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Exploring Experiences of the New Graduate Registered Nurse in Caring for the Deteriorating Patient in Rural Areas: A Qualitative Study

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ABSTRACT

Aim: To explore the experiences of new graduate registered nurses in caring for the deteriorating patient in rural areas.

Background: New graduate registered nurses often feel unprepared to care for the deteriorating patient. Whilst literature has recognised new graduate registered nurses working within metropolitan areas feel ill-equipped to care for deteriorating patients, there is a paucity of literature focused on experiences within the rural context.

Design: Qualitative, descriptive phenomenological approach.

Methods: In-depth interviews were undertaken with 7 participants in rural Eastern Australia with collected data being subject to thematic analysis.

Results: Three themes were identified that shares the lived experiences of the participants as they transitioned into the rural team: *First encounters—Transition to the rural team*; *Practice support for managing deterioration; and The road to confidence.*

Conclusion: New graduate registered nurses are unprepared to care for the deteriorating patient in rural areas. Practice support and barriers to ongoing education are influential on their experience with findings from this study supporting focused rural healthcare preparation from tertiary education providers, plus structured practice support from senior rural nurses and health facility orientation programs. Preparation should include the use of digital technologies and escalation and management of the deteriorating patient alongside rural policies and procedures to enhance patient safety and support new graduate rural nurses.

Implications for the Profession and/or Patient Care: The findings have implications for tertiary undergraduate nursing education and those supporting New Graduate Registered Nurses in their transition to practice in rural areas. Enhancement of new graduate nurses' skills and abilities in recognition and responding to patient deterioration through both technological and personnel support will enhance patient safety within rural health care.

Reporting Method: Standards for Reporting Qualitative Research (SRQR).

Patient or Public Contribution: 7 participants were involved in the study.

Summary

- What does this paper contribute to the wider global clinical community?
  - This paper makes a valuable contribution to the international literature as the first study to focus on recognition and response to patient deterioration by new graduate registered nurses in the rural practice environment. Added complexities of managing emergent situations has been highlighted within this context.
  - This paper advocates for tertiary education providers to prepare students for practice in rural facilities. This includes being competent and confident in the use of digital technologies by optimising tools such as simulation and clinical placement, to enable New Graduate Registered Nurses to be prepared to care for the deteriorating patient in rural areas.
  - This paper recommends and informs rural health services around the key role senior Registered Nurses have for the provision of practice support for NGRNs. Senior rural Registered Nurses should be placed in formal preceptor or mentorship roles for rural NGRN's and be provided training and support to do so. Further, graduate nurse orientation programs need to include education and training on digital technologies plus escalation and management for care of the deteriorating patient alongside the use of local procedures during these events.

1 | Introduction

Escalation and management of patient deterioration is an integral part of a nurse's role, yet New Graduate Registered Nurses (NGRNs) often feel unprepared to care for the deteriorating patient. Whilst literature has recognised NGRNs working within metropolitan areas feel ill-equipped to care for deteriorating patients, there is a paucity of literature focused on NGRNs experiences within the rural context. The increasing acuity of patient conditions and complexities within health care has implications for the already broad scope of practice for nurses in the rural environment. Rural nurses must be equipped with a wide range of skills to manage patients with diverse illness, injury or healthcare needs. The range in scope of practice for rural nurses can be challenging, particularly considering the frequency of differing patient presentations and when medical staff are limited (Rohatinsky and Jahner 2016; Lea and Cruickshank 2015). This is particularly true on entry to rural practice for NGRNs where their scope of practice may be further challenged when they encounter a deteriorating patient, where there is a need to extend their scope quickly with little support to do so. These challenges can negatively contribute to patient safety outcomes as on entry to practice, NGRNs can struggle to prioritise between time management and general patient care or patient safety (Murray et al. 2019). This research adds to current literature on the new graduate nurse's transition to rural practice by exploration of the added complexities the NGRN faces with emergent situations. And importantly strengthens the literature on the NGRNs care of the deteriorating patient by exploration of the added complexities associated with practice in the rural environment.

2 | Background

Transition to practice as a NGRN can be termed as 'transition shock' where there is a lack of preparation for practice creating a challenging, stressful and anxious period (Duchscher 2008). Recommendations to improve this period includes 12 months transition to practice (TTP) programs in specified areas with a high level of support (Tawash et al. 2024). However, there are challenges, such as staffing and support to optimally deliver TTP programs across rural areas (Lea and Cruickshank 2015). Transition to practice in rural areas can have additional challenges and stressors for the NGRN with the need to be equipped with a wide range of skills to manage patients with a range of presentations across the lifespan. This can be from trauma and obstetrics to mental illness. It is widely agreed in the profession, that rural nursing requires a high level of critical thinking, advanced problem solving, creativity, logistical and clinical skills. Rural nurses work with finite resources, low skill mix, geographical isolation and difficulty with accessing professional development (Calleja et al. 2019; Lea and Cruickshank 2015). Rural NGRNs need to quickly acquire these high-level skills, including team leader and in charge positions as they may find themselves in leadership positions with small staffing numbers early in their graduate year (Lea and Cruickshank 2015).

It is reported (Australian College of Nursing [ACN] 2019) that one in nine patients in the acute tertiary sector experience a complication in the early stage of their hospital admission where increasingly health professionals are missing patient deterioration. This has significant consequences for the one third of Australia's population residing in rural communities who experience poorer health outcomes and a burden of disease 1.4 times higher than metropolitan areas (Australian Institute of Health and Welfare [AIHW] 2022). Internationally, half of the world's population reside in rural areas yet only just over one third of the nursing workforce is employed in rural health care (Rohatinsky and Jahner 2016). Nurses are the largest health workforce in rural healthcare settings. Rural Registered Nurses (RN) work at an advanced level within their full scope of practice to care for complex patients where the RN is often the first point of contact for rural populations (Australian Government Office of the National Health Commissioner 2023; Whiteing and Barr 2021). The World Health Organization (WHO) (WHO 2020b) acknowledges the challenges associated with the attraction, recruitment and retention of the rural nursing workforce globally.

