

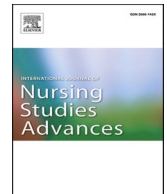
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Clinical research nursing pathways: The development and evaluation of a nursing research internship program using the RE-AIM framework

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ABSTRACT

Background: In 2018 a Nursing Research Internship program was started within a major referral and tertiary teaching centre in Australia.

Aim: We aimed to evaluate the first 12 months of the program using an implementation science framework.

Methods: This was a qualitative study. Following ethical approval $n = 20$ semi-structured interviews were recorded and transcribed verbatim. Participants included nurses with clinical, research and management roles who had engaged in or supported a Nursing Research Internship program. The Framework Method was conducted to analyse the findings.

Results: Key themes identified included 'What is the impact of a Nursing Research Internship program?'; 'Why do a Nursing Research Internship program?'; 'How do we do a Nursing Research Internship program?'; 'How do we sustain a Nursing Research Internship program?'. Positive impacts were identified for clinical nurses and their teams, for the hospital and health service, and for patients and families. Identified key components included protected research time, specialist support (including library, statistics, health economist, implementation scientist), regulatory support (ethics and governance procedures) and access to a computer and IT resources. The Nursing Research Internship program required support from nurse clinicians, nurse managers and nurse academics.

Conclusion: A structured Nursing Research Internship program supports clinical nurses to answer research questions identified directly from clinical practice.

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1. Contribution of the paper

What is already known:

- It is recognised that nursing research improves clinical outcomes, health service outcomes and health economic outcomes.
- ‘Clinical academic’, ‘clinician scientist’ and ‘clinician researcher’ roles are in their infancy in nursing.
- Clinical research pathways are becoming embedded in policy internationally.

What this paper adds:

- Nurses face unique structural challenges when wanting to lead research.
- A Nursing Research Internship Program can support nursing research to produce positive patient and family, health service and professional nursing outcomes.
- Barriers to nursing research were largely resource related, overcome with the implementation of key components and support of nursing clinicians, nursing academics and nursing managers.

Tweetable abstract: Nurses face structural challenges when wanting to lead research. When these are addressed, there are real life benefits for nurses, patients, the health service and the nursing profession. #ClinicianResearcher #NursingResearch #QualitativeMethods #RE-AIM.

2. Background

The terms ‘clinical academic’, ‘clinician scientist’ and ‘clinician researcher’ are considered healthcare professionals who have a dual connection with a higher education institution (HEIs) and deliver clinical care in various health and social care services (Baltruks and Callaghan, 2018). Evidence has underscored that because clinician researchers remain clinically active in existing healthcare services, research activities are informed by relevant clinical practice issues and patient needs (Carrick-Sen et al., 2019; Paterson and Strickland, 2023; Hatfield et al., 2016a). A recent systematic review (Paterson and Strickland, 2023) aimed at identifying the experiences of clinical academic nurses, found that the research focus and evaluation of such roles remains in its infancy within the nursing profession.

Numerous authors (Paterson and Strickland, 2023; Dunn and Yates, 2000; Hatfield et al., 2016b; Newington et al., 2020; Twelvetree et al., 2021; Weir and Ozga, 2010; Westwood et al., 2018) have advocated the need for sustained support in the development of clinician researcher nursing roles. It is reported that this can occur through strategic investment in partnerships between academic institutions and health care providers, with financial investment in the creation of new research development initiatives (Paterson and Strickland, 2023) which has been successful in other professions (Borges et al., 2010). The benefits for health systems that incorporate nursing clinician researcher roles are being realised (Wu et al., 2018; Krishnasamy and Chan, 2016; Australian Clinical Trials Alliance and Quantium Health Outcomes, 2017; Misso et al., 2016; Blevins and Millen, 2016), despite the historical professional and structural barriers (Newington et al., 2020; Barton-Burke, 2016; Mickan et al., 2017; Mickan and Coates, 2022; Carthon et al., 2017; Middlebrooks et al., 2016; Black et al., 2019; Eckert et al., 2022; Duff et al., 2016).

The presence of a clinician researcher nurse embedded in a health service has been shown to enhance research activity and evidence-based practice (Mark et al., 2020; Wells et al., 2007; Selig and Lewanowicz, 2020; Olive et al., 2020). Internationally, there have been several nursing professional development initiatives reported to create capacity and capability for novice clinician researchers within nursing. Examples have included the adoption of dyads, by pairing experienced nurse researchers with nurses in clinical practice which was reported to be an effective model and increased evidence-based practice in the United States (Mark et al., 2020). Wells et al. (2007) developed and evaluated a 2-year nursing research internship program, with a scaffolding research curriculum developed by a nursing academics. This study identified that a research internship remedied many of the barriers to evidence-based practice, whilst also supporting research professional development (Selig and Lewanowicz, 2020). A final example was conducted by Olive and colleagues from the United Kingdom, who demonstrated that a clinical research internship model enabled clinically relevant research to be conducted by clinically active nurses which was sustainable when they were supported by experienced nursing academics (Olive et al., 2020).

