Experiences of Decision Makers Establishing a Nurse-Practitioner-Led Cardiac Surgery Follow-up Clinic: A Qualitative Descriptive Study

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Abstract

***Background**: Advances in cardiovascular surgery, along with early hospital discharges, have created a demand for improved postoperative outpatient support. Nurse practitioner-led (NP-led) outpatient clinics can help address this healthcare challenge.*

***Purpose**: To explore the experience of establishing an NP-led follow-up clinic.*

***Method:** A qualitative descriptive research methodology was employed, facilitating data collection through indepth semi-structured interviews with four clinic leaders. The data were analyzed using thematic analysis.*

***Results**: Participants shared insights about the vision, facilitators, and lessons learned during the development of the clinic. Key findings included the clinic's goal, patient impact, facilitators, barriers, leadership skills, and key learnings.*

***Conclusions**: This study deepens the understanding of the elements involved in developing an NP-led clinic for postoperative cardiac surgery patients.*

***Implications for Practice**: The findings offer practical implications for healthcare administrators and practitioners regarding the planning and implementation of such clinics, as well as informing future research.*

Keywords: nurse practitioner clinic, nurse-led clinic, clinic evaluation, nurse clinic setup, qualitative

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Key Highlights

- The paper discusses the challenges, successes, and barriers to initiating and managing an NP-led cardiac surgery follow-up clinic.
- The findings reveal that establishing an NP-led clinic is challenging but rewarding, because it supports patient needs post-discharge.
- The research adds to existing literature on the challenges, successes, and barriers to designing and implementing an NP-led surgery follow-up clinic.
- The paper provides evaluative data that healthcare leaders can use to plan, initiate, and manage similar NP-led clinics.

While global life expectancy has steadily risen (Robine, 2021), increases in chronic diseases and associated mortality and morbidity are leading to more complex patient populations (Bonner et al., 2020; Vos et al., 2020). In Canada, one response to these challenges has been to reform primary healthcare, which includes shifting from patients receiving care solely from physicians to the increasing integration of nurse practitioners (NPs; Heale et al., 2018). Nurse practitioners are registered nurses with additional education and clinical training, enabling them to diagnose and treat illnesses independently (Canty & Kearney, 2018). They operate autonomously, initiating the care process and monitoring health outcomes in collaboration with an interdisciplinary team (Pond et al., 2021; Schlabach et al., 2022). NPs emphasize person-centred care to support patients in

both health and illness, helping them lead meaningful and productive lives. In Canada, the scope of practice for NPs allows them to conduct comprehensive assessments and treat various ailments, including chronic diseases, using a holistic approach (Canadian Nurses Association, 2010; Hansen et al., 2017). Thus, NPs are increasingly engaged across the whole continuum of patient care.

Background

Cardiovascular surgeries are effective treatments for relieving symptoms and reducing the risk of death from CVD (Bartlo et al., 2020). The number of cardiac surgery procedures performed in Canada is projected to increase by more than 50% in the next decade (Hassan et al., 2020; Moffatt-Bruce et al., 2018), partly due to the link between advanced age and vascular diseases, as well as the greater prevalence of cardiovascular disease (CVD) that necessitates surgical management (Nicolini et al., 2014). Advances in cardiovascular surgery practices, such as early hospital discharge, are promoted to enhance operative volumes (Sawatzky et al., 2013).

A decrease in the length of hospital stays can result in limited time for comprehensive patient teaching before discharge. Additionally, patients may struggle to comprehend or retain information due to confusion and anxiety post-operatively (Sawatzky et al., 2013). The use of outpatient clinics and programs led by NPs has demonstrated high patient satisfaction and quality health measures. These can help bridge educational and clinical support gaps (Oatley & Fry, 2020; Woo et al., 2017) and support patient needs in the immediate postoperative days, as they transition to primary care. Given the breadth of NPs' scope of practice, they can address many concerns that patients report following cardiac surgery, including fatigue, sleep disturbances, pain, shortness of breath, and decreased bowel function (Sawatzky et al., 2013). A recent systematic review by Smigorowsky et al. (2020) found that NPs can assist with postoperative surgical care in both critical care and ambulatory clinical settings. They concluded that NP-led care was associated with outcomes equal to or better than those of physician-led care, including improved blood pressure and cholesterol control, patient satisfaction, and costs associated with consultations with NPs compared to physicians (Smigorowsky et al., 2020). This qualitative research focuses on the initiation of an NP-led cardiovascular postoperative clinic.

