scope

Contemporary Research Topics

health & wellbeing 10

November 2026

https://doi.org/10.34074/scop.3010

health & wellbeing 10

Published by Otago Polytechnic Press.

CC-BY the authors.
© illustrations: the artists or other copyright owners or as indicated.

scope

Contemporary Research Topics



health & wellbeing 10

November 2026

scope

Contemporary Research Topics

health & wellbeing 10

November 2026

scope

Contemporary Research Topics

Scope: Contemporary Research Topics (Health & Wellbeing) is peer-reviewed and published annually by *Scope: Contemporary Research Topics*, Otago Polytechnic Press. The print edition of this journal is co-published by Otago Polytechnic Press and General Editions.

The journal *Scope (Health & Wellbeing)* aims to engage in multidisciplinary discussion on contemporary research in the landscape of health. It is concerned with views and critical debates surrounding issues of practice, theory, education, history, and their relationships as manifested through the written and visual activities, such as original research, commentary, and critical debates concerning contemporary researchers, industry, society, and educators in their environments of national and international practice. *Scope*'s focus is on building a sense of community amongst researchers in New Zealand and the international community.

An online version of the journal is available free at https://thescopes.org/journal/

ISSN (for hardcopy version): 2537-8872; ISSN (for online version): 2537-8880.

CC-BY 2026 the authors; © illustrations, the artists or other copyright owners.

health & wellbeing 10

November 2026

Copy Editing: Megan Kitching

Design & Typesetting: Joanna Wernham

Printing: GE/STUDIO

Cover Credit: Mel Parry Photography

Editorial Team: Jean Ross (Editor), and Megan Kitching (Editorial Assistant)

For peer review and editorial advice and comment, the editors rely on a range of appropriate reviewers, but in the first instance on members of the **Editorial Board:**

- Associate Professor Daniel Ribeiro, School of Physiotherapy, University of Otago, Dunedin, New Zealand
- Professor Dominic Micklewright, School of Sport, Rehabilitation and Exercise Sciences, University of Essex, Colchester, UK
- Dr Richard Young, High Performance Sport, Dunedin, New Zealand
- Professor Emerita Kathie Lasater, School of Nursing, Oregon Health & Science University, Washougal, WA, USA
- Professor Midori Kamizato, Okinawa Prefectural College of Nursing, Okinawa, Japan
- Professor Daniela Händler-Schuster, Institute of Nursing, Zurich University of Applied Sciences, Winterthur, Switzerland
- Dr Kate Emond, Rural Department of Nursing and Midwifery, La Trobe University, Bendigo, Australia
- Dr Kim English, Trent/Fleming School of Nursing, Trent University, Ontario, Canada
- Assistant Professor Emma Hughes, School of Health and Social Care, Napier University, Edinburgh, UK
- Professor Karole Hogarth, Head of School of Nursing | Te Kura Tapuhi, Otago Polytechnic | Te Kura Matatini ki Otago
- Richard Humphries, Te Kura Honoka ki te Ora | Institute of Sport, Exercise and Health, Otago Polytechnic | Te Kura Matatini ki Otago
- Dr Peter Olsen, Ara Institute of Canterbury, Christchurch

scope
Contemporary Research Topics

CONTENTS

6	Jean Ross	Beyond the Horizon: Shaping the Future of Health and Wellbeing
8	Interview by Josie Crawley	Teamwork Beyond the Court – Lessons in Leadership, Trust, and High Performance from Elite Sport: An Interview with Hayden Croft
16	Joanna Cobley	Picnicking and Wellbeing in Colonial Aotearoa New Zealand: Three Historical Scenes
27	David McQuillan and Ash Rohloff	The Pressure Tolerance Scale: Better Communication About Pain
35	Mariko Oshiro	An Analysis of Community-Based Breast Cancer Consultation and Support on Remote Islands in Okinawa, Japan
46	Michelle E. Bussard and Sarah A. Mahoney	Evolution of a Relaxation Room as a Resilience Promoting Strategy with Undergraduate Nursing Students
55	Michelle Miller	Summative Assessments and Clinical Placement Readiness for Year One Bachelor of Nursing Students
61	Lucy Nolan, Philip Lopez and Judith Honeyfield	Graduate Nurses in Aotearoa New Zealand: How Well is Undergraduate Pharmacology Education Preparing Them for Practice?
72	Jean Ross, Teifi Jones, Keith Roberts and Michelle Baker	Sunguarding® Anglesey: A Community-Based Pilot to Improve Public Awareness of UV Risk and Skin Cancer Prevention at Trearddur Bay, North Wales
92	Yoonah Cho	A Light Bulb Moment: From Curiosity to Contribution in My Digital Health Journey as a Novice Nursing Academic
98	Josie Crawley	Synergy

Editorial https://doi.org/10.34074/scop.3010012

BEYOND THE HORIZON: SHAPING THE FUTURE OF HEALTH AND WELLBEING

Jean Ross

In this edition of *Scope: Contemporary Research Topics (Health & Wellbeing) 10*, I am grateful to the contributors who provide valuable insights into communication, place, wellbeing, networking, teamwork, and reflection. Collectively, these contributions illuminate emerging directions in clinical practice, education, and research. They demonstrate the diverse ways clinicians, educators, researchers, students, and communities contribute to improving health outcomes and enhancing wellbeing.

The cover image of this issue further reflects these themes, depicting a coastal pathway stretching towards the horizon, framed by sea, sky, mountain, and community. The image invites us to pause and consider both where we stand and where we are heading. Like the pathway in the foreground, health and wellbeing are not fixed destinations but ongoing journeys shaped by experience, discovery, collaboration, and purpose. The horizon reminds us that while the future cannot be fully seen, it can be influenced by the actions we take today.

The opening article, an interview with Hayden Croft conducted by Josie Crawley, offers a thought-provoking perspective on teamwork. Although situated within the context of sport and performance analysis, the discussion provides important insights into the future of health and wellbeing, demonstrating that meaningful progress is rarely achieved through individual effort alone. Increasingly, significant advances emerge through collaboration, active listening, and authenticity. These principles underpin effective practice for clinicians, researchers, educators, and community development practitioners alike. Interprofessional teamwork brings together diverse perspectives, expertise, and ways of knowing, fostering innovative responses to complex health challenges. Meaningful partnerships with communities, service users, and whānau further strengthen our capacity to design services and interventions that are relevant, inclusive, and sustainable.

The first of the remaining eight contributions, by Cobley, complements the discussion of teamwork by highlighting the importance of communication, place, and belonging. The article explores both positive and challenging historical events in Aotearoa New Zealand, particularly those associated with early settler and Māori encounters through the concept of the "picnic." The following two articles, by McQuillan and Rohloff and Oshiro, also focus on communication. Both examine the importance of ensuring individuals are appropriately represented and heard, whether in clinician-patient interactions or in accessing healthcare services.

The next four articles focus on nursing education and clinical practice. Bussard and Mahoney recognise that while developing empathetic, person-centred healthcare practice offers significant benefits, students may also experience considerable stress. In response, they describe the creation

of a relaxation room for student nurses, which has demonstrated positive outcomes. Similarly, Miller addresses student stress associated with clinical placement through the development of a "passport for practice," designed to support students as they prepare to demonstrate competency during their first year of clinical education. Nolan, Lopez, and Honeyfield explore whether pharmacology education within undergraduate nursing programmes adequately prepares graduate nurses for evolving healthcare environments and increasingly complex patient needs. Their findings suggest that additional pharmacology education would strengthen graduate nursing practice. The final article in this section, a case study by Ross, Jones, Roberts, and Baker, examines a community development project undertaken by student nurses. The study demonstrates the positive impact of health promotion resources on the communities they were designed to serve and highlights the importance of communication, networking, and teamwork in achieving successful outcomes.

The final reflective article by Cho encourages readers to examine assumptions, learn from experience, celebrate successes, and identify opportunities for growth. Whether undertaken individually or collectively, reflective practice supports continuous improvement and encourages practitioners and researchers to remain responsive to changing circumstances. In an era of rapid transformation, reflection provides the space to connect evidence, experience, and values in ways that support thoughtful action. This volume concludes with a poem by Josie Crawley, entitled "Synergy," which serves as a fitting reminder of the importance of connection and collaboration.

I hope the articles in this issue inspire readers to engage with new ideas and consider future possibilities through communication, teamwork, and individual and collective reflection. By learning from one another and remaining committed to inquiry, collaboration, and excellence in practice, we can continue to shape a future that supports healthier individuals, stronger communities, and more responsive health systems for all. Enjoy.

Jean Ross (https://orcid.org/0000-0003-2467-9233) is a Professor of Nursing at the School of Nursing, Otago Polytechnic. She is also an advocate for sustainable rural community development and nurse education. Jean has been the editor of *Scope (Health & Wellbeing)* since its inception. Jean's practice is research-orientated which both informs and directs her scholarly work. Community engagement and development comprise her practice with nursing students and community members.

https://doi.org/10.34074/scop.3010011

TEAMWORK BEYOND THE COURT – LESSONS IN LEADERSHIP, TRUST, AND HIGH PERFORMANCE FROM ELITE SPORT: AN INTERVIEW WITH HAYDEN CROFT

Interview by Josie Crawley

INTRODUCTION

Associate Professor Hayden Croft brings a unique perspective to the study of teamwork. As an academic, educator, and performance analyst, he has spent years working across both higher education and elite sport. Most recently, he was part of the Silver Ferns Netball environment during their successful Commonwealth Games campaign, contributing to the team's performance analysis and broader support structures.

In this interview with colleague Josie Crawley, Hayden reflects on what he has learned from working within high-performing sport teams. While elite sport and healthcare may appear to operate in very different worlds, Hayden proposes that the foundation traits of high-performing teams are much alike. Whether the goal is winning a gold medal, delivering excellent patient care, or supporting student success, Hayden explains how teams thrive when people understand their roles, trust one another, communicate effectively, and remain focused on a shared purpose. The following interview is based on the edited transcript of an online conversation.



Figure 1. Sport Analyst: Associate Professor Hayden Croft with gold medal, 2026 Commonwealth Games. Photograph: Hayden Croft.

Your career spans both elite sport and academia. Where did your understanding of teamwork begin?

Teamwork started for me as a participant. Growing up, I played in different teams, had different coaches, and experienced different clubs and organisations. Those early experiences showed me that success is rarely about one individual. During university, I moved into support roles through

coaching rugby and performance analysis in rugby and netball, and over time I found myself more interested in how teams function than in individual performance alone.

The interesting thing is that the principles of teamwork are remarkably similar whether you are working in sport or in education.

One of the first things is defining who the team actually is. People naturally assume the team is the athletes on the court. In the Silver Ferns environment, the team is much broader. It includes coaches, management, support staff, and players. Everyone contributes to performance. If you only focus on the athletes, you miss a large part of what creates success. But the membership can be fluid. There are times where we don't travel with the team but rather support remotely. In this situation I don't feel that we are part of the team in quite the same way.

You identified three foundations of effective teamwork. What are they?

The first is role clarity. People need to understand exactly what they are responsible for. The second is minimising role conflict. If people think others are doing their job or responsibilities overlap unnecessarily, friction develops. The third is sustainable workload. People need enough time and capacity to do their work well while still having room for creativity and improvement. When you get those three things right, people tend to become self-motivated and engaged, and they innovate.

For most teams, workload has to be managed. As a team we need to establish what are the key priorities and then focus our energy first and foremost on those, try to be a little smarter each time: there are things we should do, things we shouldn't do (the black and the white). And then there are things that we could do but they're not critically important. With workload, we have to create space and understand that we can chose not to do some tasks; for example, not replying to that e-mail, to maintain focus on the things that are more important in the moment. It's navigating the grey areas, understanding what priorities are. Finding the work that has to get done, doing that and then keeping a little bit of stuff people enjoy but may not be important

What does a performance analyst contribute?

At a technical level, the role involves collecting and reporting information about performance. That includes statistics, trends, and video analysis, and identifying areas for improvement. By looking at certain phases of play where play is breaking down we can identify why they're breaking down and what improvements could be made. But the role is much broader than data. You work closely with coaches to turn the analysed information into knowledge and then communicate that knowledge so athletes can act on it. You have to tie in with the messaging that the coach is trying to convey or the game plan they're trying to work on. You are in a core role, but with other roles around you, so you must fit in with the team.

Over time you also find opportunities to contribute beyond your formal role. Sometimes that means producing motivational videos, solving technical problems, or helping maintain the general environment. Good teams encourage people to step into spaces where they can add value; even if that is making sure the team rooms are set up correctly, the projector works, and speakers are connected. If technical problems aren't resolved, they can drag the focus of a meeting away. You make sure your core role is smooth and operates as efficiently and as effectively as possible, so that you have space and room to step into other spaces where you see fit!

My role with the Silver Ferns started back when I was working at Otago Polytechnic teaching performance analysis. Like many opportunities in sport, it came through relationships and networks more than formal recruitment processes. While teaching performance analysis, I had developed connections within elite sport environments such as the Southern Steel (netball team), where Noeline Taurua was head coach for a year. When an opportunity arose in 2018, I was invited by Noeline [then head coach of the Silver Ferns] into the performance analysis role for our national team.



Figure 2. Analyst tools at the Commonwealth Games 2026. Photograph: Hayden Croft.

High-performance sport is often very campaign-based—for example, the Commonwealth Games is the pinnacle event of a four-year cycle. Noeline bought me in to the team to help formulate a high-performance environment, contribute to a campaign, and then continue to build those relationships over time through a collection of short-term campaigns and remote work outside of these. For me, it has been about developing trust and maintaining strong working relationships over several years. The team being satisfied with the work I do means I have ended up staying in that environment. I do want to stay, because I find it a really stimulating and a positive environment to work within.



Figure 3. Glasgow Netball arena at night. Photograph: Hayden Croft.

What are the most important characteristics of a high-performing team?

There are many factors, but leadership is where it begins. I do not think the best leadership is hierarchical—hierarchies are the least resilient in nature. Complex systems that work and adapt together, these are what evolve to be robust. Old fashioned leadership is based on control and power, whereas most high growth companies and evolving organisations are a little bit more dynamic and adaptable. Traditional models tend to be about directing people and telling them what to do without necessarily recognising team members' strengths.

The most effective leadership I have experienced is based on empowerment. You select good people, trust them to do their jobs, and give them space to contribute. In high-performance environments, everyone is there because they have expertise. Good leaders recognise that and create conditions where expertise can flourish.

Watch out for clichés and generalisation about leadership and people, including in formal courses: sometimes they have a top-down, Drill-Sergeant philosophy. Listen to others' advice, but at the end of the day, you've got to formulate your own approach, understanding that teams are dynamic, complex neural networks full of unique humans. That means you can't really generalise answers to problems, not when the problems involve humans. There's not one right way to do things. You need to sit in those thinking spaces—think about everything you're doing, think through problems in the context of the team you're working with. I think that's where you make a huge amount of ground as a high-performing team; leadership that empowers the team.



Figure 4. Silver Ferns training in Manchester, UK.

The Silver Ferns had to bounce back from adversity. It's well documented that in 2025 the Board and the senior management of the organisation stepped in and made changes in the environment and to the team. They used information and made some decisions on standing the coaches down. We were a high-performing team and there are always small areas to work on, improvements to make, but we weren't given an opportunity to address those. This disempowerment made the success at the Commonwealth games a year later so much better. We put a clinical campaign together over the last month at the Commonwealth Games and were able to bring the team and the players together in an incredibly positive manner. The campaign had several phases, stages, and steps of learning for the athletes—and then, the gold. Putting a great performance out at the end is probably one of the biggest highlights for me. It was great to know that we could pull everything together after a really tumultuous year and go back to our processes and the things that we know are effective, that we believe are important, and drive through that to get a good outcome. Leadership is both a science and an art. Science is the factual evidence, information based and structured. Every year I'll bring something slightly different or new into the environment. Not a big change, but an addition to build on top of what we have done previously. You could call this a practice-based evidence approach. Art is understanding people, the feeling and the nuance, the complexity and the timing of it all. Human beings are complex. Generalisations about humans rarely work, one size doesn't fit all. The more we understand individuals, the more effectively we can communicate with them, support them and bring them together as a team. The science and the art—I don't think you can do one well without the other.

You often describe success in terms of "we" rather than "I." Why?

Because no one works in isolation. In elite sport we have coaches, psychologists, physiotherapists, analysts, management, and athletes working together. If everyone pursues their own priorities without alignment, performance suffers. We spend a lot of time discussing what we are doing and why. Alignment is not about everybody thinking the same way. It is about making sure everyone is moving toward the same outcome.

For the Silver Ferns we might have 12 to 14 players travelling, six management people, a physiotherapist, a strength and conditioning coach, a psychologist, a couple of coaches and the performance analyst. The strength and conditioning coach might be trying to get certain recovery in or loading up, but we're driving a different focus and training around skill sets and strategy. There could be a conflict there and we would be working against each other for our own priorities. The same with the psychologist. If I'm giving feedback that's condescending or making fun of players or detrimental to their wellbeing, that works against the psychologist's strategy. To avoid this, we consult and talk constantly around what we're doing so that we, the whole team, work in alignment with each other. This way we have a team environment that's focused on what will make things better and then all the other stuff around that is secondary.

How important is communication in creating that alignment?

Communication is critical, but not simply in the sense of talking. Communication includes behaviour, timing, and authenticity. You can tell people they are empowered, but if your actions show distrust they will believe your actions rather than your words. Good communication requires people to think carefully about the impact of what they are doing and saying. It's not necessarily the words you say, but the way you communicate that tells people if they are authentically valued.



Figure 5. Analyst strategy meeting. Photograph: Hayden Croft.

How do you give effective feedback without negative impact?

Trust is foundational. Teams take time to formulate and to build trust and respect for each other's roles. There will be phases in any team where you're building trust and it can take a long time. An established team might have higher trust, not get on well, or might have new members. You tailor your feedback based on what stage of respect and trust the group is in.

You can only really give constructive criticism if there is already a respectful relationship. If you criticise someone without having a good functioning, working, respectful relationship, that's going to be detrimental to the team. In a new team I would use more open questioning and exploration because I am still learning about the individuals. You need to show you are trying to understand why someone made those decisions or did it that way. You need to listen—that's the whole purpose of questioning, not just get the person to self-reflect. If you question without listening, then you're not authentic and people read or pick up authenticity really quickly. In an established team with strong trust, feedback can be much more direct. The key is understanding the person in front of you and why they made the decisions they made.

You do need to be authentic in your feedback. Telling people they're great all the time without actual authentic reasons builds distrust. Balance that with realism; if we don't do a job effectively, then we'd expect to be called out on that. Feedback does require thinking before you give it [about] how you communicate with people and what you're trying to achieve in the sense of the bigger picture, not just in that incident at that time.

How do you encourage quieter people to contribute?

I do not think every person needs to contribute in the same way. Some people are vocal and naturally visible. Others contribute through preparation, observation, or action. Diversity is a strength. Rather than forcing people to speak, we try to create opportunities that let their confidence develop naturally. It's about fostering people. The goal is not equal contribution in exactly the same form. The goal is effective contribution. Teams are clearly defined by the outcome everyone's working towards. So you work backwards from that outcome and know who can fill the gaps or do the different parts of the role.

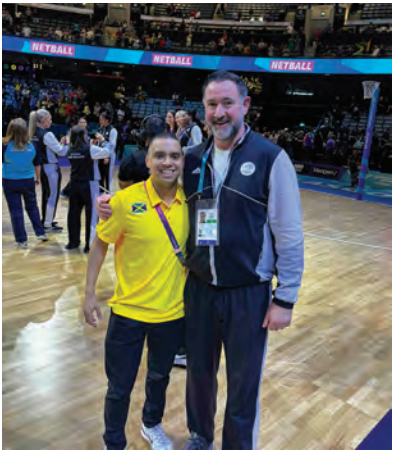


Figure 6. Hayden Croft with a former student, now the Performance Analyst for the Jamaica Netball team. Photograph: Hayden Croft.

Does that apply in both sport and academic teams?

Absolutely. We often see very different personalities within successful teams. Some people lead from the front. Others contribute quietly and consistently. What matters is whether people can perform their role effectively and whether the team values those different forms of contribution. This requires people to be really clear on what outcome everyone is working towards and for individuals to drop the insecure feeling that they have to be expert in everything. Rather, everyone [should] appreciate that each person in a team and each different team have a specialised skill set.

What can healthcare teams learn from sport?

There are strong similarities. Both involve multidisciplinary teams working toward an important outcome. In healthcare, everyone brings specialist expertise. The challenge is understanding and respecting those differences while remaining focused on shared goals. People need confidence that their expertise is valued and that their contribution matters. Respect is central.

What advice would you offer leaders working in high-pressure environments such as healthcare and academia?

Ensure roles are clear. Then be clear about priorities. Not everything can be done at once. Teams need clarity around what matters most. At the same time, people need some autonomy and some opportunity to do work they find meaningful. If workloads become overwhelming, you have to make conscious decisions about where energy is best spent.

How does a team move from being good to becoming excellent?

The first step is defining what excellence actually means. In elite sport that is relatively straightforward because success is often measured through results, trophies, and medals. In other settings it can be more complicated. Once people share an understanding of the goal, what excellence means in that setting, they can align themselves around it. After that, leaders often need to remove barriers rather than create more controls and give people freedom to work without bogging them down with critical analysis of how they're performing.

What final insight would you leave readers with?

Be careful of generalisations. High-performing teams often share similar characteristics, but people and contexts are always different. However, the principles underlying the strongest teams apply whether you are working in elite sport, education, or healthcare.

CONCLUSION

Perhaps Associate Professor Croft's most important message for healthcare professionals is that teamwork is fundamentally a human endeavour. "The strongest teams," he says, "understand individuals, value diversity, build trust, communicate well and remain focused on their shared purpose." Technical expertise, professional knowledge and organisational systems are important, but trust, communication, respect, and understanding remain at the heart of every successful team.

Hayden Croft (https://orcid.org/0000-0001-6848-3000) is Head of College (Health) at Otago Polytechnic and a performance analyst with the Silver Ferns. His work spans higher education, leadership, research and elite sport, with a particular interest in how high-performing teams learn and performance. He brings practical experience from international netball and rugby into his teaching, research and organisational leadership.

Josie Crawley (https://orcid.org/0000-0003-1011-3335), has been applying teamwork principles while educating health professionals in practice and tertiary settings for over 30 years. She achieved national awards for her tertiary teaching and Editors choice for her reflective writing. Her research platform explores creating transformative learning opportunities, narrative inquiry, and phenomenological experience.

Article https://doi.org/10.34074/scop.3010002

PICNICKING AND WELLBEING IN COLONIAL AOTEAROA NEW ZEALAND: THREE HISTORICAL SCENES

Joanna Cobley

INTRODUCTION

Picnics are a social practice widespread across classes and continents (Battiscombe, 1949; Davidson, 2014; Katz & Weaver, 2003; Levy, 2014). Food is packed, people travel to a chosen place, and ordinary routines are temporarily suspended, allowing conversation, recreation, scenery, and anticipation to distinguish the outing from an everyday meal (Mitchell, 1995). Because the practice appears familiar, its historical significance can be overlooked. While historical sources cannot establish individual psychological states, they reveal the social conditions through which connection, pleasure, belonging, and engagement with place became possible (Brickell, 2008; Ross, 2008). Contemporary scholarship on commensality, wellbeing, and nature connectedness provides a restrained vocabulary for considering why shared food, sociability, and particular environments may have mattered historically (Capaldi et al., 2014; De Neve et al., 2026; Jönsson et al., 2021; Le Moal et al., 2025), suggesting that collective outdoor dining was intimately tied to emotional and communal survival.

To explore how these dynamics of wellbeing and spatial belonging evolved, this article analyses three scenes from nineteenth-century Aotearoa New Zealand: Augustus Earle's Christmas picnic at Te Puna Bay in 1827; James Crowe Richmond's 1851 picnic at Ratanui; and the Māori-hosted gathering at Tīpapakuku, Wairarapa, in 1896 (Waitangi Tribunal, 2010), followed by a return Pigeon Bush picnic. Spanning the pre-colonial maritime frontier to the late colonial period, these specific scenes capture a critical century of rapid social and political transformation. Across these cases, the picnic shifts from an early cross-cultural maritime encounter, through a mechanism for settler community-making, to a highly charged political occasion involving Māori hosts, settlers, and Crown representatives. Ultimately, this article uses the micro-history of the picnic to examine how shared leisure and outdoor commensality served as vital yet contested sites for anchoring social networks, negotiating political authority, and enacting collective wellbeing across a changing colonial landscape.

What counted as a picnic?

Eating outdoors is not necessarily a picnic (Csergo, 2003). This article defines a picnic as an arranged social meal held outdoors, away from ordinary domestic or working routines, in which recreation, shared provisions, travel, and location form part of the occasion (Levy, 2014; Mitchell, 1995). The term originally referred to a contributory indoor meal before becoming associated with

pleasure-oriented outdoor dining in nineteenth-century Britain (Battiscombe, 1949; Levy, 2014). By the end of the nineteenth century, picnicking had become a widely recognised leisure practice across a range of social classes and national settings. Crucially, Levy (2008) cautions that these events were not always harmonious; underlying social tensions, illness, or political frictions could disrupt the gathering, meaning that conviviality and wellbeing were never guaranteed outcomes.

In colonial Aotearoa New Zealand, picnics became family and community rituals associated with holidays, churches, workplaces, and voluntary organisations (Clarke, 2007; Mitchell, 1995; Simpson, 2008). Travel, games, conversation, scenery, and release from work made picnicking a distinctive leisure practice. Through these events, settlers expressed a sense of community and temporarily domesticated the local environment for their enjoyment.

The three scenes draw on different sources. Earle's account reflects the perspective of a British visitor; Richmond's watercolour is a retrospective representation; and the Pigeon Bush account combines photographic, newspaper, biographical, and historical evidence. Together, these sources illuminate how picnics were organised, represented, and remembered, while also reflecting the perspectives and priorities of their creators. The Waitangi Tribunal's *The Wairarapa ki Tararua Report* (2010) is an invaluable secondary source; it synthesises Māori oral traditions and testimonies that were largely absent from the settler record and situates the final gathering within the contested history of Wairarapa Moana.

SCENE ONE: TE PUNA BAY, 1827



Figure 1. Augustus Earle (1827),
Tepoanah [i.e. Te Puna] Bay of Islands, New Zealand, a church missionary establishment.
[Watercolour, 327 x 632 mm]. Trove. National Library of Australia. http://nla.gov.au/nla.obj-134515608.

On Christmas Day 1827, travelling artist Augustus Earle joined a picnic at Te Puna in the Bay of Islands. Earle and his Scottish companion, Mr Shand, were staying at Kororāreka, where European residents, visiting crews, and Māori communities intersected through trade, alliances, and chiefly protection (Moon, 2011). In his narrative and journal of the event, Earle recorded that the party travelled across the bay in two whaleboats and contributed provisions to a "pic-nic feast" (Earle,

1832/1966). The party included Captain Duke of the whaleship *Sisters*, who, while recovering from illness, secured the protection of the rangatira Te Whareumu through a temporary marriage arrangement (Ballara, 2003).

From a Māori worldview, this arrangement operated through the logic of tuku, where gifts, whether fine feather cloaks, carvings, land, or kinship alliances through wāhine (women), could not be refused, and carried obligations (Metge, 2002; Wharepouri, 1994). Duke's presence highlights the cross-cultural dependencies underpinning European life in the Bay of Islands. It was this deeply embedded relationship that facilitated the picnic scene itself, where Earle described the journey as delightful and the scenery as beautiful. Their destination was Te Puna, near Rangihoua, where a Church Missionary Society settlement sat below the pā of the rangatira Waripoaka. The gathering served as a Christmas celebration and a visit to an English resident and ship captain (Earle, 1832/1966; Moon, 2011). Earle's watercolour does not depict the picnic itself but shows the mission establishment below a much older Māori landscape (Figure 1). Its value lies in showing the proximity of the mission cottages, bay, hillside, and Māori settlement. The Rangihoua Church Missionary Society farm operated through relationships with Ngāpuhi rangatira and depended upon Māori protection, labour, food, and trade (Ballara, 1990, 2003; Middleton, 2007; Parsonson, 2013). Earle and other visitors likewise moved within Māori-controlled networks of travel and access, although Earle's interpretations (such as this painting) remained shaped by nineteenth-century assumptions about civilisation, race, and progress (Earle, 1832/1909; Moon, 2011).

The Christmas picnic exposes a tension between cross-cultural exchange and social division. Earle expected the local missionaries to welcome fellow British subjects during a season associated with home, family, and hospitality. Instead, the missionary men withdrew and declined to join the gathering. After dinner, provisions for punch were sent up the steep hill to the rangatira at Rangihoua pā (Earle, 1832/1909). Although Earle observed that Māori preferred tobacco and tea to alcohol, he shared the punch with Waripoaka and his circle. The missionaries later arrived uninvited to preach and curb the picnickers' behaviour, prompting Waripoaka to reproach them for their lack of festive hospitality on his ancestral ground. The circulation of provisions was meant to foster social alliances. The picnic party provided the initial feast and later sent punch to the Ngāpuhi hosts, creating expectations of reciprocity. Food clearly carried social obligations rather than passing as a neutral commodity.