The Australian National Strategic Framework for Rural and Remote Health (2016 [updated Nov 2020]) highlights the need for flexibility in the scope of practice of RNs in rural areas, recommending improved access for education and training and promotion of advanced skills. With rural healthcare facilities often inadequately staffed and with limited access to medical support compared to metropolitan inpatient settings (Lea and Cruickshank 2015), ensuring that NGRNs also have access to the education is crucial because of their beginner scope of practice. The low staff ratio often equates to NGRNs being required to work in a generalist nursing role utilising advanced skills, with little support to solidify practice and confidence (Graf et al. 2020). This is especially around care and escalation of the deteriorating patient in a rural area.

The World Health Organization reports that approximately 1 in 10 patients are harmed in health care (WHO 2020a). Processes to enhance patient safety as recommended by the Australian Commission on Safety and Quality in Health Care (2017) have occurred within the Australian context. The National Safety and Quality Health Service Standards (ACSQH 2017) require that health service organisations have processes in place to support timely responses by skilled clinicians to manage episodes of acute deterioration. However, despite current interventions nationally and internationally, there are several barriers to the recognition and management of the deteriorating patient, particularly in rural areas. These include inadequate education programs or difficult access to education, staff shortages to create an efficient response team, minimal clinical support and lack of resources (Augutis et al. 2023).

According to studies (Herron 2017; Purling and King 2012) not specific to the rural environment, there are already multiple barriers for NGRNs in recognition of the deteriorating patient including workload, time pressures, inexperience to prioritise/organise time, as well as lineal, or task focussed thinking. For the NGRN in rural areas, experiencing high acuity and deteriorating patients may be an extra challenge and it could be theorised that these feelings may be amplified within the rural environment where a broad scope is required of the rural nurse with little support. If NGRNs are challenged in their competence and confidence, patient safety could be at risk. Therefore, this study aimed to explore the experiences of new graduate registered nurses in caring for the deteriorating patient in rural areas.

3 | The Study

The research question that guided this study was *What are the experiences of newly graduated registered nurses in caring for the deteriorating patient in the rural environment?* Specifically, this study sought to explore preparedness for detecting/caring for the deteriorating patient and to understand how the rural practice environment affects the NGRNs' experience of caring for the deteriorating patient.

4 | Methods

4.1 | Design

A qualitative study explored experiences of NGRNs managing the deteriorating patient in rural areas. Descriptive phenomenology enabled an exploration of the lived experience of the participants to create foundational knowledge of the phenomenon (Sundler et al. 2019).

4.2 | Setting and Recruitment

Seven New Graduate Registered Nurses who completed their transition year in rural Australia participated in this study. Although the targeted sample size was approximately 8–10 NGRNs, only seven participants were recruited. This small number is reflective of the small number of NGRNs that are employed in rural areas in their transition year (Schwartz 2019). Considering a main premise of descriptive phenomenology is to gain deep understanding and insight into the phenomenon under study, depth and richness of descriptions is foremost, thus the sample size was deemed appropriate. In this study, rurality was defined according to the Australian Government Department of Health (Australian Government Department of Health 2021) classification system, the Modified Monash Model (MMM). The areas of MM (Monash Model) 4 (medium rural health regions) MM 5 (small rural health regions), MM 6 (remote communities) and MM 7 (very remote communities) define the health services that are the setting for the study (see Figures 1 and 2). All participants were employed in an inpatient hospital or Multi-Purpose Centre (MPC) setting where access to nurse educators (nurses employed by the health service to provide education and support to all nurses), and senior staff was limited. All participants had

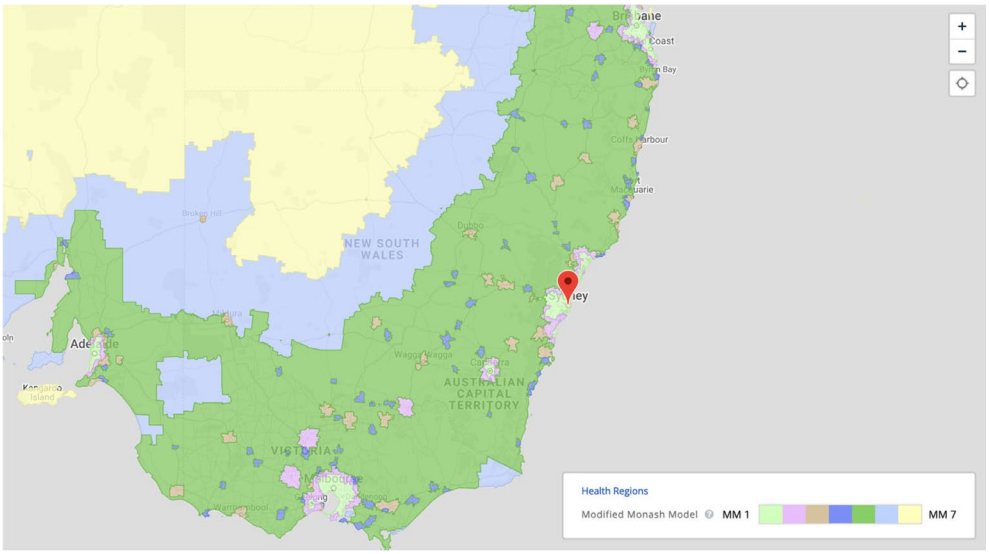

FIGURE 1 | Health Workforce Locator demonstrating MM 4 in the dark blue, MM 5 in the dark green, MM 6 in the light blue, MM 7 in the yellow (Australian Government Department of Health).

Modified Monash Model classifications table	
Modified Monash category	**Inclusions**
MM 1	**Metropolitan areas**: Major cities accounting for 70% of Australia's population. All areas categorised ASGS-RA1.
MM 2	**Regional centres**: Areas categorised ASGS-RA 2 and ASGS-RA 3 that are in, or within 20km road distance, of a town with a population greater than 50,000.
MM 3	**Large rural towns**: Areas categorised ASGS-RA 2 and ASGS-RA 3 that are not in MM 2 and are in, or within 15km road distance, of a town with a population between 15,000 and 50,000.
MM 4	**Medium rural towns**: Areas categorised ASGS-RA 2 and ASGS-RA 3 that are not in MM 2 or MM 3 and are in, or within 10km road distance, of a town with a population between 5,000 and 15,000.
MM 5	**Small rural towns**: All other areas in ASGS-RA 2 and 3.
MM 6	**Remote communities**: All areas categorised ASGS-RA 4 **and** islands that are separated from the mainland in the ABS geography and are less than 5km offshore. Islands that have an MM 5 classification with a population of less than 1,000 without bridges to the mainland (2019 Modified Monash Model classification only).
MM 7	**Very remote communities**: All other areas that are categorised ASGS-RA 5 **and** populated islands separated from the mainland in the ABS geography that are more than 5km offshore.