Objective

In this study, we aimed to explore the experiences of core decision-makers, including the NP, during the initiation of an NP-led clinic for cardiac surgery patients post-discharge. We report the findings from the qualitative research, highlighting the team's experiences in establishing and managing the NP-led clinic, and provide insights to support others undertaking similar health system improvements.

Methodology

This research team utilized a pragmatic qualitative approach to collect and analyze data regarding participants' experiences. By doing this, we aimed to build knowledge in the pragmatic tradition by focusing on 'warranted assertions' rather than absolute knowledge or 'truth' (Martela, 2015). This approach was selected due to the study's applied and practical nature. A qualitative approach facilitates the exploration of human experiences, beliefs, and perceptions (Paley, 2017). It is a suitable method for understanding and uncovering values, meanings, motives, and perceptions within a specific context, as well as generating ideas for improvement. Some of the most significant questions in health services research pertain to the organization and leadership of health care, as well as the evolving roles of health professionals, which are well-suited to qualitative approaches (Pope & Mays, 1995).

This study employs a qualitative descriptive research methodology, grounded in a naturalistic approach to understanding the meanings that participants attribute to a particular experience (Bradshaw et al., 2017; Hall & Liebenberg, 2024; Sandelowski, 2000). Qualitative descriptive methodology seeks to uncover the nature of participants' experiences within a specific context (Sandelowski, 2000). In-depth individual or group interviews, employing thoughtfully designed questions, as in this study, are suitable for data collection in qualitative descriptive studies (Sandelowski, 2000; Turale, 2020).

The qualitative description approach enables researchers to identify and interpret common themes that reflect the experiences of multiple participants, thereby enhancing their understanding of the phenomenon of interest (Willis et al., 2016). The ontological position and epistemological assumption of qualitative description suggest that reality is subjective; thus, "no one reality can exist as individuals assign their interpretation and meaning to a phenomenon" (Bradshaw et al., 2017, p. 2). Therefore, findings should be supported by verbatim quotes to illustrate and substantiate interpretations accurately. This approach is well-suited for data collection and analysis when researchers aim to provide a description or summary of experiences.

Settings/Context

The study was conducted in a clinic within a cardiac surgery program in Western Canada. The institution performs approximately 1,500 adult cardiac surgical cases annually, including heart transplants, lung transplants, and mechanical circulatory support (MCS). A cardiovascular intensive care unit (CVICU) accommodates patients in the immediate postoperative period. Following CVICU discharge, a multidisciplinary team – including nurse practitioners, surgeons, nurses, respiratory therapists, physiotherapists, pharmacists, and discharge coordinators – monitors patients for postoperative complications in a postoperative unit, providing

essential education as patients recover and prepare for discharge. The NP-led clinic serves as a point of transition for patients referred before discharge. Those living outside the province, being transferred to another acute care facility, receiving MCS, or undergoing congenital heart defect repair, cardiac transplantation, or lung transplantation were excluded from the clinic.

NP-Led Clinic: Structure and Goals

The NP-led clinic was developed with the following goals: 1) reducing the length of stay following cardiac surgery, 2) minimizing hospital readmissions, and 3) decreasing emergency department visits after discharge. Funding for the clinic was secured for an estimated two-year period from a facility innovation grant, which was entirely allocated to the NP's salary. The clinic was located within an outpatient department and staffed by a 0.75 full-time equivalent NP, along with an existing clinic coordinator (unit clerk) who supports all cardiac clinics in the outpatient setting. The outpatient clinic featured a registration desk for all patients accessing the cardiac clinics. The NP utilized one exam room on clinic days and independently performed all required interventions, including vital signs, patient assessments, education, documentation, completing requisitions and prescriptions, and faxing specialist referrals and follow-up notes to primary care providers.