Rowing, shared provisions, holiday recreation, and contrasting forms of hospitality gave the gathering its sensory and social character. The sources record Earle's enjoyment but cannot establish the experiences or wellbeing of other participants (Earle, 1832/1909, 1832/1966). They do show that European recreation at Te Puna depended upon Māori governance, alliances, hospitality, and control of land and resources (Ballara, 2003).

This initial scene establishes the broader argument of this article: picnicking generated sensory pleasure and social cohesion within networks of authority, material contribution, and protection that European visitors did not control. Those pleasurable experiences were inseparable from the social relationships and power structures that made them possible (Smith, 2007). However, by 1896, colonial expansion, land acquisition, and political change had repositioned such local networks of reciprocity within structures privileging settler dominance and accelerating Māori dispossession (Ballara, 2003; Waitangi Tribunal, 2010).

SCENE TWO: RATANUI, 1851



Figure 2. Richmond, James Crowe, 1822–1898: Picnic near Ratanui. December 1851. Ref: B-163-006. Alexander Turnbull Library, Wellington, New Zealand. https://natlib.govt.nz/records/22872785.

Twenty-four years after the Christmas gathering, James Crowe Richmond recorded a picnic hosted by Charles Brown and his wife, Margaret, at Ratanui, in a remote bush settlement on Brown's land near New Plymouth. Richmond described it as "a picnic or something of that description" (Richmond, 1851). His uncertainty is revealing: the gathering involved travel, shared food, sociability, and recreation, but its connection to an emerging settlement also gave it the character of a temporary encampment.

Richmond recorded 95 visitors, in addition to bullock drivers and Māori working for Brown. Guests rambled through rough clearings, inspected the proposed sawmill site, watched or assisted with tree felling, listened to singing and speeches, and, in Richmond's words, made "a pleasant day of it" (Richmond, 1851). Māori presence is documented, although Richmond's wording places Māori workers and bullock drivers outside his category of "visitors." Whether they shared equally in the meal or recreation cannot be determined. Richmond's watercolour shows two long tables and a large tent in a forest clearing (Figure 2). Brown had the tables and benches constructed from boards intended for a future house, turning building materials into temporary picnic furniture before permanent settlement. Food is indistinct, and the image cannot identify the menu or who prepared it.

Provisioning a gathering of this scale required considerable organisation where access to food and ease of transport were uncertain (Halse, 1851). Sourcing and hauling provisions, processing timber, and constructing tables depended upon the labour of bullock drivers and Māori workers. Domestic food preparation relied on gendered divisions of labour typical of colonial households, although the surviving record leaves individual contributions uncredited (Halse, 1851; Pickles,

2009). The tranquil atmosphere captured in Richmond's watercolour ultimately rested upon a vast network of coordinated labour that his artwork only partially acknowledges.

The landscape was not a neutral setting. The clearing anticipated further felling, milling, and construction, while settler enjoyment of the bush was entwined with plans to transform it into productive property. Wider pressure for Māori land in Taranaki was also intensifying. Pickles (2013) describes colonial engagement with landscape as embodied and sensory but also shaped by possession and environmental change. Mitchell (1995) identifies picnicking as one of the practices through which settlers occupied landscapes, and Ratanui shifts the interpretation of these events from relational encounter to settler community formation. The gathering reveals how sociability, labour, and environmental transformation were intertwined in the everyday making of colonial space.

SCENE THREE: TĪPAPAKUKU PIGEON BUSH, 1896



Figure 3. Māori Picnic, Pigeon Bush, Wairarapa. Hogg, F M:
Photographs from the papers of Alexander Wilson Hogg. Ref: PAColl-4411-1. Alexander Turnbull Library, Wellington, New Zealand. https://natlib.govt.nz/records/22900090.

By 1896, the railway network firmly linked Wellington, the colony's political centre, with the rural Wairarapa, carrying people, livestock, and goods between the two regions. In January of that year, this transport infrastructure enabled Premier Richard Seddon to travel to Tīpapakuku, connecting local negotiations over Wairarapa Moana (Lake Wairarapa) with the wider politics of colonial government. The 1890s marked the heyday of picnic excursion culture (Atkinson, 2007). Yet Māori and Pākehā often occupied separate social and political spheres (Ballara, 1993b). Public gatherings such as picnics brought these worlds together, although reports of such encounters were filtered through a Eurocentric lens.

The picnic hosted by Ngāti Kahungunu leader Hāmuera Tamahau Mahupuku and the iwi he represented at Tīpapakuku in January 1896 was larger, more formal, and more political than the earlier scenes. Contemporary reporting identified Māori as hosts and described the occasion as marking a settlement concerning the ownership and use of Wairarapa Moana. Seddon attended with members of his family, politician James Carroll, and other visitors, while local settlers also participated ("Maori and Pakeha," 1896a).

The *Wairarapa Daily Times* presented the gathering as a friendly conclusion to hostility between Māori owners and settlers whose lakeside land faced seasonal flooding ("Maori and Pakeha," 1896a). That celebratory framing requires scrutiny. Water levels in Wairarapa Moana were not merely an inconvenience awaiting technical management. The lakes and wetlands sustained Māori food gathering, travel, resources, and cultural relationships, with tuna (eel) holding central importance. Settlers, by contrast, envisioned a drained landscape planted with pasture grasses. Crown policy favoured agricultural development while weakening tino rangatiratanga (Royal, 2011; Waitangi Tribunal, 2010).

The eels prepared and served at the picnic belonged to the world at stake in these negotiations. Control of the lake opening affected surrounding farmland alongside the ecology and accessibility of a fishery of continuing importance to tangata whenua (Waitangi Tribunal, 2010). Their presence at the feast should not be burdened with meanings the sources do not make explicit, but it does connect the food served at the picnic to the environmental and political history of the gathering.

The event was hosted by Hāmuera Tamahau Mahupuku. As historian Angela Ballara (1993a; 1993b) notes, Tamahau was a major Wairarapa rangatira and political leader whose activities extended beyond the picnic. His role as host matters because it prevents the gathering from being interpreted as a Crown occasion at which Māori merely appeared (Waitangi Tribunal, 2010). Māori organisers created the event: they received visitors at Tīpapakuku, prepared the meal, delivered speeches, and directed the sequence of hospitality and entertainment.

The *Wairarapa Daily Times* focused closely on what the hosting couple wore, recording the cultural blending and high status of the occasion ("Maori and Pakeha," 1896a). Tamahau Mahupuku wore a white suit beneath a feather cloak, while his wife, Alice Mahupuku, wore a European-style white cotton gown beneath her own feather cloak—both garments serving as visible expressions of their mana (Ballara, 1993a; Figure 3). The *Times* reporter's focus remained superficial. For instance, while Tamahau welcomed Seddon alongside other rangatira whose speeches structured the event, the reporter admitted their names were too difficult to remember, rendering the other Māori speakers anonymous ("Maori and Pakeha," 1896a). This selective reporting extended to Alice; by reducing her presence to a fashion observation, the record overlooked her political significance within the world of wāhine Māori.

The speeches were not only ceremonial. They addressed how the transfer concerning Wairarapa Moana was to be understood and what relationships Māori would retain with the lakes and fisheries ("Maori and Pakeha," 1896a). The Waitangi Tribunal's examination of the negotiations gives weight to contemporary statements concerning continued access to the lakes, fishing, and reserves (Waitangi Tribunal, 2010). The significance of the speeches extended beyond the convivial form of the gathering to what was declared before the assembly. Specifically, the language of tuku framed the transfer not as a finite commercial transaction, but as a mechanism establishing permanent relational obligations. Through this relational logic, a gift cannot be uncoupled from the

donor because it retains the spiritual life force of the giver. Much like the early marriage alliance at Te Puna, where the gift of the daughter as a wife became living personification of the rangatira's power, the gift of the lake was an extension of Tamahau Mahupuku's mana. By accepting it, the Crown was bound in a perpetual cycle of reciprocity that guaranteed ongoing tribal stewardship, rather than an absolute alienation of Māori customary title.

After the speeches, Seddon proposed that the gathering turn to food. Tablecloths were spread across a natural terrace for the afternoon luncheon, where Māori men wearing pinafores served the meal and exchanged jokes with Māori and Pākehā guests ("Maori and Pakeha," 1896a). This service brings the infrastructure of hospitality to the foreground. Rather than a passive colonial encounter, the interaction reflects the relational dynamics of tikanga, where the playfulness of the shared jokes and the deliberate visibility of the male food distribution functioned to express manaakitanga and establish cross-cultural connection. The men serving in pinafores disrupted the reporter's expectations sufficiently to attract comment, providing unusual evidence of visible male food preparation and distribution ("Maori and Pakeha," 1896a).

Seddon and his wife were presented with woven feather cloaks, which was followed by young women performing haka and another group dancing to concertina music ("Maori and Pakeha," 1896a). The associated photograph (Figure 3) captures this staged environment, featuring Seddon in his cloak alongside Tamahau, Carroll, entertainers, and an accordion. Crucially, it anchors the visual record to the labour at the luncheon; the server wearing a floral pinafore or apron is the very man holding the large tuna (eel). While this image illustrates the day's event, it cannot disclose how Māori participants themselves interpreted the gathering (Waitangi Tribunal, 2010, p. 682). The reporter described apparent enjoyment and "good fellowship," yet the same account criticised the length of Seddon's speech and recorded settler doubts about whether the dispute was truly resolved ("Maori and Pakeha," 1896a). Conviviality and scepticism occupied the same event.

Several weeks later, a return picnic was held at Pigeon Bush, reversing the direction of hospitality. The *Wairarapa Daily Time*s described a Pākehā-organised meal featuring foods characteristic of a substantial colonial picnic: poultry, ham, pies, sandwiches, puddings, cakes, and sweets ("The Pigeon Bush Picnic," 1896b). Both events included haka, song, and dance, signalling shared enjoyment and the performative dimensions of cross-cultural encounter. The exchange of hospitality demonstrated goodwill and mutual recognition, but did not alter the unequal political context in which the gatherings occurred. Questions concerning land, fisheries, reserves, and the future management of Wairarapa Moana remained unresolved, despite the convivial atmosphere of both occasions.

When the final agreement was reached, contemporary participants described the transfer as a gift rather than a sale, but Māori gifting (tuku) did not constitute an unconditional surrender of ownership and relationship. Tuku could contain expectations of reciprocity, responsibility, and continuing connection, making assurances about access, fishing rights, and reserves especially significant (Waitangi Tribunal, 2010). The alliance through which Captain Duke lived under Te Whareumu's protection provides an earlier example of exchange creating continuing obligations rather than completing a simple transaction (Ballara, 2003; Metge, 2002; Wharepouri, 1994).

The agreement concerning Wairarapa Moana formed part of a longer dispute over fisheries, wetlands, and access to resources central to Māori livelihoods and identity (Royal, 2011; Waitangi Tribunal, 2010). The social pleasures of January 1896 therefore unfolded against a background

of ongoing uncertainty about the future of the lake environment and its customary fisheries. The subsequent drainage and modification of the wetland system supported settler agricultural development while affecting Māori access to tuna and other resources (Waitangi Tribunal, 2010). Pigeon Bush is the culminating scene in this article because it exposes the infrastructure beneath social connection. Shared food, humour, and recreation created opportunities for conviviality, but they occurred within an unequal negotiation over land, water, and resources. The picnic reveals both the possibilities and limits of social connection, demonstrating how wellbeing, reciprocity, and belonging remained shaped by unequal authority over the future of place.

WELLBEING AS A HISTORICALLY SITUATED POSSIBILITY

Shared food was central, but commensality should not be idealised. Contemporary research associates meal sharing with life satisfaction, positive affect, and social connection, while acknowledging that the direction of this relationship remains unclear, namely whether shared meals drive wellbeing or happier people simply eat together more often (De Neve et al., 2026). Critical scholarship on commensality demonstrates that eating together can carry obligation and represent hierarchy, exclusion, and unequal labour as much as it does connection (Jönsson et al., 2021). The historical evidence supports this cautious interpretation: shared meals created social occasions, but not on equal terms. At the Tīpapakuku picnic, as an illustration, Māori hospitality and labour were mobilised to host Crown representatives and settlers under the heavy weight of local obligation. The subsequent return picnic did not constitute diplomatic reconciliation; instead, it masked starkly unequal distribution of political power. The eating together did nothing to disrupt core colonial hierarchies, as questions of ownership, fisheries, access, reserves, and future custodial responsibilities endured long after the food was cleared (Waitangi Tribunal, 2010). Ultimately, the return picnic acknowledged a relationship without fulfilling the obligations associated with tuku.

As expected in a picnic setting, place shaped each scene. Te Puna Bay, Ratanui's forest clearing, and Pigeon Bush's lakeside setting were not passive backgrounds. They actively dictated the movement, atmosphere, and sensory character of eating outdoors; the pull of oars across water, the dense enclosure of bush, and the heat and smoke of cooking stones, the textures of ground cloths and woven garments, and the sounds of speech, singing, and concertina music were experienced through culturally constructed bodies (Pickles, 2013; Smith, 2007). While contemporary psychological research identifies a clear association between nature connectedness and subjective wellbeing (Capaldi et al., 2014), the historical evidence suggests the meanings and wellbeing value of these environments were neither universal nor politically neutral. What settlers experienced as a pleasing, recreational landscape for temporary leisure was, for Māori, ancestral whenua under active colonial pressure (Park, 1995). At Pigeon Bush, the setting was connected to a wetland economy and fishery under negotiation. Wairarapa Moana sustained vital food gathering, cultural relationships, and access to tuna—indigenous resources the Waitangi Tribunal identified as central to Māori survival and concerns regarding the settlement (Royal, 2011; Waitangi Tribunal, 2010). The environment was not merely a setting for leisure, but the literal ground upon which cross-cultural relationships and territorial displacements were physically enacted.

Wellbeing emerged through relationships and material conditions. At Te Puna Bay, European conviviality depended upon Māori authority and hospitality. At Ratanui, settler sociability relied upon labour and anticipated environmental transformation. At Pigeon Bush, these strands

converged. Māori hosting and labour enabled a large gathering where food, recreation, and good fellowship occurred alongside negotiations concerning a resource of enduring importance to tangata whenua. Synthesising the Māori testimonies preserved in the Waitangi Tribunal's reconstruction demonstrates why social connection must not be confused with equality of outcome. Relationships to whenua, water, fisheries, and ancestral resources remained fundamental to Māori wellbeing, identity, and continuity across generations (Waitangi Tribunal, 2010). Ultimately, the claims made across these three scenes concern historical conditions and social possibilities rather than measurable psychological outcomes. While contemporary wellbeing research helps identify why shared food, sociability, recreation, and place are universally significant, this framework cannot retrospectively diagnose individual historical participants (De Neve et al., 2026). The picnic created brief windows for cross-cultural connection, but it fundamentally reveals how historical wellbeing was bound to unequal authority over land, resources, and the future of place.

CONCLUSION

Picnicking may appear a light historical subject, yet its ordinariness is revealing. The picnic brought together food, movement, recreation, labour, social relationships, and place in a temporary but culturally recognisable form. At Te Puna Bay, a Christmas picnic created conviviality within a Māori-controlled world of protection, commerce, and hospitality. Contributions to the feast and provisions sent to the rangatira show giving extending the social life of the meal. At Ratanui, tables assembled from the boards of a future house transformed a forest clearing into a social space while anticipating settlement, milling, and environmental change. At Pigeon Bush (Tīpapakuku), these relationships became explicit and consequential. Māori hosts used food, speeches, performance, and tuku to receive Crown and settler visitors during negotiations concerning Wairarapa Moana, an act of hospitality later answered by a return Pākehā feast. The language of tuku carried expectations of relationship, reciprocity, and responsibility for the future, while the power to define and subsequently honour those responsibilities remained unevenly held.

Taken together, these scenes demonstrate that picnics were more than occasions for leisure. They were social events through which relationships were negotiated, communities affirmed, resources exchanged, and claims to place expressed. The practices that produced conviviality depended upon labour, hospitality, access to land and food, and meanings attached to giving and receiving. Seen in this way, picnics offer a distinctive lens on the dynamics of human wellbeing because they amplify how ordinary pleasure, belonging, and social connection were embedded within wider networks of environmental, economic, and political relations.

Asking who prepares the food, who controls the place, who is invited, who is represented, and who benefits turns a nostalgic image of a picnic into an archive of relational life. The Waitangi Tribunal's reconstruction of Wairarapa Moana reminds us that wellbeing cannot be separated from enduring relationships with whenua, water, resources, and cultural continuity (Waitangi Tribunal, 2010). As the nature of these gatherings evolved across a critical century of rapid social and political transformation, how wellbeing emerged through collective practices remained deeply shaped by unequal distributions of power and authority. Reading picnics through this relational lens shows how these temporary suspensions of routine can illuminate the historical foundations of wellbeing, exposing the conditions under which it flourishes or is constrained.

AI statement

This article developed from public talks presented at the University of Canterbury (2017) and the Friends of Canterbury Museum (2020). Microsoft Copilot AI assisted with editorial refinement; all research, analysis, and interpretation are the author's own.

Acknowledgements

Funding for publishable images was provided by Ara Institute of Canterbury.

Joanna Cobley, PhD (https://orcid.org/0000-0001-6121-6276) is a senior academic staff member in the Faculty of Health, Science & Sustainability – Te Waka Toiora, Ara Institute of Canterbury. Her research explores work integrated learning and wellbeing practices.

REFERENCES

Atkinson, N. (2007). *Trainland: How railways made New Zealand*. Random House.

Ballara, A. (1990). *Ruatara.* Dictionary of New Zealand Biography. Te Ara – the Encyclopedia of New Zealand. https://teara.govt.nz/en/biographies/1r19/ruatara

Ballara, A. (1993a). *Mahupuku, Hāmuera Tamahau.* Dictionary of New Zealand Biography. Te Ara – the Encyclopedia of New Zealand. https://teara.govt.nz/en/biographies/2m27/mahupuku-hamuera-tamahau

Ballara, A. (1993b). Wahine rangatira: Maori women of rank and their role in the Women's Kotahitanga movement of the 1890s. *The New Zealand Journal of History, 27*(2), 127–139.

Ballara, A. (2003). *Taua: "Musket wars", "land wars" or tikanga? Warfare in Māori society in the early nineteenth century*. Penguin Books.

Battiscombe, G. (1949). *English picnics*. The Harvill Press.

Brickell, C. (2008). *Mates and lovers: A history of gay New Zealand*. Random House.

Capaldi, C. A., Dopko, R. L., & Zelenski, J. M. (2014). The relationship between nature connectedness and happiness: A meta-analysis. *Frontiers in Psychology, 5*, Article 976. https://pubmed.ncbi.nlm.nih.gov/25249992/

Clarke, A. (2007). *Holiday seasons: Christmas, New Year and Easter in nineteenth century New Zealand.* Auckland University Press.

Csergo, J. (2003). The picnic in nineteenth-century France: A social event involving food: Both a necessity and form of entertainment. In M. Jacobs & P. Scholliers (Eds.), *Eating out in Europe: Picnics, gourmet dining and snacks since the late eighteenth century* (pp. 139–159). Berg.

Davidson, A. (Ed.). (2014). *The Oxford companion to food* (3rd ed.). Oxford University Press.

De Neve, J.-E., Dugan, A., Kaats, M., & Prati, A. (2026). Sharing meals is associated with greater wellbeing. *Scientific Reports, 16*, Article 18741. https://www.nature.com/articles/s41598-026-46771-9

Earle, A. (1909). *A narrative of nine months in New Zealand in 1827*. Whitcombe & Tombs. (Original work published 1832).

Earle, A. (1966). *Narrative of a residence in New Zealand [and] Journal of a residence in Tristan da Cunha* (E. H. McCormick, Ed.). Clarendon Press. (Original work published 1832).

Halse, H. (1851, June 30). *[Letter to Sir Donald McLean]*. Sir Donald McLean Papers (MS-Papers-0032-0312). Alexander Turnbull Library, Wellington, New Zealand. Papers Past. https://paperspast.natlib.govt.nz/manuscripts/MCLEAN-1000325.2.1

Jönsson, H., Michaud, M., & Neuman, N. (2021). What is commensality? A critical discussion of an expanding research field. *International Journal of Environmental Research and Public Health, 18*(12), Article 6235. https://doi.org/10.3390/ijerph18126235

Katz, S. H., & Weaver, W. W. (Eds.). (2003). *Encyclopedia of food and culture* (Vol. 3, pp. 66–68). Thomson Gale.

Le Moal, F., Litterbach, E.-K., Dunn, K., Fraser, K., Bouchaud, C. C., & Middleton, G. (2025). Unpacking family meals: State-of-the-art review critiquing the Western ideals, positioning and promotion of family meals. *Health Promotion International, 40*(1), Article daaf004. https://doi.org/10.1093/heapro/daaf004

Levy, W. (2008). The morality of anti-picnics. In S. R. Friedland (Ed.), *Food and morality: Proceedings of the Oxford Symposium on Food and Cookery 2007* (pp. 165–172). Prospect Books.

Levy, W. (2014). *The picnic: A history*. AltaMira Press.

Maori and Pakeha. (1896a, January 20). *Wairarapa Daily Times, 16*(5235), 2. Papers Past. https://paperspast.natlib.govt.nz/newspapers/WDT18960120.2.20

Metge, J. (2002). Returning of the gift – Utu in intergroup relationships. *The Journal of the Polynesian Society, 111*(4), 311–338.

Middleton, A. (2007). Potatoes and muskets: Maori gardening at Kerikeri. In J. Binney (Ed.), *Te Kerikeri 1770–1850: The meeting pool* (pp. 52–63). Bridget Williams Books.

Mitchell, I. (1995). *Picnics in New Zealand during the late nineteenth and early twentieth centuries: An interpretive study* [Unpublished master's thesis]. Massey University.

Moon, P. (2011). *Framing the world: The life and art of Augustus Earle*. Resource Books.

Park, G. (1995). *Ngā uruora – The groves of life: Ecology and history in a New Zealand landscape*. Victoria University Press.

Parsonson, G. S. (2013, May). *Marsden, Samuel*. Dictionary of New Zealand Biography. Te Ara – the Encyclopedia of New Zealand. https://teara.govt.nz/en/biographies/1m16/marsden-samuel

Pickles, K. (2009). *Colonisation, empire and gender*. In G. Byrnes (Ed.), *The New Oxford history of New Zealand* (pp. 219–241). Oxford University Press.

Pickles, K. (2013). *Postcolonial environments*. In E. Pawson & T. Brooking (Eds.), *Making a new land* (2nd ed., pp. 261–276). Otago University Press.

The Pigeon Bush picnic. (1896b, February 12). *Wairarapa Daily Times, 16*(5254), 2. Papers Past. https://paperspast.natlib.govt.nz/newspapers/WDT18960212.2.10?end_date=22-02-1896&items_per_page=10&query=The+Pigeon+Bush+Picnic&snippet=true&start_date=01-01-1896&title=WDT

Richmond, J. C. (1851, December). *Picnic near Ratanui* [Artwork]. Reference No. B-163-006, Alexander Turnbull Library, Wellington, New Zealand. National Library of New Zealand

Ross, K. (2008). *Going bush: New Zealanders and nature in the twentieth century*. Auckland University Press.

Royal, C. (2011). *Cultural values for Wairarapa waterways*. Greater Wellington Regional Council.

Shawcross, K. (1967). Fern-root, and the total scheme of 18th century Maori food production in agricultural area. *The Journal of the Polynesian Society, 76*(3), 330–352.

Simpson, T. (2008). *A distant feast: The origins of New Zealand's cuisine*. Random House International.

Smith, M. M. (2007). *Sensory history*. Berg.

Waitangi Tribunal. (2010). *The Wairarapa ki Tararua report: Volume II: The struggle for control* (Report No. Wai 863). Legislation Direct. https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_68640217/Wairarapa%20ki%20Tararua%20Vol%20II.pdf

Wharepouri, M. (1994). The phenomenon of agreement: A Maori view. *Auckland University Law Review, 7*(3), 603–617.

Article https://doi.org/10.34074/scop.3010007

THE PRESSURE TOLERANCE SCALE: BETTER COMMUNICATION ABOUT PAIN

David McQuillan and Ash Rohloff

INTRODUCTION

One of the key factors contributing to a positive or negative experience of massage is the manual pressure (MP) applied by the therapist. A massage with insufficient pressure can be ineffective, whereas a massage with too much pressure can lead to aggravation of pain and sometimes tissue damage (Butler & Moseley, 2017; Diego et al., 2004). Client-therapist communication about MP is influenced by unconscious assumptions, power dynamics, and social conditioning, making effective communication more difficult than it might seem on the surface. The pressure tolerance scale described in this article has been developed within the Otago Polytechnic massage therapy programme to improve the clarity of pressure-related communication. This article describes the scale, its theoretical basis in clinical practice, and how it can be used to improve clinical communication. The authors also present and discuss recommendations based on their experiences using this scale in private practice and in clinical supervision.

WHAT IS THE PROBLEM?

Pain is a private, subjective experience that we are all familiar with, but rarely discuss in any depth with others. We all understand what a chair is because we can see it, but do we really know what someone else means when they say "achy"? Individuals have radically different experiences of pain frequency and intensity. The nervous systems of people who experience chronic pain undergo changes, making the intensity and quality of their pain significantly different to those who only experience pain intermittently (for example, acute pain) (Miglio & Stanier, 2022; Moseley & Butler, 2017). Unconscious assumptions about the experience of the other person can lead to misinterpretation.

During massage therapy practice, it is important to adapt your pressure for each individual client, for different body areas, and for different types of massage stroke. Clients have varying levels of nervous system sensitivity and muscle development. Broader strokes (for instance, palm delivered) are less intense than focussed pressure strokes (for instance, thumb delivered). Regions of increased tissue density are often more sensitive than other areas. Effective massage application relies on good communication about the client's experience of pressure as the therapist moves between healthy and dysfunctional areas of the body and between different styles of massage application.

However, clinical communication about the client's experience of pressure is often ineffective due to power dynamics and social conditioning. In the authors' experience, massage therapists

typically ask their clients, "Is that pressure OK?" This type of question is unlikely to give therapists the information they seek. When supervising massage students' clinical work, the authors noticed that clients almost always reply to this question with "sure" or something similar, even when nonverbal signs (such as flinching or a sharp intake of breath) suggest that the MP is not ideal for that client. The power dynamics implicit in the therapeutic relationship may make it difficult for some clients to let the therapist know they are using more or less MP than the client would like (Boring et al., 2021). It may feel to the client as if they are criticising the therapist's ability to do their job. Some clients have been socialised into thinking that "no pain, no gain" makes sense for massage. These clients will guide the therapist to use more pressure than is ideal, potentially causing tissue bruising or sensitisation.

THE PRESSURE TOLERANCE SCALE

The Pressure Tolerance Scale (PTS) was developed to improve the quality of communication between therapists and clients about pressure and pain. The original scale emerged from a meeting where staff of the Otago Polytechnic massage therapy programme (the authors and Jacky Keen) discussed the problems mentioned in the previous section. At this point in time the authors were not aware of any MP scales which were centred on the client's experience of pain. This scale was tested and further developed through clinical supervision and through the authors' clinical experiences, a process which is aligned with action research methodology (Robson, 2002). The Faces Scale (Kim & Buschmann, 2006) was added to support client understanding, leading to the PTS which is presented in Figure 1.

New clients are introduced to the scale during their initial interview using the image in Figure 1. The numbers on the left represent the client's rating of manual pressure. The client experience column represents what a client feels at these different levels of pressure. The engagement column represents the therapist's normal palpatory experience when working with a client whose nervous system is not sensitised to pain (in other words, neurological wind-up). More specifically, a pressure of 1 represents skin contact. Two to 4 means that the pressure level is increasing but the client is not experiencing an increase in discomfort. At level 5 the client might say "that's the spot." The therapist will often palpate the edge of a region of increased tissue density at this point. If the therapist increases their pressure from 5, the client's experience of pain will normally increase in proportion to the increase in pressure. This increase is generally comfortable for the client until they start to experience an aversive reaction (in other words, "tensing up"). This is defined as an 8 on the pressure scale, which also defines the range of "good pain" to be 5–7. Sensitisation or neurological wind-up may cause the client's experience and the therapist's experience to diverge. If this occurs it is always best for the therapist to use the client's experience of manual pressure as their guide to what is appropriate. Once defined, the PTS is used on an ongoing basis within the massage to clarify the client's experience of pressure and pain.

The level of MP has autonomic effects related to the client's subconscious assessment of danger or safety. These effects are often clinically significant. The perception of danger (in other words, potential tissue damage) causes sympathetic activation and neurological wind-up, whereas the perception of safety has the opposite effect (Butler & Moseley, 2017; Caneiro et al., 2022). If a client tenses up in response to MP this indicates that their subconscious threat detection system is being activated. Effective use of the PTS provides a therapist with the ability to minimise the chance of this and therefore post-treatment sensitisation.