FIGURE 2 | Modified Monash Model classification table (Australian Government Department of Health 2021).

access to Virtual Health (Medical and Health services online) for patient care.

A purposive sampling technique was used for this study to explore the experiences of participants who met the inclusion criteria. A recruitment flyer was publicised and distributed through social media platforms such as Facebook and Twitter, along with professional and education networks including the Australian Healthcare Academy and the Rural and Remote Network. Already recruited participants were utilised to attract other participants suited to the study through a snowballing technique. Participants received an information sheet which clearly provided information on the study where participation was voluntary and could be withdrawn by participants at any time without consequence. Informed consent was sought prior to the interview and confirmed again at the time of the interview.

4.3 | Inclusion and/or Exclusion Criteria

Participants were NGRNs registered with the Australian Health Practitioner Regulation Agency (Ahpra), who had graduated from an Australian University and were employed within a rural inpatient health service. Participants were recruited from those employed within inpatient areas of rural health services for at least 12 months. The participants had completed their first 12 months of practice post-graduation (or 24 months part-time) within the last 24 months and had experienced at least one occurrence of detecting and/or managing a deteriorating patient during this employment period.

4.4 | Data Collection

Data were collected through individual in-depth interviews until data saturation occurred. That is individual interviews continued until no new information emerged. The seven NGRNs in the study provided rich data that allowed insight into the phenomenon. The interview schedule was developed with senior researchers and included the opening question, *what are the experiences of newly graduated registered nurses in caring for the deteriorating patient in the rural environment?* Several prompt questions were used to explore the experiences of participants. The interviews were recorded and transcribed verbatim and returned to the participants for checking. Demographic information for each participant was collected and is presented in Table 1. Interview questions are presented in Table 2.

4.5 | Data Analysis

A descriptive phenomenological approach to thematic data analysis included achieving familiarity with the data through

TABLE 1 | Demographic questionnaire.

1. What is the postcode of the community you undertook your new graduate year?
2. What date did you commence and complete your new graduate year?
3. Have you had any prior nursing experience before becoming an RN (EN, AIN)?
4. Age at time of interview:
5. Gender:

TABLE 2 | Interview Schedule.

1. Can you tell me about experiences you have had in caring for the deteriorating patient in your first 12 months as a registered nurse?
Prompts:
– What were those experiences like, how did you feel about them?
– How well prepared did you feel to care for the deteriorating patient?
– How did you feel about the level of support for you when caring for the deteriorating patient in the rural environment?

open-minded reading, searching for meaning and themes and organising themes into a meaningful wholeness (Sundler et al. 2019). After reading and re-reading the data, the coding process saw the adding of labels to the data and relating them to a particular theme derived from open and inclusive generation. The participants' narratives were colour coded based on similar connotations and notes were made down the side of the transcripts. A repeat of this occurred with each interview transcript and notes compared. The researcher was systematic in this approach, working through the data set with equal attention to each data item, and identifying items that may form the basis of themes. The process was confirmed with senior researchers who had extensive experience with qualitative data analysis, ensuring any bias was removed and assisted to confirm the themes. This process of data analysis was supported by Braun and Clarke (2006, 2022) six phases of thematic analysis.

4.6 | Ethical Considerations

Human research ethics approval was sought and approved by a Human Research Ethics Committee (HE21-228). This study was of minimal risk and met the criteria for an expedited review. Informed consent was received, and pseudonyms were used to ensure confidentiality during data analysis and publication.

4.7 | Rigour and Reflexivity

Reporting rigour was demonstrated using the Standards for Reporting Qualitative Research guidelines (O'Brien et al. 2014). The researcher discussed all parts of the research and analysis including data that was incongruent with the research question and anything unexpected that arose with experienced qualitative researchers. This study is transparent and descriptive in its methods and processes taken with the aim to ensure the research is believable and transparent to external readers. Participants' quotes and excerpts are provided within the findings to add context and confirmations of the data to provide accuracy. The methodology and ways in which this study was undertaken has been outlined with an audit trail and could be followed for replication. This study has produced authenticity in the findings and discussions by descriptive writing that draws from the voice of the participants focussing on their experiences rather than on the situation surrounding the experience. The demographics of the location and participants in the study are provided in the findings to allow another researcher to determine if the context can suit another population such as new graduates in a different rural area.

5 | Findings

Of the 7 participants in this study, two were from a MM 4 area, two from a MM 5 area, two from a MM 6 area and one from a MM 7 area. Participants were varied in gender with more females than males, aged between 20 and 50 years old, with varied culture, which has not been reported to ensure confidentiality. Six participants undertook a formal transition to practice program, one was not employed in a transition program. All participants were employed within inpatient areas of the rural health services that included working in rural/remote Emergency Departments (ED).

Data analysis saw the emergence of three themes that represent new graduate nurses' experiences in managing patient deterioration within the rural context: *First encounters—Transition to the rural team*, *Practice support for managing deterioration and The road to confidence*. Each theme comprises of two subthemes; themes and subthemes are listed in Table 3.

5.1 | Theme 1: First Encounters—Transition to the Rural Team

Participants depicted being *hands on* where there was no time to stand back and learn which created stress and anxiety, particularity when there was little immediate hands-on support and direction available to them. Theme one, encompasses two subthemes, *You can't stand back* and *That's everyone as a whole team*, that illuminates the experiences of NGRNs early in their graduate year.

TABLE 3 | Themes and Subthemes.

Theme	Subtheme 1	Subtheme 2
First encounters—Transition to the rural team	You can't stand back	That's everyone as a whole team
Practice support for managing deterioration	Someone to just say what's needed	I'm here to fall back on
The road to confidence	I want to learn, teach me	Look how far I've come

5.1.1 | Sub Theme 1: You Can't Stand Back

Participants spoke of the stress of being a key part of a small team, and the early expectations they felt were placed on them to perform in the rural environment. Participants would perform clinical skills that they had not attempted before and in some cases they had not seen before. One participant discussed their initial experience of working with minimum staff, just two or three staff members in the facility:

> At the start, it was very nerve-wracking, it felt impossible for some, for two people to be able to accomplish this sort of stuff
>
> (Jo).

