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Contemporary Research Topics

health & wellbeing 9

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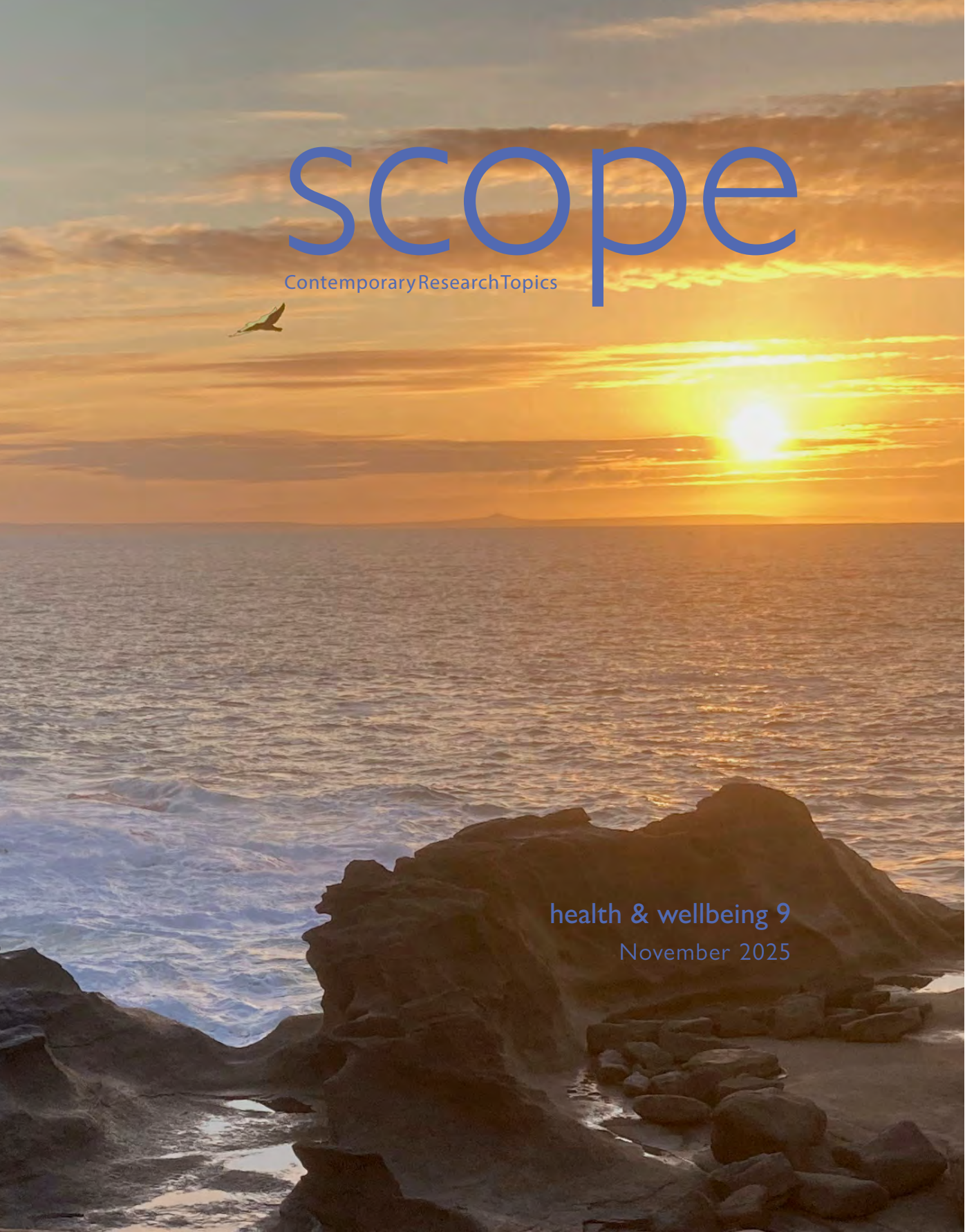

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The journal ***Scope (Health & Wellbeing)*** aims to engage in multidisciplinary discussion on contemporary research in the landscape of health. It is concerned with views and critical debates surrounding issues of practice, theory, education, history 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.

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Contemporary Research Topics

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REFLECTING

Jean Ross

Welcome to *Scope (Health & Wellbeing)* issue 9. This editorial is dedicated to reflecting. There are three reflective considerations I wish to share: *Scope (Health & Wellbeing)*'s structure which has led to a consistency between issues, the journal's beginnings, and *Scope (Health & Wellbeing)*'s collaborative approach.

In this issue, we decided to move away from our traditional approach in previous journal issues which had a dedicated theme; for example, place; occupation; rural; collaboration, and sustainability. This journal issue has taken a broad leap of faith and has stepped away from inviting contributors to publish related to the annual theme towards an open theme. Despite us not running with a theme for this issue, we continue to focus on building a sense of community between the published authors. In doing so, we have been able to group their individual published papers under a variety of topics.

This edition includes ten published papers including the first-ever online video for the *Scope (Health & Wellbeing)* journal. Our aim is to initiate an online video format supplementing traditional printed text for health and well-being research, expert knowledge, and innovative concepts which will facilitate the dissemination of information in a novel way. Here, we offer one article that supplements the traditional published format by presenting information in both text and through the medium of video.

The papers presented in this journal issue commence, as in previous issues, with "An interview with…." For this issue, the interview is with me. I have been the Editor in Chief of *Scope (Health & Wellbeing)* since its inception in 2017. Initially, I was the co-editor with Dr Simon Middlemas when the first *Scope (Health & Wellbeing)* issue was published. This first issue started out as a collaboration situated within the College of Health, Otago Polytechnic, and the journal has continued to this day.

Simon and I partnered together creating a further three issues between 2017 and 2019. I have remained as the sole Editor in Chief since 2020. Our collaborative approach has continued to establish a sound foundation, building a dedicated Editorial Team and International Editorial Board to assist in guiding the direction of this journal.

Each issue of *Scope (Health & Wellbeing)* has included a provocative cover image related to the issue's theme. Each image has been individually created from artists or photographers on request from the editor. For this issue, I requested an image associated with reflecting. As you will see on the front and back covers, this image offers an openness as represented by the sky, clear and inviting with an island in the distance leading to thoughts of potential. The lone bird offers a sense of hope in current times of significant change. A sunset maintains our optimism and signals a new tomorrow. The ocean, ever moving, situates us in an in-betweenness, between here and there, a knowing while contemplating the unknown, representing new beginnings, a time of endings, and a time for reflecting. The contents of this issue encapsulate the front and back cover images, bringing current topics to your attention. I am grateful to London Photographers for this inclusion.

In this journal, as mentioned, you are first introduced to "An interview with" conducted by Sam Mann who interviewed me initially for *Sustainable Lens: Resilience on Radio*. This programme is broadcast on OAR 105.4FM,

Dunedin's community access radio station. Sam has recreated this interview as a piece that has been presented in this journal, and that we hope you enjoy.

Further papers include those identified under the heading of sports and leisure. There are four papers aligned to this topic. First, Michael Fallu discusses the findings from a research project he conducted to investigate the participation of recreation and leisure amongst the intellectual disability community. Patrick Boudreau et al.'s. contribution focuses on Māori health inequities compared to the remainder of the New Zealand population. Their evidence supports a number of recommendations. Gary Barclay and Laura Munro's paper then offers a narrative discussion of Barclay's near fatal football injury, with the aim of informing health professionals of the psychological impact injury can have on athletics. The fourth paper in this section by Hayden Croft et al. continues the sports focus, investigating the value and use of gathering and applying statistical evidence by netball coaches with in-game competitions. This paper also engages with the presentation of an online video.

Under the second topic, health and work or study, Rachel Scrivin and colleagues reflect on the development and validation of a survey used to investigate the nutritional practice of tertiary students. Next, Anne Bradley et al. present a detailed literature review on the effects of workforce performance associated with open plan office spaces.

The following two publications relate to the third topic: trauma and mental health. Nicola Howard and colleagues review literature associated with the effects trauma can have on adults in employment. The following paper by Kim Taylor and Waireti Roestenburg identifies the dehumanising effects of a lack of secure housing on wāhine Māori as te whare tangata and her children in Aotearoa New Zealand.

The final topic, moving towards resilience and community wellbeing, includes two papers, the first by Joanna Cobley who explores survivor stories fostering emotional resilience. In the final paper for this issue, Pam McKinlay et al. share their years of experience of collaborating and crafting, and the benefits this can have for what they term "rekindling their inner resources."

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, including interviews and videos on health and well-being practice. Submissions will be subject to a rigorous peer review process. We also encourage, original research, commentary, and critical debates concerning contemporary researchers, industry, society and educators in their environments of national and international practice. Please see the Guidelines for Contributors in the back of this issue for further details. *Scope*'s focus is on building a sense of community amongst researchers and writers who are established or emerging in New Zealand and the international community.

Jean Ross is a Professor of Nursing at the School of Nursing, Otago Polytechnic. Jean is also an advocate for sustainable rural community development and nurse education. Jean has been the editor in chief of *Scope (Health & Wellbeing)* since its inception. Jean's practice is research orientated which both informs and directs her scholarly work.

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WEAVING WITH INVISIBLE THREAD (AND OTHER LIFE SKILLS): AN INTERVIEW WITH JEAN ROSS

Sam Mann and Jean Ross

It is spring in Ōtepoti Dunedin, and the daffodils are blooming. I find myself wondering what metaphor best fits Jean Ross's story. Perhaps the daffodil itself, bright and persistent, the national flower of Wales and a reminder of her beginnings. Or perhaps the red dragon, fierce and protective, flying across her homeland's flag. Or maybe the threads she so often speaks of, weaving people, places, and practices together.

Figure 1. The sight of spring. Photo credit: Jean Ross.

Whatever image I choose, the point is the same: Jean Ross's life and work are rooted in connection, resilience, and the determination to make rural nursing visible and valued. They stretch from Holyhead in North Wales, where she first saw the inequities faced by rural patients, to isolated communities in Aotearoa New Zealand, where she has supported nurses working at the time as the only health professionals on the ground. They extend into classrooms, research projects, and international collaborations, always interwoven with a commitment to making rural nursing visible, sustainable, and connected.

"Rural geographical locations, generally isolated, could be rural, remote or islands, and have a low-density population, generally high Indigenous, and are not well served for the provision of health care," she explains. "Those that do serve those communities have a collective vision to improve health disparity, improve access to health care, and work with local communities to identify their health needs and provide for them, being very adaptable to that."

The scope of rural nursing is staggering. "From birth to death, across the lifespan, acute emergencies, complex presentations, mental health and substance use, community education, [nurses are] now dealing with climate change, food insecurity, and economic disruption." In small places the nurse may be the only professional present, working twenty-four hours a day, seven days a week. "The most rural thing I've done, recently," Jean recalls, "is support those nurses, politically, educationally, and in policy development, because they were literally the only health practitioners available."

And yet, despite this breadth and complexity, rural nursing is not officially recognised in New Zealand. As Jean points out, "We are still registered nurses or nurse practitioners There is no recognised specialty of rural by the Nursing Council of New Zealand, despite years of lobbying. You can call yourself a rural nurse, but it is not formally recognised." She is quick to add that other countries do it differently: Scotland, Australia, Canada, and the United States all have formal rural health pathways, dedicated courses, and professional recognition. "Some countries do it better. I'm working with the University of the Highlands and Islands in Scotland, who provide a master's in rural health science specifically for rural nurses, which is what we pioneered nearly 30 years ago."

Jean's commitment to rural communities is rooted in her own childhood. She grew up in Holyhead, a port town on the island of Anglesey in North Wales. "We often travelled into England for health care," she recalls. "I saw Welsh-speaking patients needing treatment in England, completely outside their cultural and linguistic context." Later, as a charge nurse in Bangor, she became sharply aware of the barriers rural patients faced when accessing urban hospitals. "Patients had to go into England for health care, leaving their small rural areas, coming to what they called the big city, and then having to go further still. That experience of inequity has always stayed with me."

When she moved to New Zealand in 1991, settling in Oxford, North Canterbury, she found echoes of those Welsh experiences. The rural towns of Aotearoa had their own histories of inequity and resilience, and nurses were again the ones holding the line. Jean immersed herself in community health promotion and rural practice. In time, she co-directed the National Centre for Rural Health and began supporting nurses on Pitt Island, Stewart Island, and the West Coast, who were often the sole providers in those isolated communities. "To go rural is to understand rural," she declares, "and to practise rural means deeply understanding that community."

Her advocacy extends beyond practice into the classroom at Otago Polytechnic, where she constantly seeks ways to help students understand the realities of rural nursing. One of her most influential contributions emerged from recognising that students were struggling to find their way. "Community development became central to my work when I realised students were getting lost. We created the CHASE model, Community Health Assessment Sustainable Education, which has been adapted through COVID and is now published and used internationally."

The model was not born of theory but of a conversation in a classroom: "The CHASE model emerged from simply mapping where students were lost in learning. Out of that came a solution-focused framework, born from practice itself." What started as an ad-hoc sketch grew into a framework that has been cited internationally and adapted to different contexts. It remains rooted in her belief that practice itself is pedagogy.

She is critical of how traditional nursing education divides knowledge into silos. "We do ourselves a disservice when nursing education is siloed into papers like pharmacology or pathophysiology. Students need integration, not fragmentation." For Jean, reflection and application are non-negotiable: "Reflection is always part of my practice. To be the best practitioner is to be a reflective practitioner. Knowledge and skills only matter if they can be applied and applied critically."

Her students, she admits, are not always immediately enthusiastic. "Students often resist teamwork, but they learn to see its value: delegation, accountability, and collaboration. These projects are authentic, producing real resources for communities, and that experience never leaves them." She laughs about how many of them arrive "kicking and screaming" at the idea of community development projects, only to leave transformed. "Half the students resist at first, but by the end many are proud of making a real difference. Authentic feedback from communities motivates them deeply."

One project in Trearddur Bay, Wales, stands out. The town had the highest skin cancer rates in England and Wales. Jean's students researched, engaged the community, and, with the support of Melanoma UK and the local council, initiated free sunscreen stands at the beach. "By year three," she relates, "many nursing students can finally articulate their practice as reflective, connecting their knowledge with their application in real settings." The lesson, she says, is not only about public health but about the identity of the nurse as a contributor to community wellbeing. "I want them to leave understanding that nursing is as broad as you want it to be, and that they can make a difference everywhere, for everyone, and for the planet."

Research for Jean is not something separate, a task to be done on top of teaching. It is the same thing. "Research provides us the tools for evidence-based improvement. We can always do things slightly better. Research is not separate from education, it keeps us relevant, critical, and creative." She is vocal in rejecting the suggestion, sometimes voiced in government circles, that polytechnics should not do research:

> If we are providing an education, it needs to be the best it can be, it needs to be relevant, and to do that, we need to have people that are committed to the movement, to having the best. Research is what underpins that evidence, what keeps us in dialogue, what keeps us critical.

For her, research is not about outputs or publications, though she has edited five books, including one with more than 60 contributors. It is a way of thinking. "My nursing, education, and research practice are a continuum. One does not start or finish, they are embedded together. Practice itself becomes the pedagogy." The CHASE model is proof of that. It was research generated from practice, turned into pedagogy, and then returned to practice. "Where does one start and one finish? For me, it doesn't. It is a continuum. That becomes the pedagogy, the underpinning of how you go about teaching and learning."

She sees research as activism as well. "Supporting rural nurses means not only teaching, but also advocating politically, engaging in activism, and influencing policy development." Whether lobbying the Nursing Council for recognition of rural practice or embedding sustainability in curriculum, her research always connects back to making change.

Sustainability is one of those long battles. "It's taken 15 years to embed sustainability in nursing education," Jean says. "Lone voices don't work, you need the right people at the right time, embedded into curriculum and national policy." When she first began, climate change felt distant; now the evidence is undeniable. "Thirteen years ago we lacked strong evidence for climate change impacts. Now we have it, floods, fires, food insecurity, and we must use that evidence in teaching."

She draws inspiration from international colleagues writing on planetary health and One Health. "In our revised curriculum, we now focus on planetary health, and I'm pushing towards One Health, aligning nursing with global frameworks for health and sustainability." Students begin with photographs representing sustainability, then move into practice analysis, and finish with critical reflection through community development projects. The approach situates local practice in a global framework of planetary health: "International colleagues are writing on sustainability, planetary health, and One Health. By situating our work in that global body of knowledge, we strengthen nursing's contribution."

This ethos of connection extends into Jean's writing. "I haven't written a whole book myself, but I've edited five on rural health. No one else in New Zealand nursing has produced that body of work on rural health, and I think that leaves a mark." Editing those volumes required extraordinary coordination. "At one point I worked with over 60 contributors, across time zones, aligning voices into a single volume. It was exhausting but also affirming, a collective story of rural practice."

Her superpower, she says, is simple but transformative: "My superpower is being a connector, bringing people together. You don't always know you're a connector until you reflect and see the difference it makes." Whether coordinating authors, building research networks, or mentoring students, connection is the through-line.

As our conversation ends, I return to the daffodils outside, their yellow heads nodding in the spring breeze. I think about how Jean described her superpower. I think too of her advice for readers: "Believe in yourself. Believe in your ideas. Go for it. And if it fails, great, because you've learned from it. Be as creative as you can."

Daffodils, dragons, or threads: all could serve as metaphors. But it is the daffodils that stay with me: symbols of renewal, of resilience, of Wales in springtime, and of the flourishing that comes when we nurture connection. Jean Ross shows us that rural nursing is not marginal but central, connecting people, communities, and the planet. Her leadership is ongoing, collective, and deeply relational. It challenges nurses, educators, and readers alike to stay connected, stay reflective, and stay committed to making a difference.

Samuel Mann (Professor, CapableNZ, Otago Polytechnic) is a geographer and computer scientist whose focus is making a positive difference through professional practice. He developed the role of the sustainable practitioner, the Sustainable Lens, and the Transformation Mindset. He led the development of the Doctor of Professional Practice. When not working, he is probably swimming in open water.

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THE EFFECTS OF DEINSTITUTIONALISATION ON THE LEISURE HABITS OF PEOPLE WITH AN INTELLECTUAL DISABILITY IN SOUTHLAND

Michael Fallu

INTRODUCTION

This article discusses the findings from a research project investigating recreation and leisure participation among the intellectual disability community in Southland, New Zealand. The project draws on the original research conducted in 2004/2005 (Stanat, 2005) and was replicated in 2016. The purpose of the research was to assess the changes and constraints to leisure and recreation participation for individuals with an intellectual disability coming from long term institutionalism (deinstitutionalisation) to community mainstreaming. This research sought to identify the constraints to leisure participation, what has changed over the period between 2004 and 2016, and what this has meant for participants' quality of life (QoL). The original research project interviewed a range of individuals with disabilities including sensory, mobility, mental, and cognitive. For the purposes of this new research, only those with a cognitive disability or intellectual disability were interviewed. This was mainly because the original research was conducted by 12 interviewers, and the more recent research project by one interviewer.

BACKGROUND

The New Zealand Disability Strategy (NZDS) was implemented in 2001 and aimed to eliminate barriers wherever they existed (Ministry of Health, 2001). This strategy outlined 15 objectives that promote societal inclusion for people with disabilities. Objective nine, "support lifestyle choices, recreational and culture for disabled people" (Ministry of Disability Issues, 2001, p. 16), addresses the recreation needs of people with disabilities. This strategy was revised to produce the 2016–2026 NZDS, due to the recognition that, although some aspects had been improved, more work was "needed because disabled people remain worse off than non-disabled people across all social and economic outcomes" (Ministry for Disability Issues, 2016, p. 9).

Evidence from both local and international individuals and organisations reports numerous benefits (social, physical, and psychological) of leisure participation by people with a disability (Peterson & Stumbo, 2000; SPARC, 2004). Leisure has been found to have many social psychological benefits for people with disability such as cultivating friendships, developing life-long skills, acquiring social skills, and enhancing self-image (Palmer et al., 2011; Patterson & Fallu, 2004). Prompted by these findings, Dr Fran Stanat, manager of the Therapeutic Recreation Faculty at the Southern Institute of Technology (SIT), conducted a research project in 2005 to investigate the leisure participation of New Zealanders with a disability who live in the Southland region. Dr Stanat and 12 year three students conducted the original research which provided people with a disability the opportunity for their voices to be heard (Stanat, 2005). When the original research was conducted, one in five New Zealanders (743,000) were identified as disabled; according to a 2013 survey, that number has risen to 1.1 million, or one in four New Zealanders, which is the most recent data (Stats NZ, 2014).

The Disability Resource Centre (DRC), an Invercargill based information resource centre established in 1992, was involved in organising the original interviews. The Centre had had numerous clients with disabilities report that their recreational and leisure needs were not being met by existing facilities and organisations in Southland. Caregivers and advocates have also observed the lack of leisure and recreation opportunity for people with disabilities. The interviews were run at the DRC. While a survey of leisure needs (Southland Regional Development Strategy 2003) was undertaken in Southland just prior to the original research, it appeared that this research did not specifically address the wants and needs of people with disabilities. This strategy was later used to inform the *Southland Spaces and Places Strategy* (Sport New Zealand, 2023). Research was required to determine the leisure needs and wants of people with disabilities in Southland. It was hoped this research would enable future planning for the most appropriate recreational and leisure opportunities to ensure the participation of people with disabilities. It was further hoped planning in this fashion would enhance social inclusion opportunities in Southland.

LITERATURE REVIEW

Definitions

The following definitions are relevant to this research and the field of disability studies.

Social role valorisation (SRV) is a dynamic set of ideas useful for making positive change in the lives of people disadvantaged because of their status in society. SRV is utilised mainly in service to children and adults with impairments as well as elders, but it can be helpful to uplift the social situation of any person or group.

Intellectual disability is a condition of arrested or incomplete development of the mind, which is especially characterised by impairment of skills manifested during the developmental period, which contribute to the overall level of intelligence, in other words, cognitive, language, motor, and social abilities.

Leisure and quality of life

Leisure has been at least subtly involved in the development of social norms and practices. Arguably, when sitting around a fire in a leisure environment, primitive humans developed communication and eventually a civilisation (Mithen, 2005; Shivers & De Lisle, 1997). Rojek (2006) identifies civilisation as a complex blend of knowledge, beliefs, art, ethics, behaviour, and law; and, as Russell (2004) concludes, the major contributors to this knowledge and skills reservoir came from individuals when they were in a state of leisure. For Pieper (1952) leisure celebrates and affirms one's humanity (Kleiber, 1999, p. 8). This lends weight to the argument that therapeutically constructed leisure environments could be used to develop the necessary skills and knowledge associated with a new social paradigm. Duvdevany and Arar (2004) have made the point that simply living in a community does not assure friendship or quality of life.