The clinic opened in January 2022, with the NP working 4 days per week. The median (IQR) number of patients seen per month was 81 (range, 59–89). In the first 12 months of operation, the NP saw 910 individual patients. Initial visits were conducted both in person (n = 450) and virtually (n = 460). Additional visits were necessary for 258 (28.4%) patients, resulting in 431 follow-up phone or in-person appointments. Initial in-person visits were scheduled for either 60 minutes or 30 minutes when conducted over the phone.

Sampling/Recruitment

A purposeful sampling approach was employed to ensure that participants with the most relevant qualities, such as applicable experience and knowledge of the phenomenon of interest, were recruited to provide information-rich content for analysis (Bradshaw et al., 2017; Creswell & Poth, 2018; Sandelowski, 2000; Malterud et al., 2016). The sample for the study comprised individuals from the clinic leadership team, including the nurse practitioner. They were contacted via email and invited to participate in the research study. Recruitment concluded when all clinic leaders agreed to participate.

Data Collection

Four individuals (three clinical leaders and one NP) were interviewed for the study. Data collection was guided by semi-structured, in-depth interviews with focused questions. Individual interviews provided unique perspectives rather than the broader understanding achievable through focus groups (Sandelowski, 2000). The research team developed the interview questions iteratively to reflect the inquiry, incorporating input from clinical staff and leadership familiar with the study (see Box 1: Interview guide; Roberts, 2020). Before administering the questions to participants, the interviewer tested them with another team member. Participants answered a series of focused, open-ended questions regarding the clinic's purpose, barriers and facilitators to establishing the clinic, and factors influencing the timeline for its development. Additional questions explored the leadership and clinical skills necessary for the clinic setup. Interviews typically lasted about 45 minutes in duration.

A secure Zoom platform was used to conduct interviews, utilizing recommendations from similar research teams (Zoom Video Communications, 2023). Zoom is a collaborative, cloud-based videoconferencing service that offers features including online meetings, group messaging, and secure session recording (Archibald et al., 2019). The interview was audio recorded, and artificial intelligence-based audio transcription was employed (Gray et al., 2020), followed by manual review to confirm the transcription's accuracy. Transcripts were then uploaded to the open-source qualitative data analysis software Taguette for review, coding, and qualitative analysis (Rampin & Rampin, 2021). Interviews were conducted between November 9, 2022, and January 6, 2023. All participants joined the interview from a private office while at work, ensuring that no interruptions or distractions affected data collection during the interviews.

Box 1

Interview Guide

I understand that you have been part of the NP-led cardiac surgery follow-up clinic development. Can you describe your experience of developing the clinic?

What were some of the challenges or barriers to starting the clinic?

What were some of the facilitators for starting the clinic?

How long was the clinic in the development phase?

What would you do differently next time you develop a similar clinic?

What clinical and or leadership skills were essential for this clinic?

What specific skills did the NP bring that were essential for the clinic?

Would you like to review the questions at all?

Is there anything else you think we should know about the NP clinic?

Is there anything you would like to add?

Data Analysis

In alignment with the requirements of qualitative descriptive studies, this research adopted a thematic analysis approach, following the phases of familiarization, coding, theme generation, and reporting (Braun & Clarke, 2006). Understanding the data involved repeatedly listening to and reading it while questioning its meanings and relation to the study's objectives. Taguette was then used to highlight relevant and insightful sections of the interview transcript, which were coded, grouped, and organized into hierarchical tag structures within a query language database, facilitating easy exploration (Rampin & Rampin, 2021). Themes were generated by grouping coded and highlighted passages and elevating them to a higher level of abstraction by identifying patterns and key concepts. This inductive approach enabled a deeper understanding of the study's context and the development of a framework applicable in practical settings, benefiting others in similar contexts (Braun & Clarke, 2006; Thorne, 2008). The findings from the thematic content analysis are presented in accordance with the Standards for Reporting of Qualitative Research (SRQR) checklist (O'Brien et al., 2014; see supplementary data).

Ethical Considerations

Each participant received a written study information sheet at the outset. Before collecting data, the interviewer reviewed the contents of the consent form and obtained written consent from the participant before the interview. The researcher informed potential participants that their participation was voluntary and that they could withdraw from the study without negative consequences. All participants were given a copy of the completed consent form immediately after the interview. The study procedures received approval from the University of Alberta's Research Ethics Board (Pro00116155), and no deviations from this protocol occurred.