Participants also described the importance of the senior RN's engagement in the deteriorating patient's care otherwise the NGRN may end up leading the event. This was the case for one participant where they were left to care for a child having a seizure:

> [It was] just the two of us in the building [the participant and an RN], so we actually had no support staff at all, no one who could come and assist us, and I walked into a room with a convulsing 5-year-old and my senior registered nurse was not helping at all
>
> (Jo).

When participants discussed their educational preparation and prior experience to care for the deteriorating patient received during clinical placement experiences, they expressed that educational preparedness was minimal:

> If somebody had dropped a deteriorating patient on me in the first month [of the graduate year], I would have had no idea what was going on
>
> (Terry).

A nurse educator was identified as a team member participants needed and expected to receive guidance and support from when caring for the deteriorating patient; however, many did not have immediate or any access to a nurse educator when these events take place as the educator's role was to travel to all sites within the area:

> We didn't have an educator, we had the two weeks before we started orientation with her, but then we kind of never saw the educator again
>
> (Maree).

Minimal access to a nurse educator heightened the anxiety that participants felt around the expectation in their ability to manage the deteriorating patient in rural areas. As participants quickly learned, they had to get in and *get their hands dirty* when a patient deteriorated. This was despite feeling unprepared which resulted in the feeling of *needing more hands* and longing for greater support and a desire to first be able to stand back and watch. However, participants made clear:

> There's only two of you there. If you need hands-on, then it's hands-on. You can't stand back and be like "I'll watch you do this"
>
> (Maree).

> [It was] a very small team, so I had to get in and do it and just standing back and scribing [in a cardiac arrest], is not an option. You have to get in and get your hands dirty, it doesn't matter how scared you are, you just do it
>
> (Rachel).

As participants adjusted to working in small teams in rural practice, ongoing challenges included minimal available clinical staff to provide support when a patient deteriorated and minimal access to a nurse educator. Participants expressed they would have liked to have been able to observe others care for the deteriorating patient and the complex procedures that can occur, rather than being required immediately to be a key and significant part of the small team managing deteriorating patients.

5.1.2 | Sub Theme 2: That's Everyone as a Whole Team

Participants in this study expressed that the small team of just two or three RNs could be a challenge and so sought any other available support to widen the team. Team members to provide hands-on support were found in Enrolled Nurses (EN) and Assistants in Nursing (AIN). These nurses were highly valued by participants for their skill and knowledge in the facility, their experience of rural practice and were invaluable during an episode of deterioration. Participants perceived the ENs and AINs to be more senior because of their greater rural nursing experience and organisational knowledge, so participants found it somewhat challenging to lead:

> I feel like all my AINs and ENs, they are more experienced than me, so I can't really ask them to do something because I'm more junior to them, so it's very hard because they are more experienced
>
> (Sia).

Another participant shared similar feelings of when at six months into the graduate program, they were feeling *terrified* when required to take the lead in an event after the senior RN had left the participant alone in the ED with a sick paediatric patient:

> What made up 'terrified' for me was I actually had no senior leadership there. I felt like I was put into the leadership role because I had me and two AINs and they were working to help me. I was asking them to do something to help me, and I had no one, no one to sort of look over that. I felt like I was running that on my own
>
> (Jo).

Participants from smaller rural sites identified that they were able to seek support for care of a deteriorating patient with Health Service Managers (HSM), Nurse Unit Managers (NUM) and community nurses during weekday business hours. Jo reflects on occasions when the team was expanded:

> That's everyone as a whole team, right from the community nurses that don't work on the floor to our AINs who just do about everything
>
> (Jo).

The experienced nurse managers and community nurses were able to assist with providing patient care or advice on escalation of care. However, participants expected to experience greater stress and anxiety managing the deteriorating patient outside of business hours because they knew there would be limited healthcare personnel available to provide support:

> When we had our support staff in the building, if we had an educator, if we had a community nurse, if we had our HSM, that's when we'd call on these people.... In terms of weekends and stuff like that, it was harder to manage
>
> (Jo).

In many situations when a patient deteriorates, a Virtual Health team added to the number of staff in the team. However, even with Virtual Health expanding the team, the physical number of clinical staff present in the facility was still just two or three staff of varying qualifications and skills. This required the NGRNs to perform all roles, which included complex procedures which were described as a scary experience for participants where there was a high level of anxiety around not having a Medical Officer (MO) physically present in the facility. New graduate registered nurses were often required to perform clinical procedures that they were not experienced with, for example Intra-Osseous (IO) cannulation. In these circumstances medical staff remotely guided participants through the procedure.

> It's quite scary because you don't want to do something wrong. I know they're watching you, but they're not physically there. Putting in access [Intravenous], if I accidentally punctured something ... but they're not physically there to help you
>
> (Maree).

New graduate registered nurses must also be the eyes and ears for medical staff through Virtual Health and look across the care of the patient holistically and be able to convey to the medical staff what they see, hear and feel. Communication with the MOs through Virtual Health was found to be scary and added to the stress of the emergent situation; however, a supporting MO by Virtual Health can alleviate this stress:

> So, the doctor's talking me through it [patient care management] over the headset, and clearly could see on the camera that I was really quite scared, and didn't know what to do, so he was very cool and calm about it, and directive
>
> (Rachel).

Participants valued any other clinicians available to expand their care team. The experiences of using Virtual Health during the care of a deteriorating patient were positive; however, there was stress and anxiety associated with utilising this unfamiliar service.

5.2 | Theme 2: Practice Support for Managing Deterioration

During early experiences participants were seeking a more directive and structured approach to support, however, as their confidence and skills developed, they sought support from senior RNs that allowed them to take the lead in the patient's care enabling them to gain confidence and grow as practitioners. However, participants continued to reach out for greater support when feeling *out of my depth*, often as a result of needing to be able to care for a wide variety of patient presentations with varying acuity, which comes with the nature of the rural environment. The importance of the senior RN's expertise in these varied case presentations is displayed through two subthemes, *someone to just say what's needed* and *I am here to fall back on*.

5.2.1 | Sub Theme 1: Someone to Just Say What's Needed

With minimal staff rostered on a shift in their rural health services, participants felt that where the senior nurse was not engaged in patient care, was reluctant to take a leadership role, were new internationally trained nurses, or were inexperienced with rural practice, the nature of their experience with managing deterioration became an overwhelming and adverse experience.