Quality of life (QoL) is described by Brown et al. (1994) as "the discrepancy between a person's achieved and unmet needs and desires" (p. 41). This refers to the subjective, or perceived, and objective assessment of an individual's domain. The greater the discrepancy, the poorer the QoL. Smart (2001) argues QoL is both subjective and multidimensional incorporating, amongst other areas, freedom to function at one's highest possible level, physically, socially, and spiritually (p. 314). Smart (2001) also argues it is society's inability to accommodate the needs of people with a disability which most profoundly impacts on QoL. Quality of life includes the extent to which an individual increasingly controls aspects of their life regardless of the original baseline. Diodati (2017) has argued people with disabilities can experience constraints and barriers to leisure participation in these activities which negatively impacts their QoL. Since the 1970s, there has been a paradigm shift towards social inclusion instigated by the normalisation theory (Nirje, 1969) which has—among other social changes—provoked the deinstitutionalisation movement. As a result, new legislation has been instigated that has advocated for and

supported the rights of all individuals to be treated equally and to aspire to the highest possible quality of life. Not all individuals have had access to this QoL; for example, people with disabilities. Leisure and recreation are contributors to this high QoL. So, to understand participation in recreation, and any real or perceived constraints and barriers to leisure, is important data (Fallu, 2008).

Leisure and social inclusion

The problem of social exclusion and the need to develop a greater appreciation and acceptance of diversity are issues that have manifested in cultures throughout history (Murphy & Murtagh, 2004). For Sussmuth (1998), the inertia that contributes to the unwillingness of society to change is caused by fear and anxiety manifesting as complacency and self-satisfaction. Gaudiani (1998) argues that what has been acceptable in the past will have to change if societies of the future are to succeed, identifying "effective deployment of diverse human resources" as the key to success in the future. This is particularly relevant to the paradigm shift occurring in many Western countries in relation to deinstitutionalisation in general and that of people with an intellectual disability in particular (Bostock et al., 1996; DePoy & Gilson, 2004; Fallu, 2008). The impetus underpinning this deinstitutionalisation process stemmed from the theory of normalisation, developed by Bengt Nirje, Executive Director of the Swedish Association for Retarded Children. Nirje promoted the belief that all individuals should have access to as normal a lifestyle as possible (Grant, 2007; Nirje, 1999), with the process of deinstitutionalisation being a practical expression of Nirje's altruistic theory. The need for this practical expression was already gaining momentum through works such as Erving Goffman's (1961) *Asylums*, and Peter Townsend's (1962) *The Last Refuge* (cited in Sennett, 2003). These authors and others like Michel Foucault (1978, 1988, 1997) paint a grim picture of what Goffman referred to as "total institutions."

Leisure participation has been identified as one of the most important aspects of encouraging community adjustment (Rynders & Schlein, 1988) and this has helped to reduce society's negative impressions of those people with an intellectual disability. This has been identified as an essential step in achieving total social inclusion in accordance with the social model (Oliver, 1990). Iso-Ahola and St Clair (2000) discuss how the acquisition of leisure knowledge affects the individual's values, attitudes, motivations and perceived constraints. Access to knowledge in a leisure environment has great potential for promoting positive attitudes and values (Iso-Ahola & Mannell, 2004). People with disabilities given the opportunity to participate in leisure education programmes have a greater likelihood of developing the necessary social skills to form satisfying social relationships. In their research, Duvdevany and Arar (2004) found a strong correlation between social contacts and participation in leisure activities. Devine & Dattilo (2001) found that individuals with disabilities who perceived they were accepted socially by their non-disabled peers participated more in leisure activities and experienced a higher degree of leisure satisfaction in inclusive leisure environments. Therefore, leisure contexts may provide insight for understanding society's norms, attitudes, beliefs, and values (Devine, 2004). According to Patterson and Pegg, "in the past, western societies have tended to devalue people with disabilities, and as a consequence they were less likely to have valued social roles through paid work" (2009, p. 1).

Like Minds, an initiative established in 1997 by the New Zealand Government, was one of the first comprehensive national campaigns in the world designed to counter stigma and discrimination associated with mental illness and increase social inclusion (Ministry of Health, 2014, para. 1). When considering the objectives of Like Minds, Godbey (2006) observed that over eighty percent of what contributes to a state of health exists within the realm of what could be described as individual leisure domains. These leisure domains have great potential to contribute to the reduction of stigmas and discrimination. These realms include our environment and our relationships, including our position within a society and our perception of self. Leisure experiences can provide a powerful tool for the elimination of negative labels associated with disabilities, as leisure brings these individuals into contact with mainstream society, and this interaction can help replace negative stereotypes and myths with the reality of the individual. At the same time, leisure helps to increase the skill level of the individual which, in turn, elevates self-esteem and the likelihood of success in the community (Hutchinson & McGill, 1992; Patterson & Pegg, 1995).

Social role valorisation and study rationale

It is difficult to discuss disability, leisure, and social inclusion without understanding the theory of social role valorisation (SRV) which was developed by Wolf Wolfensberger (1983) as a refinement of Nirje's (1969; 1999) normalisation theory. SRV now represents a complex social theory. It is an empirically based social theory that addresses the social devaluation of individuals and groups. Due to this devaluation some individuals and groups are accorded low social value. The consequences of social devaluation can be described and the factors that contribute to social devaluation can be understood and countered to some extent (Cocks, 2011, p. 13). Connaughton and Cline (2021, p. 1) have argued that individuals with a moderate intellectual disability leaving school are excluded from the "good things of life" which SRV affords many nondisabled individuals, such as having a job, meeting friends, and going on to higher education. These friends, jobs, and education all contribute to having a valued social role.

This research was conducted to document the changes that have occurred since the first interviews by Dr Stanat (2005). The same questions were asked around leisure, fun, and barriers to inclusion, and the responses were compared to the original responses. The aim was to give a voice to individuals and groups not always involved in the planning of their lives (Stanat, 2005).

METHODS

Community-based agencies (PACT and IDEA) that focus on providing support for people with disabilities in the Invercargill area of Southland New Zealand were approached by the researcher to provide access to any suitable clients that they knew of who participate in leisure activities and were willing to be interviewed for the purposes of the study. The relevant support organisations were approached and provided with an information sheet, consent form, and the interview questions. Through the relevant organisations a convenient time was arranged, and the interview was conducted at a day care/activity centre. Ethics approval was granted by the Human Research Ethics Committee at SIT on 23 September 2016.

A qualitative, interview-based research approach was adopted, using the same questions as the previous study. In the original research two interviewers were involved with one asking the questions and one acting as a scribe. For this new research the researcher working alone recorded the interview on a digital device. A group interview was arranged at the above-mentioned day care/activity centre. The participants were given consent forms and the researcher explained the purpose for the interview after which the consent forms were signed. The group were asked if they were comfortable with the interview being recorded, and they were. Only a small number (17) of the total group at the day care/activity centres were involved in this interview mainly due to the level of their disability, as many lacked the cognitive linguistic skills necessary to be effectively interviewed. Two support staff also participated in the interview. They were helpful in giving prompts when necessary; for example, when the group ran out of ideas, or clarifying what was being asked. Consideration for participant understanding was used to modify questions; for example, the word "fun" was used as an umbrella term incorporating all possible definitions of recreation, leisure, sport, and play.

Research questions

1. What do you do for fun?
2. What does having fun mean to you?
3. How satisfied are you with what you do for fun?
4. How much time do you participate in activities that are fun, when do you do it and why?
5. What places do you go for fun?

6. What are the barriers to your having fun?
7. If there were no barriers, what would you do for fun?
8. What would be the perfect fun activities?
9. Anything else which should be considered about having fun?

FINDINGS

Seventeen participants plus two support staff were interviewed for the study. An overarching theme among participants from both old and new data sets was as expressed by "Alex" as a desire to participate in an inclusive fashion with non-judgemental people, or people who "treat me like a person and not just like a person with a disability."

Using debriefing techniques, the researcher discovered emerging themes for each question. The results are presented for each question.

What do you do for fun?

Activities for both the original and new interviews ranged from passive and solitary to active with the heaviest emphasis being on socialisation activities. Examples of socialisation activities included going to a mall, going to the activity centre, bocce, ten-pin bowling, talking with mates on the phone, and shopping. Both old and new data were similar, with the new data identifying more activities. One of the new activities mentioned was Tai Chi; this may be due to the researcher teaching some of the respondents Tai Chi as part of a vocational training programme which started after the first research study.

Structured and organised activities were viewed as highly desirable for two reasons. First, structured activities usually ensured that there was someone available to provide assistance. Assistance could be as simple as help in the locker room at Splash Palace, or more complex, such as providing safety in an unfamiliar environment to enable confidence. Respondents were especially concerned about safety issues related to acceptance by others.

A second reason that organised activities were preferred was because many felt it was difficult to always ask family or friends for help. One participant ("Trish") said they would "put things on hold" rather than ask for assistance all the time. Some participants stated that they participated in agency activities because support was provided. Some participants were quick to point out that the availability of planned activities was diminishing.

A theme of the role of employment also emerged from the discussions. Members of this group considered their employment a fun activity along with the more traditional recreation and leisure pursuits.

What does having fun mean to you?

Respondent group members appeared to find this question difficult but, as discussion ensued, several interesting comments and themes emerged. Many emphasised that friends had a lot to do with participation in fun activities. One participant ("Todd") from the original research reported, "These things make me feel normal." Another ("Jane") talked about "getting comfortable" and "being included." A respondent from the new research ("Beck") stated simply that fun meant "being happy" and "not being bugged by others."

Themes emerging included the notion that having fun is being normal; being included and part of the community; being with friends; being in control and able to make choices; laughing, and an opportunity to enhance one's abilities and find meaning in life.

How satisfied are you with what you do for fun?

This question did not generate much discussion. Respondents agreed that time, money, and the severity of the disability were all factors that limit satisfaction. There were many comments that were extensions of earlier discussions about a need for structured or organised activities. Specifically, many felt that satisfaction was dependent on supportive and accessible venues. The opportunity to try out new activities with the proper assistance was desired. Both old and new respondents needed prompting, and there appeared to be a general dissatisfaction regarding access to resources with responses like "okay or "not bad." One individual from the new research stated that they wanted "more fun."

How much time do you participate in activities that are fun, when do you do it and why?

Some answers were typical of what would be expected for most people. Those who did not work preferred morning and afternoon activities while those who were employed preferred evening and weekend activities. Generally, responders did not understand the question in both old and new data sets and tended to restate things they liked or would like to do.

What places do you go for fun?

Both old and new interviewees reported typical leisure and recreation agencies associated with the activities they described in question one. A major barrier for many people with disabilities is that many of the venues are overwhelming in terms of noise, activity level, people, and the attitudes they perceive. A person with a disability can often feel intimidated by the general public. The group identified their respective activity centres as safe places for them.

What are the barriers to you having fun?

The specific barriers addressed in this question were money, transport, adaptive devices, access, attitudes, people, support, and any other impediment to participating in leisure. The interviewees in the old and new interviews agreed that money was a barrier. Money, or lack thereof, created many of the other barriers (for example, no money for transport, access memberships, or adapted devices). General community attitudes emerged as a major barrier also in both sets of data.

Transportation was also identified as a barrier. Concerns were expressed about the number of buses available, the times that the buses operate, the need for assistance or support when riding the bus or in a taxi (drivers unwilling or not prepared to help), the cost of transportation, insufficient wheelchair taxis, and the limited number of rides to which a person was entitled from the Transit Mobility service.

Barriers experienced by people with an intellectual disability had not changed in the period between the two interviews. There was agreement that societal attitudes continue to pose a limitation to their ability to freely participate. Respondents believed that many people are uninformed about disabilities and are either unwilling or afraid (or both) to ask questions. One of the respondents ("Narmer") in the new data set stated: "People assume I can't do things, even if they don't know me." The respondents spoke of feeling unwelcome, discriminated against, not viewed as a real person, and disrespected.

Lack of support was another concern that was consistently discussed throughout all the responses to the questions. The groups felt that, with support, they could overcome many of the barriers to participation in leisure and recreation including the attitudinal barriers. Many said that if they had support, they would be able to be involved in inclusive opportunities.

If there were no barriers, what would you do for fun?

Participants were asked to address the question of barrier-free leisure participation relative to the activities in which they would like to participate, the resources required, the time and location for participation, the cost or funding for programmes, the people with whom they would like to participate, and any other comments about the leisure and recreation opportunities. Participants in both data sets did not initially understand the question. It was then rephrased as, "If you could have three wishes for leisure, what would you do?" The main difference between the old and new data was that in the old data there was a general happiness with what the respondents had access to. However, in the new set of data, many new skills and opportunities were identified; for instance, learning to play a musical instrument and more freedom to do more of the things they enjoyed such as socialising with friends.

Emerging themes

Generally, participants in both the old and new interviews were interested in learning new activities. There was also interest in just having a place to "hang out"; a safe place where participants could go to socialise. All agreed that resources were available in Invercargill, but that assistance was often needed to access and utilise many of the facilities to their fullest extent. There was discussion of having qualified people available to teach and provide support, in part to ensure a sense of safety. The need for transportation was also reinforced. All participants agreed the location of resources or a place to just "hang out" should be in the central city (and therefore easy to get to). Costs should be minimal. Suggestions included providing community-funded resources, with participants paying a small fee to cover cost of materials and memberships.

DISCUSSION

There was little to distinguish between the old and new data sets. Several themes emerged throughout all the questions and in both the old and new data sets. These themes related to reasons for participating; the need for structured and organised activities; public attitudes towards people with disabilities; the desire to try new activities, and "a place to hang." Each of these themes will be discussed and recommendations offered.

The reasons the group members cited for participating in leisure were typical of those cited in classic leisure studies research (Pieper, 1952/1998; Russell, 2004). Socialisation was a major reason for participation in leisure and recreation activities. Other reasons included "to be in control," "to be able to make decisions," to "stay motivated," "being included," and to "be with friends." One response not cited in the research literature as a motivation for participating in leisure and recreation was that participating in leisure and recreation was equated with "feeling normal."

There was considerable concern expressed about the need for structured and organised activities. The concept of structured and organised was often interchangeable with the notion of support and assistance. Activities that are structured and organised, and/or supported and assisted, were viewed as safe, secure, and within the participants' "comfort zone." Group members were fairly comfortable with the idea of receiving this type of support in an inclusive venue. However, the primary emphasis was not on inclusion. Rather, it was on safety and security.

Attitudes of the public were often seen as a barrier to participating in leisure and recreation. The public can be defined as other participants in an activity or as infrastructure personnel (for example, taxi drivers, service personnel, or managers).

The participants indicated that they would like to try new and varied activities if support was available. Some group members thought of their work as leisure and would like to learn new skills that would enhance their work options.

The notion of a "place to hang" ran throughout all responses to all questions. Some participants were quite keen to have a centre just for people with disabilities. Most, however, were looking for a place where they could access the support they needed to participate in leisure and recreation fully. There was general agreement that Invercargill had the resources and venues available, but that access was limited for a variety of reasons. The primary reasons were that support needed to participate was not available and that attitudes of people at the venue caused discomfort or fear.

RECOMMENDATIONS

Based on focus group data from the original study and supported by the new research, it was and remains recommended that a community-based leisure/recreation assistance centre should be developed to provide support and to enable people with disabilities to participate in leisure and recreation. While this centre would focus on meeting the needs of Southlanders with disabilities, it should be open to all community members. The parameters and functions of the centre might include, based on both the old and new research:

- Being a drop-in centre where people can get the information, advice, or the support they need to be able to participate in leisure and recreation in the community. This drop-in centre could also be a place where people can come to socialise.
- Collecting and distributing information about leisure and recreation in the community.
- Delivering leisure education and community (re)integration classes.
- Providing support services for people who need assistance to participate in leisure and recreation.
- Providing actual activity programmes. The centre could seek to help people to become involved in Invercargill and Southland leisure and recreation programmes and services.
- Offering training and consultation to providers of leisure and recreation services in Invercargill and Southland to ensure that their programmes are accessible and safe for users with disabilities.
- Recommending and providing training to leisure and recreation service providers for introducing new activity opportunities for Southlanders with disabilities.
- Developing and implementing a system to enable agencies to work together to deliver leisure and recreation services to Southlanders in the least restrictive environment.
- Developing and delivering disability awareness programmes to leisure and recreation service providers and other personnel who may have an impact on delivery (for example, taxi drivers, wait staff, store clerks, and so on).
- Developing and delivering disability awareness programmes to the general public, perhaps starting with speaking engagements at clubs.

All these services should be provided in a safe, inclusive environment.

When the original research was conducted in 2004–2005, there seemed to be a growing awareness of and enthusiasm for developing recreation for people with disabilities. This awareness and enthusiasm would seem to have dissipated. This perspective is also supported by the new interview data and the lack of support for recreation and leisure as an important enabler for QoL in the lives of people with a disability.

The main concerns to arise from the new data were that nothing has changed for the better in the decade-plus since the original research. In fact, there seemed to be less awareness of the importance of leisure in general and specifically for those with an intellectual disability.

Limitations

Only a small percentage of the total number of individuals with an intellectual disability were involved due to limitations such as lack of understanding in relation to the questions or lack of verbal ability to express their ideas. The participants in this interview would be classified as at the mild to moderate end of the intellectual disability continuum.

CONCLUSION

This research replicated a research project conducted in 2004. The purpose was to investigate what if anything had changed since the original research had been conducted. The same methodology was adopted using the same questions. The findings were very similar; however, a community-based support provider which was involved in organising the original interviews, when approached, declined saying they had no interest in recreation. As with the original research, the new data also highlighted the need for greater awareness and education for the general community and the provision of safe leisure environments.

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REDUCING HEALTH INEQUITIES THROUGH KĪ-O-RAHI: THE ROLE OF INTRINSIC MOTIVATION

Patrick Boudreau, Tyson Huia, Heperi Harris, Peter Olsen and Helen Marshall

INTRODUCTION

Māori people face persistent health inequities compared to other groups in Aotearoa New Zealand (Gustafson et al., 2024; Hobbs et al., 2019). In a review of healthcare in Aotearoa New Zealand, Brown and Bryder (2023) found cultural and ethnic differences were not adequately accommodated by governmental policies, which may explain the Government's failure to reduce inequities. Nevertheless, recent Governments have set specific priorities to improve the health and wellbeing of Māori and Pacific peoples and have advocated that, to change the status quo for Māori, a whānau-centred approach that celebrates Māori culture is needed to improve health outcomes (Government of New Zealand, 2019). Consequently, there is a need to find innovative public health approaches to reduce health inequities that are designed for Māori by Māori (Eggleton et al., 2018; Rolleston et al., 2022; Severinsen & Reweti, 2017).

A review by McHugh et al. (2019) suggested that sport and recreation can offer Indigenous youth meaningful opportunities to strengthen community ties, engage with positive role models, and deepen their cultural connections. While McHugh et al.'s (2019) review was restricted to the Canadian context, the authors believe their findings may have relevance to Indigenous people in other countries where colonisation has occurred. A sport that may resonate with the Aotearoa New Zealand context is kī-o-Rahi. Kī-o-Rahi is a traditional Māori sport, inspired by the pūrākau (story) of Rahitutakahina and the rescue of his wife Tiarakurapakewai, played on a circular field and blending elements of tag, handball, and rugby. The sport incorporates te ao Māori (the Māori world view) and therefore can be a way of passing down beliefs, traditions, and protocols from one generation to the next within a physical activity context (Palmer et al., 2009). Specifically, kī-o-Rahi incorporates mātauranga Māori (traditional Māori knowledge) and tikanga (cultural practices, customs), and supports hauora (a holistic, Māori perspective of health). As a tākaro Māori (Māori sport or game), kī-o-Rahi all but disappeared in Aotearoa New Zealand due to European colonisation, as the sport was seen as a barrier to the uptake of Christianity by Māori (Smith & Smith, 2023). Owing to ongoing effects of colonisation, there has been minimal research on the sport, as participation in the tākaro was not encouraged and only played in informal settings. However, since the 1970s, kī-o-Rahi has been growing in popularity throughout Aotearoa New Zealand (Smith & Smith, 2023). The purpose of this research was to understand the motivations that underpin participation in kī-o-Rahi today.

A scoping report on kī-o-Rahi as a health-based intervention found that most participants felt they had a physical workout from kī-o-Rahi and increased their strength and coordination as a result of playing the game (Palmer et al., 2009). Other benefits of the game included that it catered to a wide range of skill and fitness levels, provided an opportunity for interaction between ethnicities, genders, age and peer groups, and allowed the expression of Māori identity and pride (Palmer et al., 2009). Consequently, Palmer and colleagues (2009) indicated that kī-o-Rahi could be used to encourage healthy living in groups at risk of poor health outcomes.

Research by Eggleton et al. (2018) found a kaupapa Māori exercise programme by Māori, for Māori, and underpinned by a Māori world view significantly reduced weight, and improved blood pressure and mental wellbeing measures. The authors attributed the success of the programme in part to the use of kaupapa Māori principles, and their findings strengthen the argument that health programmes need to be designed by Māori, for Māori to reduce health inequities. The findings of Eggleton et al. (2018) and research by Palmer and colleagues indicate an Indigenous sport such as kī-o-Rahi may be useful in health-based interventions for Māori. Harris et al. (2021) examined the physical demands of the tākaro in a secondary school tournament and found the game was of sufficient intensity and duration to improve health and fitness. Burton (2022) also found that kī-o-Rahi participants tended to perceive lower exertion levels than would typically be expected based on objective measurements of effort such as heart rate. The research on the physical demands of kī-o-Rahi by Harris et al. (2021) and Burton (2022) indicates that the tākaro may have positive hauora (wellbeing) outcomes for participants in an exercise or health programme.

A key aspect of encouraging people to be active is determining what motivates them to participate in physical activity (Rhodes et al., 2021). This information can then be used to design a programme that meets the specific needs of an individual or group. To date, however, the psychological antecedents that underpin participation in kī-o-Rahi remain understudied. A general motivational theory that may help to unpack the reasons for participation is the self-determination theory (SDT). According to the SDT, all individuals are motivated to satisfy three basic psychological needs: competence, autonomy, and relatedness (Ntoumanis, 2023). Competence relates to the need to feel accomplished, knowledgeable, and skilful (for instance, a kī-o-Rahi player may feel like they are a good thrower). Autonomy is the need to feel that one is in control of their own behaviours (for example, a kī-o-Rahi player may experience a sense of volition when choosing their position). Relatedness concerns one's sense of belonging and connectedness (a kī-o-Rahi player may feel like they are supported by their team, for example). According to Deci and Ryan (1985), the extent to which an athlete can have these psychological needs met in turn determines the type of motivation they will have. Namely, an athlete whose psychological needs are fulfilled will have more intrinsic motivation for the activity in question.

Self-determination theory provides an explanation of motivation that does not only consider the quantity of an individual's motivation (in other words, is an individual highly motivated to take part in an activity or not), but also the quality of an individual's motivation. According to Deci and Ryan (1985), motivation can be categorised into two main types: Controlled motivation, which is driven by external forces, and autonomous motivation, which stems from internal, self-directed processes. Within these categories, five different types of behavioural regulation are identified and positioned along a continuum of self-determination.

Intrinsic motivation represents the most self-determined form, where individuals engage in activities out of personal interest or enjoyment. While the developers of SDT initially viewed intrinsic motivation as a single construct, Vallerand (1997) later distinguished three facets: intrinsic motivation to know, intrinsic motivation toward accomplishments, and intrinsic motivation to experience stimulation. Regardless of this distinction, intrinsic motivation entails participating in activities for their inherent enjoyment value.