Researcher Positionality

The interviewer is a second-year PhD student trained in qualitative research methods. She is also a nurse manager with more than 10 years of experience leading frontline nurses and multidisciplinary healthcare teams. She has overseen the establishment of multiple outpatient clinics, including a COVID-19 Immunization Centre. The research team also included members with advanced training and experience in qualitative and mixed-methods research.

Trustworthiness

We adhered to the criteria of credibility, dependability, confirmability, transferability, and authenticity, as described by Lincoln and Guba (1985). Credibility was established through prolonged contact with participants, peer debriefing within the research team, member-checking with participants, and maintaining a reflective journal (MJD). Rigorous data analysis involved multiple iterations of questioning the data and exploring alternative explanations. Dependability was ensured by maintaining an auditable trail of process logs and engaging in peer debriefings within our research team. Confirmability was addressed by keeping an audit trail of analysis and methodological memos. Transferability was supported by providing rich, detailed descriptions of the context, location, and participants studied, as well as by being transparent about the analysis and trustworthiness. Lastly, authenticity was achieved by carefully selecting appropriate participants and offering a rich, detailed description of their experiences.

Findings

In-depth interviews were conducted with four key clinical leaders, each of whom had been directly involved in the development and implementation of the clinic. Table 1 outlines the roles and responsibilities of all participants in this study. The experiences of these participants were notably consistent. Data analysis revealed six key themes: clinic goal, patient impact, facilitators (team collaboration, clinical knowledge, and interest holder involvement), barriers (hiring, the booking process, and the pandemic), leadership skills, and key learnings (effective communication and securing surgeon buy-in).

Goal of the Clinic

Participants indicated that the clinic's goal was to reduce the length of hospital stays post-operatively, lower post-operative readmissions, and decrease emergency visits by providing enhanced post-operative care through an NP. The alignment of the clinic's goal among the participants was

Table 1

Participants Characteristics

Participant	Role	Nursing Experience (Years)	Responsibilities Related to Clinic
1	Clinical leader	20	Developed idea and proposal for NP role
2	Clinical leader	23	Developed idea and proposal for NP role; direct report for NP
3	Clinical leader	20	Developed idea and proposal for NP role; decision-maker for ongoing funding
4	Nurse practitioner	24	Direct patient care, day to day management of clinic

Note. NP = nurse practitioner.

evident. One of the participants noted that the idea for an NP-led cardiac surgery follow-up clinic had been on the minds of nursing leadership for some time. "We identified that one of our issues was the prolonged length of stay within the cardiac surgery wards … There was a call for project ideas for the Innovation Fund, and this idea arose during a meeting" (P3).

The need to decrease the length of stay in the hospital was echoed by other clinical leaders, noting: "We need to support patients after their surgery and, ultimately, that is going to help reduce hospital readmissions and emergency visits afterwards" (P4). Another mentioned, "Length of stay is an organizational priority. We provide patients with a lot of education prior to discharge, but they remain overwhelmed. We had heard from a number of patients that they felt they were told nothing, and they would phone back to the unit for information" (P1).

Patient Impact

Participants reported that the clinic was supporting many patients, particularly those with limited access to primary care practitioners and living in rural areas. One participant said, "There are a lot of patients who don't have access to primary care, which is sad at this point. The clinic is bridging that gap in services for them" (P1). Another stated, "From a patient-satisfaction, provider-satisfaction point of view, the clinic has been a success" (P1). Finally, the NP confirmed that "in many cases, (they are) the first person they have called because (they are) accessible."

Facilitators

Team Collaboration

Participants discussed processes they employed to ensure team collaboration from the project's inception and throughout the planning stages. One clinical leader participant noted that they discussed the clinic with the physician lead "to see if he would be supportive of our application (for funding) … and he was. He thought it was a great idea. So, we put forward the application … and ended up getting funded for two years for an NP" (P2). Participants described at length the collaborative planning that took place as part of clinical planning and development, including having a shared understanding of the purpose of the clinic, its core functions, and plans for hiring and operations. One participant recalled: "After we decided who the successful candidate was, we met as a team and engaged the quality improvement personnel to walk through clinic processes with us. We met with the ambulatory team couple of times to discuss how to do the scheduling of patients and what that looks like" (P1).