Pressure Tolerance Scale David McQuillan, Ash Rohloff, 2026

Perceived Pressure	Therapist experience (no windup)	Client experience	Faces Scale
1	Contact with the skin/superficial fascia	I can feel you touching me	
2-4	Engaged with sub-cutaneous tissues	I can feel you're engaged with the tissues No discomfort	
5-7	Engaged with the boundary (5) and outer layers of dysfunctional areas	I can feel you're on something Bringing awareness to dysfunction "Good pain" - Tender, but feels good Client can relax	
8-9	Pushing into areas of dysfunction	Invasive Client tenses up in reaction to pain	
10	Pushing into areas of dysfunction	Abusive Far too much pain	

Figure 1. The Pressure Tolerance Scale (Authors, 2026).

Most people receive a massage to relieve stress, tension, and/or pain. This article argues that achievement of these goals relies on applying MP within the range that is appropriate for each individual client. There are surprisingly few articles which attempt to define effective MP for massage therapy. Diego and colleagues (2004) defined light pressure massage as "long light stroking" (sometimes called nerve strokes) and moderate pressure massage as "long, deep pressure stroking and squeezing." In their study, light pressure massage caused stimulation, whereas moderate pressure massage caused relaxation. These terms were used widely in Touch Research Institute research investigating the application of a range of massage styles (Swedish, therapeutic, Chinese massage, and Thai massage) with light pressure and moderate pressure. Although "moderate pressure" massage was not clearly defined, a review of this work found that moderate pressure massage was more effective than light pressure massage for the reduction of pain (Field, 2017). This finding aligns with the argument of this article.

Light pressure massage (1–2) has a stimulating effect (Diego et al., 2004). The client's attention is drawn to nerve strokes and other surface-level stimulation, but there is no sense of danger. Moderate pressure massage (3–5) has a relaxing effect. Massage within the middle of the "good pain" range (6) is neither relaxing nor stimulating. Massage at the upper limit of the "good pain" range (7) is lightly stimulating. At this point the amygdala and the prefrontal cortex are on alert, monitoring the pressure in an attempt to ensure that the therapist will not cause harm to the tissues of our body (Van der Kolk, 2014). Anything above 8 will trigger the client's defences, causing muscular contraction, sympathetic activation and neurological windup (sensitisation). Massaging at this level will still not cause tissue damage (Butler & Moseley, 2017), but much beyond this (9+) will generally lead to bruising. In the opinion of the authors there is no good reason for working at a pressure of 8 or over unless the therapist's intention is to breakdown mature scar tissue.

Hopefully most therapists would prefer not to injure their clients; however, the effects of pressure on neurological wind-up (central sensitisation) are arguably more significant to the client's pain-related outcomes. This is especially true when working with clients with chronic pain.

CHRONIC PAIN, PAIN ANXIETY, AND SAFETY LEARNING

When massaging clients with chronic pain, pain anxiety is often triggered and frequently affects the outcomes of treatment. Pain anxiety is "a cognitive and behavioural response to an evaluation that the body is in danger and needs protecting" (Caneiro et al., 2022, p. 2). The transition from acute to chronic pain involves the sensitisation of pain pathways (neurological windup). Those living with chronic pain often experience pain flares that are unpleasant, uncontrollable, and unpredictable (Caneiro et al., 2022). These flares can significantly impact one's ability to engage socially and complete activities of daily living. Fear of this experience, in other words pain anxiety, typically causes distress and leads to pain avoidance behaviours, sympathetic activation, and further sensitisation (Belda et al., 2015; Rogers & Farris, 2022). There is a growing understanding that interventions providing experiences of safety to people with sensitised nervous systems are one of the most effective ways to overcome chronic pain (Butler & Moseley, 2017; Caneiro et al., 2022).

Much of the remainder of this article describes guidelines and interpretations based on the authors' personal use of, and their observation of students using, the PTS in clinical practice. These guidelines and interpretations are also based on the theory discussed in this article.

During a massage, if perceived MP regularly reaches 8 or higher on the PTS, most clients will probably start to experience pain anxiety and some degree of neurological windup. Even when the pressure level is around 7 (and within the "good pain" range), a certain level of pain anxiety will likely develop, especially if the pressure sometimes drifts into an 8. This is because when the therapist is working at a pressure level of 7, clients are aware that they are close to the edge of their window of pressure tolerance and will to some degree be on the alert. For clients with high levels of pain anxiety, a pressure of 7 may be enough to cause sensitisation. Pressure-related sensitisation can be identified when the client reports that their PTS rating is increasing even though the therapist's pressure to an area is not. Guidelines for dealing with pressure-related sensitisation using the PTS are described in the following section.

The sensitisation picture is complicated by other ways that massage affects pain. Manual pressure overrides pain signals immediately, closing the "pain gate" or interface between the peripheral and central nervous system (Melzack & Wall, 1965). Gate effects interfere with pain signals while pressure is applied. Painful massage, especially trigger point treatment, should in theory bring about the release of endorphins causing short-term pain relief (Felicione et al., 2024; Hseih et al., 2012). Because of these short-term effects, a client with central sensitisation (for instance, fibromyalgia) may initially feel good after a high intensity massage, only to experience a debilitating flare-up once these effects wear off. Such anecdotes are common in the fibromyalgia and chronic pain community and are discussed in online fora (InternationalAsk97, 2022); however, this issue does not appear to have been identified or discussed in the literature to date. In the authors' experience someone who has had a post-massage flare is unlikely to re-engage with massage therapy. In summary, MP which exceeds the client's pressure tolerance is likely to cause sensitisation. It is important that therapists stay within the range which feels safe to the client (in other words, the range of "good pain").

USING THE PRESSURE TOLERANCE SCALE – GUIDELINES AND CHALLENGES

In the authors' experience, the PTS improves the chance of positive massage outcomes while minimising the chance of poor outcomes. Effective use of the scale is however more complex than simply describing the PTS then using it. From one appointment to the next, clients will often forget what the numbers represent, and even within one session their understanding can shift. It's important for therapists to re-establish the PTS as a common language during every appointment, and to monitor on an ongoing basis whether the client's responses match your expectations. For example, if the client is holding their breath (a common sign that your pressure is 8 or more on the scale) and describing your pressure as a 6, that could be a sign that you and the client are working with different scales (see Tables 1 and 2).

When first introducing the scale the most important point to clarify is where the client starts tensing up in response to pain (defined as 8). This is where their protective response activates and in the authors' experience almost everyone can relate to this level of pain. It is helpful to explain to the client that pressure at this level triggers their body's protective response and that we want to avoid this as it drives sensitisation. Table 1 lists the most common non-verbal signs which indicate you may be working at a pressure of 8 or higher.

Signs that the pressure is too high on the Pressure Tolerance Scale
Intake of breath / Holding breath
Increase in muscle tension
Client flinches away from you
Client describes massage as intense but says they can handle it

Table 1. Have you triggered their protective response?

The second most important element to establish is the range of "good pain." The start of the good pain range is experienced when the therapist contacts the outer edge of the client's painful region (5). The client may say "that's the spot." Their pain may be slightly increased, but the level of engagement feels good to them. The therapist can increase MP to some degree from this point safely (5–7). The "good pain" range is the sweet spot of therapeutic massage: relaxing, enjoyable, and therapeutic. Working in this range feels safe and is therefore desensitising (Butler & Moseley, 2017). The therapist has left the "good pain" range when the client starts tensing up (8). Establishing clarity around the range of "good pain" is straightforward with some people, and more difficult with others. For some, "pain" is only really painful if they're tensing up. "Good pain" doesn't make sense to this type of client. They may still be able to identify when you are just contacting the surface of the area where their pain is located (5), although they may not consider this "pain."

A massage therapist should aim to keep their pressure within the 3–6 range.
Pressures of 4–6 are more suitable for therapeutic massage.
Pressures of 3–5 are more suitable for relaxation massage.

Table 2. General guidelines.

When pressure-related sensitisation (as described in the previous section) happens, the therapist must reduce their MP dramatically and apply soothing methods with MP around 3 to 5 on the scale or whatever feels "safe" to the client. Once safety has been reestablished the client's pressure tolerance should increase. This can be identified by a reduction in their rating of pressure.

At this point, the therapist can increase the pressure again, although this must happen carefully and gradually. Soothing the nervous system must take priority over other therapeutic aims. In situations where the client's pain anxiety is very high, any pressure in and around the area may be triggering for them. In this case, changing to a different area of the body for a period of time may be appropriate.

The pressure scale is particularly useful when treating trigger points. Trigger point treatment within the range of good pain should, based on the ideas presented in this article, be more successful than attempting treatment with a pressure of 8 or more. This is supported by the authors' experiences of private clinical and clinical supervision. Communication with the pressure scale also aids the identification of pressure-related sensitisation which appears to occur more commonly with trigger point treatment.

The authors hope that others find the use of the PTS as beneficial as we have. We look forward to communicating with other massage educators about their experiences of using the scale and research which investigates some of the theoretical assumptions we have made here based on our clinical experiences.

Limitations and further research

The model and its assertions have been clinically verified but have not yet been assessed through a more formal research process. From the authors' clinical experience, it seems that the use of this model reduces post-treatment aggravation of pain, and that PTS guided treatment is more effective when working with sensitisation. However, these hypotheses are yet to be tested by randomised controlled trials.

CONCLUSION

The PTS presented here is a model which has the potential to dramatically improve clinical communication about pain. The scale facilitates specific individualised client-centred communication about the client's experience of pressure and pain. If a massage therapist's pressure can be maintained within the range that feels safe to the client's nervous system, the treatment will be more effective in unwinding sensitisation and reducing pain. If the therapist fails to communicate about this effectively, they risk causing more harm than good.

This scale and the ideas expressed in this paper are important for adapting massage in general, but are particularly useful when working with clients presenting with chronic pain. Far too many clients with sensitised nervous systems have negative experiences with massage therapists. As health providers we should always try "to help, or at least do no harm" (Hippocrates as cited by Askitopoulou, 2024).

David McQuillan has worked as a massage therapy lecturer in the tertiary sector since 2006. He has been researching the application of mindfulness and lifestyle approaches for pain management since 2019. The methodology presented in this article emerged from supervision of students' clinical experiences.

Ash Rohloff is the head of programmes for massage therapy at Otago Polytechnic, and has been working there since 2007. His expertise centres on the use of massage therapy and movement for rehabilitation and pain management.

REFERENCES

Askitopoulou, H. (2024). The Hippocratic principle "to help or at least do no harm." *Transfusion Clinique et Bioligique, 31*(3), 174–180. https://doi.org/10.1016/j.tracli.2024.06.002

Belda, X., Fuentes, S., Daviu, N., Nadal, R., & Armario, A. (2015) Stress-induced sensitisation: The hypothalamic–pituitary–adrenal axis and beyond. *Stress, 18*(3), 269–279. https:\\doi.org\10.3109/10253890.2015.1067678

Boring, B. L., Walsh, K. T., Nanavaty, N., Ng, B. W., & Mathur, V. A. (2021). How and why patient concerns influence pain reporting: A qualitative analysis of personal accounts and perceptions of others' use of numerical pain scales. *Frontiers in Psychology, 12*, Article 663890. https://doi.org/10.3389/fpsyg.2021.663890

Butler, D., & Moseley, L. (2017). *Explain pain supercharged*. NOI Group.

Caneiro, J. P., Smith, A., Bunzli, S., Linton, S., Moseley, G. L., & O'Sullivan, P. (2022). From fear to safety: A roadmap to recovery from musculoskeletal pain. *Physical Therapy, 102*(2), 1–12. https://doi.org/10.1093/ptj/pzab271

Diego, M. A., Field, T., Sanders, C., & Hernandez-Reif, M. (2004). Massage therapy of moderate and light pressure and vibrator effects on EEG and heart rate. *International Journal of Neuroscience, 114*(1), 31–44. https://doi.org/10.1080/00207450490249446

Felicione, N. J., Blank, M. D., Wright, C. D., & McNeil, D. W. (2024). Pain, fear, anxiety, and stress: Relations to the endogenous opioid system. In P. L. Kerr, C. Sirbu & J. M. Gregg (Eds.), *Endogenous opioids: From basic science to biopsychosocial applications* (pp. 157–182). Advances in Neurobiology, vol. 35. Springer. https://doi.org/10.1007/978-3-031-45493-6_9

Field, T. (2016). Massage therapy research review. *Complementary Therapies in Clinical Practice, 24*, 19–31. http://doi.org/10.1016/j.ctcp.2016.04.005

Hseih, Y., Yang, S., & Yang, L. (2012). Dry needling at myofascial trigger points of rabbit skeletal muscles modulates the biochemicals associated with pain, inflammation and hypoxia. *Evidence-Based Complementary and Alternative Medicine, 2012*, Article 342165. https://doi.org/10.1155/2012/342165.

InternationalAsk97. (2022). *Anyone else get a flare-up after a massage?* [Online forum post]. Reddit. https://www.reddit.com/r/Fibromyalgia/comments/tnlyrj/anyone_else_ever_get_a_flare_up_after_a_massage/

Kim, E. J., & Buschmann, M. T. (2006). Reliability and validity of the Faces Pain Scale with older adults. *International Journal of Nursing Studies, 43*(4), 447–456. https://doi.org/10.1016/j.ijnurstu.2006.01.001

Melzack, R., & Wall, P. D. (1965). Pain mechanisms: A new theory. *Science, 150*(3699), 971–979. http://doi.org/10.1126/science.150.3699.971

Miglio, N., & Stanier, J. (2022). Beyond pain scales: A critical phenomenology of the expression of pain. *Frontiers in Pain Research, 3*, Article 895443. https://doi.org/10.3389/fpain.2022.895443

Robson, C. (2002). *Real world research*. Blackwell Publishing.

Rogers, A. H., & Farris, S. G. (2022). A meta-analysis of the associations of elements of the fear-avoidance model of chronic pain with negative affect, depression, anxiety, pain-related disability and pain intensity. *EJP, 26*(8), 1611–1635. https://doi.org/10.1002/ejp.1994

Van der Kolk, B. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. Penguin.

Case Study https://doi.org/10.34074/scop.3010004

AN ANALYSIS OF COMMUNITY-BASED BREAST CANCER CONSULTATION AND SUPPORT ON REMOTE ISLANDS IN OKINAWA, JAPAN

Mariko Oshiro

INTRODUCTION

Breast cancer survivorship involves continuing physical, psychological, social, and informational needs beyond diagnosis and initial treatment (Fan et al., 2023; Khajoei et al., 2024). Such needs may include information about treatment, symptom management, follow-up care, family life, work, and the reorganisation of everyday life. Therefore, places where survivors can ask questions, share concerns, and connect with people who understand the experience of living with breast cancer are important.

Japan is an archipelagic country composed of many islands. Okinawa Prefecture is a particularly island-based region, with 38 designated inhabited remote islands where approximately 8.8 percent of the prefectural population lives (Okinawa Prefectural Government, 2026). In many remote island communities in Japan, health care is provided through small-scale clinics with limited staffing, and cancer-specific specialist services are therefore constrained (Shimoyama et al., 2023). Consequently, cancer patients living on remote islands need to travel by ferry or airplane to medical institutions outside their home islands for specialist cancer treatment and follow-up care that are not available locally (Takahashi et al., 2000). Breast cancer patients living on remote islands have reported difficulties travelling while experiencing treatment-related side effects, financial burdens related to travel and accommodation, and difficulties obtaining support from family members and health professionals (Oshiro et al., 2025). In addition, unmet information needs among cancer survivors have been reported in small island and rural settings (Mori & Kamizato, 2016; Rowe et al., 2023). Lack of anonymity is also a challenge in small island communities (Oshiro et al., 2025; Swan & Hobbs, 2017). Against this background, breast cancer survivors living on remote islands have limited opportunities for local consultation and peer interaction (Oshiro et al., 2025). Therefore, developing community-based places where breast cancer survivors can seek consultation and share their experiences is important in remote island communities.

In response to these challenges, the author has worked with a breast cancer patient association to develop community-based places for breast cancer consultation and support in Okinawa's island communities (Oshiro & Yogi, 2026). These initiatives aimed to create local opportunities where breast cancer survivors and residents could obtain cancer-related information, ask questions, share concerns, and connect with others in ways that were accessible and safe within their own communities.

This article presents a retrospective, practice-based comparative analysis of breast cancer consultation and support initiatives undertaken in three remote island communities in Okinawa, Japan, between 2020 and 2024, drawing on project records. The development process differed across the three islands examined in this study. On two of the islands, consultation and support activities gradually developed through collaboration with local survivors, supporters, health care professionals, administrative actors, and a breast cancer patient association. On the third island, although support needs were recognised and repeated coordination efforts were made, the initiative did not develop into sustained local activity. Including a non-formation case is important for examining challenges that may be less apparent when only formation cases are analysed.

The aim of this study is to compare the trajectories of formation and non-formation of community-based places for breast cancer consultation and support, explore conditions associated with these trajectories, and draw context-specific implications for developing such support.

METHODS

Project context

The consultation and support initiatives were developed through collaboration between a breast cancer patient association and the author. This collaboration was grounded in a pre-existing relationship of trust that had been built through more than five years of breast cancer-related research and patient-association activities. The initiatives were developed in response to concerns that breast cancer survivors living in island communities had limited opportunities for consultation, peer interaction, and cancer-related learning. Activities included public lectures, small study sessions, informal exchanges, individual consultation opportunities, and coordination with health care, administrative, and community stakeholders.

The three island communities are anonymised as Islands A, B, and C. On Islands A and B, the initiatives progressed to an initial period of practice-development support involving learning opportunities, relationship building, and support for developing a local operating arrangement. On Island C, a public lecture and an exchange meeting were held, and coordination with local health services was undertaken, but a local operating arrangement for ongoing activities was not established. Islands A and B are therefore formation cases, whereas Island C is a non-formation case.

Definition of terms

Formation case: A case in which breast cancer consultation and support activities were implemented under an established local operating arrangement, with island-based organisers holding primary responsibility for planning, local coordination, and implementation.

Non-formation case: A case in which support needs had been recognised and the patient association on Okinawa's main island and the author had implemented activities and coordinated with island-based stakeholders, but the formation criteria described above had not been met.

Continued advice, learning opportunities, materials, or occasional support from the external patient association or the author did not preclude classification as a formation case, provided that island-based members held defined operational roles and responsibilities.

Formation was assessed on the establishment and operation of the local arrangement rather than on a predetermined minimum duration. Continuation after formation was examined separately using practice records and publicly available materials through May 2026.

Approach and materials

This article presents a retrospective, practice-based comparative analysis of community-based breast cancer support initiatives. The author was involved in the development, coordination, and documentation of the initiatives and subsequently conducted the retrospective comparative analysis of initiatives on the three islands: two formation cases and one non-formation case.

For each island, the analysis used existing project and activity records, reflective field notes, meeting and communication records, lecture and study-session materials, and coordination notes prepared by the author concerning activities undertaken between 2020 and 2024, together with relevant publicly available materials. For Island A, the materials comprised a public lecture, study sessions, online learning sessions, informal exchanges, and related coordination. For Island B, they comprised a study session, a public lecture, online learning sessions, informal exchanges, and related coordination. For Island C, they consisted of a public lecture, a gathering involving patients and health professionals, hospital visits, meetings with nursing managers, and related coordination.

The main periods of active support by the author and the patient association were 2023 for Island A, 2024 for Island B, and 2020–2022 for Island C. Formation status was assessed for all three islands as of May 2026. For the formation cases, publicly available activity reports through May 2026 were additionally used to examine the continuation of activities after formation. Differences in timing and the stage reached in each case were considered when interpreting the cross-case findings.

Analytical process

The retrospective comparative analysis was informed by the case study approach described by Crowe et al. (2011). Each island initiative was treated as a case. The author first organised the materials for each case chronologically and prepared a case summary describing the starting context, sequence of activities and coordination, actors involved, operational roles, and stage reached.

The cross-case comparison was organised around five perspectives, informed by literature on community-based activities and rural nursing (Gholipour et al., 2023; Jagosh et al., 2015; Kondo, 2019; Winters, 2021) and practical knowledge shared through discussions with an experienced leader of the breast cancer patient association. These perspectives were: shared understanding of activity purpose and roles; island-based organisers and operational responsibility; lack of anonymity and attention to psychological safety; inter-organisational collaboration and participation routes; and resources and operational adjustments supporting continuation.

The three cases were arranged in a comparison matrix to identify similarities and differences in their contexts, processes, operational roles, and stages reached. Interpretations were checked against the source records. Table 2 presents the cross-case findings.

To support the credibility of the analysis, one nursing academic with expertise in island nursing reviewed the cross-case findings and their interpretation. The academic's comments were used to check that the interpretations were consistent with the documented activities and island contexts.

Ethical considerations

This manuscript presents a retrospective, project-level comparative analysis of community-based practice development initiatives. The analysis used existing project records and publicly available materials concerning activity implementation, coordination, and local operating arrangements. Individual-level clinical data, medical records, questionnaire responses, and individual consultation accounts were not analysed. The islands are referred to as Islands A, B, and C, and project collaborators and participating institutions are described by their roles or types without naming them. Relevant project collaborators agreed to public reporting of the project.

RESULTS

Case contexts and trajectories

Needs for breast cancer-related information and local consultation and support were expressed by survivors in all three cases. Table 1 summarises the community contexts and main activities.

Characteristic	Island A	Island B	Island C
Case classification	Formation case	Formation case	Non-formation case
Approximate population	50,000	50,000	7,000
Local health care provision	Hospitals and clinics were available, but no breast specialist was based on the island. Radiotherapy required off-island travel.	Hospitals and clinics were available, but no breast specialist was based on the island. Radiotherapy required off-island travel.	Breast specialist care and radiotherapy required off-island travel.
Context at the outset	A local breast cancer patient association already existed, but its activities had been largely suspended because of the ageing of members and the COVID-19 pandemic.	A local breast cancer patient association had suspended its activities during the COVID-19 pandemic. Only a small number of members were actively involved at the outset.	Existing networks enabled contact with only a small number of breast cancer survivors.
Main period of initial activities	2023	2024	2020–2022

Table 1. Community context and project activities in the three island cases.
Note: Population figures are rounded counts based on the 2020 Population Census for the island on which each initiative was based. The periods shown refer to the main start-up activities.

Applying the formation criteria described in the methods section, Islands A and B were classified as formation cases, whereas Island C was classified as a non-formation case.

Island A: Public lecture as an entry point for developing a consultation and support place

On Island A, the main period of active support by the author and the main-island patient association was 2023. Island A had an existing breast cancer patient group, although its activities had largely ceased because of member ageing and the effects of COVID-19.

An island-based member had already expressed an interest in helping organise activities. The initiative began with a public lecture as the first step toward developing a community-based place

for breast cancer consultation and support, with the aim of broadening participation beyond the existing patient group. The lecture was open not only to breast cancer survivors but also to family members, health professionals, and other residents, and was attended by 51 people. This broad framing allowed the purpose of the initiative to be shared publicly and may have reduced the likelihood that attendance would be interpreted as indicating a breast cancer diagnosis.

Following the lecture, two on-site breast cancer learning sessions were held, with approximately 20 participants in each session. Weekly online learning sessions for Pink Ribbon Advisor certification were also organised. These repeated learning opportunities provided occasions to learn about breast cancer, discuss the purpose of the initiative, and interact with patient-association members and external supporters.

Informal exchanges after formal activities included small gatherings held in the homes of breast cancer survivors and provided further opportunities for relationship building. Initially, the main-island patient association and the author planned and coordinated activities with island-based core members. Additional island-based members gradually became involved in preparations, including decisions about dates, venues, and publicity. Island-based members subsequently assumed primary responsibility for planning, local coordination, and implementation, and carried out breast cancer consultation and support activities under this local operating arrangement.

After formation, links with health-care institutions on the island were also established, through which information about learning opportunities was shared with the local patient group. Island-based members secured activity funds following consultation with local politicians. The main-island patient association and the author continued to provide advice and support when needed, while primary operational responsibility remained with island-based members. Publicly available activity reports documented that activities under this arrangement had continued through May 2026.

Island B: Gradual learning sessions to build trust and develop a consultation and support place

On Island B, the main period of active support by the author and the main-island patient association was 2024. Island B also had an existing breast cancer patient group, but its activities had largely ceased and only a small number of older members remained involved. Local operating capacity was limited at the initial stage.

Because the number of locally active organisers and initial operating capacity were limited, the project team used a gradual strategy. The initiative started with an on-site breast cancer learning session attended by 36 people. This learning session provided an opportunity for participants to learn about breast cancer, discuss the need for local consultation and support, and become familiar with the purpose of the initiative, with priority given to building relationships with existing members.

After this initial process, the activity expanded into a public lecture attended by 35 people, with the aim of broadening participation. Weekly online learning sessions for Pink Ribbon Advisor certification were also organised, creating repeated opportunities for participants to learn, interact, and maintain contact with patient-association members and external supporters. Informal exchanges after formal activities provided further opportunities for relationship building among participants.

Initially, the main-island patient association and the author planned and coordinated activities with island-based core members. Through repeated learning opportunities and informal exchanges, local survivors and supporters became connected to patient-association members, health care

actors, and other community stakeholders. Existing members re-engaged, and additional island-based members became involved in preparation and delivery. Island-based members subsequently assumed primary responsibility for planning, local coordination, and implementation, and carried out breast cancer consultation and support activities under this local operating arrangement.

After formation, the island-based group continued volunteer activities within a feasible scope while keeping operating costs low. The main-island patient association and the author continued to provide advice and support when needed, while primary operational responsibility remained with island-based members. Publicly available activity reports documented that activities under this arrangement had continued through May 2026.

Island C: Staged engagement that did not lead to a locally organised consultation and support place

On Island C, initial activities and coordination took place from 2020 to 2022. A public lecture for residents was conducted in 2020 as an initial opportunity to provide cancer-related information and raise awareness. In 2021, engagement continued through participation in a gathering involving health care professionals from Okinawa's main island, health care professionals on the island, and patients. In 2022, hospital visits and meetings with nursing managers were conducted to explore the possibility of local collaboration. Through these contacts, support needs were recognised, and the possibility of developing a community-based place for breast cancer consultation and support was explored.

However, an island-based operating arrangement did not develop. An island-based nurse explained that many cancer patients received care outside the island, making it difficult to identify breast cancer survivors living on the island. Only a very small number of survivors were identified during the coordination process. A preference not to disclose illness was also expressed, requiring attention to the possibility that taking a visible organising role could reveal a survivor's diagnosis. With few potential organisers, there was also concern that operational roles and responsibilities could place a disproportionate burden on an individual.

Although the island-based nurse assisted with local coordination, routine workload and organisational constraints limited their capacity to sustain an operating role. A local operating arrangement in which island-based members held primary responsibility for planning, local coordination, and implementation was not established, and consultation and support activities under such an arrangement had not begun.

Factors identified through the comparison

The comparison suggests that recognised support needs were a starting point, but may not be sufficient on their own for the formation of community-based consultation and support places.

On Islands A and B, repeated learning opportunities and informal exchanges appeared to help translate shared purposes into joint preparation and coordination. Entry routes were adapted to local circumstances, and public learning opportunities and informal gatherings offered different ways to participate. Island-based core members connected residents and organisations, while additional members gradually became involved in organising activities. These processes suggest that shared learning, opportunities to participate in planning and coordination, and connections with supporting organisations may have contributed to the development of locally led activities.

On Island C, support needs were recognised, but few potential island-based organisers were identified. Concerns about illness disclosure and the risk of concentrating responsibility on an individual may have further constrained opportunities to broaden local involvement and share operational roles. Although an island-based nurse assisted with coordination, routine workload and organisational constraints limited their capacity to take on an ongoing operating role. Together, these constraints may have contributed to non-formation despite recognised support needs.

For continuation after formation, Islands A and B adopted different approaches to securing funds and keeping costs low. This suggests that adapting resource arrangements and the scope of activities to local capacity, together with continued patient-association support, may have helped sustain activities. Table 2 summarises the observations underpinning these interpretations.

Comparative perspective	Island A: Formation case	Island B: Formation case	Island C: Non-formation case
Shared understanding of activity purpose and roles	Shared understanding through learning and informal exchanges: In response to needs expressed by survivors, local members discussed activity directions and roles through learning sessions and informal exchanges following the public lecture.	Shared understanding through discussions with existing members: In response to needs expressed by survivors, existing members discussed activity directions during learning sessions. A subsequent public lecture aimed to broaden participation.	Recognition of needs without agreement on operational roles: Survivors' needs were recognised, but responsibility for leading and coordinating ongoing local activities remained unresolved.
Island-based organisers and operational responsibility	From joint planning to locally led activities: Alongside those coordinating locally from the outset, additional members became involved in arranging dates, venues and publicity through repeated exchanges. Island-based members subsequently assumed responsibility for planning and delivery.	Broader involvement in preparation and delivery: Building on coordination with local core members, preparations and delivery of learning sessions and the public lecture were shared. Island-based members subsequently took responsibility for activities.	Externally led planning and delivery: One public lecture and one exchange meeting were held, mainly planned and coordinated by the main-island patient association and the author. Ongoing local arrangements for sharing operational responsibilities were not established.
Lack of anonymity and attention to psychological safety	Open participation and small-group exchanges: The public lecture was open to survivors, families, health professionals and other residents. Learning sessions and informal gatherings, including meetings at a survivor's home, offered opportunities for small-group interaction.	Participation opportunities extending beyond existing members: Learning sessions with existing members were complemented by a public lecture open to residents and health professionals.	Concerns about illness disclosure: A public lecture and an exchange meeting were held, but concerns were raised that taking a central organising role could reveal a survivor's diagnosis.