Extrinsic motivation involves engaging in activities because of forces outside the individual (to attain external rewards, for example). Four types of motivational regulation characterise extrinsic motivation: external and introjected are considered controlled styles, while identified and integrated regulations are seen as autonomous regulations. External regulation involves participating to obtain rewards or avoid punishment, while introjected regulation involves internal pressures such as guilt or shame. By contrast, identified regulation occurs when individuals personally value the outcomes of an activity (for instance, an athlete may exercise at the gym to become fitter for their preferred sport), while integrated regulation involves aligning the activity with deeply held values and one's sense of identity.

Finally, amotivation represents a state of lacking motivation, characterised by a sense of apathy or disengagement. Individuals experiencing amotivation lack self-determination and may question their continued participation. Deci and Ryan (1985) suggest that the type of motivation influences psychological outcomes. Autonomous motivation is linked to adaptive outcomes such as wellbeing, while controlled motivation is associated with maladaptive consequences like burnout and anxiety (Shannon et al., 2023).

High levels of intrinsic motivation and autonomously self-regulated forms of extrinsic motivation (integrated or identified) can have a positive impact on athletes' and exercisers' continued participation in physical activity. Therefore, we undertook a study to examine the types and levels of motivation that participants in kī-o-Rahi may have. The overall aim of this research was to determine if participation in kī-o-Rahi is motivated by autonomous or controlled types of motivation.

METHODOLOGY

Participants and procedures

Data was collected during a community kī-o-Rahi tournament (N = 34; 12 women, 22 men) in Ōtautahi Christchurch, Aotearoa New Zealand. Specifically, kī-o-Rahi players in a regional tournament were approached during rest periods between games. Sixteen participants agreed to complete the pen and paper Behavioural Regulation in Sport Questionnaire and demographic questions. An additional 18 participants completed the same questionnaire online, for a total of 34 participants. Participants recruited for online completion of the questionnaire were additionally invited to answer an open-ended question. Both face to face and online participants were afforded an opportunity to win one of two gift vouchers as compensation for participation.

The age of participants ranged from 13 to 69 years old (27.5 ± 14.3). Participants ranged from having only three days of kī-o-Rahi experience to six years (5.1 ± 4.1). Twenty-four participants identified as Māori and 10 participants identified as New Zealand European/Pākehā. Informed consent was gained prior to the completion of the survey and ethical approval was attained from the authors' Institutional Ethics Board. Players were informed of the benefits and risks of the investigation prior to giving written consent to participate in the study.

Instrument

The Behavioural Regulation in Sport Questionnaire (BRSQ) was used to quantify kī-o-Rahi participants' motivation. The BRSQ was designed to measure motivation in sport and is comprised of 24 items across six subscales to represent intrinsic motivation, the four extrinsically motivated regulations (integrated, identified, introjected, external), and a subscale for amotivation. The BRSQ was chosen for its reliability and validity as demonstrated in previous studies (Clancy et al., 2017), and because it provided a brief measure that was deemed convenient for participants. Lonsdale et al. (2008) reported a confirmatory factor analysis for the BRSQ that produced fit statistics that were considered strong and met cut-off criteria suggested by Hu and Bentler (1999).

Statistical analysis

Descriptive statistics regarding the mean and standard deviation of each type of motivation were provided. A comparison utilising an independent sample T-Test was made between the mean intrinsic motivation level of participants in the current study and previous published data on New Zealand athletes (Lonsdale & Hodge, 2011).

Qualitative content analysis

A qualitative content analysis was conducted to explore participants' motivation to take part in kī-o-Rahi. Participants who completed the online survey (n = 18), were asked to respond to the additional open-ended question: "What do you enjoy about kī-o-Rahi? (List up to 3 things)." The responses to this question are available

on request. The qualitative content analysis involved several key steps to ensure the robustness and credibility of findings (Charmaz, 2014). To achieve this, the initial coding of the responses was performed by the first author. This process involved reading all the responses multiple times to become thoroughly familiar with the data. The first author then identified initial codes that captured significant aspects of the participants' motivation to take part in kī-o-Rahi. These codes were derived directly from the data, ensuring that they were grounded in the participants' own words and experiences (Charmaz, 2014). Next, the initial codes were grouped under broader themes. This thematic analysis was an iterative process, involving comparison and refinement of the codes to ensure that they accurately represented the data. The first author developed a preliminary set of themes, which were then reviewed and refined in collaboration with all authors. This collaborative review process helped to enhance the credibility of the analysis by incorporating multiple perspectives and ensuring that the themes were comprehensive and representative of the data. The frequency of each theme was then calculated and reported.

RESULTS

Descriptive statistics

Overall, participants reported high levels of intrinsic motivation and relatively high levels of the autonomous forms of extrinsic motivation (integrated and identified regulation).

	INTRINSIC	INTEGRATED	IDENTIFIED	INTROJECTED	EXTERNAL	AMOTIVATION
MEAN	6.69	4.24	4.76	2.15	2.50	1.66
STD. DEVIATION	0.54	0.98	0.88	1.18	1.29	0.75

Table 1. Average mean and standard deviation for six diverse types of motivation reported by kī-o-Rahi players (N = 34) on a seven-point Likert scale.

Comparison with previous research

The average level of intrinsic motivation reported by participants in the current study appears to be meaningfully greater than the average intrinsic motivation levels of athletes from previous New Zealand studies on other sports, such as rugby and football. The average intrinsic motivation score in the present study (M = 6.69, SD = 0.54) was significantly higher than values previously reported for New Zealand athletes (Lonsdale & Hodge, 2011). The mean difference was 0.56, t(213) = 3.18, p = .002, 95 percent CI [0.21, 0.91], SE = 0.18.

Qualitative indicators of enjoyment

Connection to Māori culture and the opportunity to relate to others were the most frequent answers provided to the question of why participants enjoyed playing kī-o-Rahi. For instance, one participant shared that, for them, the most important thing about kī-o-Rahi was the people involved. Specifically, they used the whakataukī (saying): "He aha te mea nui o te ao? He tangata, he tangata, he tangata [What is the most important thing in the world? It is people!]."

In addition, the opportunity to be immersed in a game incorporating te ao Māori (the Māori worldview) was an essential aspect of participants' motivation to play kī-o-Rahi. For example, the rules of the game are agreed upon prior to the start of each tournament, which reflects community decision making. Participants also mentioned the importance of being able to speak te reo Māori during and between games. One participant specifically identified the meaning and purpose they found in kī-o-Rahi as a reason they continued playing. For instance, this participant said:

> I love how […] it is all about te ao Māori and actually connecting with our culture while also enjoying a game, I like how it brings different kura [schools] together allowing for new connections/friendships, [and] I also enjoy how competitive it is.

The opportunity for a more nuanced experience of competition was also enjoyed by participants. Although some participants mentioned the enjoyment they received from competition and winning, most participants described how competition was more of a means to an end, with the end being connection and community. One participant described how kī-o-Rahi allows athletes to "not feel the pressure of competition (being there to participate and being Māori first before being a number [and instead of] westernised ideologies of participating solely to win)."

Theme	Frequency Count (N = 18)
Whakawhānaungatanga (Connecting with others)	12
Te ao Māori (Culture)	10
Nuanced aspects of competition	3
Te reo Māori (Language)	2
Inclusivity	2

Table 2. Frequency count of themes for participating in kī-o-Rahi identified by respondents to the online version (n = 18) of the questionnaire's open-ended question.

DISCUSSION

The findings of this study underscore the potential of kī-o-Rahi as a culturally relevant intervention to address health inequities among Māori. The elevated levels of intrinsic motivation and autonomous forms of extrinsic motivation reported by participants suggest that kī-o-Rahi is not only enjoyable but also aligns well with the psychological needs outlined in self-determination theory (Ryan & Deci, 2020). This alignment is crucial as it indicates that participants are likely to engage in kī-o-Rahi out of genuine interest and personal value, which are key factors for sustained participation and positive health outcomes (Ntoumanis, 2023).

The literature highlights the persistent health inequities faced by Māori and the need for culturally tailored health interventions (Gustafson et al., 2024; Hobbs et al., 2019). Traditional health policies have often failed to accommodate cultural and ethnic differences, leading to ineffective outcomes (Brown & Bryder, 2023). In contrast, sport and recreation, particularly Indigenous sports like kī-o-Rahi, offer a promising avenue for health promotion. The cultural significance of kī-o-Rahi, which incorporates mātauranga Māori and tikanga, provides a unique platform for promoting physical activity while reinforcing cultural identity and community bonds (Palmer et al., 2009; Smith & Smith, 2023).

The motivational aspects of kī-o-Rahi are particularly noteworthy. The elevated levels of intrinsic motivation reported by participants are significantly higher than those found in previous studies of New Zealand athletes

(Lonsdale & Hodge, 2011). This suggests that kī-o-Rahi is particularly engaging for its participants, likely due to its cultural relevance and the fulfilment of psychological needs such as relatedness (Deci & Ryan, 1985). The qualitative data further supports this conclusion, with participants frequently citing connection to Māori culture and community as key reasons for their enjoyment of the sport.

Anecdotally, one participant in the current study indicated that they did not feel like they were working hard despite having an elevated heart rate during their games. This perception aligns with Burton's (2022) findings that kī-o-Rahi participants tend to perceive lower exertion levels than would typically be expected based on objective measurements of effort. This suggests that the enjoyment and engagement in the game may mask players' physical exertion, making it a particularly appealing form of exercise. These findings support the notion that kī-o-Rahi can be an effective health intervention, particularly for Māori communities.

The themes identified in the qualitative analysis, such as whakawhānaungatanga (connecting with others) and te ao Māori (cultural immersion), highlight the broader social and cultural benefits of kī-o-Rahi. These aspects are crucial for fostering a sense of belonging and identity, which are important for psychological wellbeing. The nuanced experience of competition in kī-o-Rahi, where the focus is on participation and community rather than solely on winning, aligns with Māori values and provides a more inclusive and supportive environment for physical activity.

The broader implications of these findings are significant. The integration of traditional Māori knowledge and practices into health interventions not only enhances their effectiveness but also ensures cultural relevance and acceptance. This approach aligns with the principles of Te Tiriti o Waitangi, which emphasises partnership, protection, and participation (Sheridan et al., 2024). By promoting kī-o-Rahi and similar Indigenous sports, policymakers and health practitioners can address health inequities in a manner that respects and celebrates Māori culture. Specific recommendations include further promoting kī-o-Rahi within kura (schools) and community centres. Additionally, public health agencies such as Te Whare Hauora could incorporate kī-o-Rahi into wellbeing programmes, particularly in regions with high Māori populations.

The current study provides compelling evidence that kī-o-Rahi can be an effective tool for reducing health inequities among Māori by promoting physical activity in a culturally relevant and intrinsically motivating way. Future research should continue to explore the long-term health impacts of kī-o-Rahi and other Indigenous sports, as well as their potential to be scaled up as public health interventions. Additionally, there is a need to investigate the specific mechanisms through which kī-o-Rahi influences health outcomes, including the roles of social support, cultural identity, and psychological wellbeing. This comprehensive approach will provide a deeper understanding of how Indigenous sports can contribute to health equity and inform the development of effective, culturally grounded health interventions.

Limitations

This study provides valuable insights into the motivational aspects of kī-o-Rahi and its potential as a culturally relevant health intervention for Māori. The use of the Behavioural Regulation in Sport Questionnaire provided a reliable and valid measure of diverse types of motivation, allowing for a nuanced understanding of participants' motivational profiles. However, several limitations should be acknowledged. First, some participants in the study had minimal experience with kī-o-Rahi, ranging from only a few days to several years. This variation in experience levels could have influenced the results. Participants with more experience might have different motivational drivers compared to those who are new to the sport. Future studies should consider stratifying participants based on experience level to better understand the impact of experience on motivation to take part in kī-o-Rahi. Furthermore, the generalisability of the findings might be impacted by the gender imbalance of participants and the small sample size. Finally, minimal qualitative data was obtained for this study, which limits the depth of understanding regarding why participants enjoyed kī-o-Rahi. While the open-ended question provided some insights, a more comprehensive qualitative approach, such as in-depth interviews or focus groups, could offer richer data.

CONCLUSION

This study highlights the significant potential of kī-o-Rahi as a culturally relevant intervention to address health inequities among Māori. The findings demonstrate that participation in kī-o-Rahi is driven by elevated levels of intrinsic motivation and autonomous forms of extrinsic motivation. This suggests that participants engage in kī-o-Rahi out of genuine interest and personal value, which are crucial for sustained participation and positive health outcomes. The elevated levels of intrinsic motivation reported by participants are significantly higher than those found in previous studies of New Zealand athletes, suggesting that kī-o-Rahi is particularly engaging, perhaps because of its cultural relevance and the fulfillment of psychological needs experienced by participants. Qualitative data further supports this, with participants frequently citing connection to Māori culture and community as key reasons for their enjoyment of the sport.

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UNSCREWED? A PLAYER'S PERSPECTIVE ON RETURN TO FOOTBALL FOLLOWING SERIOUS INJURY

Gary Barclay and Laura Munro

PREFACE

Ten years after an on-field act of violence led to a near fatal injury and associated post-traumatic stress disorder (PTSD), I (first author) am finally ready to return to a game that I love, football. The physical injury suffered was a fractured second cervical vertebrae. Recovery initially required 12 weeks wearing a halo brace and vest. The psychological recovery from this injury, however, has taken much longer. This article explores insights into the eventual return to playing football. This article may be useful for psychologists, mental skills trainers, and others involved in working with injured athletes to help them appreciate the potential psychological impact of injury and challenges faced in return to play at any level. What follows are my last memories of the game of football preceding my injury.

Saturday 18 May 2013: Local football field

> I wake up on the ground ... I'm lying flat on my back. I feel tingling in my arms and legs … I know instantly that this is a sign of spinal damage. I tell the people around me, "Don't move me!" I try to lift my head but I can't even do that. … I'm screwed…! I'm lying here thinking about a life of paralysis. I'll never be able to go for walks or bike rides with my family. My kids are going to miss out on me. I'm going to miss out on them. Images of my family riding their bikes next to our local stream come to mind, but where am I? I'm really scared … I can't take this anymore, I just want to sleep. (Barclay & Middlemas, 2016, p. 25)

Wednesday 16 August 2023

The Women's Federation Internationale de Football Association (FIFA) World Cup is currently taking place in New Zealand and Australia. The hype of the world cup, in conjunction with watching people around me enjoying playing football, have made me think seriously about playing again. These factors, as well as the continual 'pull' of playing with friends (Barclay, 2023), have made me prepare for a return to the 'beautiful game.'

The transtheoretical model of behavioural change identifies a variety of stages ranging from pre-contemplation (not considering change), contemplation (considering change), through to preparation, action, and maintenance of long-term behaviour change (Pennington, 2021; Prochaska et al., 1992). In anticipation of a potential return to football (entering the preparation stage) and knowing that I need to reduce my risk of injury due to my age and previous injuries, I consult the Accident Compensation Corporation (ACC) website for resources on preventing injury in football. I look for the FIFA 11 warm up routine which is an evidence-based, football-specific warm up designed to help reduce injury risk (Bizzini & Dvorak, 2015).

With only two games left in the season I am thinking that I might be able to attend the last couple of practices for a 'kick around' with old friends. I arrive at the local football ground unannounced expecting to join in on practice with the over-35 and over-45 teams. Unfortunately, they have cancelled the session. Disappointment sets in that no one came to play! I come home to the usual family mid-week routine and any disappointment dissipates quickly as I merge back into family life.

Friday 18 August 2023

At the Edgar Centre, a local indoor sporting complex, I watch our students teach sports-related skills to children from a local primary school. That is when I realise I know one of the teachers through playing football together during high school and at my local club. We begin talking and our conversation quickly turns to football. I joke with him about my disappointment at not being able to attend Wednesday night practice. He gives me the name and number of the over-45 team manager which is a step closer to making re-engagement happen. At this stage, the intent is to have a practice with the team. But interestingly, there is also a slight hope that I might be able to play a game. I tell myself that hope is ridiculous with just two games left in the season, to quell potential disappointment.

I am ambivalent about contacting the team manager so close to the end of the season. Such a sense of ambivalence is considered normal for those in the contemplation stage of behaviour change (Pennington, 2021; Prochaska et al., 1992). However, despite my reservations I go ahead and text him. He almost immediately calls me back saying that they are short of players tomorrow and asks if I would like to play! My self-talk in this moment is: "Holy shit, it's happening!"

I quickly ask my wife if she needs me for anything tomorrow afternoon when the game is scheduled. She looks at me with a mixture of a smile and hesitancy and says that we have no other plans then. Great! I have my wife's support. Cautiously I reply, "Yes, I can play." My heart is pounding, and I can feel the excitement coursing through my body. The adrenaline is flowing, and I am full of energy! I warn the manager I will not be 'football fit' but he assures me that my fitness should be okay: "It's over 45s so there is a wide variation in fitness. You will be fine!" We end the call with, "See you tomorrow."

I was not realistically expecting to play at all this season. But it is happening, and so quickly! There is no backing away now. I will stay true to my word regardless of how I am feeling about the speed of this transition back to play. I have always been a 'team man.' This sense of commitment and motivation to the team fits with the relatedness component of self-determination theory which suggests that behaviour can be motivated by our need for autonomy, to feel competent, and to feel connected to those around us (Deci & Ryan, 1985; Ryan & Deci, 2020).

I reassure my concerned family that I should be safe during play. Later in the day my wife expresses her excitement for me to be playing again. Her attitude this time contrasts with my last attempted return in 2021, when she was not in support of me playing again (Barclay, 2023).

I am questioning my football ability having not been to a practice this season. I reflect on what training I have done including running and resistance training in addition to kicking the football around with my son, which means I should be capable regarding general fitness and skills. But playing a game of football which requires a wide range of fitness capabilities will be more challenging (Milanović et al., 2019).

My son and I have our usual Friday afternoon kick around at the local football ground but the feeling and purpose of it is different this time. This is not just preparation for my son's game tomorrow. This is for me, too! We return home and I start to get my gear ready for the next day. I am playing football, I remind myself. Wow!

Making connections again to the transtheoretical model (Pennington, 2021; Prochaska et al., 1992), I have now moved from preparatory actions like getting injury prevention information from ACC on Wednesday, contacting

the team on Friday, and seeking my wife's approval (possibly in the wrong order), to suddenly starting the action stage on Saturday. I wasn't expecting this to happen so quickly, if at all, this season.

I realise that I need to calm down amid this excitement, or I might burn valuable energy before the game. I start using the following phrase to help reduce my activation level: "slow down to calm down." This simple phrase and associated actions of slowing down my movements while breathing more slowly and deeply has helped me experience a sense of calmness in the past. The use of breath control is widely regarded as an effective strategy for reducing activation levels (Jerath et al., 2015). I begin to clean my boots. I remind myself why I am doing this: "Because I am playing football tomorrow!"

Knowing our game is a 'home game' is helping me feel more relaxed about playing as most things, including the field and surroundings, will be familiar. Previous performance accomplishments in this environment are helping me feel confident in my ability to perform (Ashford et al., 2010; Bandura, 1986).

Interestingly, and not surprisingly, I also experience fleeting thoughts about my injury in 2013. The thoughts include how much damage was done to my physical and mental health as a result of the injury and the challenges faced during my treatment and recovery. I open my wardrobe and have a vivid and physical memory of wearing my halo brace and vest. The sensation returns of how restricted my movements were at the time. I can feel the tightness of the titanium pins that are screwed into my head. I feel the comb running through my hair as my wife attempts to comb through the dry powder she uses to clean my hair, which I am unable to wash in the shower. The memories are fleeting and not very distressing but serve as a reminder of what we went through. I calm myself somewhat by remembering that I will handle the way I participate in this game more carefully than I did in 2013.

The main strategy that I will use to keep me safe is managing my distance from others where possible and sticking to the over-45 grade where the game is slower and less intense than other grades. When I last considered re-engagement in football in 2021, I thought I needed to tell people to "be gentle with me," and to wear a coloured bib or neck collar to help keep me safe. This time, I am not having such thoughts. I know that I can walk away from any form of confrontation and that I can leave the game or substitute myself off if I do not feel safe. I take comfort from the fact that I have a sense of autonomy over how I play and feel competent in my ability to follow through on this. Deci and Ryan's self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2020) suggests that autonomy and competence are two important aspects of motivation. I feel like I am returning to football on my terms.

On occasion, I experience waves of emotion. I am on the verge of crying about playing tomorrow. Playing football again is an enormous step for me in terms of my overall healing from what happened to me 10 years ago. I know that if I let myself focus too much on the significance of what I am about to do, I could easily cry. Is this relief that I am finally going to be able to play after 10 years? Is this anxiety about the possibility of getting injured? Am I just excited at the prospect of playing again with old friends?

Saturday 19 August 2023

Game day! I wake at 4.45am and struggle to get back to sleep. Between then and the alarm going off at 6.20am, I spend most of my time thinking about football. I just cannot 'switch off.' I decide to use mental imagery of me performing various football skills successfully to help build my confidence for the game (Levy et al., 2011).

I am feeling excited and positive about my game this afternoon, but I continue to have fleeting memories of life following my neck injury. I remember being in the ambulance; wearing the halo, and not being able to wash properly. Again, I comfort myself with thoughts about how I will involve myself in the game. I also seek comforting hugs from my wife. She acknowledges that this is an important step for me, and we continue to remain positive.

After lunch I purposely do things slowly. "Slow down to calm down" is the phrase that I continue to use and it seems to be working well. I am feeling relatively calm and relaxed about playing my first game of football in ten years.

Before the game

Half an hour until kick-off! I walk over to meet the team at the clubrooms and introduce myself to those people I do not know. It feels good catching up with old friends. Several of my teammates are surprised to see me, but very welcoming and appreciative of me being there to help, given several of the regular players are unavailable due to injury.

In the changing rooms, I quietly get changed and remind myself to "slow down to calm down." I have written "slow" on a piece of tape that I have around one of my fingers as a reminder to consistently use this statement. Self-talk is an effective psychological skills training method for improving psychological performance in sports (Hatzigeorgiadis et al., 2011) and appeared to work well for me in this situation. We leave the changing rooms to do some warming up. I try to remember as much of the FIFA 11 warm up programme as I can.

During the game

Before the game starts, our captain tells my teammates to pass me the ball during the game because he thinks that I am a good player. At the time, I found this both embarrassing and unrealistic given the fact that I had not played in 10 years. Perhaps he was just trying to help build my confidence through verbal persuasion, a useful strategy for developing self-efficacy: a situation specific form of self-confidence (Weinberg & Gould, 2024).

I play on the left wing which I feel comfortable with as it gives me plenty of space thereby limiting the chances of unexpected collisions. Midfield positions can involve more body contact and tackling. I look over and appreciate my wife, daughter, and son watching me. This support from family is hugely important in my return to play.

The game is played in friendly spirits. There is a lot of banter between both groups of teammates and between teams. It seems like a primary motive for everyone involved is having fun with each other, which is consistent with systematic reviews looking at the motivations of mature sports participants (Stenner et al., 2020).

