nursing assistant students from Region 9 were enrolled during the three years. The first decentralised nursing assistant training programme in Region 9 had twenty-seven (27) students enrolled compared to the eight students enrolled in the same programme over three years. This shows an increase of 238 % in the number of persons enrolled [17].

In 2024, the significant increase in student intake was due to the hybrid approach to curriculum delivery. Students were no longer asked to leave their homes to sit in classroom sessions. They were allowed to work and study.

Table 1. Intake of Students by Administrative Regions on the Nursing Assistant Training Programme

	Nursing Assistant Training Programme										
Year	*Administrative Region*										*Total*
	1	2	3	4	5	6	7	8	9	10	55
2019	4	0	2	15	0	14	1	1	3	12	52
2020	0	0	0	0	0	0	0	0	0	0	0
2021	12	7	3	36	0	1	8	12	5	10	94
2022	20	50	0	0	27	73	1	8	27	0	206
2023	1	3	25	86	30	74	11	9	1	4	244
2024	20	65	90	190	134	161	26	20	21	141	868
Total	58	127	123	331	196	329	54	58	66	177	1519
Source: Ministry of Health, Guyana- Health Sciences Education- Student population 2019-2024											

The flexibility of the hybrid approach would have materialised into a 256% increase in student intake. This is considering the highest in-person intake of two hundred and forty-four (244) compared to eight hundred and sixty-eight (868) students in the hybrid Nursing Assistant training programme.

These significant increases in training enrollment will increase the number of healthcare workers in all regions of Guyana. As a result, more staff will manage the workload of the existing staff members, and the public will benefit from more efficient and enhanced healthcare services.

The adoption of decentralised nursing education has transformed the landscape of nursing education in Guyana by diversifying learning opportunities and expanding access to education for aspiring nurses. By decentralising education delivery, nursing programmes have become more responsive to regional needs and tailored to local healthcare priorities. This localised approach has improved student retention and graduation rates, as students are more likely to remain in their communities throughout their education and subsequent practice. Decentralised programmes have encouraged the development of innovative

teaching methods and curricular adaptations to meet rural and remote learners' unique needs.

Graduates from decentralized programs often become strong advocates for community-based healthcare solutions, bridging gaps between local communities and healthcare systems [18].

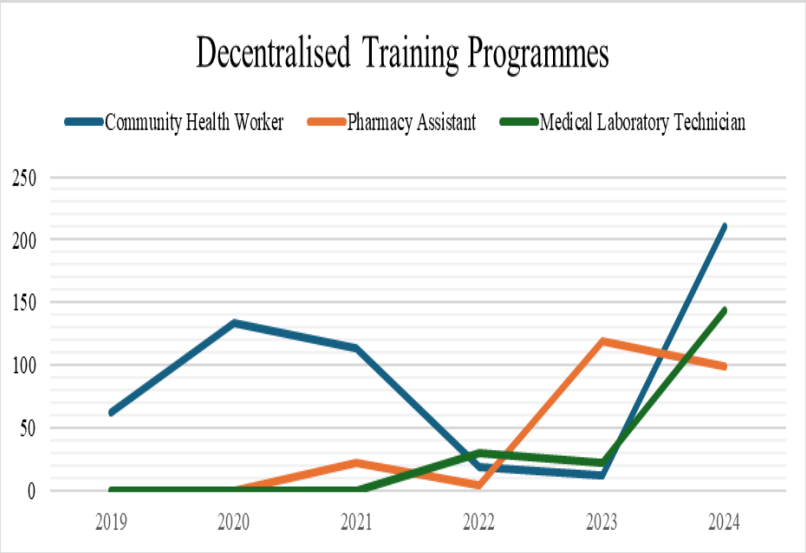

Figure 1. Student Population for Decentralized Training Programmes

Source: *Ministry of Health, Guyana- Health Sciences Education- Student population 2019-2024*

Discussion of Results - Decentralised Clinical and Technical Training Programmes

The Ministry of Health's first decentralised training programme was the Community Health Worker (CHW) training programme. This was conducted in 2018 in regions 1 and 9, significantly increasing healthcare workers in these two hinterland regions. Recognising the success of this decentralised programme, CHWs continue to be trained within the regions to adequately staff health facilities and provide services to the residents of these communities.