Fortunately, in the United Kingdom, clinical research development pathways are supported by a number of national policy documents and strategic funding investments (Carrick-Sen et al., 2016; Department of Health, 2012; Finch, 2007). Australia, however, does have a lag in development pathways for clinician researcher nursing roles and the role of the clinician researcher nurse is often recognised as a Clinical or Conjoint Professor (Campbell and Taylor, 2000). At present, the Australian context generally forces a choice between either clinical or academic pathways (Paterson and Strickland, 2023). To address this gap for novice and early career researcher pathway development, an initiative was implemented and evaluated in a metropolitan hospital in Australia. This program is the focus of this research study.

The Nursing Research Internship program initiative was an extension of a 12-week Evidence-Based Practice course which paired a novice researcher with an experienced clinician researcher nurse as a part of the Queensland University of Technology Professorial Precinct (Barton-Burke, 2016). The Evidence Based Practice course was initially established by Professor Joan Webster using Cochrane principles and had been in place for over ten years to engage clinical nurses in research and evidence-based practice. Over this time, over 100 nurses have participated. However, a research gap was frequently identified, so the Nursing Research Internship program was

initiated so that nurses could be supported to complete a pilot research project over 12 months and build new evidence. In the first 12 months, there were four interns involved, supported at some level by up to five academics who interacted directly or indirectly (as supervisors to direct academics). However, there has been no robust evaluation of this clinical research development pathway from the perspective of those involved, including the nurse interns, management (line managers of the interns, service line managers, executive leaders of the hospital and of the health service) and academic mentors (nurse researchers within the health service, academics and academic leaders from collaborating universities). To the best of our knowledge, this is the first qualitative research study in Australia which evaluated a novice clinical research pathway initiative using the RE-AIM dimensions framework (Glasgow et al., 2000) specifically to understand its reach (R), effectiveness (E), adoption (A), implementation (I) and maintenance (M) conceptualised at the individual-level (interns, managers and academics to benefit).

2.1. Design

A qualitative descriptive study (Sandelowski, 2000) was conducted using semi-structured interviews and has been reported according to the consolidated criteria for reporting qualitative research (COREQ) (Tong et al., 2007). The interview guide was developed using the RE-AIM implementation science framework (Glasgow et al., 2000) specifically to identify the impact of the Nursing Research Internship program. Analyses followed the Framework Method (Gale et al., 2013).

3. Methods

Semi-structured interviews were conducted by an experienced nurse with post-graduate qualifications in both qualitative research and implementation science, specifically using the RE-AIM framework (NR). The interviewer (NR) was also employed as a clinical research nurse in the hospital and had a professional relationship with all interviewees but had not been involved in a Nursing Research Internship program. Following ethical approval written informed consent was obtained from each participant. The semi-structured interviews were conducted either face-to-face or virtually via ZOOM meetings (at the convenience and preference of the study participant). The interviews lasted approximately one hour, and were digitally recorded, and reflective memos were taken during and after the interviews. Memos were written to record the perceptions of the interviewer for reflexive monitoring (Klaasen et al., 2022). The recordings were transcribed verbatim by a professional transcriptionist. For anonymity, the interviews were transcribed into a non-identifiable format (labelled according to a role such as intern, manager, academic) and the recording deleted. A semi-structured interview topic guide was followed, see Table 1 to address the research question, but was adapted to ensure important information from each individual participant was shared as well.

3.1. Participants and recruitment

Participants included all registered nurses who had completed an Evidence-based Practice course and Nursing Research Internship program, hospital management (line managers of the interns, service line managers, executive leaders of the hospital and health service), academic mentors (nurse researchers within the health service, and academics from collaborating universities) who had engaged in a Nursing Research Internship. Potential participants were contacted by email, with one follow-up email sent if they did not reply to the first study invitation correspondence. Professional and demographic characteristics were not collected in keeping with ethical restrictions approval to ensure anonymity of all participants.

4. Data analysis

The Framework Method (Gale et al., 2013) was used to analyse the qualitative data. The first step was to independently code the data into the constructs of RE-AIM (reach, effectiveness, adoption, implementation, maintenance) (Gale et al., 2013). Two researchers (NR and NG) met after the first two interviews to discuss findings and individual initial coding interpretation to discuss agreements and

Table 1

Structured interview topic guide with questions developed using the RE-AIM framework.