In the first half of the game, I have two minor collisions. Both leave me on the ground. The first does not result in any injury but the other involves a knock to my right ankle which gives me a fright. Thankfully, neither of these minor collisions cause any negative psychological response.

At half time, one of the spectators approaches me to say it is great to see me out there playing again. He was there in 2013 when my neck injury happened. He tells me he still remembers that day and how bad the incident was. I do not want to 'go there' during my comeback game so I swiftly change the topic.

After the game

After the game we stand around talking as a team while I finish my bottle of water and recovery drink because I know I need it. A couple of players from my team compliment me on my return to football and suggest that I had a good game.

Back in the changing rooms, the team captain asks if I am available next weekend. I say, "Yes, so long as I recover okay." The significance of what I have just achieved is yet to fully register.

Back at home, my wife gives me a big hug and says, "Well done, sweet!" A few times throughout the evening I think, "Holy shit, I did it!" After all this time and uncertainty, I did it! I feel proud of myself and relieved to have gotten back on the football field.

Sunday 20 August 2023

Having successfully got through my first game of football in 10 years, I am now confident in my ability to do the same in the last game of the season. Bandura (1986) and Ashford and colleagues (2010) identify that previous performance accomplishments are a powerful source of self-efficacy-enhancing information. Being able to successfully do something is likely to enhance belief in one's ability to complete that or similar tasks again in the future. Similarly, in alignment with self-determination theory, I am feeling competent in my ability to perform because I played successfully yesterday (Deci & Ryan, 1985; Ryan & Deci, 2020). I also feel a sense of relatedness with the group based on knowing so many people in the team and their positive feedback and friendliness towards me (Ryan & Deci, 2020). As with my 2021 football practice experiences, "I know that I am not out of place; I feel like I belong in that environment and can be successful" (Barclay, 2023, p. 34). I am hoping that I can play in the last game of the season next weekend.

Monday 21 August 2023

Back at work, I share with one of my close colleagues that I played football at the weekend for the first time in 10 years. She knows about my neck injury and is very congratulatory and excited for me. She mentions how much I was smiling at telling her my news. I am sitting at my desk feeling like I could cry. I think that this is occurring due to the release of my emotions and being able to share my progress with my colleague.

Wednesday 23 August 2023

I receive a text message from the football team manager asking if I am available for the game this coming Saturday. He says, "Hope body held up OK this week." I respond that I am "very keen so long as body is better by then!" I am excited about the prospect of playing again this weekend and being part of the team.

REFLECTIONS AND CONCLUSIONS

Decision making

After 10 years without playing football, I have found a way to 'close the loop' and become involved in the game again. To better understand how this happened, it is worth reflecting on some key aspects which may have helped in my progression from spectator to player.

The thoughts of "Could I get hurt?" and "What if I get hurt again"? are still there. However, the feelings associated with them seem more manageable and less anxiety-provoking than previously. The combination of staying away from conflict and as much contact as possible by playing in the wing position, and playing in the over-45 grade, is helping me to feel safer in the playing environment. I seem to be more at peace with the fact that the actions of one person which led to my injury were so rare and ridiculous that they are unlikely to happen again. It appears that I have found additional ways to manage my vulnerability to harm schema: my tendency towards over-protectiveness where I would respond to perceived dangers with heightened levels of anxiety despite minimal chance of harm (Barclay, 2023). This has allowed me to return to play.

As discussed above, self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2020) posits that motivated behaviour can be attributed to having a sense of autonomy, competence, and relatedness regarding that behaviour. The attraction to playing football with teammates again is strong (relatedness), as is the belief in my ability to perform the physical skills required (competence). Additionally, there is now a strong sense of choice that I can make my return to play in a manageable way that is safe for me and under my conditions (autonomy). One of the most difficult aspects for me to deal with long term was the fact that my involvement in football felt like it had been taken away from me due to the assault and subsequent injury. I lost my sense of autonomy regarding my

involvement in football which was disappointing. Now, after all these years, it feels like I have found a way to take back my autonomy by playing a game I enjoy on my terms and with my safety in mind.

It would be remiss at this point to not mention another potential contributing factor to my long-awaited return to football in 2023. In 2022, I sought therapy for some mental health challenges that I was experiencing outside of football. Part of the treatment for this was taking part in eye movement desensitisation and reprocessing (EMDR), a therapeutic technique developed by Shapiro (2004) and found to be associated with positive outcomes for those with PTSD (De Jongh et al., 2019; Van der Kolk, 2015). Although the sessions with my therapist did not specifically target my neck injury experiences, it is possible that the success of the treatment in reducing my anxiety levels and sense of personal safety 'spilled over' into other life areas. I thereby inadvertently experienced broader benefits, including feeling more comfortable being on the football field again.

It has been fantastic being back in a team environment. Members of the team have been very supportive and encouraging, especially those who knew of my previous injury. Their praise during and after that first game back helped me feel a sense of competence and belonging to the group which further spurred my desire to remain with the team in the future. My experience has been a positive one, not just at a personal level but also within the playing environment. Throughout my first game, I saw people being respectful to referees, playing fairly, having a laugh and generally just having fun, all of which motivates me to want to play again.

A further benefit of these positive experiences may be continued healing from the PTSD I experienced because of the assault that led to my injuries. Research indicates that positive and supporting relationships can help prevent and heal PTSD (Van der Kolk, 2015). Therefore, the support that I have received from my most recent playing experience may flow on to further my recovery. Perhaps playing football again with old friends will help me re-establish important social connections. After my injury, I thought I was "screwed." Now, perhaps I can 'unscrew'!

Implications for practice

The current article provides implications for practitioners supporting individuals returning to play following a significant injury. Identifying strategies to develop a sense of safety within the player can enhance feelings of control. Having a plan to substitute the player off if they are feeling unsafe; allowing them to play in a position where contact is less likely; and discussing autonomy of pace and on field positioning during the game may be useful strategies.

In addition to enhancing the player's sense of safety, encouraging the involvement of wider support networks such as family, friends, team members, and management may be useful. As demonstrated throughout this article, the power of connection has been important firstly, in my feeling supported to return to play, and secondly, enhancing the enjoyment experienced while playing. The current article highlights that focusing on the enjoyment aspect of the activity, rather than the outcome, can benefit returning to play. Returning to play in a social grade where the objective is enjoyment could enhance connection with team members and reduce anxiety around performance.

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AN EXPLORATORY STUDY OF ELITE NETBALL COACHES' ENGAGEMENT WITH IN-GAME STATISTICS DURING COMPETITION

Hayden Croft, Kirsten Spencer and Sam Robertson

INTRODUCTION

Netball is a dynamic, fast-paced team sport where coaches and players are required to make decisions quickly during a match. Live video replays are possible via modern streaming technologies; however, due to the continuous and high-speed nature of the game, coaches have limited time to look at a video replay device. Statistical data are utilised by coaches to provide insights into the current state of the game (Nicholls et al., 2018) and can be used to support decision making. Public domain websites (Champion Data, 2020) broadcast live statistical information about the state of netball matches in many international, elite club, national, and school competitions. The live information that these websites provide includes scoring, team statistics, individual player performance, opposition player performance, team performance comparisons, shooting performance, top five player rankings, score sequences, and player interchange. These categories align with many of the tactical themes used by coaches as observed in research investigating coach discussions (Croft et al., 2020).

Recent research has looked at the use of statistical information by coaches in providing feedback to athletes and players (Nicholls et al., 2018; Middlemas et al., 2017). However, there is a need for further research examining coaches' interactions with such information during a match. This is important for performance analysts to understand what information could support coaches by streamlining observation and feedback aspects of the coaching process (Drust, 2010; Nicholls et al., 2018; Williams & Kendall, 2007).

Croft et al. (2020) explored the spoken behaviours of netball coaches, identifying themes around tactics and strategies using an inductive content analysis. Subsequent work has looked to align and contextualise information within these themes (Croft & Spencer, 2021). When statistical information, such as team scoring success or individual player performance indicators, is presented to coaches, it then becomes necessary to observe their interactions with it (Edwards, 2017) to help understand its value and therefore validity. Despite existing research on coach behaviour in various sports, netball is not well understood and thus requires further investigation. Due to this, netball lends itself to descriptive and explorative research approaches (Cushion et al., 2012) to establish a basis for future research in coach behaviour.

Observational field research is an effective tool for understanding behaviour (Gray et al., 2007) as it can provide complex insights into what participants do and require. Consequently, observation research has strong ecological validity and is a good method for understanding coach behaviour and subsequently what information may be important to them during a sports match. Previous research (Cushion et al., 2012) has developed tools for instrumented coach observation. Computers and software such as Hudl-Sportcode, (https://www.hudl.com/products/sportscode) have enabled complex analysis of behaviours and, it could be argued, have better reliability

and validity than pencil and paper notational analysis. Information technologies, such as video coded data and sensor devices, have been described as both a source of knowledge and a resource for coaches; however, the role of these technologies in understanding of coach learning is critically unexplored (Cushion & Townsend, 2018). Observations of coaches' interactions with information technology have the potential to add to the evidence base and improve our understanding of the role it can play. Aligning these behaviours with the spoken tactical themes identified in previous research (Croft et al., 2020; Zetou et al., 2011) will give insights into whether a coach's spoken communications are closely aligned with their decision making.

The objectives of this study were to: 1) measure the types, frequencies, and durations of statistics viewed by netball coaches during matches; 2) describe the movement between different types and complexities of information by coaches; and 3) to observe the amount of congruence between their communications, identified in previous research (Croft et al., 2020), and statistical information from the current research. The purpose of this study was to describe through observation, and explore, how elite netball coaches use statistics during netball games so that performance analysts can better design what information is presented to them in a live setting.

METHODOLOGY

Design

An observational field research approach was adopted with a post-positivism ontology to frame this research, as it acknowledges that knowledge is a combination of theory and practice, where different methods can be utilised (Henderson, 2011; Ryan, 2006). An inductive data analysis approach (Elo & Kyngäs, 2008; Neuendorf, 2002) where open coding, creation of categories, and abstraction was implemented. This approach aligns this study with that which Croft, Spencer, and Robertson (2020) conducted on the same participant group, allowing for comparison of results.

Participants

Six elite netball coaches, who currently coach in either the National Netball League (NNL) or ANZ Premiership (ANZP) were recruited voluntarily via email. The inclusion criterion of coaching at NNL or ANZP level was set as this group had access to either a performance analyst or performance statistics, and therefore experience with using this information. Participants approached the researchers to participate in the study, having been provided information about it via their high-performance manager. Their involvement was kept confidential from their high-performance manager and all others, except the lead researcher. Ethical approval for the study was granted by the Auckland University of Technology Ethics Committee (AUTEC) (Ethics Application 21/33).

Equipment

Each coach was provided with an Apple iPad device, which was connected to the internet via a local high speed Wi-Fi network. The iPad was configured to show a live statistics website (https://mc.championdata.com/anz_premiership/index.html) on the right two-thirds of the screen and the device's internal camera on the left one-third of the screen. The camera's perspective was that of the coach, enabling identification of frequency and duration of screen viewing. The website had several pages of statistics, which align with those identified as important in previous research (Croft et al., 2020). A screen recording was taken of the iPad, identifying all interactions with the device as well as the participant's visual gaze. For all participants a stable connection to the internet was achieved and there were no connection issues identified.

Hudl-Sportscode notational analysis software was used to code the website pages, and therefore the category of statistic the coaches looked at during a netball match and the duration in seconds. Table 1 shows the statistics' screen name, the information displayed, and an overall description for the page.

Statistics screen name	Information displayed	Description
Scoring	Possession source to goal frequency and success Score worm graphic Last score and misses Lead and scoring streak	Statistics that provide information about trends and current state of scoring events.
Team Stats	Time in possession Gains, intercept, deflection resulting in a gain Penalty – Contact and obstruction Possession changes General play turnover Shooting zones and success	Combine actions of the team that are either attacking or defensive and reflect losing or maintaining possession of the ball.
Player Grid	Player time in the game Frequency of action variables in the match, including: Goals, goal attempts, goal shoot percentage, goal assist, feed, feed with attempt, gains, intercept, intercept pass thrown, deflection gain, deflection no gain, rebound, centre pass received, pick up, penalty contact, penalty obstruction, general play turnover, bad pass, bad hands, offside, and centre pass break	Individual actions for own team that are either positive, scoring, or possession gaining, or errors that lead to losses of possession of penalties.
Opposition Player Grid	Same as player grid but for opposition players	Individual actions for opposition team that are either positive, scoring, or possession gaining, or errors that lead to losses of possession of penalties.
Both Teams Player Grids	Goal, goal attempts, goal shoot percentage, feed, rebound, centre pass received, penalty, general play turnover	An abbreviated player grid allowing for comparison of both teams' individual players.
Goal Shooter	Current player goal shoots, attempts and successful percentage	A view of the shooting performances of the four players on court at the time of viewing, for both teams.
Top 5	Individual player counts for: Feed, goal assists, centre pass received, penalty, general play turnover	A view showing the five players on court for highest counts for five individual actions.
Score Flow	Shooting attempt outcome, ordered by game time, and current score	A temporal list of scoring and non-scoring attempts for both teams.
I/Change	Individual player substitutions, positions, and time	A temporal record of player substitutions with position and game time these are made.

Table 1. Content of statistics screens available to coaches for navigation during their live netball match.

Procedures

As the coaches watched the live NNL or ANZP feed of their team's netball match, they sat with the iPad detailed in the previous section on their lap. The iPad displayed the live match statistics and the participants were instructed to look at the screen when information about the game was of interest to them. Before the match began the iPad's' 'screen record' feature was activated so that all information present on screen was recorded into an mp4 format video file. This ensured that the following information was captured: the website subpages selected, zooming on the device, the information observed, and (via the web camera screen display) visual gaze frequency and length.

Data analysis

Once the video data was captured the files were loaded individually into Hudl-Sportcode, where each of the coach's gazes were coded for length and group of statistics viewed. This was calculated by coding the first video frame the participant looked at on the iPad until the last frame before they looked away. The length of the coded instance was recorded in Hudl-Sportcode and measured by using a "COUNT INSTANCE LENGTH" script. Due to a video frame sample rate of 30fps, an accuracy of 0.03s was achieved. This enabled data to be recorded for the frequency, type, and duration of statistics viewed. These measures also enabled analysis of the order in which each coach viewed the statistics and their movement between the statistical categories. Inter-coder reliability was checked by another performance analyst coding a sample of the video footage while intra-coder reliability was confirmed by the primary researcher repeat coding a sample of video footage also. As the sample size was limited to six participants, observed during one match each, data analysis could not be conducted with a range of statistical tests. Rather, descriptive analysis of visualisation of the measures collected was deemed more appropriate for this dataset. Analysis of the data was focused on two areas: the most common categories of statistics viewed (duration and frequency), and a comparison between participants. This was achieved by calculating means ± SD, but also through visualisations due to the small sample size and descriptive nature of the research.

RESULTS

As seen in Table 2, coaches spent the most time viewing "Team Stats" information, in both total duration and frequency (167.8s and 30.5 times per match respectively). However, the time per view was one of the shortest (5.5s) durations of all the categories. This was followed by the "Scoring" category (133.3s per match) and "Both Teams" (127.8s per match). However, Scoring was looked at less frequently (16 times per match) but for longer (8.4s versus 6.6s per view respectively). Additionally, the "Player Grid" and "Opposition Player Grid" screens were viewed for the longest duration (11s and 10.6s per view respectively); however, with a frequency of 10.8 and 3 times per match, per coach. "Opposition Player Grid," "Goal Shooter," "Top 5," "Score Flow," and "I/Change" were viewed the least (31.9s, 10.8s, 33.0s, 19.0s, and 3.9s per match respectively) with comparatively low frequencies. Overall, coaches viewed the statistics screen for 7.8s duration, with a mean of 71.9 views per game and a total viewing time of 646.7 s per game. This equates to approximately 11 percent of the total game duration.

Types, frequency, and duration of viewing statistical information

	Total viewing time (s)		Frequency of views		Time per view (s)
	mean (±SD)	total	mean (±SD)	total	
Scoring	133.3±144.1	799.9	16.0±12.3	96	8.3
Team Stats	167.8±108.5	1007	30.5±26.8	183	5.5
Player Grid	119.2±50.2	715	10.8±3.3	65	11.0
Opposition Player Grid	31.9±23.9	191.6	3±1.6	18	10.6
Both Teams	127.8±60.6	766.6	19.5±25.1	117	6.6
Goal Shooter	10.8±12.0	64.8	1.7±1.5	10	6.5
Top 5	33.0±48.7	198.1	3.3±4.5	20	9.9
Score Flow	19.0±16.2	114	4.5±5.6	27	4.2
I/Change (interchange)	3.9±8.0	23.3	0.5±0.8	3	6.6
Average	71.9s		10.0		7.8s
Total	646.7s		89.8		

Table 2. Summary of the statistical information viewed, for frequency and duration, by coaches during live netball matches.

Frequency of views

The results show that coaches most frequently viewed the Team Stats screen (Table 2). This screen (Figure 1) presents measures of possession, gains, and losses, in the statistics: Time in Possession," Gains," 'Intercept," "Deflection Resulting in a Gain," "Penalty – Contact and Obstruction," "Possession Changes," and "General Play Turnover." It also displays shooting zones for each team on both sides. It was observed that this centre Team Stats block was utilised (zoomed into) by coaches for the most time during a match.

Figure 1. Screen capture of the Team Stats category within website.

The second most frequently viewed category was "Scoring" (Table 2). The Scoring category shared similarities to the Team Stats in that it displayed team outcome information related to success of the teams in scoring goals from "Centre Passes," "Gains," and "Unforced Turnovers." This category focused on measures more directly related to goal scoring than Team Stats, and provided a visualisation of points difference between teams across the match time. The third category most engaged with by coaches included the "Player Grid" and "Both Teams" grids. Both displayed similar information regarding the individual performances of players in the coach's team, and then a comparison of individual players for both teams. If it is considered that these categories are different representations of the same group of individual statistics, the total time coaches viewed these is larger (139.7s and 116.2s per game) than the single largest category (190.1s per game) of Team Stats.

Total viewing time

Figures 2 and 3 demonstrate that in most categories of statistics, coaches viewed the three individual player categories in a similar manner for both total viewing time and frequency of views respectively. These were Player Grid (119.2±50.2s and 10.8±3.3, Table 2), Opposition Player Grid (31.9±23.9s and 3±1.6, Table 2), and Both Teams for its total viewing time, but not frequency of views (127.8±60.6s and 19.5±25.1, Table 2) where there was large variation. In all three categories, at least five of the six coaches demonstrated similar behaviours. For the team-based statistical categories of Scoring and Team Stats, there was very high engagement in both duration and frequency for two coaches; however, many other coaches had low or no engagement. This is also reflected as a large standard deviation, relative to the mean, for Team Stats (133.3±144.1s and 30.5±26.8) for total viewing time and frequency of views respectively. The Scoring category showed large standard deviations also (133.3±144.1s, 16.0±12.3).

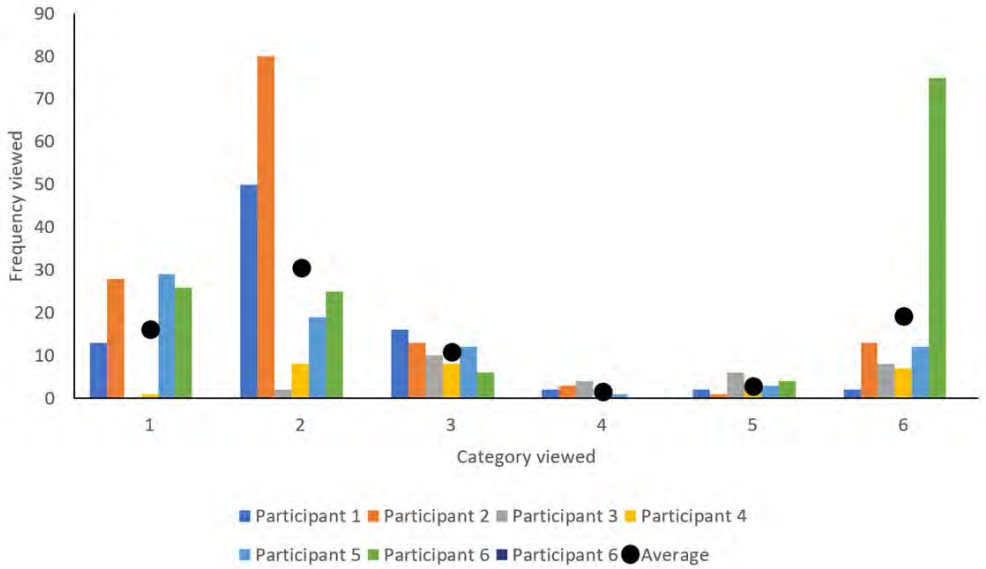

Figure 2. Individual variation, in frequency, between participants' engagement with categories of statistics.

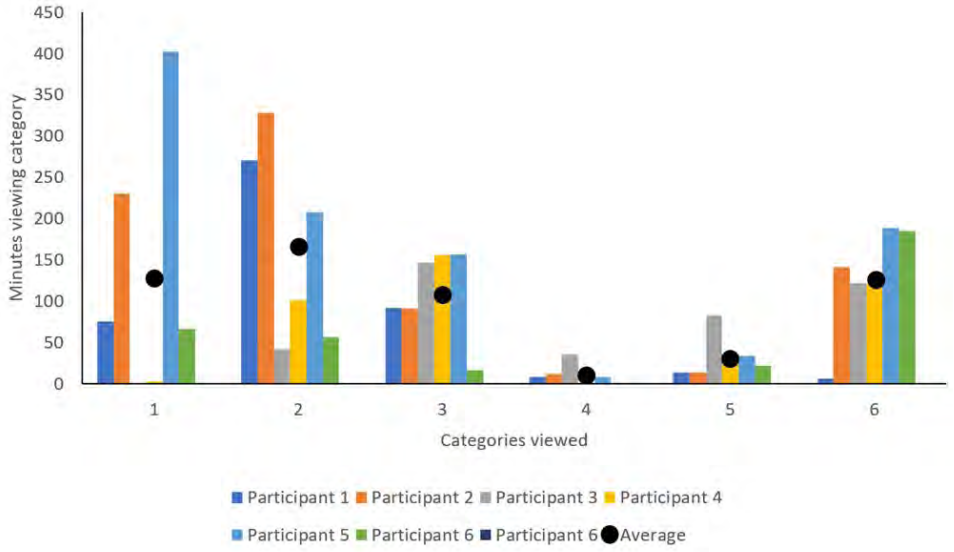

Figure 3. Individual variation, in duration, between participants' engagement with categories of statistics.

Patterns of movement between categories

Not only was the frequency of engagement observed, but also the patterns of movement between categories or screens. Many coaches tended to stay on a screen such as Team Stats or Scoring, glancing at it frequently, then moving to another category before returning to this screen (Table 3). Table 3 shows that the most common sequences of categories that all coaches moved between were from Scoring to Team Stats, Player Grid to Team Stats and from Team Stats back to Player Grid.