As the need for healthcare workers became more evident across the country due to the expansion of services provided at the regional level, the decision was made to decentralise the Pharmacy Assistant and Medical Laboratory Training programmes for the first time. These programmes were decentralised to the hinterland regions and regions where these categories of healthcare workers are needed.

Figure 1 shows the significant increase in healthcare workers trained in the decentralised Community Health Worker, Pharmacy Assistant and Medical Laboratory Technician Training programmes.

From 2019 to 2024, five hundred fifty (550) Community Health Workers (CHWs) were trained. This number included the centralised and decentralised training programmes the Ministry of Health offers. A segregated analysis of this total reflects that one hundred fifty-nine (159) persons were trained centrally, while three hundred ninety (391) persons were trained through decentralised training programmes within their regions. This increase in the number of persons who graduated significantly impacted the delivery of healthcare services in the hinterland regions. It allowed for at least two Community Health Workers at each health facility in the hinterland regions [19].

Traditionally, the Pharmacy Assistant (PA) and Medical Laboratory Technician (MLT) training programmes had an annual intake of thirty (30) students each. These training sessions were conducted centrally at one training centre in the capital city, Georgetown. These thirty (30) students had to be distributed amongst the ten administrative regions.

In 2023, the Pharmacy Assistant Training programme was decentralised to Regions 2, 6, and 9 and in 2024 to Regions 10 and 3. Figure 1 reflects a combined total of two hundred and eighteen (218). Pharmacy Assistants trained within two years using the decentralised approach. This increase would have impacted the quality of services provided in the pharmacy. Due to the increase in pharmacy assistants in Region 2, citizens can now benefit from a 24-hour pharmacy service.

The Medical Laboratory Technician training programme was decentralised to Regions 2,6,9 and 10 in 2024. Figure 1 shows a total of one hundred forty-four (144) MLTs trained in 2024 compared to fifty-two (52) in previous years. An increase of 277%. This massive increase is reflected in improved and efficient lab services provided to the general population across Guyana.

A study conducted with sixteen university medical schools in Australia, which established 18 rural clinical and regional medical schools (RCS/RMS), revealed extensive positive impacts on rural and regional communities, curriculum innovation in medical education programs and community engagement activities. "Rural clinicians are thriving on new opportunities for education and research. Clinicians continue to deliver clinical services and some have taken on formal academic positions, reducing professional isolation, and improving the quality of care and job satisfaction. This strategy has created many new clinical academics in rural areas, which has retained and expanded the clinical workforce" [20].

Similar findings were stated in a study that examined the continuing education (CE) of nurses who graduated from a decentralized nursing programme in 1994 in Northern Norway. "The results of this study show that more than half of the participants were motivated for CE. The findings indicate that the participants' previous experiences with a decentralized, flexible study model were positive and that they preferred CE organized as part-time and/or as decentralized studies [9].

Conclusion

Decentralised nursing and clinical education have several benefits, including increased access to education, tailored learning experiences, clinical exposure and skill development, retention of healthcare workers in underserved areas, cost efficiency for students and institutions, strengthened collaboration with local health systems and enhanced flexibility.

Despite the many benefits of decentralised nursing and clinical education, Guyana faces challenges such as limited resources, infrastructure constraints, and local faculty. As the system evolves, it will be imperative to address these challenges and adapt strategies to enhance further the quality and effectiveness of nursing and clinical education across diverse locations in Guyana. This could involve exploring innovative technologies for remote learning, creating standardised protocols for quality assurance, and establishing formal networks for collaboration between decentralised and centralised institutions. Additionally, ongoing evaluation and research are needed to assess the long-term impacts of decentralised education on nursing workforce dynamics and healthcare delivery models.

In conclusion, by addressing these challenges and embracing opportunities for improvement, decentralised nursing education in Guyana will contribute to developing a skilled and diverse nursing workforce and ensuring the sustainability of decentralised nursing education, ultimately enhancing healthcare delivery nationwide.

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The authors declare no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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