Inter-organisational collaboration and participation routes	Wider connections with local stakeholders: Invitations to the public lecture and related outreach established contacts with administrative and health care stakeholders and local politicians. After formation, island-based health services also shared information about learning opportunities with the local patient association.	Wider participation through the existing patient association: Existing members collaborated with the main-island patient association, creating contacts with additional participants through learning sessions and the public lecture.	Coordination through an island-based nurse: An island-based nurse assisted with local coordination. Hospital visits and meetings with nursing managers provided further opportunities to discuss collaboration, but an ongoing operating arrangement involving residents was not established.
Resources and operational adjustments supporting continuation	Securing funds and drawing on external support: After formation, activity funds were secured following consultation with local politicians. Advice and support from the main-island patient association and participation in its annual activity-reporting meeting continued.	Keeping costs low and drawing on external support: After formation, volunteer activities continued within locally manageable limits. Support from the main-island patient association and participation in its annual activity-reporting meeting continued.	Workload and organisational constraints: An island-based nurse assisted with activity coordination, but routine workload and organisational constraints limited their capacity to take on ongoing operational responsibilities.

Table 2. Cross-case comparison of the formation and non-formation of community-based breast cancer consultation and support activities.

Note: Initial activities on all three islands used grant funding secured by the author's project team and received support from the patient association on Okinawa's main island and the author.

DISCUSSION

In these three cases, recognition of support needs alone was insufficient for developing community-based places for breast cancer consultation and support. For island nursing and community health practice, it is important to coordinate support arrangements with stakeholders both on and beyond the island, taking account of survivors' preferences and privacy and the roles that island-based organisers can undertake. Figure 1 presents a heuristic model summarising the formation and non-formation trajectories observed in the three cases and the practical implications derived from their comparison.

Trust and repeated interaction may have contributed to the trajectories of the formation cases. On Islands A and B, public lectures or breast cancer learning sessions were followed by repeated learning opportunities, informal exchanges, and ongoing communication with patient-association members and local stakeholders. Island-based members gradually became more involved in preparing and coordinating activities. This progression suggests that repeated interaction and opportunities to develop activities together may have contributed to shared understanding and the establishment of local operating arrangements. This interpretation is consistent with community-based participatory research literature, which emphasises trust building, partnership synergy, and sustained relationships as mechanisms supporting continued collaboration (Jagosh et al., 2015; Yamashiro & Kita, 2023).

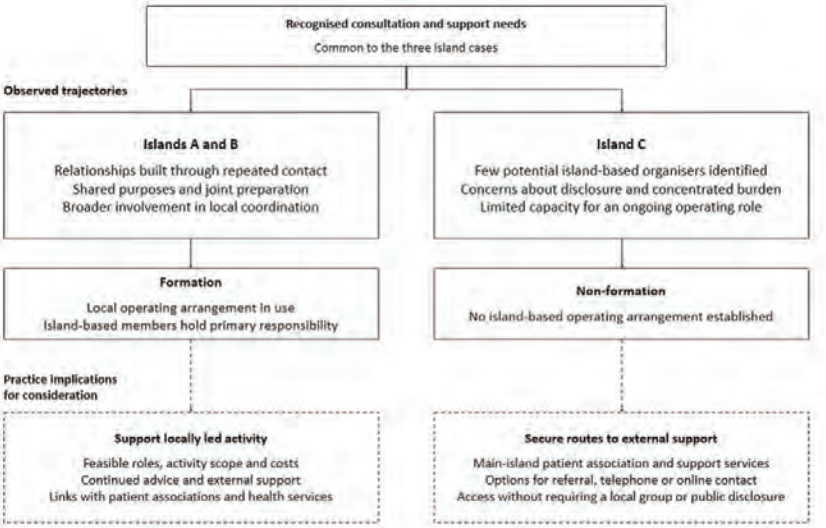


Figure 1. A heuristic model of formation and non-formation of community-based breast cancer support.

Continuation after formation also involved mobilising resources and adapting activities to local circumstances. Island A secured activity funds following consultation with local politicians, whereas Island B continued volunteer activities while keeping costs low. On both islands, island-based members undertook activity planning, coordination, and implementation, while the main-island patient association provided advice and support as needed. Continued connections with the patient association may have helped island-based members sustain locally led activities. This interpretation is consistent with research identifying information sharing and relationships with supporting organisations as factors associated with the continuation of community activities (Shimokoshi & Miyazaki, 2018).

A key contribution of this study is its inclusion of a non-formation case. On Island C, few potential island-based organisers were identified. Relying on breast cancer survivors to take central organising roles raised concerns about concentrating the workload on a small number of people and making their illness known to others through these activities. These disclosure concerns can be understood in relation to the concept of lack of anonymity in rural nursing (Swan & Hobbs, 2017). The nurse who assisted with coordination also faced difficulties taking on ongoing operational responsibilities alongside routine work. Non-formation should therefore not be interpreted as community failure. It provides an opportunity to reconsider whether the proposed operating arrangement is manageable for island-based members and respects their privacy preferences.

Where it is difficult to find people able to organise consultation and support activities on the island, arrangements are needed to enable continuing access to support beyond the island, without relying solely on local organisers. This could involve collaboration with the main-island patient association and cancer support services to establish clear points of contact, communication channels, and referral arrangements. Telephone-based education and support have been delivered to rural breast cancer survivors (Meneses et al., 2020), providing a precedent for support that

does not depend on attendance at a local group. The acceptability and feasibility of options such as telephone consultation and online participation require further examination on Island C.

Limitations

This article has several limitations. First, the comparison is based on three island cases in Okinawa. The cases differed in local characteristics and the timing of activities. COVID-19 may have affected opportunities for interaction and local coordination differently across the activity periods. These differences should be considered when assessing the applicability of the findings to other settings.

Second, the analysis relied on existing practice records, which may not fully capture how the initiatives developed. The author's involvement provided insight into the context and coordination processes, but may have influenced which events were documented, the emphasis given to them, and the subsequent interpretation of formation and non-formation.

Third, further follow-up is needed to assess the long-term sustainability of the activities, including their continuation and changes in local operating arrangements.

CONCLUSION

The comparison of formation and non-formation across three islands suggests that collaboration and shared operational responsibility may support the development of locally led breast cancer consultation and support activities. Support arrangements should reflect survivors' preferences, privacy concerns, and the roles local members can undertake. Where establishing a local operating arrangement is difficult, routes to offer support beyond the island warrant consideration.

AI statement

Generative AI was used to support language drafting, structural editing, and formatting. The author reviewed, revised and approved the final manuscript and is responsible for its content.

Mariko Oshiro (https://orcid.org/0000-0002-7634-2790) is a nursing researcher at Okinawa Prefectural College of Nursing, Japan. Her research focuses on cancer nursing, community-based consultation support, and healthcare in remote island settings. She is particularly interested in collaborative practices and access to supportive care for people affected by breast cancer.

REFERENCES

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology, 11*, Article 100. https://doi.org/10.1186/1471-2288-11-100

Fan, R., Wang, L., Bu, X., Wang, W., & Zhu, J. (2023). Unmet supportive care needs of breast cancer survivors: A systematic scoping review. *BMC Cancer*, *23*, Article 587. https://doi.org/10.1186/s12885-023-11087-8

Gholipour, K., Shokri, A., Yarahmadi, A. A., Tabrizi, J. S., Iezadi, S., Naghibi, D., & Bidarpoor, F. (2023). Barriers to community participation in primary health care of district health: A qualitative study. *BMC Primary Care*, *24*, Article 117. https://doi.org/10.1186/s12875-023-02062-0

Jagosh, J., Bush, P. L., Salsberg, J., Macaulay, A. C., Greenhalgh, T., Wong, G., Cargo, M., Green, L. W., Herbert, C. P., & Pluye, P. (2015). A realist evaluation of community-based participatory research: Partnership synergy, trust building and related ripple effects. *BMC Public Health*, *15*, Article 725. https://doi.org/10.1186/s12889-015-1949-1

Khajoei, R., Azadeh, P., ZohariAnboohi, S., Ilkhani, M., & Nabavi, F. H. (2024). Breast cancer survivorship needs: A qualitative study. *BMC Cancer*, *24*, Article 96. https://doi.org/10.1186/s12885-024-11834-5

Kondo, K. (Ed.). (2019). *Jūmin shutai no tanoshii "kayoi no ba" zukuri: "Chiikizukuri ni yoru kaigo yobō" susumekata gaido* [Creating enjoyable resident-led community gathering places: A guide to long-term care prevention through community development]. Japanese Nursing Association Publishing Company.

Meneses, K., Pisu, M., Azuero, A., Benz, R., Su, X., & McNees, P. (2020). A telephone-based education and support intervention for rural breast cancer survivors: A randomized controlled trial comparing two implementation strategies in rural Florida. *Journal of Cancer Survivorship*, *14*(4), 494–503. https://doi.org/10.1007/s11764-020-00866-y

Mori, A., & Kamizato, M. (2016). Clarifying cancer-support needs of cancer patients, their families, and medical staff on a small, remote island in order to create a support map. *Journal of Okinawa Prefectural College of Nursing*, *17*, 61–77. [In Japanese]

Okinawa Prefectural Government. (2026). *Remote island-related materials: Designated remote islands, islands, and population*. [In Japanese]

Oshiro, M., Kamizato, M., Genka, T., & Jahana, S. (2025). Ritō zaijū nyūgan kanja no senmonteki shinryō kikan e no keizoku jushin ni okeru konnankan: Shitsuteki kijutsuteki kenkyū [Perceived difficulties in continued access to specialized breast cancer medical institutions among women living on remote islands: A qualitative descriptive study]. *Journal of Japan Academy of Nursing Science, 45*, 327–337. https://doi.org/10.5630/jans.45.327

Oshiro, M., & Yogi, Y. (2026). Okinawa-ken no 2-tsu no moderu-tō ni okeru tōmin shutai no nyūgan sōdan shien taisei kōchiku e no torikumi [Developing resident-led breast cancer consultation and support systems on two model islands in Okinawa Prefecture]. *Journal of Okinawa Prefectural College of Nursing, 27*, 67–73.

Rowe, A., Crawford-Williams, F., Goodwin, B. C., Myers, L., Stiller, A., Dunn, J., Aitken, J. F., & March, S. (2023). Survivorship care plans and information for rural cancer survivors. *Journal of Cancer Survivorship*, *17*(2), 441–448. https://doi.org/10.1007/s11764-022-01204-0

Shimokoshi, T., & Miyazaki, M. (2018). Factors related to the continuation of community organisation activities: A scoping review across nursing and related fields. *Journal of Chiba Academy of Nursing Science*, *23*(2), 1–9. [In Japanese]

Shimoyama, M., Otsuka, M., Kimura, M., Uchiumi, K., Takahashi, Y., Sato, K., Kanoko, A., & Seto, H. (2023). Characteristics of the medical care delivery system in rural clinics in Prefecture A. *Japan Journal of Rural and Remote Area Nursing, 18*, 25–32. [In Japanese]

Swan, M. A., & Hobbs, B. B. (2017). Concept analysis: Lack of anonymity. *Journal of Advanced Nursing, 73*(5), 1075–1084. https://doi.org/10.1111/jan.13236

Takahashi, F., Takashita, K., & Lee, B. (2000). The role of remote island clinics in the care of patients with malignant tumours. *Journal of Community Medicine*, *14*(7), 522–525. [In Japanese]

Winters, C. A. (Ed.). (2021). *Rural nursing: Concepts, theory, and practice* (6th ed.). Springer Publishing Company.

Yamashiro, S., & Kita, K. (2023). Realist approach to community-based participatory research on a community health break-down in Japan: Mechanism reasoning, knowledge and a trust partnership. *BMC Primary Care, 24*, Article 81. https://doi.org/10.1186/s12875-023-02037-1

Article https://doi.org/10.34074/scop.3010001

EVOLUTION OF A RELAXATION ROOM AS A RESILIENCE PROMOTING STRATEGY WITH UNDERGRADUATE NURSING STUDENTS

Michelle E. Bussard and Sarah A. Mahoney

INTRODUCTION

Nursing is a high-stress profession driven by acutely ill patients, poor staffing, lack of supplies, trauma, and workplace violence. These chronic stressors may lead to burnout, moral distress, anxiety, and poor patient outcomes. Historically, efforts have centered on the treatment of psychological harm, such as depression and anxiety, that occur from these stressors. Recently, the focus has shifted to prevention through wellness activities that nurses can employ to assist them in managing their stressors in a productive manner, before burnout and psychological harm occur (Cooper et al., 2020).

Interventions promoting nurse resilience have been primarily focused within the workplace (Cooper et al., 2020) and are not routinely incorporated into undergraduate nursing academic settings (Higgins et al., 2024). To address this educational gap, Badowski (2024) highlighted the importance of nurse educators providing students with self-care tools, and promoting well-being and resilience, before graduation and entry into the workforce. As educators, our goals are multi-faceted. First, we must graduate students who have developed clinical judgment skills and are ready to enter the workforce to provide optimal patient care. A second and equally important goal is to provide students with skills required to manage stress related to working in the healthcare field, and the skills to facilitate self-care and well-being while mitigating stress, anxiety, and depression (Sharpnack, 2023).

The purpose of this article is to describe the evolution of a relaxation room at one School of Nursing (SON) in the United States of America and provide an update on its development since the original research was conducted in 2022 and published in 2024 (Mahoney & Bussard, 2024).

BACKGROUND

High stress levels in undergraduate nursing students lead to health issues that the average college student does not face (Fadden et al., 2025; Walker et al., 2025). The higher levels of stress stem from academic rigor in class, lab, and clinical settings, which can result in psychological harm and decreased academic success (Stubin & Dahan, 2024), indicating that nursing students require support to promote well-being and resilience. In 2020, the American Association of Colleges of Nursing (AACN) recommended nursing academic programs transform a reactive

culture to one of prevention through resilience training with nursing students. Thereafter, the AACN published *The Essentials: Core Competencies for Professional Nursing Education* (2021) which reenvisioned competency-based education, through 10 domains, eight concepts, over 40 competencies, and 200 sub-competencies. Domain 10 is "Personal, Professional, and Leadership Development"; Competency 10.1 is "Demonstrate a commitment to personal health and well-being"; and Sub-competency 10.1a is "Demonstrate healthy, self-care behaviors that promote wellness and resiliency" (p. 56). The domain, competency, and sub-competency each demonstrate the 2020 call for action and should be incorporated throughout a nursing curriculum to ensure that educators are providing adequate training related to resilience prior to students transitioning into the workforce.

Resilience is defined as the ability to bounce back from adversity and reduce the stress associated with it (Fadden et al., 2025; Higgins et al., 2024). Characteristics of a resilient person include "social support, self-efficacy, work-life balance/self-care, humor, optimism, and being realistic" (Cooper et al., 2020, pp. 557, 565). Cooper et al. (2020) found that resilience is a trait that can be developed over time, which indicates that as nurse educators, we can assist students with building this important trait to prevent burnout and psychological harm. Liljestrand et al. (2023) stated that a resilience-promoting program, such as a relaxation room, meditation, and mindfulness activities, assists nursing students in developing effective coping skills necessary for academic and professional success.

Walker et al. (2025) detailed the development, implementation, and evaluation of a resilience room in an undergraduate nursing program. The space was developed after a student wellness needs assessment was completed. The room was named after a student who lost her life to suicide, and it was financially funded by her family. Students provided input into the development, including the purpose statement, usage guidelines, the location, and resources available within the room such as lighting, music, creative supplies, books, yoga mats, and mindful activities. The students and faculty integrated the room into the curriculum, promoted its use through social media, and provided incentives to further encourage use of the room. Evaluation of the space took place through an exit survey with responses indicating a decrease in stress.

Higgins et al. (2024) discussed implementing an online module within a nursing course to improve undergraduate student self-care. Students were educated on relationship building, exercise, rest, proper nutrition, spiritual health, humor, moments of gratitude, self-compassion, and self-kindness. Reflective activities showcased how students implemented self-care throughout the nursing course through journaling, physical activity, pet therapy, reading, crafts, meditation, spending time with family and friends, watching movies, and enjoying outdoor activities such as viewing a sunset.

Fadden et al. (2025) conducted a study to examine biofeedback as a method to help undergraduate nursing students lessen anxiety and stress, thus improving resilience. Although the researchers found that controlling the parasympathetic nervous system could help students improve well-being, these results were not statistically significant in this study. The authors recommended providing students with strategies to decrease stress and worry to positively impact their careers and patient outcomes.

Stubin and Dahan (2024) conducted a mixed-method study to identify undergraduate nursing student stressors and how faculty can improve student mental well-being. The authors identified themes consistent with previous studies related to nursing student burnout, stress, and anxiety. Two themes noted in the qualitative portion of the study indicated that students would like

faculty-provided stress-relieving activities that promote self-care. The authors also determined that faculty who provide students with emotional support help decrease their stress and anxiety. They recommended providing students with resilience training, such as mindfulness and relaxation activities.

Lastly, the National Academy of Medicine (2021) published frameworks to improve healthcare provider well-being. They stated that a culture of connection and commitment may improve the well-being of clinicians. Similarly, the American Nurses Association (n.d.) promotes resilience and provides accessible resources to assist students, nurses, leaders, and educators to recover from stressful situations.

IMPLEMENTATION OF A RELAXATION ROOM

The relaxation room at the SON was created in 2022 in response to growing concerns of burnout and attrition among nurses, particularly in the aftermath of the COVID-19 pandemic. For this new Bachelor of Science in Nursing (BSN) program, the room provided an opportunity to develop an intentional, proactive approach to teach students about well-being and resilience. Nursing faculty recognized that simply providing mindfulness space without the proper training is like providing the equipment for a medical procedure without learning the necessary skills first. The faculty used an available office space to create a low-stimulus, tranquil environment as a designated safe zone to promote student relaxation. The location was strategically chosen within the SON, in a space situated away from faculty offices.

The development of the relaxation room was guided by published research and resources on various healthcare organizations' experiences with similar spaces (Aloufi et al., 2021; McDermott et al., 2020; Zhou et al., 2023). The room incorporates low-stimulus and interactive elements, including dimmed lighting, white noise, a wall coloring poster, and stations for yoga, coffee, and essential oils, as well as an inspiration board and a book nook. Additionally, the space features a food and toiletry station and two chairs for resting to help meet students' basic physiological needs (Mahoney & Bussard, 2024).

Mahoney and Bussard (2024) previously reported on the development of the relaxation room. As part of this research, students received a two-hour lecture on stress management and resiliency training (SMART) during each semester of the four-semester BSN program. SMART is a mindfulness program that teaches participants how to develop stress management, coping mechanisms, and resiliency skills, along with self-care and well-being through relaxation response practices. SMART helps participants build strategies to improve clinical performance, optimize emotional and gut health, and reduce provider burnout (Harvard Medical School, n.d.). The primary researcher completed the Benson-Henry Institute (BHI) four-week instructor training course for healthcare providers. Each semester, the faculty member addressed a different component of the SMART training, building upon the information provided from the previous semesters. Following the lecture, students were encouraged to use the relaxation room for a 15- to 30-minute session and complete a post-survey describing their stress levels prior to and following the use of the room along with which elements they liked most and least about the space. The aim of this article is to discuss the evolution of the relaxation room since its inception in 2022. The authors aimed to identify if students were still using the room, how often they used it, what they liked about the room, and if anything needed to be revised. Additionally, we want to share lessons learned after four years of implementation of the relaxation room.

The relaxation room is a method of promoting resilience seamlessly and connects to the American Association of Colleges of Nursing's (AACN) Domain 10 of *The Essentials: Core Competencies for Professional Nursing Education* (2021). Self-care education along with strategies to promote well-being through relaxation could facilitate meeting competency 10.1 and sub-competency 10.1a. Faculty intentionally encourage students to enter the relaxation room during times of stress, anxiety, frustration, and fear, or when they simply need time to unwind. On multiple occasions, faculty have encountered students who were emotionally distraught in the hallway after an exam or skills lab check-off and guided them to the relaxation room. They have encouraged students to lie down on the seating and listen to the white noise, with dimmed lights. Faculty have frequently been thanked for the development of this room. One student, at their pinning ceremony speech, stated the following:

> In nursing, resilience isn't just a professional expectation. It's a personal attribute, too. We learn to steady our hands during crises, but also steady our hearts when things get tough. We've developed the ability to keep going, even when the going gets hard. We still show up for our patients, even on the days we feel stretched thin. But we also learned to pause, take a deep breath, and protect our own well-being, because resilience doesn't mean being unbreakable, it means acknowledging our limits and still choosing to keep going. (B. L. Slagle, personal communication, December 12, 2025)

This reflection provides an extraordinary example of how well the resilience intervention (relaxation room) has formed the thinking pattern of this student. Upon graduation, Slagle stated, "I appreciated the essential oils in the room. They were very calming to use. I also liked the lighting choice as it brought a sense of peace as well" (personal communication, December 14, 2025).

The AACN Domain 10 parallels Standard 5.6 of the 2024 *Nursing Education Programme Standards* from the Nursing Council of New Zealand, which states, "Ākonga/students are informed of, and have access to, pastoral, cultural, and/or personal wellbeing support services" (p. 15). Within this criterion, schools are expected to provide students with support services such as mental health counseling, stress management training, well-being activities, and resilience training. Thus, a relaxation room could serve as a practical strategy to help schools in New Zealand meet Standard 5.6.

EVOLUTION OF THE RELAXATION ROOM

Due to the overwhelmingly positive student feedback, faculty were able to move the relaxation room at the SON to a larger space, furnished with two couches, accent pillows, and a desk space where students can sit and study, if desired. Further adjustments, based on student feedback, included the addition of hot chocolate, coffee creamer, tea, and snacks. The relaxation room is now conveniently located adjacent to a study space featuring a large table and whiteboards, but a bit more proximal to the faculty office spaces due to limited availability of larger spaces. Students have continued to utilize the relaxation room, although it is no longer a requirement as one of their course assignments. Faculty often observe individual students or small groups in the relaxation room at a time. Thus, it appears that students are comfortable in the space either alone or with peers.

A locked dropbox for surveys is located at the exit of the relaxation room. This provides students with the opportunity to submit anonymous and voluntary feedback regarding the space. The original research for this project was approved by the Institutional Review Board (IRB number

Item	Excellent	Very good	Good
How was your first impression?	12 (75%)	2 (12.5%)	0
How would you rate the environment/items available?	9 (56.3%)	4 (25%)	0
Do you plan to utilize the relaxation room again this semester?*	10 (62.5%)	2 (12.5%)	1 (6.3%)

Table 1. Relaxation room survey responses.
*Excellent = yes, they will use the room, Very good = yes, they most likely will use the room, and Good = yes, they might use the room if they have time.

Item	1	2	3	4	5	6	7	8	9	10
Would you be likely to recommend the relaxation room to another student?	0	0	0	0	1 (7.7%)	0	0	0	2 (15.3%)	10 (77%)

Table 2. Relaxation room survey responses: 1(not likely)-10 (most likely).

Item	1	2	3	4	5	6	7	8	9	10+
How many times have you used the relaxation room this semester?	0	3 (30%)	1 (10%)	0	2 (20%)	1 (10%)	0	0	0	3 (30%)
How many times have you used the relaxation room in the past year?	2 (20%)	1 (10%)	2 (20%)	0	1 (10%)	0	0	1 (10%)	0	3 (30%)

Table 3. Relaxation room survey responses: 1-10+.

Please provide suggestions.
I would love to have more tea options at Keurig station.
Loved the dark lighting.
Maybe some spoons or forks for people who forget them.
Please get a box of tissues or napkins here.
None, but maybe some snacks and clean blankets for when it gets cold.
I have nothing, this place is perfect.
I love it here.
Good calming space.
None, this room is very relaxing and a nice resource.
Thank you all!
Love this!
More snacks please.
It's so amazing to study while being calm.
This is a nice resource.
This is such a great space to de-stress! Love it!
I think this is a lovely room. It's nice to unwind and get to vibe out sometimes. So, this is perfect for stressed students.
BSN 1 and I come every day. It is the best resource.
I always appreciate all of the snacks.

Table 4. Relaxation room survey responses: Comments.

1867044-4) at the University (Mahoney & Bussard, 2024). After completing the initial research, student feedback continued to be collected to facilitate ongoing improvements to the room. The data collected remains anonymous so students can feel safe when submitting their feedback. Survey responses are synthesized in the tables to highlight how students viewed the relaxation room. A total of 16 responses were collected in 2025 (see Tables 1, 2, 3, and 4).

Collaboration with Air Force and evolution of the relaxation room

In September 2025, a sergeant from the local Air Force division contacted the SON research department regarding the initial relaxation room research publication (Mahoney & Bussard, 2024) and expressed interest in touring the room. The sergeant indicated that they were interested in transforming a room located on the Air Force base into a relaxation room, as they have noted poor coping skills and high turnover among their military personnel. The sergeant and three superior officers toured the relaxation room in October 2025. Discussions included the comparison of their predominantly (approximately 80 percent) male personnel with the average (mean) age of 28 years old to that of the traditional nursing student population (Department of Defense, 2020). The primary researcher for the initial relaxation room study (Mahoney & Bussard, 2024) toured the room on the Air Force base, which is in a building that adjoins the hangar where jet operations occur, and maintenance is performed.

The sergeant described how jet engine tests occur intermittently, with noise levels exceeding 80 decibels (dBs) during that time (International Civil Aviation Organization [ICAO], 2022). Military personnel in the immediate area are required to wear ear protection. However, the sound does travel to all areas of the building, and this hearing protection equipment is often insufficient to mitigate the effects of the high frequency sound sources (ICAO, 2022). This noise pollution is detrimental to the physical and mental health of the individuals working in the immediate area and elsewhere on the base (ICAO, 2022). The sergeant provided a tour of the potential relaxation space, a 444-square-foot room that is located on the second level of the building, adjoined to the break room and adjacent to a large conference room. The room currently includes four round tables with chairs, a breastfeeding pod, a television, and two vending machines. Elements such as a tranquil wall mural and soundproof panels were discussed. One of the authors is in collaboration with the Air Force for the development of this space. Planning is in the early phases, with the sergeant receiving formal approval from their military leadership. They are currently working on the budget and renovation of the designated space.

CONCLUSION

The researchers encourage anyone who wishes to develop this type of space to garner support from administration to ensure that the room will be sufficient in size, in close proximity to the nursing faculty (School/College of Nursing), and adequately funded to maintain essential items, such as oils, tea, and new coloring pads. Replenishing the room with such supplies can become costly, depending on the volume of students. Nursing faculty provide donations to the room to help sustain the food and toiletry supplies. However, a small annual budget would be beneficial to support, maintain, and ensure the long-term sustainability of the space.

The researchers also suggest incorporating wellness education into the curriculum, beginning in the first semester of nursing courses. Students should be aware of the relaxation room early in their education, empowering them to use it multiple times throughout their academic

journey and providing them with ample opportunity to build resilience skills. The researchers recommend advertising the relaxation room in school newsletters or on school social media to remind students that the room is available to them. Another consideration is who will be responsible for maintaining the space. At times, students will leave waste, spill liquids, or forget personal items. One of the authors cleans, monitors, and restocks the room on a weekly basis. A recommendation is for a designated secondary staff member to help maintain the space.

The AACN (2021) specifically identifies the significant impact of resilience and well-being on a nurse's ability to care for themselves and others. Resilient nurses demonstrate workplace adaptability, which promotes well-being, decreases stress, and reduces psychological harm, allowing them to provide high-quality patient care (Cooper et al., 2020). In addition, resilient nurses experience increased job satisfaction and successful coping skills. Teaching techniques for resilience are crucial because they facilitate bedside nursing retention. Development of a relaxation room to promote resilience is a mechanism to assist undergraduate nursing students in learning how to prevent stress or alleviate stressors when they arise (Cooper et al., 2020).

Michelle E. Bussard (https://orcid.org/0000-0002-2336-4515) is a Professor at Bowling Green State University and teaches in the prelicensure BSN program. She is also the Founding Director of the School of Nursing. Her research interests include clinical judgment, simulation, reflection, health promotion, and teaching strategies.

Sarah A. Mahoney (https://orcid.org/0009-0002-8936-3168) has worked with patient populations from birth to the end of life, including neonatal, pediatric, and geriatric care. Dr Mahoney was the prelicensure BSN Theory Coordinator and assistant professor at Bowling Green State University. Faculty responsibilities included teaching various courses including Health Assessment, Mental Health, and Maternal-child Nursing. Currently, Dr Mahoney is a pediatric nurse practitioner.