Guiding Questions
1. How were you involved in the Nursing Research Internship program?
2. Why did you participate in/supported the CCS Nursing Research Internship program?
3. Did you know other people who were involved with the program?
4. Who do you think was affected by the Nursing Research Internship program, and why? (ask about staff, patients, families etc.)
5. What do you know about the CCS Nursing Research Internship program?
6. What do you think has resulted from the research done through the CCS Nursing Research Internship program?
7. How does the program work?
8. What made your participation in/support for the CCS Nursing Research Internship program easier?
9. What made your participation in/support for the CCS Nursing Research Internship program more difficult?
10. What would you like to see done differently?
11. Do you think it can be maintained?
12. Is there anything you would like to add or comment on?

areas of divergence together. This process was repeated following the completion of further semi-structured interviews, throughout the whole duration of qualitative data collection, to ensure additional insights captured could be probed in future interviews. The coded findings were then consolidated under the headings of participant groups of, “interns”, “managers”, “academics”. Annotated reflective memos were used throughout the research process and helped to inform the data into a “matrix” which addressed the research study aim. Subsequently, these became the analytical framework which was applied to each participant group coded independently by the researchers (NR and NG). In discussion with other members of the team, the results were refined (firstly EB and then final review with JD).

Validity of the findings were supported by using an implementation science framework in line with the research aim and framework method for analysis. The use of transcriptions, data immersion with reflective memos, coding, development of an analytical framework, application of the framework and charting of data into a matrix helped ensure rigour. Coding was completed independently by two researchers (NR and NG). Further researchers independently reviewed the development of the framework and results (EB and JD).

4.1. Ethical issues and approval

Ethical review and approval were provided by the Royal Brisbane and Women’s Hospital Human Research Ethics Committee (LNR/2019/QRBW/57837). Participation was voluntary. Written consent was obtained. All findings were de-identified to ensure anonymity.

5. Results

A total of 25 healthcare professionals involved in a Nursing Research Internship program were invited to take part in the study, and 20 participants consented. Reasons for non-participation from the five individuals were due to conflicting demands and clinical workload pressures. The final participants represented eight clinical nurses (who completed the Research Internship program or Evidence-Based Practice course), seven nursing managers (including manager locally and executive leaders), and five nursing academics (including academics locally and international, interacting directly with the program or supervising those providing direct support). The semi-structured interviews were conducted over a total duration of one month.

Four key overarching themes were identified which included: (1) ‘What is the impact of a Nursing Research Internship program?’, (2) ‘Why do a Nursing Research Internship program?’, (3) ‘How do we do a Nursing Research Internship program?’, and (4) ‘How do we sustain a Nursing Research Internship program?’

Theme 1: What is the impact of the Nursing Research Internship program?

The first theme spoke to the reach and perceived effectiveness of the Nursing Research Internship program. Since starting, places in the program were fully subscribed, engaging nurses from inpatient and outpatient clinical areas equally. Ensuring equity of access to the Nursing Research Internship was discussed. It was challenging getting the word out when many ward-based nurses do not necessarily read emails.

“People are informed when the expressions of interests are advertised. I do not know who’s applied - I guess there are some who probably feel that they’d like to do it, but they’ve missed out. I mean, I waited a number of years before I could participate, there were always a few, I think about three times before, I was able to undertake the little 12-week course. But that was fine, I thought it will come around eventually. I mean, I did not think anything of it. There is only one place and if there’s more than one person applying for it, there’s going to be a couple of people who miss out. What goes around comes around.”

(Intern)

Creating interest and then establishing a waiting list took time and momentum.

“But now, with this in place, we’re getting people lining up to do the program and to do research, which is really where we wanted to start getting that. It was not just about having people at a higher grade doing research. It was about getting everyone engaged in research. And it is...in our PD (Position Description) to be doing research.”

(Manager)

Some interns spoke of spreading the word in their areas, helping others to overcome perceived barriers.

“With the nurses, I think, yeah, look, often we have that discussion at work, and you’ll say, yeah sure, we can do this better, for whatever reason. But when you to the point of saying, well, have you thought of doing an internship? it’s just seen as too much work, too much extra work on perhaps an already busy workload. So, they do see the benefit, it’s just trying to work out the demands.”

(Intern)

In turn, Managers said they helped interns overcome barriers so that the Nursing Research Internship program was seen as a positive experience that was sought after.

“... I think that’s important for the other staff to see, well, yeah, it might’ve been a busy day that day that you had off but look at the outcome. We’ve been able to change this and do that. Then you sort of think, well, if they can do that, why can not I give that as an opportunity? So, if we make sure that they have a good experience and that the team supports them, and that’s what I mean, it all goes back to culture, then the next month, well, it’s someone else’s turn, and you get the benefits that way.”

(Manager)

However, it was recognised that not all nurses are interested in participating directly in research and it is not realistic to expect them to.

“I think it helps. Look, research is not everybody’s cup of tea.”

(Manager)

Nursing interns said that they chose to participate because they wanted to impact care day to day. Impacts were identified by participants across all interviews relating to the organisation, patients, interns, nursing teams and the profession. Interns reported pride that came from improving patient care and patient outcomes by conducting clinically driven research. They spoke of the impact on the patients in their care while ensuring that their research was aligned with organisational goals. Participants spoke of choosing research questions that appeared to directly improve patient care.