One participant, with just a few months experience, ended up leading a team caring for a child with acute asthma that consisted of AINs and the NGRN because the senior RN at the time was overwhelmed by the situation and had left the Emergency Department. The participant had little experience in caring for the deteriorating patient, and further, no

experience in paediatric patients, describing this experience as *terrifying* and:

> The registered nurse I was working with was sort of terrified as well. So, I wasn't getting much leadership in that sense
>
> (Jo).

Another participant was in their facility with one other registered nurse and no other clinical staff. A patient was brought into the ED after a fall. With the only other RN on the shift being an agency nurse and not familiar with the facility, the participant felt the situation was confronting:

> It was really full on, being out there we didn't have any doctors, so it was literally just me and the other nurse. Because there is only two of us on, which was pretty scary as well because I had no idea what I was doing
>
> (Maree).

The participant further describes her experience with this deteriorating patient as somewhat *frantic* with multiple tasks underway in attempting to stabilise the patient and prepare them for an urgent medical retrieval out of the facility. The participant desired greater control of the situation and more direction/delegation was needed, *someone to just, like a team leader, someone to just say what's needed to be done*.

One participant has more positive experiences as the facility where she was employed has a strong culture and focus on support:

> There was always a senior nurse on the shift in charge. They had a minimum of 15 years as a remote area nurse, so really experienced... There was always support there
>
> (Rachel).

The need for having support from broadly skilled clinicians was also shared. For example, Clare recounted her experience with a 36-week pregnant woman who presented having an epileptic seizure and had extreme hypertension:

> I felt extremely incompetent. I was just like so out of my depth when it came to maternity... some people [RNs] don't come across that ever, it was pretty confronting
>
> (Clare).

All participants experienced this diverse collection of patients that present in the rural context requiring a broad skill set of the Rural RN. When a senior RN took the lead and provided direction to the participants with clear roles, responsibilities and a clear plan of care, participants felt these experiences to be positive. When timely support and direction was not received the participants expressed feelings of overwhelming stress, which added to their existing feelings of fear and nervousness about the outcome for the patient.

5.2.2 | Sub Theme 2: I Am Here to Fall Back on

Participants' experiences illuminated how they developed a sense of confidence with caring for the deteriorating patient later in their new graduate year. At this point participants found that a valuable approach to learning was to lead in the deteriorating patients care where the RN would stand back but maintaining a supportive role with one-to-one mentoring:

> Someone that could say "go and get involved as much as you want, I am here to fall back on" or "I am here, we'll go through things together, we'll make sure we are both involved" ... the team leader was working with me it was my patient, and then just supporting me through that whole process, overseeing it
>
> (Jo).

One participant described the support of the RN as *they had trust in you to let me go a little bit*. They felt pride that they were able to manage the patient's deterioration, however, still having the opportunity for close supervision of a senior RN. Another participant highlighted the benefit of an RN standing back and providing support:

> The senior nurse was able to stand back. And kind of just watch from a distance, so other than triaging, most of that process was mine... With that support, I started to grow... starting to slowly back away from that safe environment. They were always still watching, always still there to support, never not there to support me, but allowing me to grow as a nurse
>
> (Rachel).

As participants progressed through their new graduate year, they developed confidence and skills to care for the deteriorating patient. With the support of senior RNs who possessed the knowledge and skills needed to care for the deteriorating patient, the graduates were able to begin to develop a level of independence in managing this care:

> I had exceptional support from all of those senior nurses, whether they were agency or permanent staff, which absolutely harboured and supported me through that process, and pushed me when I needed to, and told me to hold up when I needed to, too, and allowed me to, under supervision grow my skills. I had an amazing experience as a grad, and I'm incredibly grateful to the staff that looked after me
>
> (Rachel).

For ongoing support of the NGRN, supervision to lead in the case of a deteriorating patient was what was seen as helpful.

This was a key factor that saw growth and development of confidence in the participants.

5.3 | Theme 3: The Road to Confidence

As participants gained experience in the care of a deteriorating patient, they developed insight into their key role in the team and the importance of skill development and ongoing education for safe practice. This is reflected through two subthemes, *I want to learn, teach me*, and *look how far I've come*.

5.3.1 | Sub Theme 1: I Want to Learn, Teach Me

To fulfil their role in caring for the deteriorating patient, participants spoke of the need to be self-directed and self-motivated in their learning. This need was identified from orientation, where orientation days to the facility did not meet the expectations of some participants in preparing them for their graduate year. One participant described her orientation as being *a lot of things just to get signed off*, rather than other, more focussed knowledge specific to the rural environment such as escalation of deterioration in the rural health setting.

Participants reflected on being self-motivated to get involved and experience as many cases of patient deterioration as possible, observing the process and reflecting on the clinical decisions involved were recognised as important to compliment the online learning:

> I would listen to their triage, just watch the process, just to see how it happens...when we got the phone call from our doctor to say he was sending someone up I jumped into ED with my senior registered nurse ..... Just to find out what's going on
>
> (Terry).

Some participants, however, needed to assert their need for education, but often did not have the confidence to do this until part way into their new graduate year. However, as they gained insight into their need for further education, they began to request more formal education opportunities and take greater initiative by also requesting to work more in the acute areas of the facility. However, without self-motivation and determination, minimal education opportunities were often offered:

> At the start they didn't really want to teach, but by then end of it I was like "no I want to learn, teach me"
>
> (Maree).

Other participants had very positive experiences sharing how the experienced senior nurses, who were also her mentors, really helped to develop confidence:

> The support of the senior nurses that went "you're going to do this" or "you're going to take this role today"....they would allow me to assess, work out what I thought was wrong with the patient, what the treatment plan should be and then contact the RFDS who were our rural consult and speak to them and put together a treatment plan
>
> (Rachel).

Over time mentorship also shaped the confidence of Rachel who described how she had an allocated clinical supervisor and mentors within her TTP program and having life experience and experience in the health field, she knew the importance of the provision of this type of learning support explaining:

> I understood the importance of those people, and having a network of people, and learning about people and what their different skillsets were, and know who to go to when, for what
>
> (Rachel).

Participants experienced positive feelings and a sense of mastery and achievement when they could take the lead with decisions and/or assessments with minimal supervision.