REFERENCES

Aloufi, M. A., Jarden, R. J., Gerdtz, M., & Kapp, S. (2021). Reducing stress, anxiety and depression in undergraduate nursing students: Systematic review. *Nurse Education Today, 102*, Article 104877. https://doi.org/10.1016/j.nedt.2021.104877

American Association of Colleges of Nurses (AACN). (2020). *A call to action for academic nurse leaders to promote practices to enhance optimal well-being, resilience and suicide prevention in schools of nursing across the U.S.* https://www.aacnnursing.org/portals/0/pdfs/position-statements/7-2020-Resolution-For-AACN-Nurse-Wellness-Suicide-Prevention.pdf

American Association of Colleges of Nurses (AACN). (2021). *The essentials of Baccalaureate education for professional nursing practice.* Retrieved December 14, 2025, from https://www.aacnnursing.org/AACN-Essentials

American Nurse Association (ANA). (n.d.). *Nurse well-being: Building peer and leadership support.* Retrieved December 14, 2025, from https://www.nursingworld.org/foundation/programs/nurse-wellbeing/

Badowski, D. (2024). Self-care for nursing students: A call for innovation. *Nursing Education Perspectives, 45*(4), 199–200. https://doi.org/10.1097/01.NEP.0000000000001299

Cooper, A. L., Brown, J. A., Rees, C. S., & Leslie, G. D. (2020). Nurse resilience: A concept analysis. *International journal of mental health nursing*, *29*(4), 553–575. https://doi.org/10.1111/inm.12721

Department of Defense. (2020). *2020 demographics report: Profile of the military community*. https://download.militaryonesource.mil/12038/MOS/Reports/2020-demographics-report.pdf

Fadden, R., Johnson, A. M., & Jurevic, V. D. (June 2025). Impact of a brief biofeedback intervention on nursing students' worry and resilience. *Nursing Education Perspectives, 47*(3), 174–176. https://doi.org/10.1097/01.NEP.0000000000001422

Harvard Medical School. (n.d.). *Stress management and resiliency training (SMART): Continuing education.* Retrieved December 14, 2025, from https://learn.hms.harvard.edu/programs/stress-management-and-resiliency-training-smart

Higgins, K., Hawkins, J., Tremblay, B., & Wiles, L. (2024). An online module to promote self-care and resiliency in nursing students. *Nursing Education Perspectives, 45*(4), 258–259. https://doi.org/10.1097/01.NEP.0000000000001138

International Civil Aviation Organization (ICAO). (2022). *Assessment of noise pollution in aircraft hangars* [Working paper]. https://www.icao.int/sites/default/files/Meetings/a41/Documents/WP/wp_163_en.pdf

Liljestrand, R., Chandler, G. E., Devine, C. A., Rivera Pérez, J., Mchenga, N. L., & Kalmakis, K. A. (2023). Building resilience among nursing students. *Nurse Educator, 49*(4), e232–e233. https://doi.org/10.1097/NNE.0000000000001555

Mahoney, S., & Bussard, M. E. (2024). Relaxation as an educational strategy for stress management and resiliency. *Nurse Educator, 49*(4), E213–E217. https://doi.org/10.1097/NNE.0000000000001568

McDermott, R. C., Fruh, S., Williams, S. G., Hauff, C., Graves, R. J., Melnyk, B. M., & Hall, H. R. (2020). Nursing students' resilience, depression, well-being, and academic distress: Testing a moderated mediation model. *Journal of Advanced Nursing, 76*(12), 3385–3397. https://doi.org/10.1111/jan.14531

National Academy of Medicine. (2021). *Compendium of key resources for improving clinician well-being.* Retrieved December 14, 2025, from https://nam.edu/product/compendium-of-key-resources-for-improving-clinician-well-being/

Nursing Council of New Zealand. (2024). *Nursing education programme standards*. https://www.nursingcouncil.org.nz/common/Uploaded%20files/Public/Education/Standards%20for%20Programmes/NCNZ%20Education%20Programme%20Standards%202024.pdf

Sharpnack, P. A. (2023). Reimagining nursing education: The power of a shared vision! [Message from the NLN chair]. *Nursing Education Perspectives, 44*(6), 331–332. https://doi.org/10.1097/01.NEP.0000000000001201

Stubin, C. A., & Dahan, T. A. (2024). Supporting mental health well-being in the most vulnerable future nurses. *Nursing Education Perspectives, 45*(5), 281–286. https:// doi: 10.1097/01.NEP.0000000000001297

Walker, D., Frable, P. J., & Canclini, S. (2025). Creating space: A resilience room for nursing students. *Nursing Education Perspectives, 46*(4), 268–269. https://doi: 10.1097/01.NEP.0000000000001258

Zhou, L., Chankoson, T., Wu, Y., & Cai, E. (2023). Thriving psychological well-being in undergraduate nursing student: A grounded theory study with the life grid approach. *BMC Nursing, 22*, Article 240. https://doi.org/10.1186/s12912-023-01338-1

Literature Review https://doi.org/10.34074/scop.3010006

SUMMATIVE ASSESSMENTS AND CLINICAL PLACEMENT READINESS FOR YEAR ONE BACHELOR OF NURSING STUDENTS

Michelle Miller

INTRODUCTION

Clinical placement is a crucial part of a student nurse's learning journey. In the clinical environment, students develop their dexterity with clinical equipment, strengthen their critical thinking skills, and apply theoretical knowledge to practice in a supportive learning environment (Levett-Jones et al., 2015). The clinical domain is at the intersection of theory and application. Therefore, it is essential that students are well prepared so they can take advantage of the learning experience, become safe practitioners, and achieve the expected learning outcomes.

Many nursing and health industry education providers use practical summative assessments to determine a student's ability to apply theoretical learning to practice and to assess practical skills to ensure they have achieved the required level of competence for clinical placement (Arrogante et al., 2021; Miller, 2023). What evidence is there that practical assessments can sufficiently evaluate a student's preparedness for this stage?

This literature review summarises a body of research on whether preclinical summative assessments effectively determine if a baccalaureate student nurse is work-ready for clinical placement. Its aim is to apply the insights gained to the specific context of the Southern Institute of Technology (SIT) Passport to Practice summative assessment, to determine if it serves its intended purpose.

BACKGROUND

Preparing students for clinical placement is essential, enabling them to have a positive experience and develop their nursing skills and knowledge. Cant et al. (2021) found that a lack of preparation hindered student learning, and that students need to be prepared so clinical learning can occur. A study by Levett-Jones et al. (2015) of first-year nursing students found that many reported feeling unprepared for clinical placement.

Southern Institute of Technology year one Bachelor of Nursing (BN) students are required to complete a summative practical assessment, called Passport to Practice (P2P) to proceed to clinical placement. During this assessment, students must demonstrate developing professional conduct, reflective practice, and competence in selected nursing procedures. The assessment is undertaken within a simulated clinical scenario, assessed by a nurse educator, and evaluated using the SIT Clinical Progression Rubric. The rubric aligns closely with the Nursing Council of

New Zealand Standards of Competence (NCNZ, 2025), which outline the knowledge, skills, and professional behaviours necessary for culturally safe and effective nursing practice, thereby providing a framework for assessing students' readiness for clinical practice.

The foundational work of Benner (1982, 1984) uses the Dreyfus Model of Skill Acquisition (Dreyfus & Dreyfus, 1980) to explain how nurses develop clinical expertise incrementally through education and experience. According to the Dreyfus model, a student nurse begins at the novice stage and, as knowledge and experience increase, progresses to advanced beginner, then develops competence. With further development, the nurse becomes proficient and ultimately may reach the level of an expert. This progression from novice to expert is also applicable to student nurses as their skills and knowledge evolve throughout their education. The achievement of proficiency reflects the student's ability to integrate theoretical knowledge with experience to develop competence and expertise (Benner, 1982).

Students need to be taught how to perform skills and practice them to gain competence (Benner, 1982). At the beginning of their nursing journey, students may have little theoretical knowledge, have had limited exposure to medical equipment, or be unable to apply critical thinking in a nursing context. Benner (1982) describes these students as "Novice" nurses who have no previous experience and may lack the ability to use discretionary judgment. Novice students require substantial guidance as they acquire and develop their knowledge and skills. Within the SIT Clinical Progression Rubric, the first level is described as "Dependent." At the Dependent level, students may not yet demonstrate appropriate professional behaviour or knowledge and are dependent on the nurse educator for guidance.

Throughout the year, students gain theoretical knowledge in the classroom and learn a vast range of fundamental practical nursing skills, such as taking vital signs and administering medications. Students are also able to develop empathy and professionalism through reflective practice and critical thinking. Students spend substantial time preparing themselves for the P2P assessment to practice and refine their psychomotor skills and muscle memory.

By the time students are ready to attempt P2P, they should be at a "Guided" level on the Clinical Progression Rubric, described as requiring frequent supportive cues. For Benner (1982), this is the level designated as "Advanced Beginner," where students have some clinical exposure and are developing critical thinking. Benner (1982) describes the advanced beginner as being capable of "marginally acceptable performance" (p. 403). At this stage, students have gained some experience they can draw on and apply to theoretical concepts. They should be well-prepared to pass the P2P assessment and to build a solid foundation of clinical skills and knowledge that will benefit them throughout their nursing journey.

METHODOLOGY

A literature review was conducted to identify and analyse themes related to the effectiveness of practical summative assessments in determining nursing students' readiness for clinical placement and highlighting gaps in knowledge and skills.

A comprehensive literature search was conducted between July and September 2023. The electronic databases CINAHL, PubMed, and Google Scholar were searched using combinations of the following keywords: "predictive value of practical summative assessments"; "preparedness of

student nurses for clinical placement"; "objective structural clinical examination", and "pre-clinical summative assessments." Boolean operators (AND, OR) were applied to refine the search. The reference lists of included articles were also scanned to identify additional sources.

To be included, articles were required to be peer-reviewed, published in English between 2013 and September 2023, and discuss summative assessments for health industry students. Any grey literature or conference abstracts were excluded. Sixteen articles were selected that met the inclusion criteria. The key concepts from each article regarding the value of summative pre-clinical assessments, which included the study design, the type of health education provider, the type of preclinical assessment conducted, and the predictive value of preparedness, were extracted. Common findings and patterns were then identified in the literature under the following themes.

THEMES

Value of summative assessments

Summative assessments measure student learning after specific theory and clinical instruction (Arrogante et al., 2021; Ha & Lim, 2023; Kassabry, 2023; Kibble, 2017). According to Burgess and Mellis (2015), these assessments can be used to measure students' progress towards achieving learning outcomes and to determine whether their knowledge and clinical skills are consistent with the expectations of their current stage of learning. Ashcraft et al. (2013) report that well-planned clinical scenarios provide an opportunity for nurse educators to evaluate a student's psychomotor skills, clinical decision making, and reflective thinking. For Arrogante et al. (2021), simulation-based learning increases the fusion of theoretical knowledge and clinical practice. They further observe that summative clinical examinations are commonly used to evaluate a student's knowledge and application in clinical practice. Ashcraft et al. (2013) concur that simulated assessments are an effective evaluation tool yet caution that a robust rubric is needed to assess competency. Rosy et al. (2022) and Mohammed and Amer (2018) found that practical assessment aided students in making connections between theoretical knowledge and clinical skills.

Rosy et al. (2022) reported that students felt practical assessments were fair in assessing their clinical knowledge and skills. Both students and nurse educators acknowledged that clinical skills-based assessments are a reliable method for evaluating clinical skills as they are impartial, valid, and reliable (Ha & Lim, 2023; Kassabry, 2023). The use of this type of assessment fosters self-confidence as the students practice in a safe, supported learning environment (Ashcraft et al., 2013; Ha & Lim, 2023). The preparation students complete for assessments facilitates the connection between theory and practical skills applied within the clinical environment (Ha & Lim, 2023; Kassabry, 2023; Rosy et al., 2022). A significant correlation was found between practical assessments and clinical performance, suggesting that assessments such as the P2P can identify borderline performance by students who may need additional support during clinical placement (Terry et al., 2017).

The value of clinical placement

Clinical placement ought to be a safe environment for student nurses, where they feel welcomed (Cooper et al., 2015). Clinical placement is described by Ama Amoo et al. (2022) as a place for teaching and learning. Splitgerber et al. (2021) agree, then add that clinical placement is the preferred environment for students to learn practical skills, develop clinical reasoning, and critical thinking skills. According to Jafarian-Amiri et al. (2020), the clinical environment provides an

opportunity to "transform conceptual knowledge into psychomotor skills and apply them to patient care" (p. 1). Levett-Jones et al. (2015) describe a student nurse's first clinical placement as a significant time for growth, during which attitudes and values are developed and challenged. Clinical placement is a "juncture in their educational and professional journey" and an "authentic context for nursing students to develop knowledge, skills, attitudes and values as a registered nurse" (Levett-Jones et al., 2015, p. 308).

Preparing students for clinical placement is essential, enabling them to have a positive experience and develop their nursing skills and knowledge. Cant et al. (2021) found that a lack of preparation hindered student learning, and that adequate preparation is essential for students to engage in effective clinical learning. As noted above, a study by Levett-Jones et al. (2015) of first-year nursing students found that many felt unprepared for clinical placement. The combination of theoretical and practical skills classes aims to prepare students for this step. In the clinical environment, students can further develop dexterity with clinical equipment, mature their critical thinking skills, and apply theoretical knowledge to clinical practice in a supportive environment.

Self confidence

Students are initially instructed in the best evidence-based practice guidelines and the correct procedural sequencing required for the effective use of clinical equipment. Subsequently, they are provided with opportunities to replicate and refine these skills through structured practice sessions. The deliberate and repetitive practice undertaken in preparation for summative assessment has been shown to foster students' self-confidence and enhance their readiness for clinical performance (Ha & Lim, 2023; Kassabry, 2023). Consistent and purposeful engagement in skill-based practice is therefore fundamental to the development of clinical competence and professional confidence.

Making connections

Simulation is often used in the classroom to provide students with an opportunity to practice their skills in a safe environment. According to Ashcraft et al. (2013), feedback is essential for students to advance their clinical skills and critical thinking. Nurse educators must engage in ethical and robust discussions that help students make connections between the theory learned and the application of skills and critical thinking; in other words, reducing the theory-practice gap. Concurrently, simulation enables students to amalgamate theoretical knowledge into clinical practice (Ashcraft et al., 2013).

Fair assessment

Both students and nurse educators consistently comment that practical summative assessments are a fair way to assess clinical skills (Ho et al., 2015; Mohammed & Amer, 2018; Rosy et al., 2022). For Ashcraft et al. (2013), it is imperative to have a "well-constructed" rubric when evaluating students during a summative assessment.

The SIT P2P is a subjective assessment in which nurse educators assess students against the robust Clinical Progression Rubric, aligned with the NCNZ Standards for Registered Nurses. Students are provided with a copy of the marking rubric in advance, which outlines what assessors are examining during the assessment. There should be no surprises regarding what the student should expect during the assessment.

CONCLUSION

Southern Institute of Technology endeavours to graduate professional, competent, and confident graduates. Graduates of the Bachelor of Nursing are expected to deploy critical thinking, theoretical knowledge, and clinical judgment to make nursing decisions for the people they work in partnership with, including colleagues, health consumers, and their families. Clinical placement provides nursing students with the opportunity to integrate theoretical knowledge with clinical practice in a supportive 'real life' clinical environment. Working with other healthcare workers and health consumers also provides students with the opportunity to observe clinical practice and develop their own values, beliefs, and attitudes as nurses. This type of learning cannot be realistically replicated in the classroom.

The clinical environment provides students with a multiplicity of learning experiences and opportunities to develop their knowledge and skills. It is also acknowledged that students should not be 'set up to fail.' All students entering the clinical domain should have successfully achieved a set of competencies, and the literature supports the use of summative assessments such as the P2P to ensure students are ready for this step. Therefore, it is recommended that SIT continue with the P2P, as the requirement to pass the assessment compels students to develop their clinical skills through practice, thus developing their dexterity with equipment, assessment skills, and critical thinking. It also allows those who might not be prepared to be provided with additional support.

The P2P allows SIT nurse educators to feel confident that their students will thrive in the clinical environment as they develop their nursing skills because the students entering those domains will have demonstrated their competence.

Michelle Miller is a nurse educator at the Southern Institute of Technology in Invercargill, New Zealand. Her research examines preclinical assessments that prepare learners for clinical placement. Her whakapapa is to Ngāi Tahu and Muaūpoko, grounding her scholarly work in culturally informed, equity-focused nursing education.

REFERENCES

Ama Amoo, S., Boahemaa Gyasi Aderoju, Y., Sarfo-Walters, R., Fakornam Doe, P., Okantey, C., Makafui Boso, C., Aba Abraham, S., Adjei Druye, A., & Innocentia Ebu Enyan, N. (2022). Nursing students' perception of clinical teaching and learning in Ghana: A descriptive qualitative study. *Nursing Research and Practice*, *2022*, Article 7222196. https://doi.org/10.1155/2022/7222196

Arrogante, O., González-Romero, G. M., López-Torre, E. M., Carrión-García, L., & Polo, A. (2021). Comparing formative and summative simulation-based assessment in undergraduate nursing students: Nursing competency acquisition and clinical simulation satisfaction. *BMC Nursing*, *20*, Article 92. https://doi.org/10.1186/s12912-021-00614-2

Ashcraft, A. S., Opton, L., Bridges, R. A., Caballero, S., Veesart, A., & Weaver, C. (2013). Simulation evaluation using a modified Lasater clinical judgment rubric. *Nursing Education Perspectives*, *34*(2), 122–126. https://doi.org/10.5480/1536-5026-34.2.122

Benner, P. (1982). From novice to expert. *The American Journal of Nursing*, *82*(3), 402–407. https://doi.org/10.2307/3462928

Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice*. Addison-Wesley.

Burgess, A., & Mellis, C. (2015). Feedback and assessment for clinical placements: Achieving the right balance. *Advances in Medical Education and Practice*, *6*, 373–381. https://doi.org/10.2147/AMEP.S77890

Cant, R., Ryan, C., Hughes, L., Luders, E., & Cooper, S. (2021). What helps, what hinders? Undergraduate nursing students' perceptions of clinical placements based on a thematic synthesis of literature. *SAGE Open Nursing*, *7*, 1–20. https://doi.org/10.1177/23779608211035845

Dreyfus, H. L., & Dreyfus, S. E. (1980). *A five-stage model of the mental activities involved in directed skill acquisition* (No. ADA084551). University of California, Berkeley, Operations Research Center.

Jafarian-Amiri, S. R., Zabihi, A., & Qalehsari, M. Q. (2020). The challenges of supporting nursing students in clinical education. *Journal of Education and Health Promotion*, *9*, Article 216. https://doi.org/10.4103/jehp.jehp_13_20

Kassabry, M. (2023). Evaluation of simulation using objective structured clinical exam (OSCE) amongst undergraduate nursing students: A systematic review *International Journal of African Nursing Science*, *18*, Article 100553, 1–9. https://doi.org/10.1016/j.ijans.2023.100553.

Kibble, J. D. (2017). Best practices in summative assessment. *Advances in Physiology Education*, *41*(1), 110–119. https://doi.org/10.1152/advan.00116.2016

Ha, E., & Lim, E. (2023). The effect of objective structured clinical examinations for nursing students. *PloS One*, *18*(6). https://doi.org/10.1371/journal.pone.0286787

Levett-Jones, T., Pitt, V., Courtney-Pratt, H., Harbrow, G., & Rossiter, R. (2015). What are the primary concerns of nursing students as they prepare for and contemplate their first clinical placement experience? *Nurse Education in Practice*, *15*(4), 304–309. https://doi.org/10.1016/j.nepr.2015.03.012

Miller, M. L. (2023). *Pre-clinical summative assessments: A stepping stone or barrier to progression? Year One Bachelor of Nursing* [Unpublished Master of Health professional project]. Victoria University of Wellington.

Mohammed, N. A., & Amer, H. A. (2018). Nursing students' perceptions regarding modality use of the objective structured clinical examination (OSCE). *Journal of Health, Medicine and Nursing*, *51*, 56–66.

Rosy, K. O., Nandini, M., Princy Francis, M., & Divya, T. N. (2022). Objective structured clinical exam: A cross-sectional study to evaluate undergraduate nursing students experience. *International Journal of Nursing Care*, *10*(1), 37–47. https://doi.org/10.37506/ijonc.v10i1.17826

Splitgerber, H., Davies, S., & Laker, S. (2021). Improving clinical experiences for nursing students in nursing homes: An integrative literature review. *Nurse Education in Practice*, *52*, Article 103008. https://doi.org/10.1016/j.nepr.2021.103008

Terry, R., Hing, W., Orr, R., & Milne, N. (2017). Do coursework summative assessments predict clinical performance? A systematic review. *BMC Medical Education*, *17*, Article 40. https://doi.org/10.1186/s12909-017-0878-3

Article https://doi.org/10.34074/scop.3010005

GRADUATE NURSES IN AOTEAROA NEW ZEALAND: HOW WELL IS UNDERGRADUATE PHARMACOLOGY EDUCATION PREPARING THEM FOR PRACTICE?

Lucy Nolan, Philip Lopez and Judith Honeyfield

INTRODUCTION

Safe and effective medication administration is a fundamental component of nursing practice and directly influences patient outcomes (Donaldson et al., 2017). Nurses are required to interpret prescriptions, calculate dosages, recognise interactions, monitor therapeutic and adverse effects, and educate patients (Nursing Council of New Zealand, 2025b). These responsibilities demand pharmacological knowledge and sound clinical judgement. Therefore, concerns persist regarding the preparedness of newly graduated nurses to manage medications safely in increasingly complex clinical environments.

Within the Bachelor of Nursing programme at Toi Ohomai Institute of Technology, Bay of Plenty, pharmacology was initially embedded alongside pathophysiology within an integrated bioscience course. Anecdotal observations by educators suggested that the breadth and complexity of pharmacological content created challenges for knowledge retention and its application in clinical practice. To provide greater focus on key concepts, pharmacology was subsequently developed into a stand-alone one semester paper covering drug classifications, mechanisms of action, pharmacokinetics, pharmacodynamics, dosage calculations, and adverse effects. Although this increased focus was associated with improved student achievement, concerns regarding content volume and delivery intensity persisted. The paper's compressed delivery over one semester and completion before clinical placements limited opportunities for students to consolidate learning and apply pharmacological knowledge within clinical practice settings. Consequently, pharmacology content was further reviewed, streamlined, and integrated across bioscience and clinical nursing papers within the programme to strengthen links between theoretical knowledge and clinical application.

Despite these developments, anecdotal observations by educators continued to identify challenges in students' ability to retain and apply pharmacological knowledge, particularly during OSCEs and clinical placements. Similar concerns have been noted among newly graduated nurses, suggesting an ongoing theory-practice gap. As healthcare becomes increasingly complex, understanding

graduates' perceptions of their pharmacology preparation is important for informing ongoing curriculum development and ensuring nursing programmes adequately prepare nurses for safe and effective medication management.

International literature also highlights deficiencies in pharmacological readiness among new graduate nurses (Athanasakis, 2021; Braiki et al., 2024; Jung & Park, 2025; Webb et al., 2025). Graduates frequently report feeling underprepared when transitioning to practice, citing limited applied learning opportunities, an overemphasis on theoretical content, and inconsistencies in pharmacology curricula (Baharum et al., 2023; Kreedi et al., 2021). The theory-practice gap refers to the difficulty students and newly qualified nurses may experience when applying theoretical knowledge learned in education to complex, unpredictable clinical situations. This gap remains a persistent challenge in nursing education, particularly when students are required to transfer theoretical knowledge into complex clinical situations (Shoghi et al., 2019). These gaps contribute to medication errors, a leading preventable cause of patient harm worldwide (Khristy, 2025). Inadequate pharmacological knowledge has been associated with an increased risk of these errors (Preston et al., 2019). Difficulties translating theory to practice can also negatively affect nurses' confidence, job satisfaction, and retention (Kallerhult Hermansson et al., 2024).

This concern is reinforced by McCabe et al.'s (2023) meta-analysis, which found that only 46 percent of nurses demonstrated adequate or above-adequate knowledge of acute pain management. These findings suggest that existing educational approaches may not adequately prepare all nurses to apply pharmacological knowledge safely in practice.

The transition from student nurse to registered nurse is a particularly important point at which the theory-practice gap becomes evident. In pharmacology, this gap occurs when nurses can perform medication-related procedures but are less confident applying deeper knowledge of drug mechanisms, interactions, contraindications, and adverse effects to patient-specific decision-making (Shoghi et al., 2019).

New graduates must also adjust to unfamiliar clinical environments, increased workloads, hierarchical team structures, and the expectations of independent practice. Hallaran et al. (2023) found that new nurses commonly experienced feelings of being unprepared, limited confidence, stressful workplace cultures, and a lack of support during this transition. Although supportive teams and opportunities to develop confidence can facilitate a successful transition, insufficient mentorship and unrealistic workplace expectations may increase stress and undermine safe clinical decision-making. These pressures may be especially significant when new nurses are required to administer medicines, recognise adverse effects, and make timely clinical judgments. Bridging the theory-practice gap in pharmacology is therefore essential to helping nurses develop the confidence and pharmacological acumen required to make safe clinical decisions in challenging work environments.

Medication related incidents can have a profound emotional impact on novice practitioners. Recent nursing graduates have reported that their education did not always adequately prepare them to respond to medication errors (Treiber & Jones, 2018). A literature review by Nydoo et al. (2020) found that healthcare professionals involved in adverse events may experience significant emotional distress, including sadness, guilt, anxiety, and symptoms consistent with post-traumatic stress. These effects may be particularly significant for new graduates, who are still developing their professional identity and clinical competence.

In Aotearoa New Zealand, these concerns are increasingly important because of the Nursing Council of New Zealand's (2025b) revised Registered Nurse scope of practice. Consequently, nursing education must support graduates to develop sound clinical reasoning, confidence, and emotional resilience, along with the pharmacological knowledge required for safe practice in increasingly complex healthcare environments.

The aim of this study was to explore newly graduated Registered Nurses' perceptions of how effectively their undergraduate pharmacology education prepared them for safe medication practice. The study also aimed to identify gaps between theoretical learning and clinical expectations and inform future curriculum development.

METHODOLOGY

Study design

Data were collected using a questionnaire designed to capture both quantitative and qualitative information about newly graduated Registered Nurses' perceptions of pharmacology education sufficiency. The survey included demographic items (age, gender, ethnicity, and practice setting) and a series of closed-ended Likert-scale questions assessing the perceived importance of pharmacology knowledge domains. Open-ended questions invited participants to elaborate on their experiences of integrating pharmacology theory into practice, the sufficiency of their preparation, and recommendations for improving the pharmacology course. The combined quantitative data were analysed through descriptive statistics, with qualitative responses subjected to thematic analysis. This mixed-methods design allowed for the identification of both numerical trends and deeper contextual insights into participants' experiences.

Participant recruitment and survey administration

Surveys were distributed using a convenience sampling approach to 45 graduates from the total cohort of 68 newly graduated Registered Nurses in 2024. The participants had completed a Bachelor of Nursing degree at Toi Ohomai Institute of Technology, were working in the Bay of Plenty region of Aotearoa New Zealand, and were within their first year of professional practice. The 45 graduates were selected based on their accessibility and availability during the data-collection period. Of the 45 surveys distributed, 42 (93 percent) were returned. Of these, 38 were fully completed and included in the analysis. The completed responses represented 56 percent of the total graduate cohort (38/68) and 84 percent of the graduates who received a survey (38/45).

Surveys were administered in hard-copy format and de-identified to protect participant confidentiality. The instrument included closed-ended questions that collected demographic information and assessed participants' perceptions of their pharmacology knowledge. Open-ended questions invited participants to describe their experiences of pharmacology education and explain how they applied this knowledge in clinical practice.

Data analysis

A mixed-methods survey design was used to gather quantitative and qualitative data. The quantitative component consisted of closed-ended questions that collected demographic information and assessed participants' perception of pharmacology education and confidence

in medication-related competencies. Responses were transcribed into an Excel database and analysed using descriptive statistics, including frequencies and proportions. This analysis identified patterns across participants' responses and provided an overview of their characteristics, perceived pharmacology knowledge, and confidence in applying pharmacological skills in practice.

The qualitative component consisted of open-ended questions that explored participants' experiences of pharmacology education and how they transferred their knowledge into clinical practice. Responses were read and re-read to support familiarisation with the data. Similar ideas were then grouped in Excel, coded for recurring concepts, and reviewed iteratively to develop broader themes. This process identified participants' perceptions of the strengths and limitations of their pharmacology education, including factors that supported or hindered the application of theoretical knowledge in practice.

The quantitative and qualitative findings were considered together during the interpretation phase. Quantitative results showed the frequency and distribution of participants' reported confidence and perceived pharmacological knowledge, while qualitative findings provided context for these patterns by describing participants' experiences of applying pharmacology in clinical practice. Integrating both forms of evidence enabled the study to identify potential theory practice gaps in pharmacology education and develop a more comprehensive understanding of how undergraduate preparation influenced newly graduated nurses' confidence and readiness for safe medication practice.

Ethical considerations

Participants were invited via an email which included a full participant information sheet regarding the propose and voluntary nature of the study, assuring anonymous use of data and identifying lead researchers and the right to withdraw participation. This information was repeated in the introductory statement on the survey instrument confirming that questions were completely anonymous and voluntary, and that completion and submission of the questionnaire would be taken as consent for responses to be collected, analysed, and reported. All surveys were de-identified to ensure participant confidentiality, and data were stored securely in accordance with institutional research protocols. This study was approved by the Toi Ohomai Research and Human Ethics Committee (Approval Number 23046).