“Yeah, and if we’re improving things for our patients, then their journey is going to be better. The benefits of even like with the one with the good quality of sleep and all that jazz and bits and bobs that can actually then reduce the things like bed space and length of stay in hospitals, which then has the potential for that runoff effect of having better patient flow, having less times that we’re bed-blocked and patients being more comfortable and actually speaking up, I guess.”

(Intern)

The Nursing Research Internship program gave patients the opportunity to directly contribute and influence healthcare. Interns reported that patients had enjoyed the opportunity to take part in their research, and they were humbled by this feedback.

“Well, definitely for the consumers and for the patients in the projects that I think about, it resulted in better outcomes.”

(Academic)

For academics, it was important that this research was quantifiable. However, it was broadly acknowledged that questions identified at the bedside were patient-centric and directly applicable to clinical care.

“You have the words. [patient centric]. But that’s it. And that’s not to diminish what medical research does. It’s different. You’re viewing the patient a bit differently and, yes, we’re all working together for the patient, but, I guess, what we’re wanting to achieve can be different, and that’s okay.”

(Intern)

It was observed that the Nursing Research Internship program offered other organisational benefits including staff satisfaction, retention and potentially recruitment as it was seen as an asset to the service. It was also seen as an investment in high calibre nurses. Participating in the program was regarded as beneficial for career development and personal growth. Interns spoke of feeling valued by the opportunity to participate in the research internship.

“Support from my line manager. As much as I know, because it was when I was on the ward, as much as we were short, I’m lucky that the NUM [Nurse Unit Manager] up there is very supportive of evidence-based practice and supporting us to see what else is available in the service line.”

(Intern)

Participants expressed that with this investment they can potentially influence key performance indicators and patient outcomes. A variety of nursing teams engaged in the work of the interns, such as safety and quality nurse consultants or educators, building further capacity in the nursing workforce.

“So, it just opened a whole new window of practice for nurses and how we are evolving our practices. So, I think that’s fantastic.”

(Intern)

For managers, the opportunity to engage not just interns but the broader team in research that improves care delivery in their local units was considered valuable.

“... for staff, it’s getting them engaged in that frontline research. And for them, it’s something they haven’t done a lot of previously. And so, for them, looking forwards, they can actually see that, hey, what I think and what my ideas are really matter, and that I could actually be driving a change process. Rather than being told to do something from an article that’s been written on the other side of the planet, they can actually be the ones driving that change because it’s the research that they’ve done with their colleagues research, which I think then gains that interest to say, Oh look, Mary did this great research right here in our unit and this is the outcomes. And let’s drive it and let’s change it.”

(Manager)

This impact was also reported by interns.

“If a nurse comes up to me and asks me something, I’m thinking, why do you think that? “That’s a good question, it gets them thinking. So, then it challenges them to think as well. Because nursing is changing. Health every day, new practices come out, new protocols come out, so it’s really important to be in-tune with your own practice and your own knowledge because what is current today may not be current next week.”

(Intern)

Access to the Nursing Research Internship program positively supported disinvestment in initiatives that do not improve outcomes. Good quality care is not necessarily expensive care.

“So, the staff member that I’ve got there now will benefit. Whether she continues on in a research role or whether she comes back into the clinical, she will never be the same clinical nurse again after that ...So just for her own career growth, networking. I mean, she came into this hospital only knowing our team and probably a few other people in cancer care. Now she probably knows a whole lot more people in this organisation. So, the benefits just are – I’ve probably left out so many. Yep, the professional development, the growth of that staff member, closer - You know about it in theory, but the actual working at the bedside with the research going on, it’s just, I think, invaluable to have that continuity through the two. It’s a strong link that I think is, for me, a really good way of actually bringing the research to us.”

(Manager)

Academics reflected on the benefits for the organisation having the program embedded in the business infrastructure.

“From an organisational perspective, it’s, I think, raising the profile of [service line and hospital] to a national platform... we’re getting recognition from people around the country”.

(Academic)

Over the first 12 months, four nurses presented at local research meetings, and one at a national meeting. Additionally, another was successful in a competitive national grant round. Further to our qualitative evaluation, we have reports that the interns included in this project have also established two clinical trials, with accepted peer review publications of their protocols. Others have become leaders in management and clinical research, in departments that are research active, having national and international impact.

Theme 2: Why do a Nursing Research Internship program?

The findings within the second theme also explored the effectiveness of the Nursing Research Internship program. Across all three participant groups, it was broadly acknowledged that the program was effective if it built nursing research capacity. There was variation across the responses from interns, managers and academics as to why this was needed, however. It was also generally recognised that the program opened up another career pathway that had not been previously visible.