Participants were self-directed in their learning about care of the deteriorating patient. In addition to online education, with new insight into the requirements of the role as a rural RN and their understanding and concern for patient safety, participants sought education from the senior RNs with gaining understanding in what they need from these RNs.

5.3.2 | Sub Theme 2: Look How Far I've Come

The pressure on the participants to be a skilled member of the team and a key part of the management of the deteriorating patient enlightened participants on the importance of learning strategies for growth such as questioning, feedback, debriefing and reflective practice:

> That reflective practice was so important because when I was feeling defeated or down, I could go back through that and go "look at how far I've come, I didn't know what to do there but now I don't even need to think about it".
>
> (Rachel).

Participants recounted how senior RNs would use questioning to foster the participants practice and knowledge and they felt this was beneficial as it challenged them to grow their skills and critical thinking, prompting reflection on what learning they required:

> She [the retrieval nurse] came in and asked for a handover, so that was really good for me to be like "hold on, there is actually a lot more going on here than what I have been focussing on". Being able to give that handover to that second nurse and then her being like "well have you done this? What's this look like? What are we doing now?" I was like "oh ok". I don't know what I am supposed to be doing but I need to
>
> (Maree).

Reflecting on experiences of the deteriorating patient as they occurred, participants developed confidence and recognise the importance of advocating for patient needs:

> I could see it, but I couldn't sort of portray it to the doctor... I don't know whether I just didn't have the urgency to act upon it earlier
>
> (Terry).

Another participant wished they could have been more assertive with a senior RN who had a difference of opinion in a triage score and now has used this experience to become more confident in doing so:

> She was like, "No he's fine, he's stable, he's a 2". I had a really conflicted view on that because of his obs. I didn't say anything because obviously the nurse was my superior.... I just reflect on that and just wish I had said...had the confidence to say "you know what, it's under my name, I want it as a 1"
>
> (Clare).

For others reflective practice often originated through a post event debrief, and this was for some, the moment where sudden insight associated with care of the deteriorating patient was gained:

> I didn't feel very confident or like I'd done a good job. It wasn't until after we had a bit of a debrief. That I felt like I'd actually done a good job. The debrief was actually very beneficial
>
> (Maree).

The use of Virtual Heath also assisted the participant's reflection and professional growth through receiving feedback from the Virtual Health team on their practice following an experience created a sense of accomplishment in participants:

> That was a little bit positive for me... yeah because they pointed out that I actually knew more than I thought I did, which was reassuring for me that I can actually be a nurse
>
> (Maree).

Initially, participants felt they were unprepared to manage the deteriorating patient and that there was a great responsibility for the NGRN to be able to do this in the rural area. However, after gaining experience and reflecting on their growth and practice, participants had a sense of validation in relation to decision-making and provision of care allowing them to grow as practitioners.

6 | Discussion

From this research, three primary conclusions emerged. The first, undergraduate and transitional preparedness currently has NGRNs unprepared to care for the deteriorating patient within the rural environment. Second, the pressure on NGRNs to care for the deteriorating patient informed them of the importance of ongoing education and skill development. And third, when NGRNs had practice support from an experienced rural nurse, their experience in caring for the deteriorating patient was perceived as less stressful.

6.1 | Unpreparedness

Previous literature has identified NGRNs unpreparedness to care for the deteriorating patient (Della Ratta 2016; Purling and King 2012; Sterner et al. 2019); however, these studies have not been undertaken in the rural context. This study extends on current knowledge highlighting that the unpreparedness of NGRNs is exacerbated due to the challenges often associated with the rural practice environment such as small teams, less hands-on support and the use of Virtual Health for which new graduates were not prepared for, nor had they experienced. These challenges require sound clinical reasoning skills; however, Herron (2017) found that student nurses are not well exposed to situations to develop their clinical reasoning skills, exacerbated by instructor or preceptor supervision (during undergraduate clinical placements) who guide and ultimately makes the decision. Amplifying this, participants in this study were rarely able to manage the care of a deteriorating patient during undergraduate clinical placements. Rather these events were managed and attended by the RN or facilitator and as such, the acuity of the event lead to missed opportunities for their skill development. Enhancing simulated learning experiences to include the use of digital technologies would both introduce students to the virtual world as well as enhance skills and knowledge around patient assessment and care escalation. This study further highlights that professional experience placements provide the undergraduate student the opportunity to lead in the care of the deteriorating patient and in the use of digital technologies including to escalate patient care. Undergraduate nursing students should be encouraged and facilitated with opportunities to care for more complex patients and be part of the care of the deteriorating patient.

The findings of this study suggest that experiences of patient deterioration requiring complex care and clinical reasoning occurs for NGRNs within the very early days of professional practice. This study further highlights that with no MO present in many rural sites the nurse is a patient's first point of contact. Thus, the NGRNs in rural areas are placed in emergent situations where they are required to take a leadership role, making clinical decisions independently until escalation for greater support is made. This requires the NGRN to perform with high levels of independence. The rural NGRN is particularly vulnerable to being unprepared to take a key role in emergent events because of minimal support staff in rural practice. In this study, even when there was a senior RN present, NGRNs were taking leadership roles when the senior RN was not engaged in a patient's care or was inexperienced in rural practice or not confident in the situation. This created a perception among participants of being thrown in the deep end and resulted in stress, fear and frustration which reflects 'transition shock' as described by Duchscher (2008). Placing these responsibilities on NGRNs within the first period of transition adds to and magnifies the stressors of transition to practice. Rural nurses working with

NGRNs should receive training and support on preceptorship and mentorship roles which should include supporting newly graduated nurses for early leadership. The knowledge of and competence and confidence with local policies, procedures and technologies is crucial for the new graduate's experience and patient safety.

Another important finding of this study is that the NGRNs were not prepared to manage the deteriorating patient via Virtual Health in facilities which utilised Virtual Health as their way of medical coverage, including escalation of care. Virtual Health requires NGRNs to escalate care and liaise with the medical team in a way in which they have never experienced before. Very early in their transition, NGRNs may need to practice advanced or complex skills to manage the requirements of the deteriorating patient with a medical team through telehealth technology. New graduate registered nurses in this study were highly stressed when needing to attend to complex clinical procedures in high-stakes situations where they may have had some theoretical education in undergraduate study, but their first attempt at the procedure is undertaken with no hands-on support, rather online support through Virtual Health. The anxieties of NGRNs utilising Virtual Health in the care of the deteriorating patient stems from little preparation in undergraduate education and further in facility orientation. New graduate nurses require knowledge and skills associated with the use of Virtual Health practice that includes communication skills, clinical judgement and decision-making, supportive attitudes and legal and ethical understanding (Knight and Prettyman 2019). Undergraduate curricula could address this gap through implementation of education regarding the use of Virtual Health using teaching methodologies that incorporate simulated environments aimed at reflecting the rural context.