The study is limited by the relatively small number of completed surveys (n = 38), which restricts the generalisability of the findings. The sample was drawn exclusively from newly graduated Registered Nurses in the Bay of Plenty region. As a result, the findings may not fully reflect the experiences of graduates from other regions or training institutions. Additionally, although Māori and Pasifika nurses were represented in the sample, the perspectives of groups critical to the nursing workforce and to upholding Te Tiriti o Waitangi obligations may not have been adequately captured.

FINDINGS

Demographic profile

Most respondents were aged 20–25 years, reflecting the typical age of new graduates, with fewer participants aged 26–35 and very few over 36. The sample was predominantly female (95 percent), with 5 percent male respondents and no participants identifying outside binary

categories. Ethnicity data showed 71 percent European, 13 percent Asian, 13 percent Māori, and 3 percent Pasifika. While Māori and Pasifika respondents were fewer in number, their representation within the sample was reflective of the current ethnic composition of the New Zealand nursing workforce (Nursing Council of New Zealand, 2024).

Practice settings were varied, although most respondents worked in medical-surgical wards (39 percent), followed by primary/community health (16 percent) and perioperative care (10 percent). Smaller numbers worked in aged care, CCU, emergency, orthopaedics, and rehabilitation, suggesting most graduates entered generalist practice areas requiring broad pharmacology knowledge.

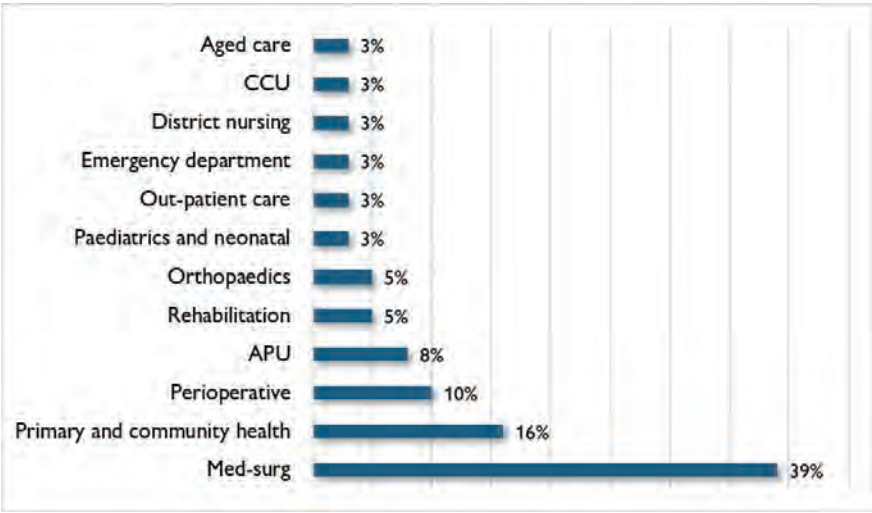


Figure 1: Practice setting.

Pharmacology knowledge needs

Respondents identified several pharmacology competencies as essential for safe nursing practice, including drug administration (86 percent), drug calculations (79 percent), prescribing and dosage knowledge (79 percent), drug classification (71 percent), contraindications (68 percent), drug interactions (61 percent), and mechanism of action (53 percent). Findings suggest a stronger emphasis on procedural and safety focused competencies, particularly medication administration and calculations, while conceptual pharmacology knowledge, such as mechanism of action and drug interactions, was perceived as important but less consistently understood.

Quality of learning resources and teaching materials

Fifteen respondents (39 percent) indicated learning resources and teaching materials were slightly influential in supporting the integration of pharmacology theory into practice, while 10 respondents (26 percent) rated them as very influential. A further nine respondents (24 percent) were neutral, three respondents (8 percent) identified a minor influence, and only one respondent (3 percent) considered them not influential. Findings suggest that learning resources and teaching materials meaningfully support the application of theory to practice.

Consolidation and integration of knowledge

Most students felt the course moderately to strongly supported consolidation and integration of knowledge. Only two respondents (5 percent) reported a minor influence, and one respondent (3 percent) considered it not influential, while nine respondents (24 percent) were neutral. Thirteen respondents (34 percent) identified the course as slightly influential and another 13 respondents (34 percent) as very influential. Overall, 68 percent perceived a positive influence, suggesting the course facilitated integration of pharmacology knowledge into practice for most participants.

Thematic analysis

Three overarching themes influencing the integration of pharmacology theory into clinical practice were identified: course structure and delivery; relevance and integration with practice, and teaching quality and support.

Course structure and delivery

Participants frequently described the three-month pharmacology course as too short in duration and delivered at a rapid pace, contributing to cramming behaviours and limited long-term knowledge retention. Respondents also reported feeling overwhelmed by the volume of medications taught, with many perceived as having limited relevance to clinical practice. Some students described pharmacology as being taught like a "foreign language" rather than being contextualised within nursing practice. Lecture slides were commonly perceived as excessive and insufficiently engaging.

Relevance and integration with practice

Participants identified a perceived disconnect between theoretical pharmacology content and the medications most encountered in clinical practice, with some drugs covered in the course viewed as outdated or less clinically relevant. Many respondents reported that meaningful consolidation of pharmacology knowledge occurred primarily during clinical placements through repeated exposure to commonly administered medications.

Teaching quality and support

Some participants acknowledged positive teaching experiences, highlighting effective tutors and supportive teaching approaches. Respondents also recommended the inclusion of more engaging and clinically focused teaching strategies to better support the integration of theory into nursing practice.

Preparedness for practice

Preparedness varied across pharmacology domains. The strongest preparedness was identified in drug calculations, with 82 percent feeling well prepared, followed by drug administration (64 percent) and drug classification (59 percent).

Lower levels of confidence were reported in conceptual pharmacology areas, including mode of action, drug interactions, contraindications, and prescribing/dosage knowledge, where many respondents identified ongoing gaps despite reporting some level of preparedness. These findings suggest that students felt more confident in procedural pharmacology skills than in applying deeper conceptual pharmacology knowledge to clinical practice.

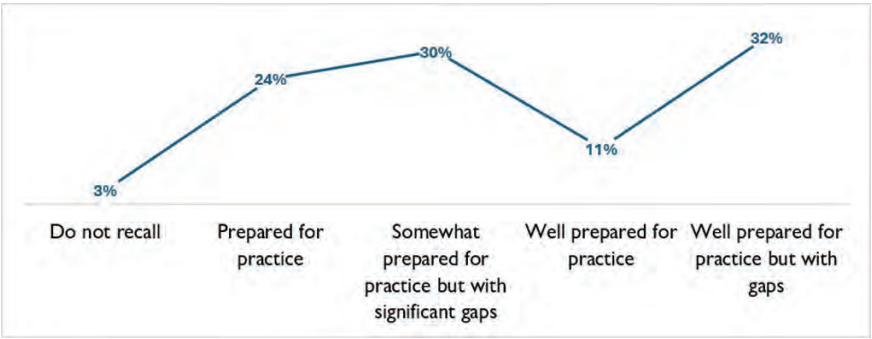


Figure 2: Perceptions of pharmacology preparedness based on conceptual pharmacology knowledge.

Sufficiency for practice

Respondents frequently reported that confidence and competence developed primarily through clinical placements, workplace experience, and self-directed learning rather than through coursework alone. Students highlighted the importance of understanding drug actions, dosages, interactions, and contraindications for safe nursing practice, although some content was perceived as lacking direct relevance to their clinical settings. Perceived preparedness was strongly influenced by placement quality, clinical exposure, and individual effort. Many participants recommended extending pharmacology education across the nursing programme and increasing integration between theoretical content and clinical practice.

Most respondents (63 percent, n=24/38) reported that their pharmacology education sufficiently prepared them for their role as a Registered Nurse, while 37 percent (n=11) felt it was insufficient.

Recommendations for improvement

Respondents recommended extending pharmacology teaching across all three years of the Bachelor of Nursing programme rather than within a short three-month course. Participants also suggested increased hands-on learning opportunities, including drug calculations, IV medications, monitoring, and real-life patient scenarios. Stronger integration of theory and clinical practice was recommended, particularly regarding mechanism of action, side effects, interactions, and contraindications. Students also emphasised the importance of supportive placements, clinically relevant teaching, clearer learning outcomes, and more interactive teaching approaches.

DISCUSSION

The findings of this study reinforce the persistence of the theory-practice gap in pharmacology identified in both national and international literature. Although participants reported confidence in procedural competencies, they expressed lower confidence in their conceptual understanding of pharmacology. This disparity suggests that newly graduated nurses may be able to perform medication-related tasks, such as administration and dosage calculations, without feeling equally confident applying the theoretical knowledge required to explain or evaluate those actions. Similar differences between practical competence and theoretical understanding have been reported in previous studies (Caboral-Stevens et al., 2020; Irvine et al., 2024). Lim and Honey (2017) likewise found that new graduates felt confident calculating medication doses and monitoring adverse

effects but were less assured in explaining mechanisms of action and drug clearance. These findings support the concern outlined in the background to this research that pharmacology education does not always translate effectively into clinical practice. Nursing education frameworks must therefore integrate practical medication skills with deeper conceptual learning and opportunities to apply knowledge to patient-specific situations, thereby supporting sound clinical reasoning, confidence, and medication safety in nursing practice (Santiago et al., 2021; White et al., 2023).

Participants of this study also described pharmacology courses as too short and content-heavy, limiting opportunities for integration of knowledge into practice. Similar concerns have been reported internationally, where students have trouble transferring theoretical pharmacology knowledge into clinical settings (Preston et al., 2019). Respondents highlighted the value of clinical placements and ongoing workplace learning, consistent with literature supporting simulation, experiential learning, and continuing professional development as strategies to strengthen pharmacology competence and medication safety (Irvine et al., 2024; Lim & Honey, 2017; Shahzeydi et al., 2024).

In response to the data analysed in this study and ongoing student feedback, the institute at which this study is based has implemented enhancements aimed at improving pharmacology education. Lecture content has been revised to be more accessible and less content-dense, with a focus on clarity and student engagement. Tutorials incorporate real-life clinical scenarios, supporting the application of pharmacological knowledge to practice. In addition, a computer-based, exam-style component was introduced to a written assessment, requiring students to independently write a conclusion under controlled conditions. This approach was designed to better demonstrate students' actual acquisition, integration, and application of knowledge, rather than reliance on externally generated content. These developments highlight the need for ongoing data collection and continuous improvement of pedagogy in pharmacology education to ensure it remains responsive, effective, and aligned with real world clinical practice demands.

Scope and limitations

This study evaluated the perceived sufficiency of pharmacology education provided by a New Zealand tertiary education institution, as reported by nursing graduates during their first year of registered clinical practice. It specifically examined whether participants considered that curricula had equipped them with the knowledge and skills necessary for safe medication management. It explored the perceptions of newly graduated nurses regarding their preparedness, while also identifying gaps in knowledge and assessing the effectiveness of teaching methodologies.

The study was limited to entrant nurses, excluding mid-career or advanced practice nurses. It concentrated solely on pharmacology education and on the graduate nurses' perceptions of clinical readiness, patient safety, and professional confidence, without extending to other areas of nursing curricula such as anatomy or medical-surgical. The research did not account for broader systemic healthcare factors such as staffing ratios, workload, or organisational policies. By narrowing its scope, the study sought to provide a focused evaluation of pharmacology education and the perceptions of clinical preparedness among new graduated nurses. Additional limitations include a small sample size drawn from a single regional cohort, which may limit generalisability.

CONCLUSION

This study explored how newly graduated Registered Nurses in Aotearoa New Zealand perceived the adequacy of their undergraduate pharmacology education for safe medication practice. Participants viewed their education as providing a useful foundation and reported greater confidence in procedural competencies. However, they expressed lower confidence in conceptual areas. This disparity demonstrates an ongoing theory-practice gap in pharmacology, in which graduates may be able to perform medication-related procedures without feeling equally confident applying the theoretical knowledge required to evaluate medication use and make clinically informed decisions.

Participants identified the short, content-heavy course structure and limited opportunities for applied learning as barriers to consolidating pharmacology knowledge. Clinical placements, workplace experience, and self-directed learning were viewed as important for developing confidence and connecting theoretical knowledge with clinical practice. The responses support a more longitudinal, scaffolded, and clinically integrated approach to pharmacology education. Extending pharmacology teaching across the Bachelor of Nursing programme, incorporating simulation and real-world clinical scenarios, and developing closer links between classroom learning and clinical placements may help graduates develop both practical competence and theoretical understanding.

Although the study was limited by its small, convenience sample from one regional cohort, and its reliance on self-reported perceptions, it provides valuable insight into the early practice experiences of new graduates. The findings indicate that pharmacology education requires ongoing evaluation to remain relevant to contemporary nursing practice needs. Improving the connection between pharmacological theory and clinical application is important to improve graduate confidence, support sound clinical reasoning, and enable nurses to administer medicines safely within the expectations of registered nurse practice in Aotearoa New Zealand (Nursing Council of New Zealand, 2025b).

Lucy Nolan is a registered nurse with 19 years' experience across Australia and New Zealand, specialising in neurosurgery and neurology. She has experience in diverse roles including acute care, patient outcomes analysis, and clinical nurse consultant positions. Currently, she is an academic staff member at Toi Ohomai Institute of Technology in Rotorua, teaching pharmacology and pathophysiology.

Philip Lopez is a physician, academic, and registered Medical Technologist from the Philippines with expertise in pathology, curriculum development, and academic leadership. Since moving to New Zealand in 2017, he has combined nursing education with postgraduate study, completing a PhD in Educational Management. He is currently a Senior Lecturer in Medical Laboratory Science at Auckland University of Technology.

Judith Honeyfield, PhD, is Academic Leader for Te Puna Whai Ora Department of Nursing at Toi Ohomai and a Principal Academic Staff Member. She teaches across all years of the Bachelor of Nursing programme, including clinical placement supervision, and maintains strong healthcare sector networks. Her research focuses on healthcare education and aged care, including an Ako Aotearoa-funded project on preparing student nurses for culturally centred care with older adults, particularly Māori and Chinese New Zealanders. She also specialises in adult education pedagogy, with a doctoral thesis on developing tertiary teachers and professional agency. Judi has contributed widely to teaching resources and supports collaborative research and novice academics.

REFERENCES

Athanasakis, E. (2021). Medication safety practices in clinical nursing: Nurses' characteristics, skills, competencies, clinical processes, and environment. *International Journal of Caring Sciences*, *13*(3), 2019–2027. https://internationaljournalofcaringsciences.org/docs/51_athanasakis_review_14_3.pdf

Baharum, H., Ismail, A., McKenna, L., Mohamed, Z., Ibrahim, R., & Hassan, N. H. (2023). Success factors in adaptation of newly graduated nurses: A scoping review. *BMC Nursing*, *22*, Article 125. https://doi.org/10.1186/s12912-023-01300-1

Braiki, R., Douville, F., & Gagnon, M.-P. (2024). Factors influencing novice and beginner nurses' intention to report medication errors and near misses. *Canadian Journal of Nursing Research*, *56*(4), 448–456. https://doi.org/10.1177/08445621241263438

Caboral-Stevens, M., Ignacio, R. V., & Newberry, G. (2020). Undergraduate nursing students' pharmacology knowledge and risk of error estimate. *Nurse Education Today*, *93*, Article 104540. https://doi.org/10.1016/j.nedt.2020.104540

Donaldson, L. J., Kelley, E. T., Dhingra-Kumar, N., Kieny, M. P., & Sheikh, A. (2017). Medication without harm: WHO's third global patient safety challenge. *The Lancet*, *389*(10080), 1680–1681.

Hallaran, A. J., Edge, D. S., Almost, J., & Tregunno, D. (2023). New nurses' perceptions on transition to practice: A thematic analysis. *Canadian Journal of Nursing Research*, *55*(1), 126–136. https://doi.org/10.1177/08445621221074872

Irvine, S., Aggar, C., Whiteing, N., Honey, M., Stewart, L., Lim, G., Philip, S., & Andrew, S. (2024). Final-year nursing students' preparedness for medication administration during COVID-19: A multisite survey study. *Nurse Education in Practice*, *78*, Article 104011. https://doi.org/10.1016/j.nepr.2024.104011

Jung, S., & Park, J. (2025). Educational needs for medication safety competence among nurses by clinical ladder stage. *PLOS ONE*, *20*(4), Article e0319483. https://doi.org/10.1371/journal.pone.0319483

Kallerhult Hermansson, S., Norström, F., Hilli, Y., Vaag, R., & Bölenius, K. (2024). Job satisfaction, professional competence, and self-efficacy: A multicentre cross-sectional study among registered nurses in Sweden and Norway. *BMC Health Services Research*, *24*, Article 734. https://doi.org/10.1186/s12913-024-11177-8

Khristy, S. (2025). Breaking the cycle: Reducing medication errors through nursing excellence. *International Journal of Multidisciplinary Research*. https://www.ijfmr.com/papers/2025/4/50003.pdf

Kreedi, F., Brown, M., Marsh, L., & Rogers, K. (2021). Newly graduated registered nurses' experiences of transition to clinical practice: A systematic review. *American Journal of Nursing Research*, *9*(3), 94–105. https://doi.org/10.12691/ajnr-9-3-4

Lim, A. G., & Honey, M. L. L. (2017). New graduate nurses' knowledge and skills in medication management: Implications for clinical settings. *The Journal of Continuing Education in Nursing*, *48*(6), 276–281. https://doi.org/10.3928/00220124-20170517-09

McCabe, C., Feeney, A., Basa, M., Eustace-Cook, J., & McCann, M. (2023). Nurses' knowledge, attitudes and education needs towards acute pain management in hospital settings: A meta-analysis. *Journal of Clinical Nursing*, *32*(15–16), 4325–4336. https://doi.org/10.1111/jocn.16612

Nursing Council of New Zealand. (2024). *Te ohu mahi tapuhi o Aotearoa The New Zealand nursing workforce: A profile of nurse practitioners, registered nurses, and enrolled nurses 2022–2023*. https://www.nursingcouncil.org.nz/common/Uploaded%20files/Public/Publications/Workforce%20Statistics/workforce_statistics/Workforce%20statistics%202022%E2%80%9323.pdf

Nursing Council of New Zealand. (2025a). *Draft nursing education programme standards*. https://www.nursingcouncil.org.nz/common/Uploaded%20files/Education%20standards.pdf

Nursing Council of New Zealand. (2025b). *Registered nurse scope of practice*. https://nursingcouncil.org.nz/common/Uploaded%20files/RN%20scope%20of%20practice%20-%20Jan%202025.pdf

Nydoo, P., Pillay, B. J., Naicker, T., & Moodley, J. (2020). The second victim phenomenon in health care: A literature review. *Scandinavian Journal of Public Health*, *48*(6), 629–637. https://doi.org/10.1177/1403494819855506

Preston, P., Leone-Sheehan, D., & Keys, B. (2019). Nursing student perceptions of pharmacology education and safe medication administration: A qualitative research study. *Nurse Education Today*, *74*, 76–81. https://doi.org/10.1016/j.nedt.2018.12.006

Santiago, M., Davis, E. A., Hinton, T., Angelo, T. A., Shield, A., Babey, A. M., Kemp-Harper, B., Maynard, G., Al-Sallami, H. S., Musgrave, I. F., Fernandes, L. B., Ngo, S. N. T., Christopoulos, A., & White, P. J. (2021). Defining and unpacking the core concepts of pharmacology education. *Pharmacology Research & Perspectives*, *9*(6), Article e00894. https://doi.org/10.1002/prp2.894

Shahzeydi, A., Dianati, M., & Kalhor, F. (2024). Clinical simulation in nursing students' safe medication administration: A systematic review. *Iranian Journal of Nursing and Midwifery Research*, *29*(5), 522–529. https://doi.org/10.4103/ijnmr.ijnmr_323_23

Shoghi, M., Sajadi, M., Oskuie, F., Dehnad, A., & Borimnejad, L. (2019). Strategies for bridging the theory-practice gap from the perspective of nursing experts. *Heliyon*, *5*(9), Article e02503. https://doi.org/10.1016/j.heliyon.2019.e02503

Treiber, L. A., & Jones, J. H. (2018). After the medication error: Recent nursing graduates' reflection on adequacy of education. *Journal of Nursing Education*, *57*(5), 275–280. https://doi.org/10.3928/01484834-20180420-04

Webb, C., Dabkowski, E., Missen, K., & Missen, A. (2025). Contributing factors to medication administration errors among novice registered nurses: An integrative review. *Journal of Clinical Nursing*, *34*, 4499–4519. https://doi.org/10.1111/jocn.17721

White, P. J., Guilding, C., Angelo, T., Kelly, J. P., Gorman, L., Tucker, S. J., Fun, A., Han, J., Chen, G., Samak, Y., Babey, A. M., Caetano, F. A., Sarangi, S. C., Koenig, J., Hao, H., Goldfarb, J., Karpa, K., Vieira, L., Restini, C., Cunningham, M., Aronsson, P., Kelly-Laubscher, R., Hernandez, M., Rangachari, P. K., Mifsud, J., Mraiche, F., Sabra, R., Piñeros, O., Zhen, X., Kwanashie, H., Exintaris, B., Karunaratne, N., Ishii, K., & Liu, Y. (2023). Identifying the core concepts of pharmacology education: A global initiative. *British Journal of Pharmacology*, *180*(9), 1197–1209. https://doi.org/10.1111/bph.16000

Case Study https://doi.org/10.34074/scop.3010010

SUNGUARDING® ANGLESEY: A COMMUNITY-BASED PILOT TO IMPROVE PUBLIC AWARENESS OF UV RISK AND SKIN CANCER PREVENTION AT TREARDDUR BAY, NORTH WALES

Jean Ross, Teifi Jones, Keith Roberts and Michelle Baker

INTRODUCTION

The Sunguarding Anglesey Pilot, situated in North Wales, United Kingdom (UK) was a community-based application of the Melanoma Fund's established Sunguarding prevention model. Delivered through a collaboration between the Melanoma Fund, Isle of Anglesey County Council, student nurses from Otago Polytechnic, Dunedin, New Zealand, local Beach Wardens, and community partners, the pilot applied elements of the prevention model within a coastal setting at Trearddur Bay, Wales. Its purpose was to improve public awareness (among the beachgoers) of ultraviolet (UV) radiation, encourage sun-protection practices, and explore the practical requirements for delivering a place-based skin cancer prevention initiative. Activities included educational resources, access to free sunscreen, public engagement, media communications, and an initial evaluation. The pilot generated substantial public and media engagement and provided implementation learning to inform potential future development across Anglesey. This case study describes how the student nurses' community assessment informed the design and delivery of the Sunguarding Anglesey Pilot. It examines what was implemented at Trearddur Bay, the public and stakeholder response, and the practical and evaluation lessons that should shape any future expansion.

Background and purpose

The Sunguarding Anglesey Pilot originated from a community development and clinical practice initiative undertaken by nursing students from Otago Polytechnic, Dunedin, New Zealand during 2025. Community development is a core component of the Bachelor of Nursing (BN) curriculum, preparing student nurses to address health inequities and fulfil nursing's social mandate. Students learn to engage collaboratively with communities to promote participation, sustainability, social justice, and health improvement. This approach, grounded in public health, aligns with systems thinking to reduce health inequity and improve social determinants of health (Ross & Mann, 2026). Public health nursing recognises the interconnectedness of human health, environmental wellbeing, and population outcomes. As communities often lack the resources required to comprehensively assess health needs (Ross, 2019) and implement solutions, nursing students provide valuable assistance to achieve this under the supervision of Registered Nurses (RNs) from the School of Nursing at Otago Polytechnic by completing a community development project.

The RN for this project was Professor Jean Ross who grew up in the local area before moving to work in New Zealand.

The development pathway was sequential: the student-led community assessment identified local UV-related needs and opportunities; these findings informed recommendations for Trearddur Bay; the recommendations were then integrated with relevant components of the Melanoma Fund's existing Sunguarding model; and the resulting pilot was implemented and evaluated to generate learning for future delivery.

Trearddur Bay

This community development project focused on the Trearddur Bay community situated on the Isle of Anglesey, North Wales, UK (Figure 1).

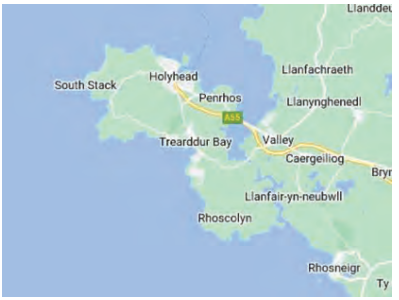


Figure 1. Trearddur Bay Map | Anglesey. Source: Google Maps.

Trearddur Bay is located on Holy Island about five kilometres south of Holyhead on the Irish ocean. The village developed as a seaside resort and takes its name from the medieval figure Iarddur. Today it combines a traditional Welsh coastal character with a strong tourism industry. It has hotels, holiday cottages, public bars, restaurants, a sailing club, golf courses, and local shops, making it a popular holiday destination throughout the year, centred on its beach and promenade (Figure 2). The community had a resident population of 1,686 in 2022 (Census Data, n.d.).



Figure 2. Trearddur Bay beach and promenade. Photograph: Jean Ross.

Trearddur Bay is known for its attractive sheltered sandy beach, with safe bathing areas, rock pools, clear waters, and relaxed coastal atmosphere, and is one of the most popular seaside villages in Anglesey, North Wales. The average annual water temperature in Trearddur Bay is 11.4°C, with the highest monthly average of 15.9°C occurring in August and the lowest monthly average of 7.1°C occurring in March (Climate Data, n.d.). The mild summer temperatures encourage beachgoers (both residents and tourists) to visit Trearddur Bay beach. As well as swimming or walking dogs, the beach is also well known for water sports including sailing, kayaking, paddleboarding, scuba diving, fishing, and boating. An additional new attraction is the Anglesey coastal path which passes through the area, offering scenic walks to several other local beaches and the South Stack Lighthouse and nature reserve (Figure 1). The nature reserve is famous for seabirds, including puffins during the breeding season, and offers spectacular sea-cliff views (Isle of Anglesey County Council, n.d.).

COMMUNITY DEVELOPMENT PROJECT

The Otago Polytechnic community development project was guided by the Community Health Assessment Sustainable Education (CHASE) Model (Ross et al., 2023) (see Table 1). CHASE is a community development framework that supports student nurses through stages of engagement, community assessment, health need identification, and implementation of health promotion initiatives.

Through community profiling and assessment, students examined the socio-political, demographic, cultural, economic, environmental, and sustainability contexts of the Trearddur Bay community. Primary and secondary data were collected and analysed using a strengths, weaknesses, opportunities and threats (SWOT) framework to determine health needs and population groups. The assessment identified a key health concern related to the potential risk of skin cancer for beachgoers.

CHASE Model	Relation to this project
Community	Trearddur Bay Beach, Isle of Anglesey, North Wales
Health	Skin protection of beachgoers became the identified health need.
Assessment	A collection of primary and secondary data was assessed and analysed related to the Trearddur Bay community.
Sustainable health	Protecting beachgoers against skin cancer.
Education	Active engagement with the Trearddur Bay beachgoers, leading to innovative systems-thinking to identify concerns and improve health by creating a health promotion message and resources.

Table 1. The CHASE Model as it relates to this project.

Ethical considerations

Several important ethical considerations underpinned this community development project and contributed to its credibility, integrity, and relevance. Formal ethics approval was obtained from the Otago Polytechnic School of Nursing Ethics Committee prior to commencement. Category B ethics approval ensured that student nurses were able to engage in discussions and email correspondence with community stakeholders in a manner that protected their anonymity and confidentiality in all correspondence. Rather than imposing predetermined solutions, students worked alongside stakeholders to identify community priorities and health concerns. This participatory approach aligns with community development principles of empowerment, autonomy, and shared decision-making (Ross et al., 2023).

Identified issue

The increasing risk of skin cancer among both residents and tourists (beachgoers) in Trearddur Bay was the focus of this pilot project. Trearddur Bay's popularity as a coastal recreation site, alongside UV exposure and a general lack of public education on sun safety, increases the risk of UV-related skin damage and disease. This led to the following project question: How can UV exposure education help reduce the risk of skin cancer among beachgoers of all ages at Trearddur Bay?

To address this question, a thorough review of evidence-based literature was conducted by the student nurses which identified a significant increase in the incidence of skin cancer, particularly

non-melanoma skin cancer. This review revealed that in 2020 skin cancer was the most diagnosed cancer in Wales (Public Health Wales, 2025). Furthermore, the literature reviewed revealed there was a lack of understanding of the risks associated with UV exposure and skin cancer by the public. This is concerning, as UV radiation remains the primary cause of all forms of skin cancer (Raymond-Lezman & Riskin, 2023). While brief sun exposure has recognised health benefits, such as Vitamin D synthesis and mood regulation, the risks of overexposure, particularly in a country with rising skin cancer rates like Wales, are significant and preventable (Abbott et al., 2024; Barnes et al., 2019). Robertson and Fitzgerald (2017) go as far as to suggest that approximately 86 percent of diagnosed skin cancers among UK youth could be prevented using education and promotion of improved sun safe behaviours.