"I kind of think of the standard pathway more if people want to do something extra, but then they kind of just go into becoming a CN [Clinical Nurse] or becoming a clinical facilitator on the ward with students. But this is kind of like, it's just a bit more hands on. A lot more varied in the work that you do, the people you meet."

(Intern)

All participants articulated that nurses did not identify as researchers; however, the Nursing Research Internship program supported the unique, and important, contribution nurses could make.

"Yeah, and I think it's kind of also highlighting when you're looking at the types of nursing research that's out there, especially around the quality-of-life stuff for patients, and that's not to diminish what the medical teams do, but we're there 24 h a day for them as an inpatient. You see them through everything."

(Intern)

Managers and academics raised their concerns about research activity not being commonplace in nursing. Across all participant groups, the impact of having the Nursing Research Internship program was thought to validate nursing as a profession. While it was not reported directly, it was implicit that a lack of nursing research diminished the status of nursing. Supporting research was an opportunity to stand on equal footing with other health professional groups.

"... I'm working with a nurse researcher to put together a nursing and midwifery research framework, and she's also looking at setting up a research advisory committee so that we can share the pockets of research that particularly nursing and midwifery are leading and driving so that we can link in not only with our own profession, but with other professional groups."

(Manager)

It was agreed amongst all participants that there was a need to support nursing research. Participants identified that there are nursing questions about clinical practice, which simply do not have answers because there is no evidence base available. Stories of finding these answers were positively shared by interns and managers. Interns expressed that their perspectives about their own clinical practice changed in a positive way because the Nursing Research Internship program gave them a new perspective on their work, day to day. However, it was identified that to conduct research, a shift from being an independent competent clinician to a dependent novice researcher was challenging.

"When I've started talking to people about the project and I do explain to them that I have a very big L plate, learner, on my back ... it's not something I encountered in my work that I've done previously."

(Intern)

Interns identified that they had not anticipated that they would need to learn completely new skills.

"It was probably my first day and it hit me that I actually had no idea what I was doing."

(Intern)

The Nursing Research Internship offered a safe environment to sit in this space, giving nurses an opportunity to "*dip their toes in*" (academic) when they were able, as they were guided through research processes step by step in a supported manner which was not over-whelming.

"Once I learned how to actually do proper research searches and actually narrow it down to the information I needed, when it came to actually doing a systematic review, I guess that's different in terms of I definitely felt a lot more, Okay, I've done this, but now what do I need to do? Because it was complete unknown territory."

(Intern)

Interns reported that despite feeling outside their comfort zone, the support of the Nursing Research Internship program enabled them to take risks, despite feeling uncertain of where the research process was heading at times.

For managers, the Nursing Research Internship program was thought to give their staff new opportunities, challenge the status quo, and helped interns to build a network outside their local unit.

"I think it's because someone takes them under their wing and guides them through a process and it just builds their confidence and it also, because they go sit with the other interns, they build better relationships across [teams]."

(Manager)

For academics, the Nursing Research Internship program was believed to be an opportunity to integrate evidence directly into practice.

"... it's so important that the nurses who do this, that that's what we encourage them to do, is to think about it in that way. What are you doing? Not just about publication, but what are you doing to influence your colleagues? How do they know what you've learned? What are you doing to help them to understand what you've learned?"

(Academic)

Theme 3: How did we do the Nursing Research Internship program?

Theme 3 identified what influenced the adoption of the program, and implementation. Participants spoke to the practicalities of delivering the program in their interviews. The core elements identified for implementation are presented in Fig. 1. Across the interviews, it was recognised that 12 months was not enough time to learn all the skills required, as a higher research degree would, for example. Instead, expert support was engaged. Such experts included the nurse researcher, a librarian, a statistician, a health economist and regulatory guidance from the ethics office. Interns also needed designated time away from their clinical area and access to a computer. Across all of the interviews these elements were reported to be necessary, and valuable. Described as a “gentle percolation of knowledge” (manager), interns learned at their own pace meeting their own learning needs rather than following a generic curriculum. The interns reported that they learnt a wide range of skills that supported their specific research project.

“I had no idea really before, the amount of work involved in research. I certainly understood that there was a lot of analysis and all the rest, but the work behind ethics and governance and all those sorts of procedures and trying to apply for and be awarded funding.”
(Intern)

Interns gave examples of the many new skills they had developed, such as understanding the research pipeline, writing in a scientific manner, speaking in public fora, navigating regulatory requirements and operating research data capture systems. Even the first step of applying for the Nursing Research Internship program was perceived as a leap of faith, which required the support of their manager.

“... can you help me find out the answer to this question?” ... [my nurse unit manager] jumped on the boat straight away and said, wow, yes ... let’s have a look at this and apply for it and let’s go from there. So, I went through the EOI process, applied for it, and then, yeah, within weeks started.”
(Intern)

The nurse researcher also needed support from the managers to provide guidance on outcomes and the most pragmatic approach possible.