Start screen		End screen	Frequency
Scoring	-->	Team Stats	26
Player Grid	-->	Team Stats	24
Team Stats	-->	Player Grid	23
Team Stats	-->	Scoring	20
Both Teams	-->	Team Stats	20
Scoring	-->	Player Grid	17
Team Stats	-->	Both Teams	15
Player Grid	-->	Scoring	15
Player Grid	-->	Both Teams	10
Both Teams	-->	Player Grid	7

Table 3. Frequency of movements between statistical categories, for all coaches, during live netball matches.

To better visualise these movements, a network graph (Figure 4) displays the categories with arrows and font size weighted for frequency and movement between categories, in the direction the coach moved. All arrows pointing towards Team Stats are heavily weighted, implying that a return to this category after being in another was the most common movement. Movement away from this category was also high, which could be due to it being the most common that coaches looked at. Font size was set at 10 percent of the category frequency displayed in Table 3, while arrow thickness (point size) was set at 25 percent of the frequency of the combination displayed in Table 3.

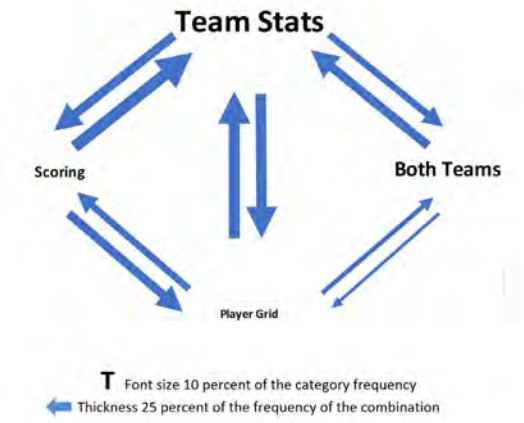

Figure 4. Network graph of the coach movements between statistical categories, weighted for font size and arrow thickness to scale.

Congruence with spoken communication identified in previous research

When the themes of spoken behaviour (Croft et al., 2020) are aligned with statistical categories of this research, it can be seen (Table 4) that the individual player statistics Player Grid (37 percent) and Opposition Player Grid (39.3 percent) had strong alignment with the spoken themes from Croft et al. (2020). Themes also aligned well with the Both Teams Player Grid (26.1 percent) and Scoring (24.9 percent) categories. The Goal Shooter (18.4 percent), Top 5 (18.4 percent), and Score Flow (17.7 percent) categories had weaker alignment with the spoken themes of coaches. These similarities demonstrate some congruency between the two behaviours.

Spoken behaviour	Statistics webpage categories	Alignment percentage of spoken themes	Description
Scoring Attacking actions Defending actions	Scoring	24.9	Statistics that provide information about trends and current state of scoring events.
Player positioning Team positioning Attacking actions Defending actions Errors Attack strategy Defensive strategy	Team Stats	46.6	Combine actions of the team that are either attacking or defensive and reflect losing or maintaining possession of the ball.
Centre pass Gains/ Losses Attacking actions Defending actions Errors Attack strategy Defensive strategy	Player Grid	37	Individual actions for own team that are either positive, scoring, or possession gaining, or errors that lead to losses of possession of penalties.
Opposition actions Centre pass Attacking actions Defending actions Gains/Losses Errors Attack strategy Defensive strategy	Opposition Player Grid	39.3	Individual actions for opposition team that are either positive, scoring, or possession gaining, or errors that lead to losses of possession of penalties.
Opposition actions Centre pass Gains/ Losses Attacking actions Errors	Both Teams Player Grids	26.1	An abbreviated player grid allowing for comparison of both teams' individual players.

Errors Attacking actions	Goal Shooter	18.4	A view of the shooting performances of the four players on court at the time of viewing, for both teams.
Attacking actions Centre pass Errors	Top 5	18.4	A view showing the five players on court for highest counts for five individual actions.
Attacking actions	Score Flow	17.7	A temporal list of scoring and non-scoring attempts for both teams.

Table 3. A comparison of the spoken themes identified by Croft et al. (2020) and the coach engagement with statistical categories.

DISCUSSION

Types, frequency, and duration of viewing statistical information

The purpose of this research was to observe coach interactions with statistical information during live netball matches, providing insights for performance analysts who develop live analysis tools. The first objective was to measure, using computerised analysis (Cushion et al., 2012), the frequencies and durations of the different types of information viewed by these coaches. Coaches engaged more consistently with individual player statistics (Player Grid, Opposition Player Grid, and Both Teams), which make up the Team Stats and Scoring. This could be explained by the complexity of the statistical information, with the Team Stats and Scoring categories being constructed from the combined actions of players and possession outcomes; for example, the "Team Stats – Intercepts" is the sum of all individual player Intercepts. Team Stats had the shortest duration per view; however, there were many such views, implying that the coach's behaviour was to glance quickly and often, updating themselves with the state of this information. Nash and Collins (2006) describe coaches as avoiding the use of too many cognitive resources for unfamiliar situations and tending to rely on prior knowledge from a similar situation. This could explain why we see coaches favour more familiar or simplistic statistics during games, as there are already high cognitive demands on them.

The team-based categories of Scoring and Team Stats had different levels of engagement between coaches. Some had very high engagement in both duration and frequency, while others had low or no engagement. Anecdotally, between the six coaches there were differing levels of understanding of these types of statistic and this could be reflected in different perceptions of their value.

Patterns of movement between categories

The second objective of this research was to analyse the coaches' movements between categories of statistics to provide further insights into coaches' use of this information. The most common movements were from Team Stats to other categories, often returning back to Team Stats. One of the most frequent patterns was to

move from Team Stats, a group of combined team statistics, to a category that represented individual player performance; in other words, the Player Grid. The Team Stats are a combination of individual player actions, or events, and this movement may indicate that coaches navigate layers of statistics to 'dig down' for causes of the measures. This finding aligns with many of the principles of dashboard design (Juice, 2009) and with the concept of relational organisation. Dashboard design will often allow the user to expand information, revealing more detailed information about the high-level metrics. There are also research frameworks that implement this relational approach (Weed, 2009)

Congruence between coach discussions and statistical information viewed

The third objective of this research was to compare the results from objective one with the themes identified by Croft et al. (2020), to see if there was congruence between what coaches talked about and the statistics they viewed. It was found that 58.3 percent of these themes were represented in the categories viewed by the coaches in this study. Coincidentally, the largest category, Team Stats, was the most representative of the spoken themes with 46.6 percent similarity. This supports the concept that there is a relationship between spoken behaviour and engagement in statistics. This in turn confirms the assumption that spoken behaviours are indicative of information coaches require, aligning with the findings of Croft et al. (2020). Some categories, such as Scoring (24.9 percent), had weaker alignment with the spoken themes of coaches. This could represent that they view some statistics often (16 views per match, at 8.3s each) but do not discuss them because they are an outcome measure, not requiring interpretation of their meaning. The more complex categories, such as Scoring, are created from complex combinations of actions, positioning, errors, and strategy, as seen in Table 3, and could provoke more discussion to contextualise and interpret these events.

Limitations

As this study was set in high-performance netball the population for suitable participants was small. With time constraints and delays due to COVID-19 restrictions the researchers were only able to recruit six participants. This meant that statistical analysis of results was not undertaken, and a descriptive approach was necessary. The small sample size also meant that collecting demographic information about the participants would have risked their anonymity. Having such information would have been useful in the analysis and discussion of results as it could have brought context to some of the differences observed.

CONCLUSION

There were several findings and insights discovered in this study that can help a performance analyst understand a coach's engagement with match statistics in netball. These include the frequency of views and total viewing time for different categories of statistics. Insights were also discovered into coaches' movements between statistical category types. For some coaches, these movements were between complex and simple, and team and individual, statistics. There was also congruency between the statistical categories viewed and what coaches discussed, as detailed in previous research. The congruency was highest for complex team statistics which may require discussion to help interpret and contextualise. A performance analyst could utilise these findings to influence the design of information tools that are more aligned with the coaches' behaviours.

Video version

https://youtu.be/pGrtZoXDjiQ?si=0vZD-9cRQEF3NPlk

This link leads to a video that has been generated to explain this paper in an interesting and engaging way for practitioners.

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DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE TO EXPLORE TERTIARY STUDENTS' NUTRITION PRACTICES

Rachel Scrivin, Debora Moore, Cindy de Villiers and Emma McMichael

INTRODUCTION

A nutritious diet plays an important role in maintaining good health, wellbeing, and the prevention of non-communicable diseases (Jankovic et al., 2015; Micha et al., 2017). The Ministry of Health's "Eating and Activity Guidelines for New Zealand Adults" suggest eating a variety of foods from the four main food groups and restricting dietary salt, sugar, fats, processed foods, and alcohol (Ministry of Health, 2020). In New Zealand, nearly half of adults meet the recommended daily intake for fruit, with one in 11 meeting the daily vegetable intake (Ministry of Health, 2024). As the Ministry of Health guidelines cover a wide age range (19–64 years), it is possible that food choices and eating habits differ between younger and older adults. When considering younger adults, it is likely that many will be moving from home to independent living, which can lead to changes in their eating habits. Moreover, university is a time of transition for many young adults. Weight gain during the first year of study is common and can be linked to changes in lifestyle, likely attributed to greater independence and autonomy, including less physical activity, unhealthy dietary behaviours, and stress (Crombie et al., 2009; Finlayson et al., 2012; Vadeboncoeur et al., 2015).

Higher levels of psychological distress are more commonly reported in younger people (aged 15–24 years), and may impact nutrition practices and dietary behaviours (Ministry of Health, 2024). Higher levels of stress can occur during the examination period, and may impact student dietary choices, leading to a decrease in fruit and vegetable intake and an increase in snacking, skipping meals, and consuming more sugary foods and sugar-sweetened beverages (Alduraywish et al., 2023; Avram et al., 2025; Jaremków et al., 2020; Michels et al., 2020; Salihu & Gashi, 2024). Similar nutritional practices have been observed in studies with Western European, Middle Eastern, African, and Asian university student populations (Almoraie et al., 2025; Bernardo et al., 2017). Conversely, in the United Kingdom, it was reported that while food intake varied among university students, a considerable proportion of students followed healthy dietary patterns, such as a vegetarian diet (Sprake et al., 2018). In New Zealand, a study examining the influence of the university food environment on student and staff purchasing preferences, choice determinants, and opinions found that most respondents purchased food and beverages on campus, but healthy items were found to be less available and more expensive to purchase compared to less healthy items (Roy et al., 2019).

Although the tertiary education environment may provide less favourable conditions for healthy dietary choices, there appear to be clear changes in eating behaviours at different times of the year. As mentioned, these changes could be due to different stressors experienced, for instance exams versus term time. Therefore, the aim of this research was to explore the nutritional practices of tertiary students during various times of the academic year to determine if any significant changes in eating practices and habits occurred, which might lead to educational

opportunities to promote healthy eating practices in the future. It was hypothesised that students' nutritional practices would show an increased consumption of convenience foods, particularly sugary, sweetened, and caffeinated drinks, during exam time.

METHODOLOGY

This was a validation and exploratory study. A mixed-methods approach was employed to develop and validate the Student Nutrition and Practices Questionnaire (SNaP-Q) (Figure 1) before launching the final questionnaire. The project was approved by the Toi Ohomai Institute of Technology Research and Human Ethics Committee (unique reference number 24019).

The five phases of questionnaire development and validation involved:

Phase 1 Review of the previous similar nutrition questionnaires. Literature review and initial questionnaire development.

Phase 2 Expert content review (Delphi method).

Phase 3 Face validity (nursing students).

Phase 4 Construct validity (tutors versus students).

Phase 5 Reliability test-retest (health and wellbeing students).

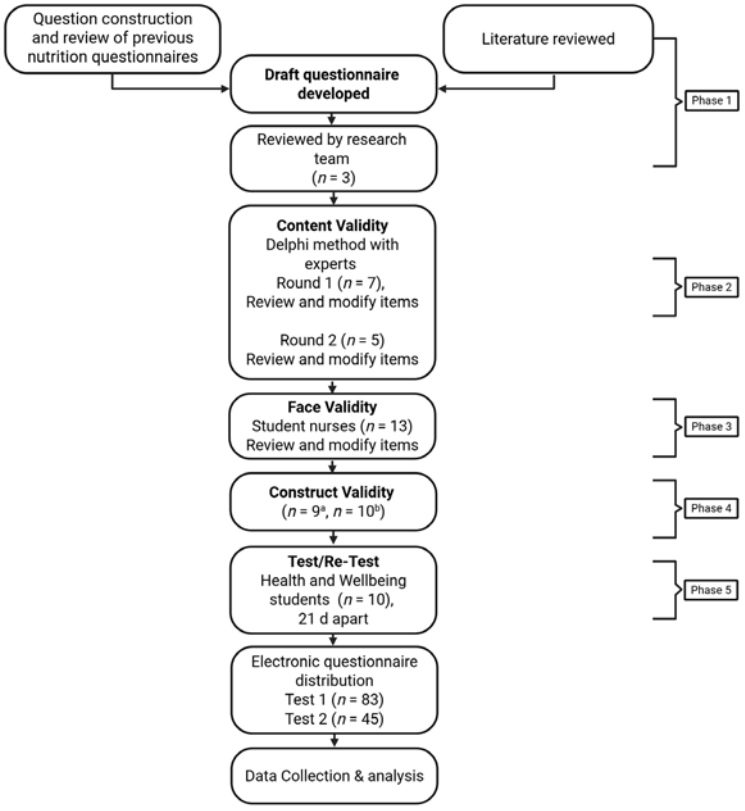

Figure 1. Five-phase development and validation of the student nutrition and practices questionnaire (SNaP-Q).
Note: a, Tutor group; b, Student Test 1 group; d, days; n, number. Original image developed in https//:BioRender.com

Phase 1 involved reviewing previously published methodological procedures to inform the five-phase validity process (Scrivin et al., 2021). Three experienced practitioners (two registered dietitians and one nutritionist) reviewed the literature and previous nutritional practice questionnaires to develop the initial questionnaire. Professional organisational bodies and researchers contacts were approached to recruit nutrition experts to review the questionnaire.

The anonymous Delphi method was used in phase 2 of the questionnaire development. The Delphi method is often used in questionnaire development in healthcare, where questions are reviewed by experts and rated to determine consensus among items (Boulkedid et al., 2011). To determine the relevance of each item, two ratings were required with cut-offs, which determined if items required subsequent review. The first rating was a content relevance score using a four-point Likert scale. Experts rated whether the item was 1, irrelevant; 2, somewhat relevant; 3, relevant; or 4, highly relevant, which determined a content validity index (CVI) score (Polit et al., 2007). A CVI score of ≥ 0.78 was required to obtain group consensus on the item's relevance. The second rating was an agreement score on whether to delete, modify, or keep each item, with an option to provide additional comments and/or context to support the rating (Scrivin et al., 2021; Tam et al., 2020). A group agreement score of ≥ 70 percent was required to keep the item (Scrivin et al., 2021). If the CVI or agreement ratings did not meet the cut-offs, the item was modified and returned for further review until a unanimous consensus was obtained. The first round required reviewing 12 demographic and 13 nutrition questions. Based on reviewer feedback, four demographic and seven nutrition questions required further review for round two, with consensus obtained on all questions after this review round. A content review and thematic analysis of the open-ended expert review responses was conducted. Comments were grouped into four categories: format, language, content, and/or comments that did not require actionable change. A thematic analysis using NVivo version 14 (Lumivero, Denver, CO 80202, United States) was performed to determine common item themes.

A group of nursing student (n = 13) volunteers attended a group face validity session (phase 3). During the group session, three researchers were available to clarify any questions students may have had about the questionnaire. Using an online form, students reviewed each item of the questionnaire and rated the difficulty of each item on a five-point Likert scale ranging from 1 (very difficult) to 5 (very easy). They also provided an agreement score indicating whether to delete, modify, or keep each item, with the option to provide additional comments. Any changes were reviewed and agreed by the research team.

To ensure the questionnaire measured the construct intended, questionnaire responses were compared between health tutors (n = 9) and health and wellbeing students (n = 10) (phase 4). It was anticipated that health tutors would behave as expected (for instance, consuming regular meals, or eating meals mostly from home) compared to students' responses, which might vary from expected. The final stage of validity (phase 5) involved a test-retest procedure to determine the reliability and stability of the questionnaire over time. Health and wellbeing students (n = 10) completed Test 1 before a semester break, and Test 2 the first week back from a semester break (21 days apart). No further changes to the questionnaire were required after construct validity (phase 4), and reliability testing (phase 5). The questionnaire was deemed ready for distribution.

The final questionnaire consisted of seven demographic and 18 nutrition practice questions. The final questionnaire was uploaded online through Microsoft Forms and advertised to all students enrolled in the Bachelor of Nursing (n = 386) and Certificate in Health and Wellbeing courses (n = 37). The questionnaire was advertised at two different time periods (21 days apart), where it was known that students would have a different workload; in other words, class time versus exam time. Students accessed the questionnaire through a provided link. Written consent was obtained online prior to completing the questionnaire. Questionnaire responses were collected using Microsoft Forms, then exported to Excel workbooks for analysis. During the preparation of this work, the authors used NVivo (version 14) to assist with auto coding and sentiment analysis of open-ended responses.

All data was analysed with IBM SPSS Statistics 26.0 (IBM Corporation, New Orchard Road Armonk, NY 10504-1722, United States). All data was checked for normality using the Shapiro-Wilk test, and descriptive statistics used to describe continuous variables. T-tests for parametric data and Wilcoxon tests for non-parametric data were conducted to test for differences. Item-CVI (I-CVI) scores were calculated by the number of experts rating either a 3 (somewhat relevant) or 4 (highly relevant) item relevance divided by the number of experts (Scrivin et al., 2021). Bivariate analysis using Pearson's intra-class correlations was used with $p < 0.05$ considered statistically significant.

RESULTS

No previous questionnaires were identified that could be replicated for the purposes of the study. The newly developed questionnaire was reviewed formally by three researchers. Seven nutrition experts with an average 20.3 years of nutrition experience reviewed the first round of the questionnaire. All demographic questions (n = 12) obtained an I-CVI score of ≥ 0.86 and an agreement rating of 91.6 percent (n = 11/12). Most (n = 12/13, 92.3 percent) nutrition questions scored an I-CVI of ≥ 0.86, with an agreement rating of 84.6 percent (n = 11/13) (Table 1).

Item	Not Relevant	Somewhat Relevant	Quite Relevant	Quite Relevant	Total of column 3 & 4	I-CVI	Delete (%)	Modify (%)	Keep (%)
D1	0	0	1	6	7	1.00	0	14	86
D2	0	0	0	7	7	1.00	0	14	86
D3	0	0	1	6	7	1.00	0	43	57
D4	0	0	2	5	7	1.00	0	57	43
D5	0	1	3	3	6	0.86	0	43	57
D6	0	0	0	7	7	1.00	0	14	86
D7	0	1	2	4	6	0.86	0	71	29
D8	0	1	3	3	6	0.86	0	29	71
D9[a]	0	1	2	4	6	0.86	14	29	57
D10[a]	0	1	0	6	6	0.86	0	0	100
D11[a]	0	0	2	5	7	1.00	0	14	86
D12[a]	0	0	2	5	7	1.00	0	29	71
N1[a]	0	0	0	7	7	1.00	0	43	57
N2[a]	0	0	1	6	7	1.00	0	43	57
N3	0	2	0	4	4	0.66	16	0	84
N4	0	1	1	4	5	0.83	17	33	50
N5[a]	0	0	0	7	7	1.00	0	43	57
N6	0	0	0	7	7	1.00	0	29	71
N7	0	0	0	7	7	1.00	0	0	100
N8[a]	0	1	0	6	6	0.86	0	57	43
N9[a]	0	0	0	7	7	1.00	0	57	43
N10[a]	0	0	3	4	7	1.00	0	71	29
N11	0	0	0	7	7	1.00	0	29	71
N12[a]	0	1	1	5	6	0.86	0	71	29
N13	0	0	1	6	7	1.00	0	43	57
Mean	0.00	0.40	1.00	5.52	6.52	0.94[b]	1.88	35.04	63.08
SD	0.00	0.58	1.08	1.36	0.77	0.09	5.21	21.74	21.06
Lower (95% CI)	0.00	0.23	0.42	0.53	0.30	0.04	2.04	8.52	8.25
Upper (95% CI)	0.00	0.63	1.42	6.05	6.82	0.98	3.92	43.56	71.33

Table 1. Item Relevance (I-CVI) and keep, modify or delete responses from experts (Delphi Method Round 1) (n = 7 experts).
Note: a, Items returned for Round 2; b, Scale Content Validity Index; CI, confidence interval; I-CVI, Item-Level Content Validity Index; n, number; SD, Standard Deviation, % = Percentage.

Most of the open-ended responses related to modifying the content of the questions or general comments regarding the consideration of other factors (Table 2).

Category	Sub-category	*n*	Examples of summarised responses
Content change	Demographic modifications	21	-Will you be specifically looking into differences between females, transgenders, etc.? If so, you could leave the question as is, but if not, I would recommend simplifying it to the gender question that is used in the NZ Health Survey for example. -Although people will understand the question, you may want to rephrase the question to "Which age group do you belong to?" to match the answer options provided. I would also remove "old" from the answer options.
	Additional information	13	… you could add a "never" option to question 4 as well … would change the order so that starts with the lowest level.
	Modify the question	26	-Does holiday mean that people are away from home (e.g., on a holiday to Australia)? Or does this include the semester breaks in which they are still at home but just not have any classes? Maybe say holiday/semester break. -I think this is relevant, but you might want to consider whether you need both this question, and question 9 about level of study - are they both necessary? If so, do you want to put them together? e.g., "What course are you enrolled in?" followed by "What level of study is this course at?" or similar?
Format change	Duplicate numbers	3	-Please note that you currently have two questions with the number "9."
	Structure Change	1	-This question could be better placed before the previous question.
Language change	Spelling	2	"Graduate" is spelt incorrectly in Option e.
General Comment (not requiring a change)	Clarification	4	-Who? Do others influence food choice e.g., friends, family, advertising -How would you interpret the cost answer? Given that water is free, they would not choose these to save money.
	Consideration	8	-Not sure about this one and what relevant info it would give us. -Will you be looking at the healthiness of the breakfast from this question or do you just want to describe the type of foods people are choosing? It would be difficult to assess healthiness. -Focus and Concentration. I wonder if you might miss information if you do not include nutritional supplements e.g. micronutrient or protein supplementation. Sometimes protein or meal replacement drinks end up replacing meals.
	Positive comment	4	-Good to see there is a "prefer not to say" option. -These demographic questions are important so that you are able to describe your participant population, so I have rated them highly throughout.

Table 2. Examples of summarised comments by experts (n = 7) on the students' nutrition and practices questionnaire (SNaP-Q) during round 1 of the Delphi method.

Four demographic and seven nutrition questions were returned for round two and reviewed by four experts. All items in the second round received an I-CVI of 1.0, with three questions requiring some minor content changes. The researchers modified the questionnaire, which did not require any further review. Thirteen nursing students rated the difficulty of each question and whether to keep, modify, or delete any questions and any additional queries or responses made were recorded. No questions were rated as difficult or very difficult. Most questions were rated as very easy to answer (82 percent), and most students wanted to keep the questions, with only a few requiring modifications.