The participants acknowledged that "communication and regular meetings were important" from the start to successfully start clinic operations. However, some of the meetings were impeded due to the ongoing COVID-19 surge planning, and many of the meetings and "work were done virtually" (P2).

Clinical Knowledge

The combined cardiac knowledge and clinical experience of the clinical leaders and the NP were seen as crucial in facilitating the design and launch of the NP-led clinic, ensuring it was well-equipped to deliver high-quality care to post-cardiac surgery patients. Notably, participants highlighted that the NP involved in planning the clinic possessed extensive knowledge of cardiac conditions, including the anatomy and physiology of the heart, various types of heart diseases, their symptoms and causes, as well as the available treatments and medications. Participants noted that the NP's prior experience in cardiac care, including bedside practice and clinical education roles, provided a comprehensive understanding of many aspects of the cardiac surgery trajectory. This allowed them to identify the needs of post-cardiac surgical patients and create suitable care plans and interventions. Additionally, their familiarity with cardiac issues enabled them to acquire the necessary equipment and resources to provide effective patient care.

Interest Holder Involvement

In addition to the core planning team, the hospital quality improvement team and IT support services played crucial roles in ensuring that the clinic was appropriately equipped for practice, including supporting the use of the hospital booking system and electronic medical records. For example, one participant (P1) noted that the "Quality Improvement (group) helped with the process development of the clinic, and the IT (team) was essential in helping with developing the clinic within (the electronic medical record)" (P1). In their interviews, clinical leaders similarly reported that they found the NPs on the post-operative cardiac surgery unit to be 'helpful' and 'supportive' in advocating for and promoting the clinic. The "NPs on the unit are instrumental with identifying people for the clinic and getting them to the clinic" (P1). This, along with the support of cardiac medicine NPs, cardiologists, and cardiac surgeons, significantly enhanced the planning process, including referral and operational processes.

Barriers

Participants discovered that, after receiving funding, they faced additional challenges, including hiring a qualified NP and establishing an effective booking process. Key barriers include hiring, the booking process, and the COVID-19 pandemic.

Hiring

The participants agreed that it was essential for the NP hired to practice to their full scope, be clinically strong, and have the ability to manage the day-to-day operations of the clinic. This includes in-depth cardiac assessment, management of postoperative complications, and support for the booking clerks. One of the participants mentioned: "We went through the recruitment process and hired our current

NP, who also worked in CVICU. It was important that the NP have great assessment skills, the ability to critically think, and be able to remotely assess patients. NP recruitment … didn't come without causing some pain in the sense that we recruited internally. The workforce is tenuous right now… so many vacancies across the organization" (P3).

Another participant noted: "It was important the NP have cardiac knowledge and experience with cardiac surgical patients. We needed to hire someone who was willing to learn and build the clinic themselves, with significant cardiac surgery experience. Someone who was understanding, confident, and someone with experience with pleural effusions, sternal infections, and how to assess these patients" (P1).

Booking Process

The participants identified that booking patients for follow-up appointments was challenging. One of the clinical leaders described the entire process as "daunting" since none of the leadership team members at the time had prior experience in ambulatory care. They believed that the clinic should be managed by ambulatory care services rather than acute care leadership, given their direct access to the booking software and human resources. One participant remarked, "I think it was unfortunate that we knew going into the project that we needed some resources allocated to booking, and we did not get them" (P1). Another participant mentioned that the "two biggest challenges were money and bookings" (P2).

All participants expressed frustration with the booking process. They recognized that, aside from funding, the booking process posed a barrier that affected the timely care of patients after their hospital discharge. Consequently, they felt this might have hindered their initial goal of reducing the patients' length of stay in the hospital. One participant recalls, "By using the booking office at the (hospital), we were not able to turn those bookings around quick enough. So booking was our biggest problem, and we ended up moving away from using the booking office and used internal resources on the cardiac surgery ward" (P1).