6.2 | Ongoing Education

On entering practice, the first opportunity for education on caring for the deteriorating patient is orientation. However, this study found that rural NGRNs can be disappointed in their orientation to rural facilities, as they expected more about the particular aspects of rural practice unique to the health services where they were employed. Whilst the literature (Herron 2017; Sterner et al. 2019) identifies the lack of experience-based learning for the deteriorating patient in undergraduate education, orientation programs can also be a missed opportunity to provide education and skills to prepare NGRNs for these cases. This study recommends that health facilities include in their orientation program consolidation of skills and knowledge on the deteriorating patient as well as policy and procedures local to the facility. Training and orientation for NGRNs around Virtual Health platform/s will ensure NGRNs are confident in the process for escalation and management of deteriorating patient care with the primary support through digital technologies.

The findings of this study indicated that participants relied on online education focused on the management of the deteriorating patient as there was little face-to-face education available for them throughout the transition year. In rural practice, there is a lack of access to ongoing education for several reasons. Nursing staff in the facility is limited, therefore, finding a nurse to cover a shift to attend education can be challenging. Further, the distance and cost to travel to attend face-to-face education days or conferences can be high (Whiteing and Barr 2021). These barriers to education can affect both the development of new skills and currency of practice.

In rural areas, managing a deteriorating patient is influenced by the diversity of patient conditions where the NGRN must work as a generalist and be able to move between the care of older patients, adults, paediatric patients, antenatal care and emergency care (Muirhead and Birks 2019; Whiteing and Barr 2021). Generally, the variation in presentations within the rural context can hinder NGRNs ability to create patterns of recognition that can occur with familiar and more frequent presentations. The smaller the facility the more generalist the nurse needs to become because they are required to fill the gap created by a shortage of more experienced nurses, MOs and allied health professionals in rural areas. Literature suggests (Lea and Cruickshank 2015) NGRNs are unprepared for the extended role of the rural RN with literature (Herron 2017; Murray et al. 2019) identifying barriers for ongoing education to assist them with assuming this role. The participants in this study reflect the findings in the literature. Challenges of location, time and resources for ongoing education can negatively affect their performances and experiences in caring for the deteriorating patient (Graf et al. 2020; Muirhead and Birks 2019).

Literature has outlined the benefits of simulation for NGRNs with evidence demonstrating training increases the confidence and ability of new graduates to manage patients in acute situations (Norris et al. 2023; Sterner et al. 2023). Virtual simulation has been found to improve the ability of the student nurse to recognise and respond to deterioration (Goldsworthy et al. 2022). Therefore, in rural areas where face-to-face education has challenges, consideration of regular virtual simulation opportunities situated within the rural practice environment and provided by rural healthcare services could be a strategy for the new graduate nurses' ongoing education.

Face-to-face education and support from nurse educators were also desired among participants in this study. However, participants had difficulty in accessing a nurse educator. With minimal access to nurse educators, participants in this study identified the need to be self-directed and self-supported in many parts of their education. They were proactive in seeking out learning opportunities from the senior RNs who were recognised as those who provided the greatest education through hands-on support. However, as found in this study and supported by literature (Mellor et al. 2017), senior staff can sometimes be reluctant to provide education and feedback on NGRNs progress and performance and it may need to be directly requested from a NGRN. The current study highlights the value that participants found during a debrief from either senior staff, a manager or from the Virtual Health team in growing their skills and confidence. Seeking out opportunities for a debrief where this was not routinely offered was a strategy for self-development.

There is a long-standing concern in the literature (Lea and Cruickshank 2015), supported by this study's findings, around the effectiveness of rural health services to meet expectations of NGRNs ongoing training and support. Challenges that NGRNs

in rural areas face with access to education may adversely affect their experience around caring for the deteriorating patient, and in turn, patient safety.

6.3 | Practice Support

Early in the graduate year, participants desired someone to take the lead with clear direction and communication when a patient deteriorated. The participants had a fear of high acuity patients and perhaps causing the patient harm. Therefore, participants were looking for someone to role model the care of the deteriorating patient where they could stand back and learn. A role model did not need to be an RN, in this study and in synergy with other research (Lea and Cruickshank 2015) ENs and AINs were highly valued for their support and direction towards the NGRN in the absence of, or adjunct to the senior RN.

To be able to safely care for the deteriorating patient at this early stage of transition, NGRNs also need supernumerary staffing arrangements, repeated practice of skills and access to experienced nurses with skills in preceptorship (Duchscher 2008). The positive influence preceptors have on novice nurses' skills and role development is known internationally (Della Ratta 2016), yet this current study highlights that many NGRNs do not have any formal preceptor relationships with no formal preceptor allocated to any of the study's participants. Participants in this study desired a mentorship relationship based on trust where they can safely learn and feel supported in their care for the deteriorating patient. The benefit of rural specific mentorship programs has been recommended by Rohatinsky and Jahner (2016). In this study, only one participant was allocated formal support through allocation of a senior RN to support the NGRN. Where this occurred, the NGRN was able to attempt new skills, become familiar with the rural practice environment, and gain some independence in caring for the deteriorating patient with a sense of accomplishment. Mentorship in rural areas will come from senior rural nurse colleagues who work alongside the NGRN each day. To facilitate effective mentorship, Health Services and Health Service Managers (HSM) should provide support and training to senior RNs, promoting a culture of embedded mentorship support. Virtual technologies could provide an opportunity for rural health services and their senior RNs to gain training and support from metropolitan health services.