Demographics			**Course information**		
	Completed once	Completed twice		Completed once	Completed twice
Gender			Course/programme		
Female	69	23	Bachelor of Nursing	55	20
Male	2	3	Certificate in Health & Wellbeing	18	6
Non-binary	1	0			
Missing	1	0			
Age (years)			Year of study		
15–19	9	4	First year	37	14
20–24	21	6	Second year	14	6
25–34	26	6	Third year	20	6
35–44	13	7	Fourth year	2	
45–54	4	3			
Ethnic Background			Time of year		
NZ/European	38	12	Classes	18	6
Māori	15	6	Placement	13	
Asian	14	8	Study leave	15	5
Pacific People	2		Exam time	25	14
Indian	2		Semester break	2	
Latin American	1				
Filipino	1				

Table 3. Demographics and course information from questionnaire responses, completed once (n = 73).

When comparing tutor and student responses in phase 4, the tutors showed some differences in their eating habits. Tutors always (n = 9/9, 100 percent) consumed a lunch or meal in the middle of the day compared to students (n = 5/11, 45 percent, p = 0.05, Z = -2.0). Students tended to consume more rice-based lunches (≥ 2–3 times per week, n = 5/11, 45 percent) than tutors (less than once a week, n = 5/9, 55 percent, p = 0.04, Z = -2.07). Most tutors reported that their main reason for consuming caffeinated, sugary, or diet drinks was taste and/or enjoyment (n = 5/8), whereas students reported varied reasons, for instance, taste and/or enjoyment (n = 3/8), routine (n = 2/9), an energy boost (n = 2/8), social influence (n = 1/8) and improved concentration/focus (n = 1/9, p = 0.04, Z = -2.023). Tutors reported consuming nuts more frequently (≥ 3–4 times a week, n = 6/9) compared to students (once a week or less, n = 5/9, p = 0.04, Z = -2.032).

The test-retest validity process (phase 5) was completed by 10 students, 21 days apart. There was no significant difference (p = 0.40, Z = -0.834) in the test-retest results of the demographic questions, which showed a strong positive correlation (r = 0.71, p < 0.001). There was no significant difference in the nutrition questions (p = 0.31, Z = -1.012) with a weak positive correlation (r = 0.32, p < 0.001). No further changes to the questionnaire were required after phases 4 and 5 of the validation process.

The questionnaire was advertised twice, encouraging students to complete it at the two different time points of the academic year. Seventy-three students completed the questionnaire once, and 26 students completed the questionnaire twice (Table 3). For the group that completed the questionnaire twice, there was no significant difference between the grouped demographic questionnaires (p = 0.12, Z = -1.547), with a strong positive correlation (r = 0.90, p < 0.001). However, there was a significant difference regarding when during the academic year the questionnaires were completed. Test 1 was completed during class time (n = 8), placement (n = 8), study leave (n = 7) or exam time (n = 3), and Test 2 was mainly during exam time (n = 14/26) (r = 0.63, p < 0.001). There was a significant difference between the grouped nutrition responses (p < 0.001, Z = -3.704), with a strong positive correlation (r = 0.679, p < 0.001). Compared to Test 1, there was significantly increased snacking (p = 0.01, Z = -2.44) at Test 2, with fruits and vegetables (p = 0.03, Z = -2.140), drinks (p = 0.06, Z = -1.862), and nuts and seeds (p = 0.01, Z = -2.496) consumed less frequently (Table 4). Table 5 highlights some of the open-ended responses analysed by NVivo, which indicate that exam time and stress are very negative responses (sentiments) associated with changes in eating habits and food choices.

Questions	Response	Test 1 (%)	Test 2 (%)	*p* (*Z*)	*r* (*p*)
How many times a week do you have snacks?	Always or almost always (6–7 x/week)	6 (23)	10 (39)	0.01 (-2.45)	0.81 (< 0.01)
	Sometimes (2–5 x/week)	14 (54)	12 (46)		
	Never or almost never (0–1 x/week)	6 (23)	4 (15)		
How many times a week do you have the following for snacks? Fruits and vegetables	Less than once a week	1 (5)	2 (9)	0.03 (-2.14)	0.68 (< 0.01)
	Once a week	1 (5)	6 (27)		
	2–3 x/week	8 (40)	6 (27)		
	3–4 x/week	1 (5)	2 (9)		
	5–6 x/week	1 (5)	0 (0)		
	Daily	8 (40)	6 (27)		
How many times a week do you have the following for snacks? A drink of some sort e.g., Protein shake, Sports drink, Up and Go, milk, tea/coffee	Less than once a week	3 (17)	6 (30)	0.06 (-1.86)	0.69 (0.01)
	Once a week	3 (17)	5 (25)		
	2–3 x/week	2 (11)	2 (10)		
	3–4 x/week	2 (11)	2 (10)		
	5–6 x/week	1 (6)	1 (5)		
	Daily	7 (38)	4 (20)		
How many times a week do you have the following for snacks? Nuts, seeds or products made from these? e.g., nut bars etc.	Less than once a week	3 (16)	9 (43)	0.01 (-2.50)	0.65 (0.01)
	Once a week	2 (11)	4 (19)		
	2–3 x/week	9 (47)	2 (10)		
	3–4 x/week	2 (11)	4 (19)		
	5–6 x/week	1 (5)	1 (5)		
	Daily	2 (11)	1 (5)		

Table 4. Nutrition questions with differences between Test 1 and Test 2.

Response	Explanations: *Please explain how you think you may eat differently during different parts of the academic year, e.g., class time versus exam time*	Nodes	Test (first) or Retest (second) response
Very Negative	Eat less during ***exam time**** as I get very ***stressed out and feel nauseous***† from stress	Stress Exams	First response
Very Negative	During ***stressful periods, I find I binge eat more sugary and snack foods***† such as around due dates of assignments and ***exam times****.	Stress Exams	First response
Very Negative	Worse during placement and ***exam time**** from change of routines and ***stress***†	Stress/ Exams	Second response
Moderately Negative	During lecture time, I find myself hungrier. During ***study leave****, I tend to get into a zone and ***do not seem to eat at regular times****	Exams	First response
Moderately Negative	***Placement and exam time not great**** due to e***xtra stress, so less time and mental energy to make healthier choices***†	Stress Exams	First response
Moderately Negative	I ***eat differently when I'm doing assignments***. I am able to be disciplined and eat healthily at all other times. When doing assignments, I ***eat junk food***§ constantly.	Eating habits Food choices	First response
Moderately Negative	I usually ***eat more processed foods***§ during ***exam time**** that are easy to make or heat up due to the ***lack of time and energy I have***†	Stress/ Exams Food choices	Second response
Moderately Negative	I ***eat more during class time***‡. ***Stress***† during ***exams**** makes me ***eat less***‡	Exams Stress Eating habits	Second response
Moderately positive	During exam ***periods, stress levels are higher***† so I find it easier to ***'reward myself' with unhealthy foods***§. ***Exam revision**** also ***requires a lot of discipline**** to focus, and I can easily get distracted and end up boredom eating. During class time, I'm good at preparing set meals for myself, but with being less active on my feet during this time (as opposed to placement) ***I'm more likely to boredom eat/snack as well***‡.	Stress Exams Food choices Eating habits	First response
Moderately positive	I usually make ***extra dinner so I can take some for lunch the next day***§	Food choices	First response
Moderately positive	If I did not ***make lunch, then I would buy it at the campus cafe***‡. But during study leave, I have ***more time to cook healthy meals***‡ at home.	Eating habits	Second response
Very positive	As a second-year student nurse, my ***eating habits definitely change during the academic year***‡. During regular class time, I try to focus on balanced meals—***lots of fruits, veggies, and whole grains***§—because I need the energy to stay alert and engaged in lectures and clinicals.	Eating habits Food choices	First response
Very positive	***During exam time**** or when I am currently doing an assessment, I prefer to prepare ***easy-to-cook or instant meals****. I do think I eat more sweets during this time.	Exams	First response
Very positive	***Eat healthy and nutritious food***§ during class and light meals during ***exams****	Exams Food choices	Second response

*, Stress; †, Exam time; ‡, Eating habits; §, Food choice

Table 5. An example of some NVivo coded open-ended responses grouped into response, nodes and if the response was from the first or second questionnaire completion.

DISCUSSION

The current questionnaire has undergone a rigorous validation process to ensure that it is robust and stable over time. The test-retest questionnaire responses confirm that students' snacking frequency and snack choices vary at different times of the academic year and that they exhibit very negative responses associated with exam time and stress, which may impact their food choices and eating habits.

The development of the SNaP-Q involved a review of the current literature to determine if similar questionnaires were already in use and to assess the structure and content of existing questionnaires (Avram et al., 2025; Ramón-Arbués et al., 2021; Scrivin et al., 2021; Tam et al., 2020). Due to a lack of nutrition questionnaires specifically developed for use with tertiary students in New Zealand, a unique questionnaire was developed. Using the Delphi method, experienced registered dietitians or nutritionists anonymously reviewed the questionnaire (Boulkedid et al., 2011). The Delphi method is a widely used methodology that has the advantage over other group consensus methods in that it does not require face-to-face contact, yet still requires group consensus (Trevelyan & Robinson, 2015). Reviewers applied both content validity (Capling et al., 2019; Polit et al., 2007; Scrivin et al., 2021; Tam et al., 2020) and agreement ratings (Scrivin et al., 2021; Tam et al., 2020) to provide numerical evidence to keep, modify or delete items. To obtain unanimous agreement, two rounds of anonymous expert review were required. The subsequent face validity process was completed by students who deemed the SNaP-Q easy to complete and understand, with minor adjustments suggested to improve comprehension. To determine construct validity, questionnaire responses were compared between a tutor and a student group. Significant differences were observed between tutor and student demographics, and some of the nutrition questions highlighted varied eating habits and food choices between groups; for instance, tutors consistently ate lunch 100 percent of the time, whereas students were less consistent ($p = 0.04$). The differences in demographic and nutrition responses favourably indicated that the SNaP-Q was able to measure the concepts it was meant to measure (Ranganathan et al., 2024). Inconsistent meal patterns have been observed in studies with university students, specifically skipping the breakfast meal (Alduraywish et al., 2023; Almoraie et al., 2025; Whatnall, Patterson, Brookman, et al., 2020). It is likely that a lack of time or available resources influences students' meal patterns, or that an increase in snacking behaviour occurs (rather than eating a meal), particularly energy-dense snacks, which may in turn influence the number of meals consumed in a day (Almoraie et al., 2025).

The final test-retest phase revealed that the SNaP-Q demographic and nutrition responses were stable over time, with no significant difference between the two different test periods ($p = 0.40$). During a two-week test-retest period, the demographic questions showed a strong correlation ($r = 0.71$, $p < 0.001$). However, a weaker positive correlation was observed for the nutrition questions ($r = 0.32$, $p < 0.001$). Despite this positive weak correlation, it is likely that due to the questionnaire construct, nutrition habits and practices could change over time, related to changes in the student's circumstances such as living arrangements or work-life balance. A change over time has been observed in other research, with a significant decline in daily fruit and vegetable consumption and physical activity from the first semester (fall freshman year) to the final semester (fall senior year) reported, with greater changes among students living off campus (Small et al., 2013).

Most of the students who completed the SNaP-Q were New Zealand European (completed once n = 38, 52 percent; or twice n = 12, 46 percent) females (completed once n = 69, 95 percent; or twice, n = 23, 88 percent), aged 20–34 years of age (completed once n = 46, 73 percent; or twice, n = 12, 46 percent). All of the students who completed the SNaP-Q were studying health-related programmes. Students were studying either a Bachelor of Nursing (completed once n = 55, 75 percent; or twice n = 20, 77 percent) or a Certificate in Health and Wellbeing (completed once n = 18, 25 percent; or twice n = 6, 25 percent). Students who completed the SNaP-Q appear to be a representative sample of both student cohorts at the time of data collection. The SNaP-Q was completed by 26 students at two different time periods ($p < 0.001$, $Z = -3.493$) about three weeks apart. The questionnaire was first completed during classes, placement, or study leave, and secondly during exam time ($r = 0.632$, $p = 0.001$). Student responses to how they might eat differently during various parts of the academic year, such as

class time versus exam time, revealed several 'very negative' responses that were associated with exams, stress, and poorer eating habits and/or food choices (nodes identified in NVivo). Some students commented that they had less time to cook and prepare meals and were more likely to choose high-sugar food and drink options during exam times. Some of the 'very positive' responses were related to preparing quick and easy meals or trying to maintain better eating habits (Table 5). Inverse relationships have been observed between stress and diet quality in studies with students enrolled in health courses (such as medicine) in Saudi Arabia and Belgium during exam time, which supports the current study findings (Alduraywish et al., 2023; Michels et al., 2020). Positive correlations have been observed between students' cooking ability and healthy dietary behaviours (Shi et al., 2022). Higher diet quality (nutritional value) was associated with students who reported self-perceived 'excellent' cooking skills and with those who cooked more frequently (Shi et al., 2022). In addition, students who reported better cooking ability tended to follow more health-conscious dietary patterns, such as eating more fruit and vegetables and less processed foods (Sprake et al., 2018). Having adequate resources such as time, nutrition knowledge and facilities to prepare and cook meals is likely to be a factor for improved diet quality.

The examination period is often a time of intensified study, with unfavourable changes in student dietary choices reported (Alduraywish et al., 2023; Avram et al., 2025; Jaremków et al., 2020; Michels et al., 2020; Salihu & Gashi, 2024). During Test 1 the frequency of snacking was mostly commonly reported as sometimes (2–5 x/week), compared to Test 2 (exam time), where frequency increased by 15 percent in the 'always or almost always' (6–7 x/week) category. This may indicate that students make small changes to the type and frequency of the snacks they choose during exam time; for instance, greater snacking on fruits and vegetables during term time (Test 1), compared to exam time (Test 2). Similar findings were reported among Saudi Arabian (Alduraywish et al., 2023) and Flemish students (Michels et al., 2020) who reported consuming less fruit and vegetables during exam time. However, other studies report that fruit and vegetable intake appears to be low among university students, regardless of the time of academic year (Al-Otaibi, 2013; American College Health Association, 2009; Gan et al., 2011; Michels et al., 2020; Ramón-Arbués et al., 2021; Whatnall, Patterson, Brookman, et al., 2020). Overall, these findings indicate there is a need for greater awareness and education about the importance of consuming more fruits and vegetables among tertiary students.

It was hypothesised that there could be an increase in the frequency of consumption of caffeinated ($p = 0.24$, $Z = -1.186$) or energy drinks ($p = 0.56$, $Z = -0.577$) or sugary snacks (such as chocolate or sweets) ($p = 0.19$, $Z = -1.303$) consumed during exam time (Test 2) but this was not observed. Contrary to current research findings, students have reported consuming sugary snacks and caffeinated drinks, such as coffee, more frequently during exam time (Jaremków et al., 2020). It is possible that food choices vary amongst demographics and courses of study. The current cohort of predominantly female nursing and health and wellbeing students are likely to have been taught about healthy eating during their course of study, which may have impacted the study findings. Eating behaviours and demographic characteristics have been explored among Australian university students, where a higher dietary intake of nutrient-rich foods was associated with age (> 25 years irrespective of gender), being female, living in rented accommodation, or being enrolled in postgraduate or health-related courses (Whatnall, Patterson, Chiu, et al., 2020). It is possible these students have greater nutrition education and health awareness due to their specific course of study.

The current exploratory study had a small number of participants complete the SNaP-Q compared to other studies with larger participant numbers (e.g., > 1000 participants) (Ramón-Arbués et al., 2021; Sprake et al., 2018; Whatnall , Patterson, Chiu, et al., 2020). Other questionnaires have investigated lifestyle factors (such as alcohol, physical activity, and smoking) in addition to nutritional practices, which may provide further insights and comparisons to student lifestyle behaviours (Avram et al., 2025; Bennasar-Veny et al., 2020; Jaremków et al., 2020; Moreno-Gómez et al., 2012; Ramón-Arbués et al., 2021). Launching the SNaP-Q to a larger student population may provide greater insight into eating habits and food choices among different demographics, courses of study, and times of the year. It is possible that the current cohort of students has a higher level of awareness and knowledge about the importance of eating healthy, nutritious food and drinks throughout the year due to their health-related course of study, which could impact study findings.

This original questionnaire has undergone a thorough validation process. This has included an expert content review, face and construct validity tests, and reliability tests. The questionnaire was launched at two different times during the academic year, highlighting that the current cohort of students had few differences in their eating habits and practices, possibly due to their health-related courses of study. The planned future development of this research is to launch the SNaP-Q to a larger student cohort to determine the differences that may exist within the wider tertiary student population and across various courses of study. Consideration of other lifestyle factors, such as physical activity, alcohol consumption, and smoking/vaping, may be included to gain a broader understanding of tertiary student lifestyle behaviours and to identify any correlations associated with nutrition practices. However, it is acknowledged that further validation would be required if the questionnaire content and construct were to change.

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OPEN PLAN OFFICES: A SEMI-SYSTEMATIC LITERATURE REVIEW 2012–2022

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INTRODUCTION

Open Plan Office Design, characterised by large office spaces with few physical barriers, is a megatrend in office design across the industrialised world, spanning multiple industries, organisation types, and sizes (James et al., 2021; Konnikova, 2014). However, a plethora of research in recent years, across diverse academic fields, has identified paradoxical consequences of this approach to office layout, with research findings making contrasting claims about its impacts on performance. The global pandemic brought the health risks of open office spaces into sharp focus, with an associated emphasis on employee wellbeing. Some recent studies question if this means the end of the open office as a foundational approach to workplace design (Oygür et al., 2022; Samani and Alavi, 2020).

This semi-systematic review analyses a decade of research on open plan offices, both pre and post the COVID-19 pandemic, with a focus on employee wellbeing and satisfaction. As a team who work in open-plan offices, we experience the impacts—both positive and negative—every day. We also notice how new hybrid work structures that allow people to work from home have changed how we perceive and operate in these spaces. These observations and experiences led us to ask the research question, what are the human resource impacts of the open plan office in the contemporary work environment?

The contrasting results, and the current health risks associated with open offices, make this a fascinating and important current issue for research (James et al., 2021). Knowledge in any discipline emerges from cumulative results of many studies (Hansen et al., 2022), so semi-systematic reviews, such as this study, which synthesise material from a range of sources to create a single point of reference, are important to unravel the complexities of a topic and facilitate evidence-based decision making (Eykelbosh & Fong, 2017).

BACKGROUND

The open office layout has been a foundational approach to workplace design throughout the last century. In 1906, Frank Lloyd Wright unveiled the Larkin Administration Building in New York, a revolutionary vision in its day, with regimented rows of desks in a vast open space, overlooked by managerial offices. Since then, open plan office design has taken many forms, from the cheap call-centre cubicles of the 1980s to Frank Gehry's multi-million-dollar design for the new Facebook campus MPK20. Gehry's campus, which opened in 2015, is reputedly the largest open office floor plan in the world, accommodating 3,000 employees. According to Konnikova, in 2014 70 percent of workplaces in the industrialised world had adopted some form of open office layout, with the world's largest corporations, including Google, Yahoo, eBay, Goldman Sachs, and American Express, investing

millions in state-of-the-art open-plan offices. In Aotearoa New Zealand, Fonterra in Hamilton and Mercury Energy NZ in Tauranga, among others, have invested in office developments of this type in recent years.

The term "open plan office" (OPO) is a generic term encompassing a variety of different spaces, from undefined open spaces seating large numbers of employees, to much smaller offices seating fewer than 10 people (see Table 1).

Office design	Functional features
Cell-office	Personal room for one person
Shared-room office	Two to three people in a room
Small open plan office	Four to nine people share a workspace
Medium-open plan office	Ten to 24 people share a workspace
Large open plan office	More than 24 people share a workspace
Combi-offices	A type of Activity Based Office with shared workspace and facilities
Hot-desking office	Non-personal workstations with no access to supportive facilities for work that requires more space, such as back-up offices, meeting rooms, and project rooms

Table 1. Types of office layout (adapted from Bodin-Danielsson & Theorell, 2018, p. 9).

The open office layout came under intense scrutiny during the global COVID-19 pandemic due to the increased exposure to air-borne infection it created (Burridge et al., 2022; Oygür et al., 2022). This risk to health, combined with the increase in hybrid and remote working options since the onset of the pandemic, has dramatically changed the use of office space (Bradley et al., 2022; Marshall, 2022). The aftermath of the COVID-19 pandemic made us contemplate on how our workspaces impact our physical and mental health, making it worthy to review current, relevant research on the impact of the open office on employee wellbeing and satisfaction in the contemporary work setting.

METHOD

This is a qualitative study in the form of a semi-systematic review of research literature published in peer reviewed journals over the decade from 2012 to 2022. Snyder (2019) highlights the importance of integrated literature reviews in business research, noting that "knowledge production within the field … is accelerating at a tremendous speed while at the same time remaining fragmented and interdisciplinary" (p. 333). She promotes a rigorous, systematic methodology for literature reviews to better enable the synthesis of ideas and enhance the validity of findings.

Semi-systematic reviews are popular in business research as the design is appropriate for "topics that have been conceptualized differently and studied by various groups of researchers within diverse disciplines" (Snyder, 2019, p. 335). This diversity is the case with research literature on open offices, which spans the fields of business, human resource management, psychology, health, architecture, building, and design. Hansen et al. (2022) acknowledge that qualitative analysis can capture insights and contextual nuances from diverse studies which quantitative meta-analysis does not. Therefore, semi-systematic review is an appropriate methodological approach for this study.

This study followed the guidelines recommended by Eykelbosh and Fong (2017) and Snyder (2019) which provide a protocol for semi-systematic literature reviews. This improves academic rigour via a research process that is both intentional and systematic. Ekyelbosh and Fong (2017) note that semi-systematic reviews are most effective when conducted by a team of reviewers across an extended timeframe with access to data analysis software, as was the case for this project. A team of researchers is helpful in qualitative research as it enables a large amount of data to be processed, provides additional data triangulation, and helps avoid bias (Braun & Clarke, 2006; Eykelbosh & Fong, 2017; Green et al., 2006).

Data selection

Having developed our research question, the team identified key words to use in an online literature search. Due to the volume of literature on the topic, the data search was streamlined by dividing the timeframe into three subsets with pairs of research colleagues focusing on identifying suitable literature published in a given period. Each pair searched across several different databases to avoid database bias (Eykelbosh & Fong, 2017). Databases included JSTOR, Business Source Complete (EBSCO), Taylor and Francis online, Emerald Insight, Wiley online library, and Google Scholar. Potential articles were selected against agreed criteria.

The search terms used were: "open-plan office," "open-plan workplace," and "open-plan workplace design." The selection criteria for sources were: Academic peer-reviewed journal articles, in English, focusing on human resource outcomes such as productivity, wellbeing, and satisfaction (as opposed to acoustic levels, temperature, layout).