The challenges with the booking process and resources also caused the NP to take on more administrative work. As noted by one participant, "the NP basically worked a lot on [their] own to assess what she needed in the clinic" (P3), and complete all tasks, including administrative work.

Pandemic

The participants unanimously agreed that despite the clinic receiving funding in January 2021, the COVID-19 pandemic delayed its opening, which eventually occurred in January 2022. Participants reported that it was "quite hard getting the clinic going during the pandemic" (P1), and that "There was a lot of delay experienced… because of COVID" (P3). They suggested that the pandemic may have also affected the allocation of funds and resources, which could have assisted the team in establishing the clinic more timely. One participant commented: "Because COVID hit, we did struggle. We found out that we got the money. Then there was a bit of a delay to make sure the money was actually in the account… allocated for the special purpose of starting the clinic (P2).

The NP recalls starting "the job in January 2022" and having to see her "first patient 10 days after …definitely hit the ground running" (P4).

Leadership Skills

Participants felt that the NP leading the clinic needed to be creative, autonomous, and self-sufficient in understanding and developing the clinic's working processes. Additionally, they indicated a need for strong leadership abilities. One of the managers remarked, "my leadership style is more hands-off. I believe in hiring good people and letting them work, which is exactly what the NP did" (P2). The NP acknowledged the importance of being multi-skilled. She stated, "I am a one-man show. I am the organizer, the planner, and the clinician, and I am my own clerical support."

Learnings

Communication

Similar to other processes in healthcare, one participant felt that enhanced communication was required, noting, "I didn't have a lot of communication as to how things are going, and I was not receiving data that was coming out of the clinic… it would also have been helpful to receive feedback and engagement from the physicians once the clinic was running" (P1).

The same participant also felt that more explicit role definitions within the leadership team from the outset would have benefited their project and acknowledged that the ongoing COVID-19 surges had affected their collaboration. They believed the team "needed to define... roles better from the start" (P1).

Surgeon Buy-in

Furthermore, one participant expressed that the clinic did not achieve its initial goal of reducing patients' length of stay. They noted: "I don't think the clinic has been a success. From a patient-satisfaction, provider-satisfaction point of view, it has been a success, but it has not played out with the length of stay or readmission rates, which was our primary goal" (P1).

Some participants acknowledged that the clinic's outcomes may be linked to a lack of sufficient buy-in from surgeons regarding the early discharge of their patients when it is safe. As one participant notes: "I don't know that we saw the surgeons really pushing the envelope in discharging patients sooner like I had hoped. We still had instances where the patients were medically ready for discharge, and the surgeons would state they feel uncomfortable, and they prefer the patient stay another day. What we needed was the surgeons to tell their patients that when they were medically stable, they would be discharged home, and have their follow-up at the NP clinic" (P1).

The participants also believed that additional time should have been dedicated to promoting the clinic to other members of the cardiac sciences team within the facility. They also felt that a surgeon champion would have been beneficial for advocating the clinic among the surgeons' group. One of the participants found that "In order for it to be a success, we needed to make sure that the residents and the surgeons all knew about the clinic, but they are all busy, and it's a process change. This takes time … reminding the surgeons and residents of what we're doing and what the clinic goals are, and that the clinic is to support their patients" (P4).

Another participant noted that "having a physician champion for the clinic would have been helpful, someone to endorse it with all the cardiac surgeons, to help champion the clinic" (P3).

Discussion

This study examined the experiences of decision-makers in designing and launching an NP-led post-operative care clinic for cardiovascular surgery patients. It sheds light on the establishment of NP-led care and clinic operations, providing qualitative insights that complement existing research on NP-provided care. The findings reveal that designing and implementing an NP-led clinic is a challenging endeavour, as numerous factors must be considered. These results hold clinical and administrative significance as they may inform NPs and leaders when considering similar health system interventions. The decision-makers in this study aimed to decrease hospital length of stay. Previous studies on similar clinics in acute care settings have associated CVD-focused NP-led care with lower 30-day readmission rates (David et al., 2015; Echeverry et al., 2015; Estrella-Holder & Zieroth, 2015). In a retrospective chart review, Meyer and Miers (2005) found a decrease of 1.91 days in the length of stay for postoperative cardiovascular surgery patients with NP-led care. However, concurrent evaluation data collected during this study (unpublished) showed no statistical difference in the length of stay after critical care discharge.