“... then a natural extension of the evidence-based practice program. It just seemed to be the next logical step. And, I guess, the support for - because people around me have, I guess, believed in what I want to do. So, the nurse unit managers and the nursing directors have all just allowed me to do this as well. So, it then makes my job of supporting easier because I’m being given support by everyone.” (Academic)

In turn, managers spoke of needing support from academics. The presence of evidence-based practice and research support encouraged local units to evaluate their day-to-day practice. In instances where there was an evidence base, quality improvement resulted. When there was no evidence, the Nursing Research Internship Program was a valued opportunity.

“Because it’s such a great way of getting research or really robust quality improvement activities to occur in the units. I can’t do that on my own. I need the help of the nurse researchers to do it, and the nurse researchers need the help of the interns to do it. So, it’s really about enabling that team to happen to get that outcome.... Why I really support it, because they’re things I can’t do on my own, the interns can’t do on their own, and the nurse researcher can’t do on their own.”
(Manager)

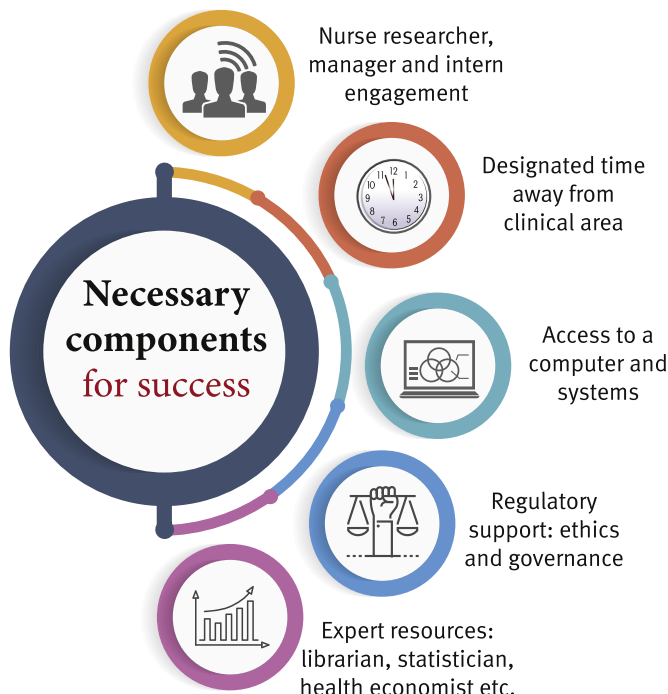


Fig. 1. Core components of the nursing research internship program.

It was identified that each person had an important role in ensuring the success of the program.

“So, it’s very much a team sort of a thing. It’s not about one person doing one thing. It’s about everyone coming together to make sure that this outcome happens.”

(Academic)

For managers, they needed accommodate the program in their existing budgets.

“Absolutely. I’ve had other service lines ask me, how are you doing it? and, how are you funding it? and, how can you make it work, because we can’t make it work? I think it’s about prioritising and it’s all around priorities. We bring a bucket of money in over here, and it’s what you decide to do with that bucket of money to whether you can do this or not. “

(Manager)

The nurse researcher worked to ensure that the program had visible outcomes.

“I work hard. I have high expectations of myself, and I probably have pretty high expectations of the people that come into the program. But then I’m very clear with them upfront that, you’re being released one day a week to come here, so I’m going to work you hard, because it’s costing the organisation.”

(Academic)

Participants identified that the nurse researcher needed unique skills and personal characteristics to teach research with enthusiasm. For the nurse researchers teaching the program, the Nursing Research Internship program took a toll on the development of their own research programs as they invested in the work of others. Teaching research was broadly acknowledged as time consuming and labour intensive, but that the intense time commitment was unavoidable.

Theme 4: How do we sustain a Nursing Research Internship program?

The final theme, explored maintenance, looking forward to the future of the Nursing Research Internship program. By understanding the enablers and barriers over the first 12 months, and the shared experiences research outcomes, this theme identified opportunities for sustainability. Identified barriers included unrelenting clinical demands, and limited resources, which were felt by all participants. However, the growth of a research community was seen as an opportunity to offset some of these challenges.

While the benefits for a Nursing Research Internship program were widely acknowledged, clinical service provision would always take priority over research. The challenges of ensuring skill mix in clinical areas was expressed strongly by Managers. Many stated that research was considered a good thing if it does not get in the way of clinical care, and that the Nursing Research Internship program would be threatened if this happened. When all clinical needs were met, the Nursing Research Internship was made available. Interns spoke of being feeling like a “*fraud*” not being on “*the floor*” when their colleagues were working a bit harder because they were not there to contribute.