Selected articles were recorded in tables for each timeframe and cross-checked against the selection criteria by different team members. The search was then repeated to ensure a complete set of data was identified (Eykelbosh & Fong, 2017). The selection process identified 26 articles which were published in peer-reviewed, academic journals across a variety of fields including industrial health, management, architecture, and design.

Data analysis

The team conducted separate narrative reviews, with each team member analysing a subset of the data. Themes were collated in a literature review matrix and discussed with the group. Data sets were then swapped and re-analysed by different team members. This process provided triangulation and deepened our overall understanding of the findings.

RESULTS

Our analysis revealed themes which were summarized in a Literature Review Matrix, (available upon request). The themes of noise, distractions, lack of privacy, stress, and lack of personal space appeared repeatedly as negative dimensions of open office workspaces. Collaboration was commonly identified as a positive dimension of open plan workspaces but evidence for this is less consistent. Other positive aspects such as creativity and knowledge transfer were mentioned in only four of the studies we reviewed (Samani et al., 2017; Smollan & Morrison, 2019; Vink et al., 2012; Yunus & Ernawati, 2018). Negative reported impacts were far more prevalent than positive across the body of literature reviewed.

Employee satisfaction, wellbeing, and the open plan office

Most of the studies we reviewed showed that employees rate the open plan office low in terms of workplace satisfaction. Kim and de Dear (2013) noted that occupants of open plan offices had the lowest overall satisfaction with their workplace whilst those in enclosed office spaces reported the highest rating. A study by Bodin Danielsson and Theorell (2018) in Sweden found the same results, their study suggesting a strong association between office design, wellbeing, and satisfaction.

The studies presented various reasons for employees' negative reactions to the open plan office. Kim and de Dear (2013) identified that key sources of dissatisfaction in the OPO are privacy issues, space constraints, noise, and uncontrolled interruptions from co-workers. Taskin et al. (2019) proposed that the OPO results in "organizational de-humanisation" (p. 264). In Australia, Morrison and Macky's (2017) survey of 1,000 office workers found that unfavourable working environments in the OPO increased the social demands on, and mental workload of, employees.

High office density was reported to be another unfavourable attribute of the OPO. Otterbring et al. (2018) and Weziak-Bialowolska et al. (2018) both found an inverse relationship between the number of people sharing an office space and employee satisfaction. Essentially, the more people in a shared open office, the lower the level of workplace satisfaction. This concurs with prior assertions by Kim and de Dear (2013) that office density is a significant determinant of workplace satisfaction.

Studies also investigated the effects of the OPO on employees' perceived health. A 12-month longitudinal study by Bergstrom et al. (2015) in Sweden reported that employees who moved to an open office felt a decline in the quality of their work environment which resulted in deteriorating work performance and perceived health. Weziak-Bialowolska et al. (2018) also explored employees' perceptions of their overall health after moving to an open plan office but found no significant changes in health perceptions amongst participants. It appears that the subjective nature of self-reports would account for the difference in findings between these two studies.

Noise and other distractions

Stress caused by exposure to irrelevant speech and other visual and auditory distractions were identified as having a negative impact on employee wellbeing and satisfaction in most of the studies we reviewed. Distractions caused by ambient noise in open plan offices were reported to have negative impacts on productivity. Kang et al. (2017) found that noise had the greatest influence on productivity, with conversation noise having the most significant negative impact. Similar results were found in a survey by di Blasio et al. (2019) where employees report that the resulting annoyance from irrelevant speech noise resulted in decreased productivity.

Three experimental studies provided empirical evidence on the impact of noise on productivity, satisfaction and employee wellbeing. Jo and Jeon (2022) noted that irrelevant speech noise is a primary cause of annoyance, resulting in dissatisfaction, lower productivity and increasing perceived workload stress. Jahncke and Hallman (2020), findings confirmed that employee performance was impacted negatively by noise distraction and found that privacy, including acoustic and visual privacy, was vital to work performance. Sander et al. (2021) demonstrated a causal relationship between noise exposure in OPOs and physiological stress responses. It was also noted in the latter study that individuals vary in their sensitivity to noise.

Although distractions are considered to be an inconvenience in the OPO, some studies suggest that the impacts of these distractions vary according to individual characteristics such as age, with younger generations appearing to be more amenable to OPOs (Rasila & Rothe, 2012; Smollan & Morrison, 2019; Yunus & Ernawati, 2018). Other studies observed that some personality types are more susceptible to distractions (Gerlitz & Hülsbeck, 2023; Seddigh et al. 2016). Agreeable employees, who are less likely to confront distracting colleagues, were found to be more significantly affected in open plan offices whilst more emotionally stable personalities appeared to be less affected by noise and distractions (Seddigh et al. 2016). Gender differences were also found to be a factor on how open office spaces are perceived by employees, with women more likely to be impacted by the lack of privacy in the OPO compared to men (Smollan & Morrison, 2019).

The impact of personal control on wellbeing and satisfaction in the open plan office

Whilst the studies reviewed showed that various inconveniences are associated with the OPO, our review also showed that flexibility and personal control of the workspace can mitigate its negative attributes. Research by Gou et al. (2018) revealed that adverse conditions were alleviated when employees had personal control of their workspaces. Samani et al. (2017) also proposed that privacy issues in the open plan office are mitigated when employees can control auditory and visual privacy, and this eventually results in feelings of wellbeing, satisfaction, and productivity. The need for individual control over the workspace was also highlighted in Jahncke and Hallman's (2020) experimental study, suggesting that work tasks that require focused concentration are best performed without background distractions. There is some evidence that employees are exercising some form of individual control by choosing to work remotely for all or part of the working week (Barnes et al., 2020).

Design of workspace

Most of the studies we reviewed showed the OPO to be generally disliked by occupants. However, other studies suggest that better workplace design can mitigate negative perceptions of the OPO. A longitudinal study in Aotearoa New Zealand by Smollan and Morrison (2019) reported that employees found moving to one open office space favourable, having managed to adapt their reduced and more inconvenient workspaces. This positive outlook was attributed to progressive organisational culture and good communication throughout the change process. In their subsequent publication, Morrison and Smollan (2020) suggested that the design consultation process and provision of private workspaces for focused work mitigated the negative effects of the OPO, and proposed a "safe by design" approach to promote wellbeing and employee satisfaction. The importance of having a human-centred approach to office interior design was also highlighted in other studies (Bodin Danielsson & Theorell, 2018; Candido et al., 2019; Vink et al., 2012) stating that workplace aesthetics, comfort of furnishings, and adaptability of work areas were among the highest ranked factors in alleviating dissatisfaction with the open plan workspace.

Three further recent case studies emphasize the design of workspaces and focus on activity based working (ABW), the latest incarnation of OPO design, which featured alternative spaces that cater to different task needs and employee preferences. For Candido et al. (2021), interior design is a key predictor of wellbeing, satisfaction, and performance in a space. Other studies found that negative impacts on productivity resulting from distraction and a lack of privacy in ABW offices were consistent with studies on OPO layouts. Barnes et al. (2020) conducted a case study with employees who moved to an ABW office who subsequently reported negative impacts of the ABW on their satisfaction, work effectiveness, wellbeing, and engagement. Babapour Chafi et al. (2020) concurred with other studies, such as Jahncke and Hallman (2020), and discovered that, even though alternative workstations in ABWs provide flexibility, many employees did not switch workspaces but chose instead to stay in the same place, which rendered the provision of different workspaces redundant.

DISCUSSION

Open office research from across the globe over the past decade reveals remarkably consistent findings. Despite the diversity of locations, measures, methodologies, and research aims, clear themes emerge. Noise and other distractions, and lack of privacy and personalised space, are shown to adversely impact employee wellbeing, satisfaction, and performance. Our findings concur with identified themes from earlier reviews. The negative impacts of OPO on health were significant findings in previous literature reviews by Richardson et al. (2017) and Colenberg et al. (2021). We do note, however, that studies on the impacts of the OPO on perceived health can have conflicting results and attribute the inconsistency of findings to the subjective nature of self-report data collected in these studies. Our review revealed that noise and distractions can have varying impacts depending on individual characteristics, findings which were also noted in reviews by Gerlitz and Hülsbeck (2023) and James et al. (2021).

Introducing flexibility and personal control over workspaces are identified as strategies that mitigate the negative impacts of open plan offices to some degree. These are exemplified in activity-based workspaces, although the extent to which employees take advantage of these alternatives is questionable. The results accentuate the need to consider organisational, task, and individual needs in designing workspaces which not only consider the physical space but also provide appropriate social and individual spaces. As Barnes et al. (2020) note, there are multiple design factors to consider if the space is to be used effectively. Our findings on the role of personal control in mitigating the negative impacts of the OPO were similarly noted by Colenberg et al. (2021) who also stated the importance of thoughtful design of interior space.

Our review provided insights on the emergence of activity-based workspaces as an intended improvement of the open plan office. Whilst ABWs were purported to be better than the traditional OPO as they offer flexibility (Candido et al., 2021), our review noted that inherent issues in open office environments such as distractions and lack of privacy are still felt by workers in ABWs.

IMPLICATIONS

There are clear implications arising from the research that need to be considered in the design and management of open offices, to enhance employee wellbeing and satisfaction.

1. *Noise and other distractions.* The issue of noise and other distractions is the biggest obstacle to employee wellbeing, satisfaction, and performance in open offices, and needs to be addressed in the design and management of open plan office spaces. Design can mitigate noise levels through choice of materials and layout, while management can consider individual preferences, offering flexibility and personal choice in the use of spaces.
2. *Designing the space.* The literature identifies three types of space that need to be considered in open plan office design:
    - Physical space—the attributes and characteristics of the physical environment.
    - Social space—opportunities for interpersonal connection, culture, and social support.
    - Individual space—choice of personal activity, and personal control of the environment.
3. *Flexibility and personal control.* This is consistent across a decade of research: employees who have control over where they work experience higher levels of satisfaction and wellbeing. The new trend for remote working exemplifies this more than ever and highlights the need for workplace cultures and leadership that support autonomy.

THE FUTURE OF THE OPEN OFFICE AND A FUTURE RESEARCH AGENDA

There is emerging evidence, as identified in this study, that employees are solving the 'open office problem' themselves, by simply opting to work from home when they are able. This is an important area for future research, as the popularity of remote and hybrid working appears to be a consistent global trend (Bradley et al., 2022). The Gallup organisation reports that half of remote-capable employees are engaged in hybrid work patterns and expect to continue in this way in the long term (Wigert at al., 2023). Questions have also arisen as to the future of office design in the post-pandemic workplace (D'Angelo, 2023) and this is an important area for emerging research (James et al., 2021).

Most studies have focused on preventing health problems rather than looking at ways that the office space could enhance health, a further area for future research. "It seems that open-plan offices should be avoided, although it is not yet clear to what extent the number of occupants, spatial density and openness are related to health

complaints" (Colenberg, 2021, p. 362). Although there is substantial evidence on the detrimental effects of the OPO on employee health and wellbeing, most of which was gathered through self-report methods, further empirical evidence from future studies can support these findings.

Limitations

There is an enormous quantity of research data on open office environments. Our selection process used specific key words, which may have resulted in the exclusion of other relevant material. However, despite potential omissions, our aim of thematic salience was achieved through the diversity of studies included. There has been limited research conducted in Aotearoa New Zealand, so literature has been reviewed from a variety of locations and could involve cultural differences that may limit their transferability to other cultural contexts.

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THE EFFECTS OF TRAUMA ON OCCUPATIONAL FUNCTIONING WITHIN EMPLOYMENT: A LITERATURE REVIEW

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INTRODUCTION

This literature review aimed to understand, through an occupational therapy lens, how trauma affects adults' participation in employment in Aotearoa New Zealand. "Occupational therapy promotes health and wellbeing by supporting participation in meaningful occupations that people want, need, or are expected to do" (World Federation of Occupational Therapy, 2025). Such occupations include self-care, leisure, and productive activities, all of which support wellbeing, but can be impacted by trauma (Edgelow et al., 2020). Meaningful productive occupations can include employment, as a means of financially supporting daily living, and non-financial alternatives such as volunteering.

Adversity from negative life events, or socio-economic circumstances, can determine an individual's ability to fully participate in components of daily life such as schooling (Lund et al., 2013). Trauma occurs from an exposure to a painful or stressful event, or series of events, and causes the individual to re-experience the effects of this exposure, subsequently negatively impacting cognition and mood (Edgelow et al., 2020). Trauma events or adverse experiences can have a lasting effect on mental, physical, social, emotional or spiritual wellbeing, and affect how productive occupations and activities are performed (Aitchison & Suarez, 2021; Donaldson et al., 2018). Successful occupational functioning in employment contexts may be defined as completing expected and required work tasks within the employment setting; but it is notable that these demands will vary depending on the role and the environment (Edgelow et al., 2020).

The Organisation for Economic Co-operation and Development (OECD), advised in 2018 that Aotearoa New Zealand loses five percent of its gross domestic product each year due to mental health and lost labour productivity, which includes health and social care spending for those who are unemployed. The social welfare and beneficiary system, managed by the Ministry of Social Development (MSD) in Aotearoa New Zealand, enables individuals to defer actively seeking employment when they have a medically certified health condition, injury, or disability, with either no capacity to work or the capacity to work fewer than 15 hours per week (MSD, 2023). Research suggests this loss of functional capacity to work can impact mental health and can occur as the result of untreated trauma (Nandi et al., 2004; Stergiopoulos et al., 2011).

The effects of trauma, especially stemming from childhood, have garnered extensive attention in mental health research, yet there remains a gap in knowledge regarding its impact on occupational functioning in employment settings (Howard, 2023; Sienkiewicz et al., 2020). There are few studies exploring the effect of trauma on employment in the context of Aotearoa New Zealand, with available research only alluding to the effects as a secondary finding (Besley & Peters, 2020; Te Pou o te Whakaaro Nui [Te Pou], 2018). This literature review informed the main author's master's research project, which directly interviewed participants within Aotearoa New Zealand on how trauma affected their ability to obtain and sustain employment to fill this gap in the research (Howard, 2023).

In Aotearoa New Zealand, the historical impact of colonisation has resulted in Māori (the indigenous peoples or tangata whenua of the land), being particularly vulnerable to occupational injustices (in other words, restricted participation in occupations due to unjust social constraints). This colonial legacy is evident through disparities in employment, educational, and health outcomes (Bailliard, 2024; Durocher et al., 2014; MSD, 2016). Māori are disproportionately affected by poor mental health, limiting their employment opportunities and exacerbating economic challenges (OECD, 2018). Research from OECD (2018) showed approximately one in four New Zealanders with a severe mental health condition are without income from either work or social benefits, compared to approximately one in ten people within Australia. Consequently, exploring trauma effects, including among Māori, is critical to understanding occupational barriers to employment within an Aotearoa New Zealand context.

Occupational therapists have a unique role in understanding and addressing the impact of trauma on obtaining and sustaining employment, by using trauma-informed and evidence-based practices to support (re)engagement in work and resist re-traumatisation (Edgelow et al., 2020; Substance Abuse and Mental Health Services Administration, 2014). This review examined current literature about the impact of trauma on occupational functioning and on obtaining and sustaining employment, and the role of occupational therapy, then applied the findings to the unique cultural context of Aotearoa New Zealand.

METHODS

The literature review was completed with the research question: How does trauma impact on adults' ability to obtain and sustain employment? Research studies on this topic were often from international sources and primarily focused on analysis of quantitative data without consideration of the holistic context or an occupational perspective, such as using volunteering for grading re-employment. This review explored the available research within the field of trauma and employment, the potential relevance of the findings for Māori, and their applicability to occupational therapy within Aotearoa New Zealand. It consolidated existing knowledge of this issue as it applied to occupational therapy practices in Aotearoa New Zealand, an area not examined before.

The initial search strategy used the search terms "trauma" and "employment" and was applied to four health-related databases: Gale academic, Taylor and Francis online, CINAHL, and Cochrane. Searches were completed between 2022 and 2023 and the resulting hits ranged between 19 and 1,102. Initial screening involved reviewing the titles for relevancy to the research question. Articles focused on medical or acute trauma within hospital settings were excluded: such studies almost exclusively reported on employment status only at time of injury or incident, rather than longer-term occupational impacts. Therefore, a secondary search of these databases using the terms "adverse childhood experiences" and "employment" was completed to provide additional articles relevant to childhood trauma and the effects on employment status later in life. Articles were excluded if the research focus was not relevant or the article was not in the English language. The review focused on studies from the last 20 years to maintain relevance to current practice. Reference and citation checking of key articles generated additional relevant articles, which were also included within this literature review. Additional grey literature, such as reports from MSD, was sourced to provide relevance to the Aotearoa New Zealand context in the absence of location-specific research publications.

In total, 24 articles were selected. Fifteen articles used quantitative methodologies, two articles used qualitative methodology, three were systematic reviews, three were literature scans, and one was a scoping review. Only four articles were written within an Aotearoa New Zealand context. The included articles were assessed for suitability and quality using the McMaster Critical Review Forms for qualitative and quantitative research (Law et al., 1998; Letts et al., 2007). The literature found was then further analysed using qualitative narrative analysis for identifying and summarising previous publications with the aim of seeking new study areas that have not yet been addressed; in this case, the impact of trauma on occupational functioning within employment (Ferrari, 2015). Studies were

compared to allow key concepts within the information to emerge to be discussed and evaluated. This process allowed for an in-depth examination of the findings and interpretations presented in each study (Ferrari, 2015). The findings of this analysis are synthesised below.

FINDINGS

Trauma in the Aotearoa New Zealand context

There was a paucity of literature exploring the relationship between trauma and employment in Aotearoa New Zealand, which is important within the unique historical and cultural context of this nation. One literature scan reported that 65 percent of Māori people had experienced one or more traumatic events during their lifetime, additional to experiences of historical and intergenerational trauma (Te Pou, 2018). Trauma experienced by Māori as a result of colonisation was reported to be compounded by experiences of racism, discrimination, and socio-economic disparity, which continue to affect Māori employment rates, income levels, and health outcomes (McClintock et al., 2018). While Māori share similar resilience strategies to those found in western cultures, there are cultural differences aligned with te ao Māori (the Māori worldview) and whānau (family and community) dynamics. Māori focus on collectivist benefits actively expressed through whanaungatanga (connection) and whakapapa (genealogy) relationships, as opposed to values of individualism within western societies (Pihama et al., 2017). Therefore, further research is needed in Aotearoa New Zealand, especially research including Māori perspectives, on how workplaces can become more trauma-informed and accommodating of cultural differences to improve employment rates.

Adverse childhood experiences and their occupational implications

The landmark adverse childhood experiences (ACE) study, completed in the United States by Felitti et al. (1998), established the long-term health and employment risks associated with early-life trauma. This study used a standardised 10-item ACE questionnaire and compared the responses to participants' medical histories. Felitti and colleagues (1998) found participants who scored four or more on the ACE questionnaire, compared to those who had experienced no early-life trauma, experienced increased negative impacts on their health and employment as adults. Further international studies using the ACE questionnaire have consistently demonstrated that individuals with higher ACE scores, of four or more, typically experience lower employment rates and higher job turnover, indicating that childhood trauma has lifelong impacts on occupational functioning (Hansen et al., 2021; Hardcastle et al., 2018; Liu et al., 2013; Lund et al., 2013; Metzler et al., 2017; Schüssler-Fiorenza Rose et al., 2016). Sienkiewicz et al. (2020) and Smith et al. (2022) found participants with ACE histories of physical and sexual abuse had worsened occupational functioning within employment than participants with a different ACE profile. Additionally, studies have shown that higher ACE scores are correlated with disruptive adult behaviours, lower cognitive abilities, emotional health problems, difficulties in interpersonal relationships, and physical and mental health disabilities, all of which can affect employment sustainability (Haahr-Pedersen et al., 2020; Hansen et al., 2021; Hardcastle et al., 2018; Lorenc et al., 2020).

Youth and employment transitions

The United Nations (n.d.) defines youth as those aged between 15 and 24. Youth exposed to trauma and adversity can experience disruption impacting academic attainment and their transition from school to employment. Danish cohort studies from Hansen et al. (2021) and Lund et al. (2013) showed that those with higher ACE scores, who did not enter employment or higher education after schooling, had greater negative health and financial impacts. Studies from the United States (Wade et al., 2014) and United Kingdom (Sanderson, 2020) reported that youth with adversities in childhood experienced later socio-economic barriers to employment. These barriers included: limited access to education; lack of resources such as inadequate clothing for work; limited transportation options; having a disability; having children; accessing mental health services; using drugs and alcohol, and experiencing

racism. These issues brought about a reliance on systemic factors such as childcare arrangements; public transport availability and schedules; costs of purchasing items, and availability of health and support services, which impacted on their ability to obtain and sustain employment. Aotearoa New Zealand-based research shows that Māori youth face similar barriers, further compounded by intergenerational trauma and systemic discrimination as ongoing effects of colonisation (MSD, 2016). For example, in Aotearoa New Zealand, Māori are 10 times more likely to experience multiple forms of racism and three times more likely to be unemployed than European or other ethnicities (MSD, 2016; Pihama et al., 2017). No literature was found exploring the relationship between ACE scores and employment status in Aotearoa New Zealand. However, international research found that youth who have experienced adversity are disproportionally represented in unemployment rates (Hansen et al., 2021; Lund et al., 2013; Sanderson, 2020; Smith et al., 2022; Wade et al., 2014).

Adult trauma and occupational functioning

Traumas from natural disasters or physical or sexual attacks have lasting psychological effects on adults, including anxiety, depression, and post traumatic stress disorder (PTSD), which in turn negatively affect their ability to work (Donaldson et al., 2018; Serrano et al., 2021). Studies of earthquake survivors, including those of the Christchurch earthquake in 2011, show that post-trauma symptoms (such as heightened anxiety and dissociation) can lead to job losses and unemployment (Dorahy et al., 2016; Serrano et al., 2021). The impact of trauma is further evident in marginalised communities, as seen in the aftermath of the 2019 Christchurch Mosque shootings. In this context, Muslim wives who had previously relied on their husbands for financial support were forced to navigate their grief and trauma while also facing compounding socio-economic challenges. These challenges included speaking limited English, being unable to drive, and temporary visa statuses, all of which limited employment opportunities (Besley & Peters, 2020).

A systematic review (Huggard et al., 2017) and position paper (Brouwers, 2020) based on international research indicated that frontline workers in emergency services and the military were also identified as at high risk for occupational disruption, exacerbated by frequent exposure to trauma, and resulting in high rates of PTSD, burnout, and moral distress, which often led to job resignations or career changes. Research has shown that unemployment can worsen PTSD symptoms. Nandi et al. (2004) found that those who were unemployed after the September 11 attacks in New York, United States, were 10 times more likely to develop PTSD than employed people. Furthermore, individuals with unresolved PTSD symptoms face greater difficulty returning to work (Edgelow et al., 2020; Stergiopoulos et al., 2011). Trauma responses have been shown to vary depending on individual resilience, past experiences, and the social environment (Te Pou, 2018; Vieselmeyer et al., 2017). Sienkiewicz et al. (2020) emphasised the need for a holistic view of trauma across the lifespan, as both childhood and adult trauma events significantly impact employment status and occupational functioning.