A national survey of Welsh primary schools found that 39 percent of responding schools had a formal sun safety policy, although only 82 percent of those schools with such a policy reported enforcing it (Abbott et al., 2024). The study also identified gaps in curriculum provision and the availability of protective infrastructure. However, the survey did not establish why schools assigned differing levels of priority to sun safety. It would therefore be inappropriate to infer causation from these findings. The results instead indicate a need for further research into the organisational, educational and practical barriers affecting the adoption of sun safety measures in schools.

EVIDENCE: SKIN CANCER AND MELANOMA IN WALES

Skin cancer remains one of the most significant and preventable public health challenges in Wales. Public Health Wales reported that the age-standardised incidence rate increased by 7.1 percent between 2016 and 2019, reaching 469.8 cases per 100,000 population (Public Health Wales, 2023; Welsh Cancer Intelligence and Surveillance Unit, 2023). This continuing increase highlights the growing burden of skin cancer on individuals, healthcare services, and the wider health system.

The latest Welsh Cancer Intelligence and Surveillance Unit (WCISU) report, covering cancers diagnosed between 2002 and 2022, shows that, excluding non-melanoma skin cancer, the annual number of cancers diagnosed in Wales increased by 31 percent over this period (Public Health Wales, 2023; Welsh Cancer Intelligence and Surveillance Unit, 2025).

Melanoma, although less common than non-melanoma skin cancer, remains the most serious form of skin cancer because of its ability to spread to other parts of the body. Across the UK, an average of 19,392 people are diagnosed with melanoma each year, making it the fifth most common cancer. Incidence rates have increased by 164 percent since the early 1990s and by 26 percent over the most recent decade for which comparable statistics are available (Cancer Research UK, 2023).

According to Cancer Research UK (2023), around 2,600 people die from melanoma each year in the UK. Cancer Research UK estimates that approximately 86 percent of melanoma cases are preventable and attributable to exposure to UV radiation from sunlight and sunbeds. This reinforces the importance of effective primary prevention and creating environments that make sun-protective behaviours easier to adopt.

For Wales specifically, Cancer Research UK (2023) reports that 88 percent of melanomas with a known stage were diagnosed at Stage I or Stage II between 2017 and 2019. Early diagnosis is associated with significantly better outcomes, highlighting the importance of helping people

recognise suspicious skin changes and seek medical advice promptly. Collectively, these data demonstrate that skin cancer remains a substantial and largely preventable public health challenge. Whilst public awareness of the dangers of UV radiation has increased considerably over recent decades, incidence continues to rise. This raises an important implementation question: How do we translate awareness into consistent everyday behaviour? The Sunguarding Anglesey Pilot was developed in response to this challenge. Rather than focusing solely on awareness, it seeks to support the consistent adoption of sun-protective behaviours by combining education with practical infrastructure, visible behavioural prompts, and organisational leadership. The Sunguarding Anglesey Pilot provided an opportunity to explore how this implementation model could be applied within a real community setting and, importantly, what lessons could be learned to strengthen future place-based prevention initiatives.

SUNGUARDING EDUCATIONAL RESOURCES AND IMPLEMENTATION TOOLS

Sunguarding is an established prevention programme developed by the Melanoma Fund to support the adoption of sun- and heat-protective practices across schools, sport, outdoor recreation sites and facilities, and workplaces. Its model combines education with behavioural prompts, practical infrastructure, and organisational support. Existing resources include age-appropriate educational materials for primary schools, guidance for teachers and organisations, and the free online Sunguarding Course for people responsible for others outdoors. The Anglesey Pilot did not create Sunguarding; rather, it applied selected elements of this existing model at Trearddur Bay beach in a coastal community setting and incorporated recommendations arising from the student-led community assessment and evidence-based literature review. This led the student nurses to review their findings alongside the Melanoma Fund's existing Sunguarding resources. This process identified where established resources could be used and where locally relevant additions were required. Aligned with the overarching goals of increasing sun safety awareness and access, the student nurses' health promotion initiatives (see the recommendations below) featured bilingual educational posters and a free sunscreen dispenser which had the potential to make a meaningful impact.

The student nurses' recommendations aimed to benefit beachgoers at Trearddur Bay, including local residents and visitors. They proposed reaching this audience through bilingual sun-safety information, access to free sunscreen and educational materials displayed at the beach and in local businesses. The resulting recommendations combined the existing Sunguarding approach with bilingual communication and public access to sunscreen. Together, these elements were intended to make sun protection more visible, accessible, and relevant to beachgoers including residents and visitors. In a nation where skin cancer is one of the most diagnosed cancers, education and awareness remain fragmented, largely left to individuals and organisations, with no standardised or widespread public messaging. Despite past public health campaigns, limited success has been achieved, highlighting the need for a more comprehensive and culturally relevant approach. In a community as connected as Trearddur Bay, the health and wellbeing of its members are vital to overall cohesion and the maintenance of a healthy, sustainable environment.

RECOMMENDATIONS

Recommendation 1: Place educational posters in both Welsh and English at Trearddur Bay beach and at local businesses (Figure 3).

Evidence: The posters highlight the risks associated with activities such as sunbathing which can be harmful due to elevated levels of UV exposure (Ziaj et al., 2020). Displayed in prominent local businesses and public establishments, the posters were highly visible to the community, serving as an engaging and accessible source of awareness and education through visually appealing design.

Rationale: Aesthetic posters placed in local businesses aimed to catch the attention of patrons and visitors, while also sharing key information about UV exposure, common myths, and recommended sun-safe behaviours. During the Anglesey Pilot, QR codes on the UV Safety Station (Figure 4) provided access to Sunguarding information and educational resources, extending engagement beyond the immediate provision of sunscreen. This form of health promotion has contributed to the overall wellbeing of the community by providing accessible, foundational information that not only introduces the topic of skin protection but also empowers individuals to make informed choices about their health.

The posters were intended as a place-based educational prompt, using bilingual information at the beach and in local businesses to explain UV risk and practical ways to protect the skin. These posters presented valuable, easy-to-digest information about UV exposure, skin cancer, common misconceptions, and recommended strategies for effective protection against UV damage. This represents an educational approach that has been identified as playing a key role in the prevention of skin cancers (Robertson & Fitzgerald, 2017). When implemented alongside the following recommendations, the posters can contribute to a comprehensive strategy for promoting sun-safe behavioural change.

Recommendation 2: Install free sunscreen dispensers at Trearddur Bay beach to improve access to protection and normalise its daily use (Figure 3).

Evidence: UV exposure is the primary cause of all forms of skin cancer, and a substantial number of diagnosed cases are preventable through the promotion of sun-safe behaviours (Raymond-Lezman & Riskin, 2023; Robertson & Fitzgerald, 2017). A highly effective and widely endorsed protective measure against UV damage is the regular application of sunscreen with a sun protection factor (SPF) of 30 or higher (Cancer Research UK, 2023).

Rationale: Complimentary sunscreen dispensers enhance the public visibility of this preventive measure, functioning as a tangible reminder to apply sunscreen. This recommendation aims at improving public access to sunscreen, which is anticipated to increase its usage and foster more consistent adoption of sun-safe practices. In addition, the sunscreen dispenser aims to improve access to essential sun protection in highly visible areas, such as beach entrances. This increased accessibility encourages greater use of sun protection measures by beachgoers.

Recommendation 3: The student nurses also recommended providing UV-detecting stickers to alert individuals to real-time sun intensity and encourage protective behaviours.

Evidence: It is common for individuals to apply sunscreen only once and neglect reapplication; however, as noted by the Wales UV Index (2025), sun-related skin damage can occur after as little

as 45 minutes of unprotected exposure, even in low UV conditions. Therefore, a clear reminder to reapply sunscreen would be highly beneficial in preventing sunburn and encouraging consistent sunscreen use.

Rationale: Sun stickers are designed to be applied before sunscreen use and then covered with sunscreen. During this process, the sticker changes from visible to transparent. When it becomes visible again, it signals that it is time to reapply sunscreen. Ideally, the individual will then repeat the process by reapplying sunscreen.

Note: Recommendation 3 was not implemented due to financial constraints.

Overall aim

The overall aim of the community development project was to promote lifelong learning and support sun-safe behaviours across all ages of beachgoers through embedding health education in public spaces and ensuring sun protection was accessible, visible, and appropriately inclusive. Education alone is not enough; practical, visible resources are also needed to support a behavioural shift. This initiative sought to improve community wellbeing, reduce preventable skin cancer rates, and encourage a long-term shift in attitudes toward preventative skin cancer rates in Trearddur Bay (Centres for Disease Control and Prevention, 2026). The Community Strategies to Lower Skin Cancer Risk (Centres for Disease Control and Prevention, 2026) supports pairing sun-safety information with practical access to protection such as shade and sunscreen. The educational messages in English and Welsh were therefore paired with visible, practical support, including access to free sunscreen, an approach consistent with community-level skin cancer prevention guidance (Centres for Disease Control and Prevention, 2026). In addition, the information was made available in Braille.



Figure 3. Sunguarding stand at Trearddur Bay beach. Photograph: Jean Ross.

SUNGUARDING ANGLESEY PILOT

The Sunguarding Anglesey Pilot built directly on the community development project facilitated by Jean Ross (Otago Polytechnic, Dunedin, New Zealand) and the student nurses who conducted the Trearddur Bay community development project. The pilot included two of the three recommendations mentioned above whilst supporting the evidence-based literature which identified a clear gap in public education around UV exposure, particularly at popular beach areas on Anglesey. This work provided the foundation for this initiative, moving from insight to action by translating evidence into a live, community-led prevention model under the Sunguarding movement, which is endorsed by the Welsh Sports Association (WSA) and supported by Sport Wales.

Community partnerships

The success of this Sunguarding Anglesey Pilot has relied heavily upon local knowledge, community participation, and strong partnerships between stakeholders including:

Professor Jean Ross: academic advisor and co-designer of the Trearddur Bay community development project, and her student nurses who created the health-promotion framework, providing oversight of pilot alignment with evidence and evaluation design.

Isle of Anglesey County Council: Coordination, permissions, and communications.

Keith Roberts: engagement with Beach Wardens, Royal National Lifeboat Institute (RNLI) relationships, local community engagement, and activities associated with community events.

Teifi Jones: contribution through tourism leadership, communications management, media engagement, evaluation, and stakeholder development.

RNLI Lifesavers: operation, maintenance, and integration with beach-safety programmes

Public Health Wales: integration with national prevention messaging.

Michelle Baker: CEO, Melanoma Fund and strategic lead for Sunguarding, providing the behaviour-change framework, educational resources, implementation tools and strategic direction for the pilot.

Purpose

The purpose of the Sunguarding Anglesey Pilot was to explore the feasibility of applying selected elements of an established sun-safety model within a coastal community setting. It sought to increase awareness of UV risk, make sun protection more visible and accessible, and identify the operational requirements and evaluation measures needed for future delivery. As an initial pilot, it was not designed to establish sustained behaviour change or the effectiveness of the complete Sunguarding model.

Rationale

Early detection of melanoma costs the National Health Service (NHS) around £9,000 per patient, while late-stage treatment can exceed £200,000 per person. In Wales, melanoma care costs over £8.8 million annually, with more than 11,000 new cases of non-melanoma skin cancer each year. Behavioural risk factors remain significant: 34 percent of Welsh adults rarely or never use sunscreen, while 27 percent use sunbeds (Melanoma Focus, 2023).

The total cost of this pilot was estimated to be £3,000 GBP or around $6,200 New Zealand dollars (as of October 2026 exchange rate), which represents only 1.5 percent of the cost of treating a single late-stage melanoma case. The relatively low cost of this pilot illustrates the potential value of investment in primary prevention when considered against the substantial costs associated with melanoma treatment.

Through collaboration with Isle of Anglesey County Council and local Beach Wardens, the pilot explored how UV awareness and access to sun protection could be incorporated into a coastal setting. The experience generated preliminary operational learning concerning equipment management, public visibility, staff engagement, and initial evaluation. Further implementation and evaluation across additional sites would be required before the approach could be described as transferable or replicable. This work aligns with the preventive and long-term principles of the Well-being of Future Generations (Wales) Act 2015, particularly its emphasis on prevention, collaboration and integrated action.

Launch

This pilot was launched at Treaddur Bay beach on 28 May 2026, by the local team, including Teifi Jones, Keith Roberts, and Jean Ross (Figure 4). Figure 3 shows the educational material and the Sunguarding information stand incorporating free sunscreen from a purposeful dispenser at the Beach Wardens' Hut.



Figure 4. Local members of the Sunguarding Anglesey Pilot team at the Trearddur Bay launch Photograph: Jean Ross.

Aims

The Sunguarding Anglesey Pilot aimed to:

- Drive awareness and change sun-protection behaviours among beachgoers
- Position Anglesey as a national exemplar for rural and coastal melanoma prevention.

Delivery model

The mechanics of the Pilot was to promote the health promotion resources including the Sunguarding Sunboard equipped with dispensers and SPF 50 sunscreen at Trearddur Bay beach, in collaboration with the Isle of Anglesey Council's Beach Wardens team, and community partners.

This delivery model centred on a standalone educational display (Sunboard) at Trearddur Bay (Figure 4), supported by two QR codes: one directing visitors to Melanoma Fund sun protection resources and one linking to the Otago Polytechnic evaluation survey on public knowledge, behaviours, and attitudes to sun protection.

The intention was that the Beach Wardens would install and remove Sunboards daily during the summer when the UV Index was 3+. The board would display clear safety and allergy guidance and link to Sunguarding Outdoors resources via QR code. Sunscreen refills would be stored securely in the Beach Warden's Hut ensuring consistent availability. The Beach Wardens were invited to complete the free, accredited Sunguarding course, earning Continuing Professional Development (CPD) points and embedding sun- and heat-protection practices into beach-safety culture.

Engagement and data collection

During the two weeks (2 June to 18 June 2026) following the launch, Jean Ross visited Trearddur Bay on multiple occasions and worked alongside the Beach Wardens to enhance the understanding of sun safety among beachgoers and visitors. During these visits it became evident that relatively few people were entering the Beach Wardens' Hut. Observations suggested that limited signage meant many visitors were unaware of the hut's purpose and the role of the Beach Wardens. This highlighted the need for a broader awareness campaign promoting both the Beach Wardens' service and sun safety messaging. To strengthen engagement, the educational poster displayed at the hut was redesigned into portable flyers. Forty English-language flyers and 10 Welsh-language

flyers were produced. During this time, Jean Ross and Teifi Jones regularly visited the beach, met with Beach Wardens, and spoke directly with visitors along the beach and promenade (Figures 1 and 2). Individuals were informed about the collaborative campaign involving the Isle of Anglesey County Council, the Melanoma Fund, and Otago Polytechnic. The pilot data were derived from two main sources, the evaluation tool (developed by Stuart Terry through Otago Polytechnic) and social media.

Beachgoers received flyers in either English or Welsh and were encouraged to access further information through the QR code and complete the evaluation survey. Beachgoers clicked on the QR code found on the Sunboard poster and or flyers, and answered the posed survey questions either in English or Welsh. The data were analysed through Qualtrics which includes built-in reporting tools, real-time data collection, and automated insights.

FINDINGS

Evaluation survey

Overall, the evaluation survey findings suggest that beachgoers had a high level of awareness of the health risks associated with UV exposure, with most respondents reporting that they were very aware of skin cancer risks. The educational posters were effective in increasing knowledge, with almost all respondents indicating that they had learned something new about sun safety. Although awareness was high, reported engagement in protective behaviours varied, with some respondents only occasionally adopting sun protection measures. The findings also demonstrated that awareness of the availability of free sunscreen was not universal, highlighting an important gap in health communication.

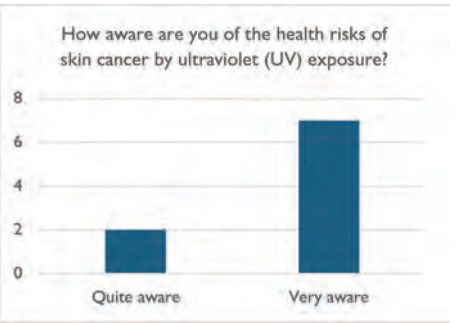


Figure 5. Risk awareness.

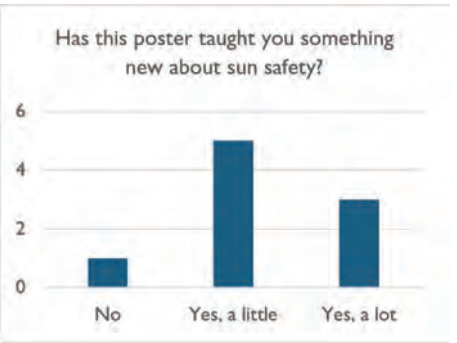


Figure 6. Educational posters.

Figures 5–10 provide the data analysed from the evaluation survey questions including the number of responses.

Encouragingly, respondents expressed a strong willingness to use free sunscreen when made aware of its availability. Given the small sample size (n = 9) and the exploratory nature of the pilot, findings should be interpreted cautiously but provide preliminary evidence that the initiative was both relevant and well received by respondents. The evaluation did not reliably distinguish between Anglesey residents and visitors or record participants' place of residence consistently. It was therefore not possible to assess differential reach or impact between these groups. We recognise that for future evaluation

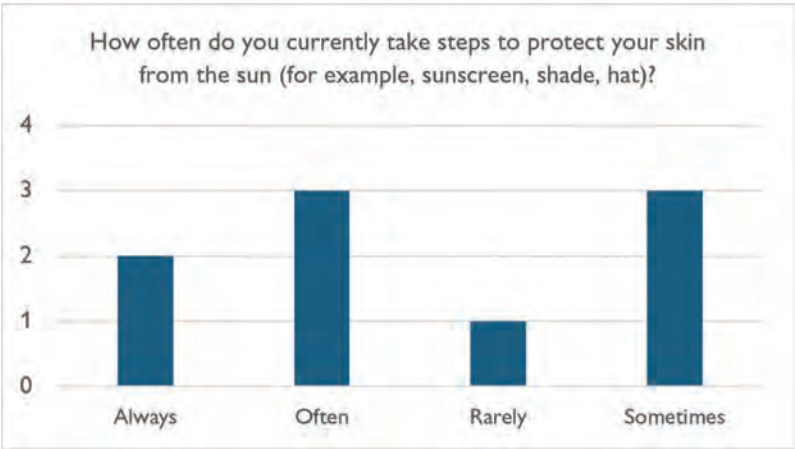


Figure 7. Sun protection measures.

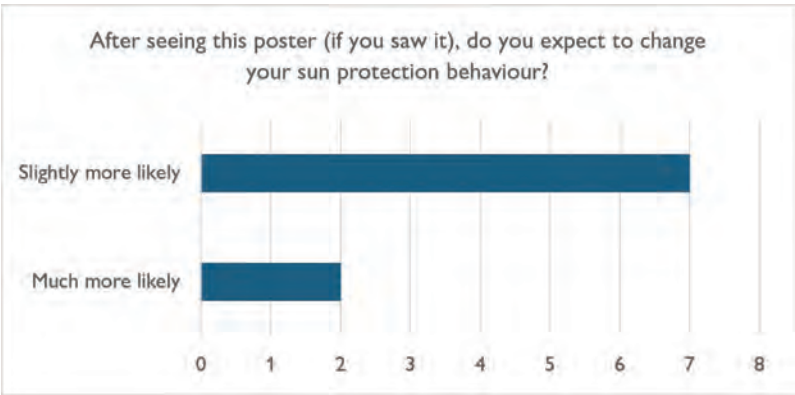


Figure 8. Poster impacts on behaviour.

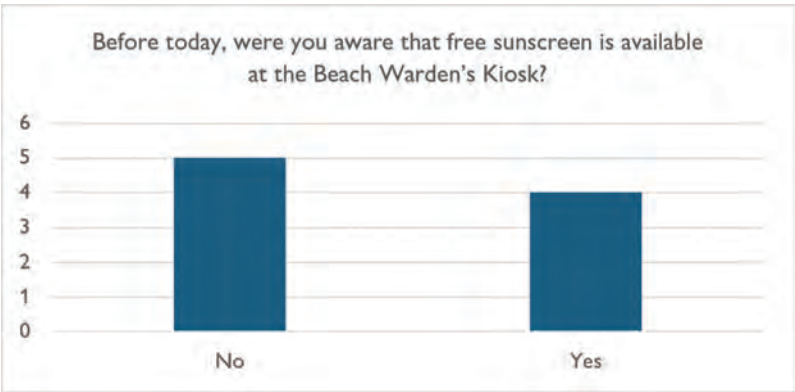


Figure 9. Awareness of free sunscreen.

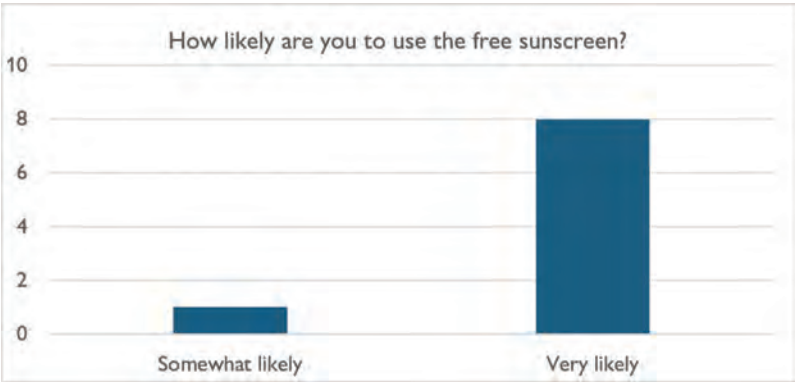


Figure 10. Sunscreen use.

should collect basic demographic and residency information, subject to appropriate consent and data-protection arrangements. However, our focus for this pilot was to understand and gauge whether there was a need for this information amongst locals and visitors and, if there was, what was their response to this information and how effective was using social media.

Social media

Social media sentiment showed a stronger engagement reaching far beyond Treaddur Bay analysed through Isle of Anglesey Tourism Page (Figure 11) with a national reach including social media engagement and public commentary. The audience included a substantial proportion of individuals new to the initiative from across Wales as demonstrated from the social media engagement (Table 2). This reach was enhanced through tourism networks and promotional activities associated with Anglesey. Evaluation of participation and outcomes will form part of future project analysis.



Figure 11. Visit Anglesey Facebook page example.

As of 22 June 2026, social media engagement had reached approximately:

Views	144,880
Interactions	1,297
Comments	90
Shares	139
Website link clicks	130

Table 2. Visit Anglesey Facebook page engagement statistics.

EVALUATION

Overall sentiment about the project was taken mostly from social media interactions or informal conversation at the beachside highlighting:

- **Positive media and social media impact:** The pilot achieved substantial coverage across radio, press, and television (Table 3), alongside approximately 140,000 Facebook reach, with more than 1,000 interactions, around 90 comments and approximately 95 percent positive feedback as of 22 June 2026 (Table 2).
- **Strong public support:** Beachgoers responded positively to the campaign, particularly to the availability of free sunscreen and practical sun-safety advice.
- **High awareness among engaged visitors:** Many people who interacted with the campaign already used SPF 50 sunscreen and understood the importance of UV protection.
- **Need to reach higher-risk groups:** Observations suggested that future activity should focus more deliberately on outdoor workers, tradespeople, and other groups exposed to prolonged UV radiation.
- **Signage and visibility matter:** Limited awareness of the Beach Wardens' Hut reduced initial footfall, demonstrating the importance of clear signage and proactive outreach.
- **Accessibility strengthened impact:** The translation of materials into Welsh and transcription into Braille improved inclusivity and demonstrated how public health campaigns can better serve diverse community needs.

Stakeholder and community impact

The pilot demonstrated the value of combining local knowledge, academic input, council support, voluntary effort, and health promotion expertise. Jean Ross led direct community engagement and implementation support, Teifi Jones contributed through tourism leadership, evaluation, communications and stakeholder development, and Keith Roberts's contribution enhanced the relationships between the Beach Wardens, RNLI, and Maritime personnel, harnessing local knowledge and community events. The initiative also built relationships with local businesses. Beyond distribution at the Beach Wardens' Hut, information was also shared through flyers in Welsh and English with local businesses and community venues within the Trearddur Bay Village. Five establishments agreed to display project materials on their noticeboards. Educational materials were also transcribed into Braille, an innovative step in improving accessibility and inclusivity within public health promotion activities on Anglesey.

Community feedback

The pilot generated considerable interest and positive feedback. Many beachgoers reported that they routinely used SPF 50 sunscreen and understood the importance of protection from UV exposure. Numerous individuals shared personal stories of family members, friends, or acquaintances who had experienced melanoma, including some who had died from the disease.

Visitors expressed appreciation for the availability of free sunscreen at the Beach Wardens' Hut and were supportive of plans to expand the Sunguarding Anglesey initiative in future years. Many indicated they would complete the evaluation survey using the QR code, contributing valuable data regarding public awareness and behaviour. The Beach Wardens commented that the Sunguarding Station was well received, and they noticed that beachgoers and passers-by often made use of the sunscreen dispenser and stopped to read the signage.

The pilot generated substantial communications reach and demonstrated public and stakeholder interest in the Sunguarding approach. However, communications reach should not be treated as evidence of implementation or behaviour change. Operational delivery centred primarily on the UV Safety Station at Trearddur Bay, supported by educational signage, QR-linked information, sunscreen provision, and media activity.

The Sunguarding Course was offered to Beach Wardens, but course participation was not systematically recorded, and the proposed school-based component was not progressed during the pilot period. The evaluation also did not establish whether engagement translated into changes in protective behaviour or whether the initiative reached higher-risk groups. The pilot should therefore be understood as an initial feasibility and engagement exercise. It identified interest in visible, accessible sun-protection infrastructure and identified practical lessons for future delivery, but it did not evaluate the complete Sunguarding model or demonstrate sustained behaviour change.

These findings suggest that the combination of educational messaging, social media promotion, and practical interventions such as free sunscreen provision has the potential to improve sun safety knowledge and support positive behavioural change among beach users.

COMMUNICATIONS, DISSEMINATION AND IMPLEMENTATION LEARNING

Communications successfully introduced the pilot to regional, national and international audiences and demonstrated the strength of collaboration between the Melanoma Fund, Isle of Anglesey County Council and Otago Polytechnic.

The communications programme:

- Launched the first coordinated coastal Sunguarding Pilot on Isle of Anglesey.
- Positioned Sunguarding as an innovative, community-based behaviour change model for skin cancer prevention.
- Communicated consistently through English and Welsh media.
- Demonstrated effective collaboration between local government, academia and the third sector (a third sector organisation is a non-governmental, values-driven group that reinvests its financial surpluses to achieve social, environmental, or cultural goals rather than generating group profit).
- Secured regional, national and international media coverage across television, radio, print, online, and social media.
- Encouraged partner organisations to amplify prevention messages through their own communication channels.

Table 3 highlights the variety and successful communication and media coverage during May and June 2026.

Date	Organisation	Coverage	Contribution
22 April	Local Dunedin (New Zealand)	Development of collaborative international partnership between the core team	*Blowing Bubbles, Otago Access Radio* (Mann, 2026)
14 May	Otago Polytechnic (New Zealand)	Otago nursing students collaborate on Welsh skin cancer project	News feature (Otago Polytechnic, n.d.) describing how research undertaken by nine Otago Polytechnic nursing students informed the development of the Sunguarding Anglesey pilot, demonstrating collaboration between New Zealand and Wales.
14 May	Scoop Independent News – Health (2026) (New Zealand)	National publication of the Otago Polytechnic story	Extended dissemination throughout New Zealand, highlighting the translation of academic research into practical public health action.
28 May	Isle of Anglesey County Council (2026)	Official bilingual press release	Formal announcement of the UK's first coordinated coastal Sunguarding pilot, published in both English and Welsh.
28 May	Nation. Cymru	National news coverage	Reported the launch of the pilot and the partnership between the Melanoma Fund, Isle of Anglesey County Council and Otago Polytechnic (Mansfield, 2026).
May	BBC Radio Wales	Radio interview	Broadcast coverage during launch week promoted the pilot and introduced the Sunguarding behaviour-change approach to skin cancer prevention.
29 May	BBC Cymru	Welsh-language interview	Interview with Teifi Jones extended dissemination through Welsh-language broadcast media. BBC Radio Cymru, Wales – Post Prynhawn (Afternoon Post), Aled Thomas
23 June	ITV Wales	Television news feature	Television coverage of the pilot highlighted the installation of the UV Safety Station and introduced the Sunguarding initiative to audiences across Wales.
June	Partner social media	Coordinated communications	The Melanoma Fund, Isle of Anglesey County Council and Otago Polytechnic published coordinated English and Welsh social media content, with partner organisations amplifying campaign messages. Project correspondence records positive public engagement, including responses from individuals personally affected by skin cancer.
June	North Wales partner communications	Heat-health messaging	Sunguarding messages were reinforced through wider public health communications during periods of elevated UV and hot weather, maintaining visibility beyond the initial launch. Welsh Local Government Association (WLGA) – Video interview to highlight the project and what additional work the Local Authority does.