NGRN participants in this study when experiencing their first deteriorating patients, felt the need to reach out to a nurse educator for support in these emergent events. Participants were accustomed to support from educators in their undergraduate clinical placements and were aware their peers in metropolitan areas had this support available. Graf et al. (2020) suggests that as well as limited access to a nurse educator, smaller hospitals receive oversight from regional or metropolitan graduate programs that are meant to provide support to their satellite facilities. This current study found that rather than relying on new graduate programs for support, informal support relationships for the NGRN from ward-based nurses to learn from during emergent events was most influential. Participants found nurse managers as knowledgeable and effective leaders during acute situations. The absence of a nurse educator in many rural sites, fewer preceptors and less clinical support in general due to less resources and lower skill mix, (Graf et al. 2020) nurse managers are often sought to fill the gap in support (Calleja et al. 2019), thus need to be available to assist the NGRN when adverse events occur. However, whilst NGRNs felt greater support when a nurse manager was available, participants in this study highlighted the perceived gap in support when caring for a deteriorating patient outside of business hours because the support outside of hours was drastically reduced. Whilst Virtual Health was used to cover support in some instances, participants expressed that face-to-face and hands-on support was preferred.

The current study identifies that preceptors would provide learning opportunities by 'staying close and stepping back'. This allowed the novice nurses to perform tasks independently, develop their clinical reasoning and critical thinking skills, whilst still maintaining patient safety with preceptors taking over patient care when the novice nurse was not recognising signs of patient deterioration, or the situation was too emergent in nature. In this study of rural NGRNs, the support came from the experienced senior RNs on the ward who were seen as the NGRNs main educator and supporter, however, was not part of any formal role. Where the RN used a stand back and support approach during emergent events, that provided one-to-one support using questioning, feedback and debriefing, the participants felt a sense of trust, reaching a point where they began to feel confident in their practice. The development of trust from the senior RN was considered to be a key feature in practice development and confidence among the participants in this study.

In terms of support, where the NGRNs in this study experienced a nurse who was not supportive during an event of patient deterioration, their experience was characterised by feelings of being overwhelmed, stressed, frightened and of being difficult. New graduate registered nurses in this study, and in a study by Sahay et al. (2021), were uncomfortable in seeking support from senior RNs where the nurse's behaviour or attitude was not supportive. Where NGRNs receive less support their stress, anxiety and self-doubt will increase and the NGRN will be more likely to feel overwhelmed, fearful and scared (Graf et al. 2020). Not all senior RNs, leaders, managers or educators, are proficient at providing good support (Calleja et al. 2019; Graf et al. 2020). Similar to Calleja et al. (2019), and Lea and Cruickshank (2015), this study found that the skill mix of staff in rural areas is of major concern to NGRNs especially when commencing their new graduate programs as ward-based support often does not occur due to skill mix and staffing ratios. In this present study, NGRNs were casualties of this skill mix deficit when caring for deteriorating patients. For example, some were required to take on leadership roles with ENs and AINs constituting their team and were required to provide advice to RNs who were new to nursing in rural Australia. Therefore, the level of support received can be dependent on the shift NGRNs are allocated to and who they are rostered to work with (Graf et al. 2020).

6.4 | Strengths and Limitations of the Work

This study has several strengths. The interviews provided rich data into the experiences of NGRNs in caring for the deteriorating patient in rural areas. The participants varied in age, gender

and cultural background adding to the richness of the data and it is the first study of this phenomena. One limitation of this study is the small sample size, which for further research could be addressed with a larger study and differing methodology inclusive of a mixed method approach; however, this study did not set out to generalise rather it aimed to provide insight into participant's experiences.

6.5 | Recommendations for Further Research

Further qualitative studies on the experiences on the phenomena would allow a rich understanding of the barriers to safe patient care or a positive new graduate nurse experience and inform education for best practice. Research would be valuable on the effectiveness of implementation of specific education in undergraduate programs on preparing new graduate nurses for managing patient deterioration in rural practice. Particularly, there is a lack of research around the implementation of Virtual Health into undergraduate curriculum and how to best prepare students for use of these technologies in rural health practice within the context of escalation of care.

6.6 | Implications for Policy and Practice

This study highlights that further focus on the undergraduate preparation of registered nurses to safely care for a deteriorating patient in the rural context is required. Literature has shown simulation is an effective learning tool to educate undergraduate nursing students in the care of the deteriorating patient but should also include the use of digital technologies for patient assessment and care escalation in rural areas. Professional experience placements can provide the undergraduate student the opportunity to be more actively involved in complex patient cases and care of the deteriorating patient. Policy makers for health organisations could consider these findings when developing policy and practice for Transition to Practice Programs including preparedness, support roles and education to meet safety and quality requirements. Health service administrators in rural areas need to ensure that roles of preceptors and mentors for NGRNs are present and that they are proactive in providing training and support for these roles. Orientation and TTPs for NGRNs should include care of the deteriorating patient within the facility and training on Virtual Health platform/s. Access to a nurse educator should be re-visited with area health services and advocacy for greater access for the NGRN provided.

This study acknowledges the feelings of stress, fear and overwhelm that the participants' experienced when caring for the deteriorating patient and recommends that NGRNs commencing their new graduate year in a rural area be proactive in orientating themselves to the processes of escalation and management of care of the deteriorating patient in the facility including through the use of Virtual Health. Self-management of ongoing education in recognising and responding to patient deterioration is important to lessen the feeling of being out of depth. NGRNs should reach out for support from available services to support wellbeing.

7 | Conclusion

The findings from this study highlight the complexity and breadth of skills nurses are required to possess whilst working rurally; however, new graduate nurses are often ill-equipped and ill-prepared to work in the rural environment. This highlights the need for tailored support and education to care for the deteriorating patient in rural areas. Whilst literature has recognised NGRNs working within metropolitan areas feel ill-equipped to care for deteriorating patients, this study extends on what is known by highlighting NGRNs experiences within the rural context. The findings highlight the added complexities the NGRN faces with emergent situations in rural areas. This research can positively impact NGRNs and patient safety where policymakers and health service administrators implement recommendations into policy and procedures across rural health services. Importantly, the better prepared and supported NGRNs are in the care of deteriorating patients in rural areas, the greater enhancement of patient safety and retention of our newest nurses in the rural nursing workforce.

Author Contributions

Elaine C. Towner: conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, validation, visualization, writing – original draft, writing – review and editing. **Leah S. East:** conceptualization, formal analysis, methodology, supervision, validation, writing – review and editing. **Jackie Lea:** conceptualization, formal analysis, methodology, supervision, validation, writing – review and editing.

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I confirm that any data utilised in the submitted manuscript has been lawfully acquired in accordance with The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity. State that the relevant fieldwork permission was obtained and list the permit numbers.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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