“I also sometimes think, well, I guess I get the feeling, and I’m sure a lot of the others do, but because you’re not down there running around that you’re seen as having a cushier - almost like a fraud, I guess.”

(Intern)

The time allocation in the Nursing Research Internship gave space for the interns to think critically and question the evidence. It is difficult moving research forward one day a week, all interns reported that it was generous and prized. The precious resource of time away from the clinical area was discussed by all participant groups.

“Because it’s clear that in the day-to-day work of clinical nurses these days, really very much the pace and the acuity is just so much around the day-to-day doing of care delivery. There is very little time for nurses, in a day, to think about and critically question evidence underpinning their practice. So, to me, this is just a really important opportunity to give time for that to happen, because the way in which our health system is structured, unfortunately, nurses just don’t get that time.”

(Academic)

Participants agreed that formal infrastructure to support the Nursing Research Internship was needed, that there is no “*fat in the system*”. This was thought to be problematic in an uncertain climate of government changes, policy changes, changing funding models and the lack of research allocation in health service planning and frameworks. The investment in one person needed to be of benefit to the wider nursing workforce. Formalised dissemination activities to clinical areas were considered essential. In the short term, it was reasonable that the Nursing Research Internship program provided only a select few with the basic skills to do research.

“I think what makes it easy is that it’s a structured program. It’s now people seeing the outcomes. They’ve seen their peers and colleagues do it, enjoy it, get outcomes. It’s got leadership support, I think. And it’s got the time out, the dedicated time out. So, I think those things are all really - And I think it’s led by some people who are good, experienced, researchers as well, and that makes a difference. They know their stuff and so they’re really able to make sure that there’s good outcomes from it.”

(Academic)

It was proposed that no more than four interns could be supported at one time, which still put a lot of pressure on the nurse researcher mentor. Each of these interns required desk space, access to IT systems and other supports on top of the allocation of clinical free time. The nurse researcher still needed to support the grant writing, patient recruitment, publication manuscripts and other leadership responsibilities to ensure research quality and keep momentum on their own program of research.

Long term, Academics proposed that the goal should be building capacity in the nursing workforce to support higher degree students, building a pipeline that supports larger rigorous research studies. It was proposed that sustainability could be supported by other experienced clinician researchers rather than dependent on one nurse researcher. All agreed, however, that the Nursing Research Internship program was an important first step which opened the door for new opportunities.

“...specific to what I’m working on, we have been able to reach out to professors in the US, who are the only other people that have conducted a study that we’re wanting to do, which come about from this... program. So, I think that’s also really exciting, liaising with, say, someone from America and we’re here... It’s really exciting to be able to liaise with.”

(Intern)

Connecting outside of the service line with other researchers was seen to ensure the longevity of the program. As a result of the Nursing Research Internship program, communities have started to emerge. New networks facilitated relationships across clinical and research arenas. Communities included peer support with other interns and engagement within the multi-disciplinary team more broadly.

“From a multidisciplinary perspective, because all of these projects are either engaging with our medical colleagues, pharmacy colleagues, they’re multidisciplinary at the [hospital] level as well. So, I think that nurses at the ground level are leading nursing-led multidisciplinary research.”

(Academic)

With this in mind, other disciplines were thought to have a lot to teach nurses, and that nurses had a lot that they could teach in return.

“I know other people who have been part of the internship, they’ve got physios onboard and a whole lot of other of the multi-disciplinary team onboard. So, that also allows them to work with other healthcare professionals and they’re learning about what each other does and how one’s role benefits, what goes on.”

(Intern)

Stepping into the unique role nurses have within a multi-disciplinary team was viewed as long overdue, but it was recognised that nurses were hindered by the persisting lack of confidence.

“I believe that nurses are well-placed to conduct research, to lead multidisciplinary research, but they need the confidence and the guidance and support to be able to do that.”

(Academic)

The perceived value of the Nursing Research Internship program was considered in itself an asset. Sharing its successes as widely as possible may nurture further uptake and integration across the broader organisation.

“I think the other thing that is also making this work is probably the broader, not just Cancer Care, but the broader commitment to research at the organisation level. So, I think that we can’t underestimate how Cancer Care is just one little part of that broader culture. So, they wouldn’t be interested if they weren’t getting leadership messages that this is important. So, I suppose that’s the only other thing, is that to continue to see this as a broader organisation-wide so that the value is understood.” (Academic)

6. Discussion

This qualitative study evaluated a Nursing Research Internship program in an Australian hospital, which provided one day a week over 12 months to clinical bedside nurses. Four key themes were identified. Interviews identified that the Nursing Research Internship program had a reach across all areas in the service line, with interest extending to other areas across the hospital health service. Participants perceived that it was effective in engaging nurses in research, and for rapid translation of evidence into practice. The structures put in place for the Nursing Research Internship program were a key enabler. It was well adopted, and the tailored support provided to interns appeared to be effective in producing quality research.