Table 3. Communications and media coverage.

TAKE AWAYS

From a delivery and scaling perspective, the pilot indicates that Sunguarding Anglesey is a low-cost, high-visibility prevention initiative with strong partnership potential. It aligns with visitor safety, public health, tourism reputation, community wellbeing, and inclusive service delivery. However, successful expansion will require a more formal operating model, including sponsorship, agreed responsibilities for equipment management, consistent signage, training uptake among beach wardens and a stronger evaluation framework. Table 4 considers the potential risks and issues of the pilot and any future engagement.

Risk or issue	Impact	Suggested mitigation
Low visitor awareness of Beach Wardens' Hut	Reduced engagement with resources and survey participation	Improve signage, use beach-front outreach, and involve local businesses in promotion
Campaign may mainly reach already-engaged sunscreen users	Limited impact on higher-risk groups	Target outdoor workers, tradespeople, sports groups, and tourism staff
Dependence on voluntary effort	Inconsistent delivery if resources are not coordinated	Define roles, create a rota, and secure council or partner support for daily set-up and pack-down
Need for ongoing sunscreen and dispenser funding	Expansion may be constrained by cost	Develop sponsorship packages and engage local businesses, tourism partners, and health stakeholders
Evaluation data may be incomplete	Limits evidence for future funding and publication	Increase QR-code visibility, use brief assisted surveys, and track engagement at each site

Table 4. Risks and issues.

Community Interest: An Invitation to Share the Sunguarding Anglesey Pilot

A local networking event took place at the time of the launch of the Sunguarding Anglesey pilot and invited Teifi Jones and Jean Ross to attend. This meeting aimed to celebrate the impact of an Economic Development initiative on Anglesey, share learning from the programme, and hear from businesses and partners who had contributed to strengthening the economy and the Welsh language. Teifi Jones presented an overview of the programme and some of its successes, including businesses supported and jobs created. Jean Ross introduced her involvement in the community and why she promoted her student nurses to develop this work. She also took the opportunity to share the pilot with key parters and businesses in the area (Figure 12).



Figure 12. Interview between commentator Alun Roberts and Jean Ross. Photograph: Teifi Jones.

LOOKING TOWARDS THE FUTURE: PILOT EXPANSION PLANS FOR 2027

Discussions are taking place between the Isle of Anglesey County Council and Jean Ross (Otago Polytechnic) regarding expansion of the pilot programme particularly with outdoor workers and tradespeople, who are often exposed to long periods of UV radiation. The Beach Wardens will be encouraged before summer 2027 to undertake relevant educational modules designed specifically for outdoor workers. The long-term vision is to:

- Expand the model to all Anglesey beaches with Beach Wardens, subject to sponsorship and operational capacity.
- Create a standard Sunguarding beach pack including signage, educational posters, bilingual flyers, Braille materials, sunscreen dispenser guidance and QR-code evaluation prompts.
- Develop a targeted outreach stream for outdoor workers, tradespeople, sports participants, tourism operators, and families with children.
- Encourage Beach Wardens and relevant outdoor staff to complete Melanoma Fund educational modules and record participation.
- Formalise responsibilities for equipment installation, removal, restocking, and basic monitoring at each site.
- Use local businesses and community venues as secondary distribution points for materials and potential sponsorship.
- Strengthen the evaluation plan by collecting survey responses, social media metrics, anecdotal feedback, sunscreen usage indicators, and stakeholder reflections.
- To achieve this goal, sponsorship will be sought to support the purchase of sunscreen, dispensers, signage, promotional resources, and education. Additional stakeholder support will also be required to assist with daily installation and removal of equipment and displays.

CONCLUSION

The pilot demonstrated that working in partnership, visible sun-protection infrastructure, and coordinated communications can generate public and stakeholder engagement with skin cancer prevention. It also identified practical requirements affecting delivery, including site visibility, equipment management, staff participation, audience targeting, and evaluation design.

The findings should nevertheless be interpreted as preliminary. The pilot did not implement or evaluate every component of the Sunguarding model and cannot demonstrate sustained behaviour change. Future delivery should establish clear implementation responsibilities, record participation in educational activity, distinguish communications reach from behavioural outcomes, and use a prospective evaluation framework. Subject to these improvements, further delivery across Anglesey could test whether the approach is feasible, transferable, and capable of influencing protective behaviour over time.

The community development nursing project promoted social justice by identifying and responding to health needs, empowering community members, supporting participation, recognising the relationship between environmental and human wellbeing, and preparing nursing students to address health inequities through community partnership and advocacy, in this case the Sunguarding Anglesey Pilot.

Acknowledgements

The authors wish to acknowledge Otago Polytechnic for its vision, leadership, and financial support of this initiative, particularly Professor Karole Hogarth, Head of the School of Nursing, for her commitment to community development and the involvement of student nurses in this work.

We also thank the nursing students whose community assessment and recommendations informed the development of the pilot: Ella Herbert, Ruby Jary, Sophie McElligott, Arana McLachlan, Lucy McLellan, Olivia McPherson, and Liyona Theres. Particular thanks go to Monique Hingston and Maria McKeen who continued their involvement throughout the pilot.

The authors are grateful to colleagues at Isle of Anglesey County Council for their collaboration and support. We also thank the Isle of Anglesey County Council and its Maritime Team Beach Wardens for their invaluable local knowledge, practical assistance, and ongoing support in the delivery of the Sunguarding Anglesey Pilot at Trearddur Bay.

We extend our appreciation to the local businesses, volunteers, residents, and visitors who engaged with the initiative and contributed to its evaluation, which was developed by Dr Stuart Terry of Otago Polytechnic. We are also grateful to Angharad Rhodes for transcribing promotional materials and information resources into Braille.

Further thanks are extended to Alun Roberts for the invitation to present the pilot initiative at a local networking event. Finally, we thank the peer reviewers and copy editor for their thoughtful comments and constructive feedback on the manuscript.

Jean Ross (https://orcid.org/0000-0003-2467-9233) is a Professor of Nursing at the School of Nursing, Otago Polytechnic. She is also an advocate for sustainable rural community development and nurse education. Jean has been the editor of *Scope (Health & Wellbeing)* since its inception. Jean's practice is research-orientated which both informs and directs her scholarly work. Community engagement and development comprise her practice with nursing students and community members.

Teifi Jones is Destination Development Officer at Anglesey Council. He is experienced in community and sport development, economic development, and place-making. Passionate about Wales, its communities, the Welsh language and the outdoors, he works with businesses, communities, and partners to support sustainable growth, enhance visitor experiences, and promote local opportunities.

Keith R. Roberts is a Councillor with over twenty-five years' experience of local government and specialities in education and local government standards. He has experience in school governance as member and chair at primary and secondary levels in both Catholic and public education streams plus establishing provision of education in developing nations. His principal employment (prior to retirement) was in the police service, local government, European development and the civil service.

Michelle Baker is CEO of the Melanoma Fund, leading its work in skin cancer prevention and behaviour change. She has developed Sunguarding®, the charity's prevention framework spanning education, sport, workplaces and outdoor settings, and works with organisations across the UK to embed practical, sustainable approaches to UV and heat protection.

REFERENCES

Abbott, R. A., Tod, D., Lanyon, K., Driscoll, T., Prathap, S., Watkins, A., & Peconi, J. (2024). Are Welsh primary schools sun proofed? Results of a national survey, part 2: Sun protection practices in primary schools in Wales. *Clinical and Experimental Dermatology, 49*(12), 1582–1590. https://doi.org/10.1093/ced/llae218

Barnes, P. W., Williamson, C. E., Lucas, R. M., Robinson, S. A., Madronich, S., Paul, N. D., Bornman, J. F., Bais, A. F., Sulzberger, B., Wilson, S. R., Andrady, A. L., McKenzie, R. L., Neale, P. J., Austin, A. T., Bernhard, G. H., Solomon, K. R., Neale, R. E., Young, P. J., Norval, M., … & Zepp, R. G. (2019). Ozone depletion, ultraviolet radiation, climate change and prospects for a sustainable future. *Nature Sustainability, 2*, 569–579. https://doi.org/10.1038/s41893-019-0314-2

Cancer Research UK. (2023). *Melanoma skin cancer incidence statistics*. https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/melanoma-skin-cancer/incidence

Census Data. (n.d.). *Trearddur*. https://www.censusdata.uk/w04000874-trearddur

Centres for Disease Control. (2026). *Community strategies to lower skin cancer risk*. https://www.cdc.gov/skin-cancer/php/community-strategies/index.html.

Climate Data. (n.d.). *Trearddur Bay climate*. https://en.climate-data.org/europe/united-kingdom/wales/trearddur-bay-226381/#climate-graph

Isle of Anglesey County Council. (n.d.). *Visit Anglesey*. https://www.visitanglesey.co.uk/en-gb

Isle of Anglesey County Council. (2026, 28 May). *Anglesey launches UK-first Sunguarding® pilot to tackle rising skin cancer risk*. https://www.anglesey.gov.wales/en/newsroom/news/anglesey-launches-uk-first-sunguarding-pilot-to-tackle-rising-skin-cancer-risk

Mann, S. (Host). (2026, 22 April). Bubbling Sun-guarding on Ynys Gybi – Jean Ross (No. 593) [Audio podcast episode]. In *Blowing Bubbles*. Otago Access Radio. https://accessmedia.nz/player?EID=57be22a2-9b9c-4323-8fa9-e4dc2d4e6e96&audioOnlyMode=true

Mansfield, M. (2026, 28 May). *Groundbreaking scheme launched in Wales to tackle rising skin cancer rates*. Nation Cymru. https://nation.cymru/news/groundbreaking-scheme-launched-in-wales-to-tackle-rising-skin-cancer-rates/

Melanoma Focus. (2023). https://melanomafocus.org/news-blog/welsh-public-ignoring-rising-skin-cancer-risks/

Otago Polytechnic. (n.d.). *Otago nursing students collaborate on Welsh skin cancer project*. https://www.op.ac.nz/about/news-and-media/news/otago-nursing-students-collaborate-on-welsh-skin-cancer-project

Public Health Wales. (2023). *Non-melanoma skin cancer incidence in Wales*. Welsh Cancer Intelligence and Surveillance Unit. https://phw.nhs.wales/reports/non-melanoma-skin-cancer-incidence-in-wales/

Public Health Wales. (2024). *Official statistics show skin cancer remains most common cancer in Wales*. https://phw.nhs.wales/news/official-statistics-show-skin-cancer-remains-most-common-cancer-in-wales

Public Health Wales. (2025). *Non-melanoma skin cancer incidence in Wales, 2016–2020*. https://publichealthwales.shinyapps.io/nmsc_incidence_in_wales/

Raymond-Lezman, J., & Riskin, S. (2023). Benefits and risks of sun exposure to maintain adequate vitamin D levels. *Cureus, 15*(5), Article e38578. https://doi.org/10.7759/cureus.38578

Robertson, F., & Fitzgerald, L. (2017). Skin cancer in the youth population of the United Kingdom. *Journal of Cancer Policy, 12*, 67–71. https://doi.org/10.1016/j.jcpo.2017.03.003

Ross, J. (2019). Rural community practice: An interview with Alun Roberts. *Scope: Contemporary Research Topics (Health & Wellbeing), 4*, 10–12. https://doi.org/10.34074/scop.3004028

Ross, J., Mahoney, L., & Crawley, J. (2023). Progressive rural community collaboration: A vehicle for rural Encounters–The CHASE Model in action. In J. Ross, S. Mann & K. Whiddon (Eds.), *Rural landscapes of community health: The Community Health Assessment Sustainable Education (CHASE) Model in action* (pp. 21–65). Springer Publishers.

Ross J., & Mann, S. (2026). Establishing a community development project with planetary health principles: A public health approach to learning and teaching. *MOJ Public Health, 15*(1),1-6. https://doi.org/10.15406/mojph.2026.15.00507

Scoop Independent News – Health. (2026, 14 May). *Otago nursing students collaborate on Welsh skin cancer project*. https://www.scoop.co.nz/stories/GE2605/S00064/otago-nursing-students-collaborate-on-welsh-skin-cancer-project.htm

Well-being of Future Generations (Wales) Act 2015, anaw 2. https://www.legislation.gov.uk/anaw/2015/2/contents

Welsh Cancer Intelligence and Surveillance Unit. (2023). *Cancer mortality in Wales. Public Health Wales*. https://phw.nhs.wales/reports/cancer-mortality-in-wales/

Ziaj, S., Tseliou, F., Datta, D., & Abbott, R. A. (2020). Skin cancer awareness and prevention behaviour in Wales. *British Journal of Dermatology, 184*(4), 764–765. https://doi.org/10.1111/bjd.19676

Reflection https://doi.org/10.34074/scop.3010009

A LIGHT BULB MOMENT: FROM CURIOSITY TO CONTRIBUTION IN MY DIGITAL HEALTH JOURNEY AS A NOVICE NURSING ACADEMIC

Yoonah Cho

INTRODUCTION

In 2025, I was still relatively new to academia, having left clinical practice only a year earlier. As a nursing lecturer involved in developing new curriculum content, I recognised that digital health is a rapidly evolving area of healthcare which required immediate attention. Digital health encompasses the use of digital technologies to support healthcare delivery, improve health outcomes, and enhance the experiences of patients and healthcare professionals. I could see potential for growth in this field, not only for the healthcare system but also for my own professional development.

At the time, I was exploring current literature to better understand how digital health could be integrated into nursing education. During this process I encountered both international and New Zealand evidence highlighting the urgent need to prepare nursing graduates for practice in increasingly digital healthcare environments (Kleib et al., 2024; Sadd et al., 2024). Both papers emphasised the importance of digital health knowledge and competencies for safe, high-quality nursing practice. Reading them reinforced my responsibility as a nursing lecturer to prepare future nurses for the realities of modern healthcare and to keep pace with the rapid evolution of digital health. It was a real light-bulb moment for me.

When I learned that Digital Health Week NZ (DHWNZ) 2025 was being held, I saw this as a real-world opportunity to expand my knowledge and understanding of digital health; not only as a nurse but as an academic. Attending DHWNZ 2025 felt like a natural next step in that journey. I was grateful to receive support from the School of Nursing, which enabled me to attend and encouraged my growing interest in this area. As a first-time attendee, I arrived eager to learn, connect with others, and absorb as much knowledge as possible. I was excited about the insights and experiences I could bring back to my teaching and professional practice. Little did I know that attending DHWNZ 2025 would open doors to opportunities, networks, and experiences that would significantly shape my professional journey.

CONFERENCE DETAILS

- Conference: Digital Health Week NZ 2025
- Organiser: Health Informatics New Zealand
- Theme: *Action for Impact: Digital Health Shaping the Future of Care Today*
- Location: Ōtautahi Christchurch
- Dates: 24–27 November 2025
- Attendance: More than 1,100 delegates.



HiNZ DHWNZ 2025 at Te Pae Convention Centre, Ōtautahi Christchurch. Photograph: Author.

CONFERENCE HIGHLIGHTS

The conference opened with a mihi whakatau followed by a welcome from Health Informatics New Zealand (HiNZ) CEO Scott Arrol and HiNZ Board Chair Kyle Forde. This conference also marked the 25th anniversary of HiNZ. The conference theme, *Action for Impact: Digital Health Shaping the Future of Care Today*, brought together people with a passion for and interest in digital health across Aotearoa New Zealand. This included many of the current and future leaders in the field. The first keynote speaker was Dame Helen Stokes-Lampard, Chief Medical Officer of Health New Zealand. She highlighted that technology alone will not transform healthcare and that clinical leadership, a clear vision, shared communication, and interdisciplinary collaboration are essential to achieving meaningful change. The Hon Simeon Brown, Minister of Health, announced the launch of HealthX, highlighting the importance of digital transformation and Artificial Intelligence (AI) innovation in healthcare, including the rollout of AI scribes to support frontline clinicians nationwide. Other keynote speakers included Morag McDowell, Health and Disability Commissioner, the Hon Matt Doocey, Associate Minister of Health, and speakers from a range of professional backgrounds, including leadership and personal development, who shared messages centred on possibilities rather than barriers.

Throughout the conference, presentations showcased how digital technologies are transforming healthcare through improved access to care, connected health information systems, consumer empowerment, and the growing use of AI in practice. The speakers challenged delegates to think boldly, embrace innovation, and recognise the potential each of us has to contribute to meaningful change within healthcare.

KEY LEARNING THEMES

Of all the sessions I attended during the conference, one of the most memorable was "Nothing About Us Without Us: Disabled People Leading the Digital Future" (HiNZ, 2025) by Debbie Hughes from the New Zealand Disability Support Network. In this session, Hughes shared a powerful message that made me rethink my understanding of disability and inclusion in digital

health. She presented examples of how digital health tools, often celebrated as positive innovations, can unintentionally create barriers for people with disability because they were not involved in the design process from the beginning. Instead of improving health consumer experiences, these tools can create new challenges that exclude people with disabilities from fully participating in their own care. The way I understood her message was that it is like these people being invited to a party but being unable to get through the front door. Her message challenged delegates to consider who benefits from digital health innovation and highlighted the importance of including people with disabilities in the design process to ensure technologies are accessible, inclusive, and fit for purpose. This made me stop and think. As we continue to innovate healthcare, are we leaving anyone behind? How can we develop digital health without widening the digital divide and existing inequities? What is my role in this space? Hughes' presentation also made me reflect on my role as a nursing lecturer and how I can help students consider disability inclusion when discussing health inequities and digital health innovation.

Another valuable session was "Empowering Future Nurses: Innovation as a Catalyst for Confidence, Collaboration, and Career Identity" (HiNZ, 2025) by Kat Vakavosaki and Samantha Heath from the University of Waikato. Kat shared how undergraduate nursing students at the University of Waikato collaborated with computer science students to develop a medication management device *Medit*. This was designed to support older adults living independently with their medication management. What stood out to me was the collaboration between disciplines and how innovation was embedded within undergraduate education. The research findings demonstrated that nursing students can play an active role in developing technology-enabled solutions to healthcare challenges, rather than simply being end users of technology. The session showed how their clinical perspectives can contribute to improved health outcomes through interdisciplinary collaboration. It also highlighted that exposing students to practical digital health solutions before registration can help them develop confidence and prepare them to become future leaders in healthcare. This resonated with me as a nursing lecturer and made me reflect on how we can create similar opportunities for our own students to engage with innovation and digital health during their nursing education.

IMPACT ON MY TEACHING PRACTICE

It has been almost nine months since I attended DHWNZ 2025 and I realise how much I have grown professionally in less than a year. This conference had an enormous influence on my growing interest in digital health. It was a catalyst that motivated me to explore ways of strengthening digital health within nursing education as a novice nursing academic.

I returned from the conference with a desire to become more involved in this space and several goals. One of these was to teach students transferable skills rather than focusing on individual technologies. As digital tools continue to evolve rapidly, graduates will encounter different systems depending on where they work. Therefore, it is important that students develop the skills, critical thinking, and adaptability required to work confidently in a range of digital healthcare environments. To support this development, I have introduced discussions with students about digital professionalism, digital ethics, and the responsible use of AI. I have also provided opportunities for students to design their own digital health solutions to develop their understanding of digital health capabilities and principles. Additionally, I have begun engaging with key stakeholders to explore opportunities for students to gain exposure to electronic medication

management systems to help them build confidence in using digital technologies within clinical practice. As my knowledge and interest in this area have developed, I have been invited to contribute to curriculum development for the Bachelor of Nursing Year 3 programme, with a particular focus on digital health.

Professional leadership and contribution

Another goal was to become involved in national conversations about supporting current and future nurses in developing competence in digital health. At the time of the conference, this felt ambitious. I was relatively new to academia and had only recently begun exploring digital health. However, the event encouraged me to step outside my comfort zone and connect with experts working in this field. As a result of attending the conference and expanding my network through DHWNZ 2025, I reached out to members of the HiNZ Nursing and Midwifery Informatics Special Interest Group (HiNZ-NMI), expressing my interest in becoming involved in future initiatives. The first step in this journey was joining the HiNZ-NMI Executive Committee in 2026. At the start of this year, I was invited by the authors of the updated *Guidelines: Digital Health for Nurses in Aotearoa New Zealand Entering Practice* (Collins et al., 2026) to join the advisory group supporting its review and development. This was my first opportunity to contribute to a nationally recognised piece of work. It gave me a voice as a nursing lecturer in conversations about the future direction of digital health in nursing and how these New Zealand guidelines may be translated into curriculum and practice.

I have also contributed feedback on the gaps in digital health and AI literacy, through the School of Nursing, to the consultation on proposed revisions to the Nursing Council of New Zealand Code of Conduct for nurses. Additionally, I joined the Otago Polytechnic AI Steering Committee, where I continue to participate in discussions regarding the development of institutional guidance on the use of AI and assessment design within this new educational paradigm.

The conference reinforced my role as a nursing lecturer in preparing future nurses with the digital health literacy required for contemporary practice. The work I have since become involved in has inspired me to share current discussions about AI in nursing and tertiary education, and how we can prepare graduates to work safely, ethically, and confidently alongside emerging technologies. As a result of the knowledge, confidence, and opportunities gained since attending DHWNZ 2025, I submitted an abstract for DHWNZ 2026, which has been accepted for presentation. Attending the conference as a learner and returning the following year as a presenter feels like a significant milestone in my digital health journey and an opportunity to contribute back to the digital health community.

Ongoing professional learning and networks

Less than a year later, I have already achieved some of the goals I set following the conference. While many goals remain a work in progress, I continue to explore current literature, emerging evidence, and best practice approaches to better understand how digital health capabilities can be meaningfully embedded within nursing education.

Beyond these professional achievements, one of the greatest benefits of attending the conference was the chance to connect with people who share a passion for digital health. Through these connections, I have built networks, gained inspiration, and discovered opportunities that I would not have encountered otherwise. I have also actively engaged in digital health discussions through

professional networks such as LinkedIn, particularly around AI in healthcare and education. More recently, I have been following the work of Delaney La Rosa and reading *Nursing Education in the AI Era: Practical Guidance for Educators to Advance Equitable Care* (La Rosa et al., 2026), which is continuing to shape my thinking about the role of AI in nursing education.

CONCLUSION

Looking back, the conference theme *Action for Impact: Digital Health Shaping the Future of Care Today* accurately reflects my experience. The conference did not simply increase my knowledge of digital health; it motivated me to 'take action.' What began as an interest in understanding digital health has developed into active involvement in digital health education, AI discussions, curriculum development, professional networks, and national conversations about the future of nursing practice.

I can confidently say that this conference changed my practice as a nursing lecturer. Digital health and AI are no longer conversations about the future. They are part of the healthcare environment that nurses, educators, and students are working within today. As healthcare continues to evolve, digital health literacy must become everyone's business. All healthcare professionals need a basic understanding of digital health, not just those working in informatics or technology-focused roles.

DHWNZ 2025 demonstrated that successful digital transformation requires more than technology alone. It requires collaboration, leadership, innovation, and a commitment to ensuring that no one is left behind. The conference challenged me to think differently about healthcare, education, disability inclusion, and the role of AI in practice. It also provided practical opportunities to contribute to national conversations and become part of the growing digital health community in Aotearoa New Zealand.

For healthcare professionals, educators, and students who are interested in understanding how digital health is shaping the future of care, I would highly recommend attending a future HiNZ DHWNZ conference. The knowledge gained, the connections made, and the opportunities created extend far beyond the conference itself. Most importantly, the conference reminded me not to doubt my ability to contribute. For those early in their academic or professional journey, I hope my experience demonstrates where curiosity, openness to learning, and a willingness to engage can lead. We all have the potential to be leaders in digital health, and meaningful change often begins with taking the first step into a conversation.

Acknowledgements

The author would like to acknowledge the support of the School of Nursing, Otago Polytechnic, for providing funding to attend DHWNZ 2025. The author also acknowledges the mentorship and support of Otago Polytechnic School of Nursing kaimahi, which helped expand their research interest in digital health.

Conflict of interest statement

The author is a member of HiNZ and currently serves as an executive member of the HiNZ-NMI. These affiliations did not influence the content of this report.

AI statement

Microsoft Copilot was used to assist with manuscript editing, proofreading, and refinement of writing. All reflections, interpretations, and content are the author's own.

Yoonah Cho (https://orcid.org/0009-0007-4050-4755) is a Senior Lecturer in the School of Nursing at Otago Polytechnic. She is an EdTech Champion, a member of the Otago Polytechnic AI Steering Committee, and an executive member of the Health Informatics New Zealand Nursing & Midwifery Informatics Special Interest Group (HiNZ-NMI).

REFERENCES

Collins, E., Britnell, S., & Honey, M. (2026). *Guidelines: Digital health for nurses in Aotearoa New Zealand entering practice* (2nd ed). https://doi.org/10.82348/our-archive.00250

Health Informatics New Zealand. (2025). *Digital Health Week NZ 2025: From the stage 2025*. https://www.hinz.org.nz/resource/resmgr/special-reports/events/DHWNZ2025-Post-Conference-Re.pdf

Kleib, M., Arnaert, A., Nagle, L. M., Ali, S., Idrees, S., da Costa, D., Kennedy, M., & Darko, E. M. (2024). Digital health education and training for undergraduate and graduate nursing students: Scoping review. *JMIR Nursing, 7*, Article e58170. https://doi.org/10.2196/58170

La Rosa, D. W., Sumpter, D. F., Carlisle, S., & Beard, K. V. (Eds.). (2026). *Nursing education in the AI era: Practical guidance for educators to advance equitable care.* Springer. https://doi.org/10.1007/978-3-032-12402-9

Sadd, R., Collins, E., & Honey, M. (2024). Supporting digital health integration in a national curriculum: The New Zealand experience. In G. Strudwick, N. R. Hardiker, G. Rees, R. Cook & Y. J. Lee (Eds.), *Innovation in applied nursing informatics* (pp. 488–493). IOS Press. https://doi.org/10.3233/SHTI240197

https://doi.org/10.34074/scop.3010008

SYNERGY

Josie Crawley

Cellular wizardry
life unfurling, pungent from decay
as magicians of light conjure oxygen and glucose
spin waste to atmosphere.

Ancient alchemy a rhythm, worked
by needled fingers, veined palms, arms reaching above
below, divining water, dendrite roots
listen for change, whisper warning.

Breathe in, breathe out
engaging in symbiotic exchange
with solar powered miracles
greens our insides:
un-swaddle anxiety with dappled joy,
re-calibrate cortisol, de-hectic pace and push,
reframe focus to notice
the delicate structures
repeated yet unique in every leaf
nature's gifts freely offered,
attentive, creative, productive—
we thrive in the presence of plants.



Figure 1. Greening up. Photograph: Josie Crawley.

Josie Crawley (https://orcid.org/0000-0003-1011-3335), Associate Professor, Otago Polytechnic School of Nursing, is passionate about the transformative power of narratives and nature. In addition to facilitating student nurses' storied learning, she writes reflective poetry. She has published in a variety of academic journals, and her poetry has been included in a collection of poems by Aotearoa New Zealand Nurses, health and nursing publications, and the *Otago Daily Times*.

GUIDELINES FOR CONTRIBUTORS

Submissions for *Scope (Health & Wellbeing)* should be sent by 30 June for review and potential inclusion in the annual issue to: Jean Ross (Editor: jean.ross@op.ac.nz).

Scope (Health & Wellbeing) 11 theme: Open.

Please consult the information for contributors below and hardcopy or online versions for examples.

All submissions will be peer reviewed. Peer review comments will be sent to all submitters in due course, with details concerning the possible reworking of documents where relevant. All submissions must include disclosure of whether and how AI was used in writing the work. All final decisions concerning publication of submissions will reside with the Editors. Opinions published are those of the authors and not necessarily subscribed to by the Editors or Otago Polytechnic.

Contributors retain copyright in their submissions and must obtain permission for the use of any material that is not their own included in their submission. Contributors grant the publishers permission to deposit the published work in our institutional repository.

Except for images, mātauranga Māori, and where otherwise indicated, content will be made available as open access on a Creative Commons Attribution license 4.0.

All images are copyright to the respective artists and photographers.

Mātauranga Māori is a significant component of Aotearoa/New Zealand's heritage, and sharing mātauranga Māori facilitates inter-cultural dialogue and understanding that is in the national interest. However, we recognise that the originating Māori community and/or individual has the primary interest as kaitiaki over the mātauranga and we are therefore committed to ensuring that the sharing, promotion and innovation based on mātauranga Māori respects and enhances its cultural and spiritual integrity, as well as that of the originating community and/or individual.

Submission formats include: editorials, articles, perspectives, essays, research notes and work in progress. Other formats will also be considered.

High standards of writing, proofreading and adherence to consistency through the APA referencing style are expected. For more information, please refer to the APA Publication Manual, 7th edition; and consult prior issues for examples. A short biography of no more than 50 words; as well as title; details concerning institutional position and affiliation (where relevant); contact information (postal, email and telephone number) and ORCID number should be provided on a cover sheet, with all such information withheld from the body of the submission. Low resolution images with full captions should be inserted into texts to indicate where they would be preferred, while high resolution images should be sent separately. Enquiries about future submissions can be directed to jean.ross@op.ac.nz.