Previous research has demonstrated that patients from diverse backgrounds, including age, ethnicity, and care setting, are generally satisfied with NP care (Hayes, 2007; Oatley & Fry, 2019). Patients found NPs approachable and accessible; they listened intently to patients' experiences, spent sufficient time addressing their concerns, and effectively managed their health issues (Thrasher & Purc-Stephenson, 2008). The results of this study align with prior findings, as participants reported anecdotal evidence of high patient satisfaction. The accessibility of the NP has enabled them to bridge the gap in care access between hospital discharge and the first appointment with the patient's primary healthcare provider. The clinic addressed the post-operative needs immediately after discharge from the hospital until patients can see their primary care providers. This is particularly crucial for patients residing in rural areas. Access to qualified healthcare providers such as NPs via telephone has been characterized as an alternative for patients who might otherwise present to an emergency department for non-urgent care (Oatley & Fry, 2020). Although this study's data show no difference in hospital readmissions, emergency department visits decreased for clinic patients 7 days following discharge.

Furthermore, team collaboration facilitated the smooth initiation of the clinic. Decision-makers worked closely with other departments and hospital leadership to secure funding, hire a qualified NP, and ensure appropriate referrals. They engaged the quality improvement team, the IT team, and the booking department, regularly communicating to ensure a successful launch of the clinic. Nevertheless, participants shared essential insights that healthcare leaders and providers should consider when establishing similar clinics, such as the importance of ongoing collaboration and interest-holder engagement to ensure buy-in both before and after the clinic's initiation. The study findings suggest that the lack of surgeon engagement and buy-in may have contributed to the unchanged length of stay. Patients may have remained in the hospital longer because surgeons were not fully aware of the NP clinic's role in supporting patients post-discharge.

Implications for Practice and Research

Evidence of the value of the NP role is growing, and this study outlines what is needed to broaden the practice settings in which NPs can have a positive impact. While there is substantial research on the NP's role in acute and primary care settings, studies on NP-led clinics in outpatient settings are insufficient. As the number of NPs in this context increases, research must assess their impact on patients, other healthcare providers, and the healthcare sector as a whole. Future studies should investigate the effects of NP-led care in outpatient settings across various patient groups, including those post-transplantation or following critical care stays. There is a significant need for research that investigates the patient experience in NP-led care, as this would provide evidence to inform decision-making regarding the NP role. As the participants in this study noted, NP-led care is crucial to the overall functioning of the healthcare system.

Limitations

While this study provides insights into the experiences and perspectives of a specific group of participants, several limitations should be considered. First, the sample size was small and specific to the practice setting and context, which may have limited the transferability of the findings. Furthermore, the study relied on a single data collection method: semi-structured interviews. While this approach allowed the researcher to gain in-depth insights into the participants' experiences, it may not have captured the full range of their perspectives and experiences. Finally, as with all qualitative studies, the findings are subject to the researchers' subjective

interpretation. Although we attempted to minimize personal bias, our perspectives and assumptions may have influenced the data collection and analysis processes. Despite these limitations, the study provides valuable insights for policymakers and administrators seeking to establish similar clinics in similar contexts. Additionally, the data from this study serves as a foundation for future research that could address these methodological considerations and enhance the validity and transferability of findings.

Conclusion

This study revealed that developing and implementing an NP-led follow-up clinic for cardiac surgery patients involved several successes and challenges. Team collaboration, clinical knowledge, and the involvement of key individuals facilitated the smooth and successful implementation of the clinic. Participants suggested that better role definition, improved booking processes, increased engagement from surgeons, and the inclusion of a surgeon champion could contribute to even greater success and support the achievement of the clinic's primary goal – decreasing hospital length of stay. This study provides valuable insights for healthcare professionals and managers seeking to establish similar NP-led clinics to enhance post-cardiac surgery patient care.

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Conflict of Interest

None of the authors have any conflict of interest to declare.

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