Barriers identified in the findings were largely resource based, particularly around the additional demands for the clinician nurse researcher facilitating the program. There were multi-level impacts identified not only for the interns, managers and academics, but also patients, multi-disciplinary teams, the health service, the nursing profession and clinical research generally. It was broadly recognised that research skills are important for many reasons, and across many nursing roles. Core components for the internship were well articulated by participants. A strategy for ongoing sustainment was a necessary step forward.

The themes provided a reflection on the role of research in nurses’ clinical practice, the practicalities of supporting nursing-led research, and how such a program can be embedded in a health service. In keeping with the literature (Eckert et al., 2022) this study identified that nurses have a unique and important contribution in clinical research. A new finding was that participants broadly accepted that clinical nurses are not seen as researchers, that research and clinical practice are often kept separate. Participants identified that nurses have important questions that need to be answered and the value of nursing research to health services is not comprehensively understood. Consistent with other research, however, a Nursing Research Internship program overcame self-imposed limitations felt by nurses (Mark et al., 2020; Wells et al., 2007; Selig and Lewanowicz, 2020).

Participants in this study reported that organisational support of nursing research was key, as identified in other research studies (Stutzman et al., 2016). The literature reports on various approaches to engaging clinical nurses in research (Mark et al., 2020; Wells et al., 2007; Selig and Lewanowicz, 2020; Olive et al., 2020), whether by a research partner organisation, a conjoint researcher or nurse researcher employed within the health service. (Mark et al., 2020; Olive et al., 2020). Our findings identified that the Nursing Research Internship program does not rely on one nurse researcher alone, and that research support was already embedded within the health service. Research support identified in the literature includes specific librarian services, writing support and grants support (Selig and Lewanowicz, 2020). Our findings identified that these resources were necessary to take pressure off the nurse researcher, to ensure research quality and keep up momentum. As was found in our study, institutional or health service support to quarantine research time and release nurses from their clinical duties is essential (Mark et al., 2020; Olive et al., 2020; Stutzman et al., 2016).

The literature identifies that nursing research activity within departments and across institutions is highly variable, and often person dependent (Australian Clinical Trials Alliance and Quantum Health Outcomes, 2017). Embedded nursing research has many benefits, including improved nursing work satisfaction, staff retention and patient outcomes (Paterson and Strickland, 2023; Mickan et al., 2017; Mickan and Coates, 2022; Carthon et al., 2017; Middlebrooks et al., 2016; Black et al., 2019). Data shows that access to support programs create lifelong researchers leading clinically relevant research (Mickan and Coates, 2022; Carthon et al., 2017;

(Middlebrooks et al., 2016; Black et al., 2019; Eckert et al., 2022), who attract ongoing research funding and respected research outputs (Middlebrooks et al., 2016; Eckert et al., 2022). Similar programs have contributed to changes in organisational culture and practice, increased connections and networks, and engagement in robust research methods (Martin et al., 2022; Paterson and Strickland, 2023).

6.1. Implications for future research

Nursing research has been shown to have benefits for patient outcomes and health services (Eckert et al., 2022). There is still much to learn about the broader impacts on patient care, nursing as a profession, and health service delivery benefits, requiring ongoing consideration and knowledge development. Future research could look to evaluate other programs and learn more about the impacts of engaging clinical nurses to lead research. Understanding nursing research impact and how it can be measured to better assess benefits for patient outcomes and health systems requires ongoing enquiry.

6.2. Study strengths and limitations

There are limitations to the findings of this study. Firstly, this study was conducted at one site. The numbers of people who had engaged in the internship were small, and as a result, the numbers of participants are also small. Due to ethical limitations, we were not able to include demographic and identifying details about participants. The response rate was high from those who were approached to take part. Whilst our participants perceived that the Nursing Research Internship program built capacity for nursing research programs, future research is needed to prospectively measure this impact. Although this research was started before the COVID-19 pandemic, the Nursing Research Internship program has recently resumed, and these findings continue to be relevant.

7. Conclusion

For a Nursing Research Internship program to be successful, engagement with clinical nurses, nurse managers and nursing researchers is needed. Embedded infrastructure within the health service, is necessary for such a program to be sustained into the future.

CRedit authorship contribution statement

Natasha A Roberts: Writing – original draft, Methodology, Formal analysis, Conceptualization, Project administration, Funding acquisition, Data curation, Visualization, Investigation. **Elise Button:** Writing – review & editing, Methodology, Formal analysis, Conceptualization. **Jed Duff:** Writing – review & editing, Formal analysis. **Catherine Paterson:** Conceptualization, Writing – review & editing. **Michael Smith:** Writing – review & editing, Project administration, Funding acquisition, Conceptualization. **Nicole Gavin:** Writing – review & editing, Methodology, Formal analysis, Conceptualization.

Declaration of competing interest

The authors have no conflict of interest to declare.

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