Contribution of employment to wellbeing

Most studies in this review were quantitative in focus and limited by definitions of employment status as either employed or unemployed, without factoring in part-time or voluntary work as a means of spending time productively. However, Sanderson (2020) and Wade et al. (2014) used qualitative methods to explore the relationship between complex socio-economic factors and trauma which significantly impacted employment status, and found that part-time and voluntary employment were still beneficial for some individuals making their first steps into employment.

Employment was reported to provide more than income; it contributed to personal growth, identity, routine, life purpose and meaning, and access to opportunities, providing material comfort, a sense of belonging, and social connection (Edgelow et al., 2020; Jarman et al., 2016; MSD, 2016; Nandi et al., 2004). Studies have shown that individuals with supportive employment report higher life satisfaction and mental health resilience, which buffer against the impacts of trauma (Edgelow et al., 2020; Jarman et al., 2016; Nandi et al., 2004; Te Pou, 2018).

However, without supportive workplace environments and compassionate employers, trauma survivors found it difficult to sustain employment due to ongoing psychological and cognitive challenges (Edgelow et al., 2020). Due to their unique position and skillset for this area of practice, it has been proposed that occupational therapists can guide employers in creating trauma-informed workplaces, providing strategies that reduce re-traumatisation and enhance job retention (Edgelow et al., 2020).

Trauma-informed occupational therapy interventions

Edgelow et al., (2020) identified occupational therapists as playing a key role in supporting trauma recovery through workplace interventions, including graded work exposure and adapting workplace environments to be more trauma informed. Their scoping review suggested occupational therapists could also work with those providing supportive psychotherapy-based interventions following trauma to help individuals regain occupational roles or alternative meaningful employment and aid their recovery. Interventions included promoting work skills development and graded work exposure, where individuals gradually resumed tasks to desensitize PTSD responses (Edgelow et al., 2020). Occupational therapists can also use trauma-informed practices and interventions to help individuals manage symptoms that affect job performance, such as anxiety or emotional dysregulation (Stergiopoulos et al., 2011). Further findings suggest that educating employers on workplace accommodations can support trauma survivors in returning to work and maintaining employment (Jarman et al., 2016). Further research on the effectiveness of occupational therapy interventions on supporting people to obtain and sustain employment following trauma is required.

DISCUSSION

This literature review explored research on the impact of trauma on obtaining and sustaining employment, which highlighted the multifaceted challenges that those who have experienced trauma faced in achieving stability in their occupational functioning. Adverse childhood experiences and adult trauma disrupt emotional and cognitive functioning, posing barriers to employment and wellbeing. The literature provided some insights into how the impacts of trauma experienced at any life stage can have an effect on employment. However, it did not address the cumulative effect of experiencing trauma across the lifespan on employment outcomes.

In Aotearoa New Zealand, Māori communities face additional barriers to employment due to the effects of intergenerational trauma from colonisation and structural inequities (Tuhiwai Smith & Pihama, 2023). These inequities emphasise the need for culturally informed and responsive occupational therapy practices which benefit whānau groups by supporting relevant individuals into employment to allow their occupational performance to flourish in suitable workplace environments.

Occupational therapists can offer guidance to employers and workplaces for modifying occupations and environments, where practically possible, to manage work-related trauma. As demand for trauma-specific return-to-work programmes grows, occupational therapists have an opportunity to develop evidence-based best practices to support sustainable employment outcomes. While occupational therapy offers opportunities for trauma-informed approaches in workplaces, there remains a lack of specific research within Aotearoa New Zealand on the impact of trauma on obtaining and sustaining employment. Future research should focus on developing culturally safe and responsive interventions that support those who have experienced trauma to obtain and sustain employment.

Limitations

This narrative literature review was conducted in partial contribution to the first author's master's qualification; thus, it was beyond the scope to include an exhaustive and systematic search of databases. Therefore, it is possible additional relevant literature was not included. Minimal literature was found from the unique sociopolitical context

of Aotearoa New Zealand's health and employment systems, which may limit the transferability of the findings. However, this review has highlighted the limited published research on the topic in Aotearoa New Zealand. It also provides some understanding on how trauma impacts employment in this context.

CONCLUSION

The evidence that trauma impacts on the occupational functioning of those seeking to obtain and sustain employment is robust; however, this review did not find examples of literature reporting previously traumatised peoples' experiences of successfully obtaining and sustaining employment. It is suggested that much of the literature reviewed would be enhanced by considering a definition of employment that is more inclusive (for example: part-time and voluntary positions). Further, more qualitative research is warranted to determine differences between the effects of trauma experienced at different life stages, in order to further understand how these effects subsequently impact employment. From an occupational perspective, the literature signposts a range of trauma-informed interventions that occupational therapy can contribute to in supporting someone to obtain and sustain employment. However, further empirical studies are required to evaluate peoples' experiences of these interventions and their impact on employment and wellbeing outcomes. It is crucial that any occupational therapy interventions are developed and delivered in a culturally safe, trauma-informed and responsive manner to reduce social inequities and enhance trauma recovery and wellbeing.

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TE WHARE TANGATA: HOUSING, MATERNAL MENTAL HEALTH, AND WĀHINE MĀORI

Kim Taylor and Waireti Roestenburg

SETTING THE SCENE

Those who live by original Māori lifeways recognise wāhine Māori as te whare tangata (the house of humanity); she is uniquely connected to Papatūānuku and symbolises life and fertility (Mikaere, 2003, 2011; Murphy, 2011; Pere, 2019; Roestenburg & Hoskyns, 2022; Yates-Smith, 2019b). Yates-Smith (2019b) explains, "Our ancestors considered the creative, fertile element to be the most important gift and, therefore, to be cherished" (p. 77). Wāhine, as bearers and carers of humanity, were treasured and held unique societal status (Pere, 2019; Roestenburg & Hoskyns, 2022; Roestenburg, 2023; Yates-Smith, 2019a). The reproductive role of wāhine was central to whakapapa, and, as Murphy (2011) notes, the very "survival of whānau, hapū, and iwi" (p. 26). Menstrual blood was revered for carrying the seeds of the tipuna-mokopuna continuum (Pere, 2019). This vital role granted wāhine privileged position in Māori society (Murphy, 2011; Pere, 2019; Roestenburg & Hoskyns, 2022). Tremendous respect was given to wāhine, especially during pregnancy (Pere, 2019; Roestenburg & Hoskyns, 2022; Yates-Smith, 2019a). As Pere, cited in Murphy (2011), affirms, "A mother cherishes and nurtures her child in the womb, and ... this cherishing and nurturing must continue" (p. 11). Violations of this sacred role, such as domestic violence or rape, were met with severe repercussions, including castration or death (Pere, as cited in Murphy, 2011).

The colonisation of Aotearoa New Zealand introduced a stark contrast between the inferior European status of women and the revered position of wāhine Māori, culminating in a reversal of Māori women's societal positioning (Pere, 2019; Pihama, 2001). Today, even while they continue to try and hold the sky up for their families and children, as the "'house of the people' (te whare tangata), many Māori women's reproductive bodies reflect [their] histories of colonial oppression and resistance" (Murphy, 2011, p. 13).

Too many wāhine continue to experience dispossession and intersecting challenges such as poverty, mental distress, violence, and racism (Durie, 2003; Jones, 2000; Smith et al., 2021). For young wāhine, their sexuality is stigmatised, stripping them of agency under narratives of "savagery" and "promiscuity" (Green, 2011; LeGrice, 2014; Reid, 2004). After becoming mothers, wāhine are more than three times as likely to die by suicide compared to other maternal groups in New Zealand (Productivity Commission, 2022). In sum, the current position of wāhine Māori, especially vulnerable or young mothers, could not be farther removed from their original societal positioning.

This project endeavours to illuminate the dark corners where the systemic dehumanisation of te whare tangata and her children thrives. Poignantly, this neglect is most evident in the realm of housing. Te whare tangata, the very house of humanity, faces continuing housing challenges that harm her and, therefore, the generations to come.

THE RESEARCH QUESTION

This project stems from the lead author's frontline mahi in the social service sector, where she has witnessed and continues to witness the housing desperation of too many mothers. Early in her role, she encountered a hapū wāhine who was unhoused, abstaining from drugs, and awaiting a court hearing. To ensure the health of her pēpi and avoid a prison-based pregnancy, she urgently needed a residential address to secure a community sentence. Although the Ministry of Social Development (MSD) agreed to place her on the social housing waitlist, she required immediate emergency housing. However, MSD advised that pregnancy alone does not qualify one for emergency housing—a provision available, though certainly not guaranteed, only once a child is born. The lead author's understanding of the social welfare landscape has since evolved. With her current knowledge, she would have advocated more vigorously, potentially challenging and demanding a review of that decision. The experiences of this māmā lie at the heart of this article, illuminating the human stories behind the data.

This witnessing of housing deprivation drives the central question of this inquiry: What is the most effective societal lever to address Māori perinatal distress and suicide? Both authors firmly believe that access to appropriate housing is crucial.

METHODOLOGY

This project undertakes a scoping review of quantitative and qualitative research to explore the intersections between maternal mental health (MMH) and housing with emphasis on perinatal wāhine Māori within the socio-political context of Aotearoa New Zealand. The review employs a broad-to-focused approach, beginning with general linkages between mental health and housing before narrowing to the specific experiences of Māori māmā.

Databases utilised include EBSCOhost, Elsevier, and PubMed. Keyword searches were "mental health and housing" and "maternal mental health and housing." Variations of these terms included "Māori," "health," "Indigenous," and "New Zealand." The review incorporates 24 peer-reviewed sources, 11 of which are New Zealand-based, with the remainder primarily originating from the United States. These studies are particularly relevant due to the shared patterns of wellbeing disparities among Indigenous populations and ethnic minorities in settler-colonial societies such as the US, New Zealand, Canada, and Australia, where systemic inequities are often stratified along racial lines (Morris, 2023). Some consideration was given to older literature to track changes in housing and mental health patterns in New Zealand over time (James, 2007; Peace & Kell, 2001). Recognising the prominence of housing issues in public discourse, the review supplements its scholarly focus with material from reputable newspapers, magazines, and grey literature, including government policies and organisational white papers. These additional sources are integrated within the Discussion to provide a more comprehensive, homegrown understanding of the topic.

Before moving forward, we address our positioning of mothers as primary caregivers and our use of binary gendered language. First, a longitudinal study of families and whānau in New Zealand found that mothers handle over 90 percent of children's needs, even when fathers are present (Hennecke et al., 2020). Second, the majority of the lead author's tāngata whaiora (individuals seeking wellbeing) are single mothers, approximately 25 percent of whom are Māori. These women are the primary inspiration for this project. When referring to gender, the literature cited aligns with traditional terminology. In our Recommendations, we have purposefully used non-binary terminology to assure our proposal feels applicable to all.

Ethical considerations

The lead author, Taylor, a European descendant from a settler-colonial nation currently residing in another such nation, has reflected on her positionality throughout this project. Smith (1999/2021), in the introduction to *Decolonising Methodologies*, asserts that the term "'research' is inextricably linked to European imperialism and

colonialism" and is "one of the dirtiest words in the Indigenous world's vocabulary" (p. 1). To engage responsibly, the lead author has embraced bi-cultural praxis, which includes education about te ao Māori, respect for tikanga, advocacy for Indigenous empowerment, and alignment with initiatives that uphold Māori aspirations (Came & Tudor, 2016).

The second author, Roestenburg, is a Māori woman, māmā, nana, academic, researcher, and facilitator of healing and learning wānanga. Waireti leads Te Wānanga o Te Wairua Māori where she delivers personal-collective, wairua-centric healing/learning and wellbeing promoting experiences in coproduction with Māori communities (Roestenburg et al., in press). She has played a central role in shaping this work. She has contributed both to the literature review and to the critical contextualisation of the research, ensuring it honours the ongoing realities, mana, and strength of te whare tangata. Her expertise has been invaluable in ensuring that Māori perspectives are authentically and respectfully represented.

A core principle of this project is that its objectives align with Māori aspirations, such as reducing wellbeing disparities in accordance with Te Tiriti o Waitangi (Paine et al., 2013). The Waitangi Tribunal's 2019 findings of significant treaty breaches in the health sector led to the development of new policy tools to address these inequities (Came et al., 2023). Inspired by this approach, we situate this project within a similar Māori-centred framework with specific focus on housing.

FINDINGS

The bi-directional relationship between mental illness and lack of, or poor-quality, housing is well-established (Bovell-Ammon et al., 2020; Çaliyurt, 2022; Evans, 2003; Onapa et al., 2021; Patel et al., 2018). Stable, healthy housing provides a sense of control, lessens the chance of physical health problems, and provides an opportunity to develop social connections (Çaliyurt, 2022; Suglia et al., 2015). Onapa et al. (2021) examined nearly 30 international studies to conclude that proper housing can ease anxiety and depression. Studies have consistently proven that children who grow up in stable, healthy homes have better life outcomes than those who do not (Bovell-Ammon, 2020; DeCandia et al., 2022).

However, having a roof over one's head is not a guarantee of good mental health. Evans (2003) explains that structural and environmental characteristics—"crowding, noise, indoor air quality, and light"—are profoundly important for psychological comfort (p. 536). Suglia et al. (2015) link aspects of housing to specific mental health outcomes. Structural problems can result in depression for adults and anxiety, behavioural issues, and delinquency in children. Frequent moves can lead to depression and anxiety in adults and scholastic problems for children. Patel et al. (2018) reiterate housing as a key determinant of social wellbeing, recommending fundamentals such as "affordable and clean energy," structural and environmental integrity, and undercrowding (p. 1566).

Twenty-four years ago, Peace and Kell (2001) declared the need for a systematised, collaborative framework to address New Zealand's interconnected housing and mental health difficulties. The tāngata whaiora interviewed expressed a desire for choice in housing location and type. Six years later, James (2007) detailed the impacts of inadequate housing on New Zealand children's health. Challenges for young single mothers to secure rentals were highlighted, as was the "concerning substandard and poor-quality housing" in areas with high Māori populations (p. 11).

Analysing two decades of New Zealand research, Howden-Chapman et al. (2021) affirm that Māori, Pasifika, and those on a low income and/or with a disability are most negatively impacted by the country's subpar, and dearth of, affordable homes. The connections between lack of housing and poor health, including MMH, for Māori mothers are well established yet remain unaddressed and are intensifying (Adcock et al., 2021). Māori were the primary subjects of colonisation in New Zealand. Today's healthcare system extends from that history which explains factors behind lower medical service use amongst Māori (Durie, 2003). Māori face a higher likelihood of

encountering healthcare discrimination, receive inferior care, encounter premature hospital discharges, and are referred to specialists less frequently (Pitama et al., 2014; Wilson et al., 2021).

Māori women are more likely to experience depression, anxiety, stress, and poor mood during pregnancy than non-Māori (Signal et al., 2017). In their study of women and homelessness, Fraser et al. (2021) note that within a cohort of high government-service users, the majority were women (53.8 percent), younger (57.1 percent), Māori (78.6 percent), mothers (81.4 percent), and were 4.3 times more likely than the general population to need hospitalisation during pregnancy.

There are indications that depression in early motherhood is correlated with later housing insecurity, and depression is higher amongst mothers who lack personal and/or community support to navigate housing and other social concerns (Marçal, 2021). Peace and Kell in 2001 reported on the importance of housing location for Māori, who must often choose between living near whānau or living closer to community-based support services. This problem persists twenty years later (Adcock et al., 2021).

Suglia et al. (2011) found "housing disarray" (noisy, crowded housing) and instability (moving frequently) positively correlated with depression in mothers, and instability (but not disarray) correlated with generalised anxiety disorder (p. 1112). While they could not establish a direct connection between living in derelict housing and either depression or generalised anxiety disorder in mothers, other studies confirm that the type and quality of housing influences MMH. Evans (2003) cautions that "multiple dwelling units are inimical to the psychological well-being of mothers with young children" (p. 537). Such housing can exacerbate feelings of loneliness and lack of control, especially amongst those on low incomes (Evans, 2003; Suglia et al., 2015).

Reno et al. (2022) report that housing precarity and dereliction can negatively impact breastfeeding amongst mothers on a low income due to stress, mental health status, and/or pressure to return to work soon after childbirth. The housing concerns of study participants include a history of homelessness, fear of eviction, and domestic disorder. Although exclusive breastfeeding is recommended for the first six months of life, the authors found that housing insecurity was associated with a significant reduction in this practice. Reno et al. conclude that housing is a crucial determinant of health for mother and child, with race/ethnicity connected to housing status.

New Zealand studies concur that racial discrimination is connected to homelessness and poor-quality housing for pregnant and new mothers. Thayer and Kuzawa (2015) found that experiences of ethnic prejudice can increase stress in prenatal women and their newborn children via heightened cortisol levels. Bécares and Atatoa-Carr (2016) found that women who experienced racial discrimination in a health setting were 66 percent more likely to experience postnatal depression. Of the Māori, Pasifika, Asian, and European women analysed, Pasifika women had the highest rates of pre- and post-natal depression and prenatal stress overall, and Māori women had the highest reported incidences of discrimination, with nearly one-sixth of them having been verbally abused due to their ethnicity within the last year. In their study of 37 young wāhine mothers, Adcock et al. (2021) report that some reported experiences of racism in their search for private rentals.

Bécares and Atatoa-Carr (2016) identify housing as second only to education as the social dimension in which the highest level of discriminatory treatment is found in New Zealand. This finding echoes Peace and Kell (2001), who 15 years previously declared discrimination as the "third most highly ranked housing difficulty," naming it as "ongoing, pervasive," and "serious" (p. 116). Bécares and Atatoa-Carr describe housing discrimination as being "particularly severe," with the Māori, Pasifika, and Asian women in their study "more than twice as likely" to experience depression during pregnancy than those who did not report "unfair treatment in the housing sector during the past year" (2016, p. 6). Amongst this cohort, racial discrimination in housing within the last 12 months makes prenatal perceived stress 2.3 times more likely, prenatal depression 2.1 times more likely, and postnatal depression no more likely (Bécares & Atatoa-Carr, 2016). The impacts of racism affect not only mothers but also children born to and raised by stressed mothers directly via cortisol and indirectly via observing and experiencing their mother's distress (Thayer & Kuzawa, 2015).

Bécares and Atatoa-Carr (2016) echo US researchers when highlighting the need for affordable and high-quality housing to address these issues. A Boston study found improvements in parents' and children's physical and mental health over a six-month period when their housing needs were met (Bovell-Ammon et al., 2020). Physicians in the US have demanded "the right to prescribe housing … as a cost-saving humane investment in children's brain development" (Padgett, 2020, p. 199). US healthcare workers are defining housing as medical care, with suggestions to embed legal representatives into medical centres to combat the housing inadequacies that lead to poor mental and physical health (Hanssmann et al., 2022; Suglia et al., 2015).

Housing entwines economic factors, mental health, and racial realities. Rising rent costs, fear of eviction, and lack of control over when or if housing repairs will be made can lead to heightened levels of stress and depression (Çaliyurt, 2022; Suglia et al., 2015). Racial discrimination in New Zealand's housing market has "severe direct consequences" for MMH and can affect "children's development" (Bécares & Atatoa-Carr, 2016, p. 9). Even when families secure rental homes, they will experience poorer mental health than homeowners (Mason et al., 2013).

Housing status is so integral to wellbeing that Suglia et al. (2015) suggest healthcare providers ask if patients rent or own on mental health screens. Adcock et al. (2021) emphasise the devastating impacts of private rental insecurity on whānau health but also the positive outcomes for young Māori mothers when their housing needs are met with a balance of autonomy and relational connectedness.

DISCUSSION

There is an inseparable relationship between MMH and housing. Stable and suitable housing significantly enhances the likelihood of mothers and children thriving. Conversely, homelessness, unstable or substandard housing, and housing discrimination impose severe mental and physical health burdens that leave intergenerational impacts on wellbeing. In the most tragic circumstances, the mental health consequences of housing problems can raise suicide risk.

These issues must be understood within the socio-political context of New Zealand, where the housing market is described as "one of the world's most troubled" and our homes as among the least affordable globally (Frost, 2023, para. 3). Addressing MMH and housing, particularly for wāhine Māori, requires confronting the racial dynamics embedded in this "troubled" market. Effective solutions should draw on insights from domestic government and organisational research, which emphasise the vital connections between housing, MMH, and Indigenous sovereignty.

Architectural designer Kake (2019) asserts that the ongoing alienation of Māori from their land is a violation of Te Tiriti o Waitangi. Health outcome inequality is another recognised breach (Came et al., 2020; Paine et al., 2013; Pitama et al., 2014; Wilson et al., 2020). This article lies at the intersection of these issues, arguing that home and health inequalities represent a compounded breach that should be addressed collectively. The *Mana Wāhine Kaupapa Enquiry* (WAI2700, Waitangi Tribunal) is currently investigating "the denial of the inherent mana and iho of wāhine Māori and the systemic discrimination, deprivation, and inequities experienced as a result" (para. 3). The investigation has identified four pou to frame the inquiry: rangatiratanga, whenua, whakapapa/whānau, and whai rawa. No or poor-quality housing undermines all four.

The Helen Clark Foundation (2022) reports suicide as the primary cause of death for New Zealand's pregnant and new mothers. The Productivity Commission's (2022) *Maternal Mental Health Report* estimates that up to a fifth of mothers in New Zealand experience mental health issues, with Māori women "3.35 times more likely to die by suicide" (p. 3). If left unattended, maternal unwellness can have lifelong, intergenerational adverse effects on children (Ministry of Health, 2021; University of Auckland, 2021). Concurrently, New Zealand grapples with a surge in housing troubles that disproportionately affect Māori (StatsNZ, 2021).

The Ministry of Health's (2021) investigation into MMH services mentions "housing difficulties" such as "quality and insecurity" as part of the web of whānau needs that drive the mental health status of perinatal women (p. 15). Māori mothers have described experiencing heightened stress and provocation of past trauma after childbirth, discomfort in mainstream healthcare settings, and reluctance to seek help, often attributing their stress to inadequate housing (Innovation Unit, 2019).

Even if Māori mothers begin seeking care, their needs may not be met by the current system. Only a minority of New Zealand's district health boards offer kaupapa Māori services focused on MMH (Ministry of Health, 2021). Of the 11,000 women who will experience perinatal depression and anxiety each year, 75 to 95 percent of them, depending on location, will have symptoms deemed not serious enough to get support through the healthcare system (Productivity Commission, 2022).

New Zealand's governing and consulting bodies are aware of these health and housing disparities. The New Zealand College of Public Health Medicine (2018) issued a dire housing policy statement that echoes off-shore advocates. Soon after, healthy homes standards were legally codified, and currently, in 2025, all private rental homes must meet minimum heating, ventilation, and drainage requirements to be legally rentable (Ministry of Business, n.d.). Te Whatu Ora's (2023b) Healthy Homes Initiatives (HHIs) led to a nearly 20 percent reduction in housing-related hospitalisations in their trialled areas, including a focus on pregnant women and families on low incomes with tamariki under five.

Unfortunately, these incremental advances do little to remedy the broader housing problems that plague the country. HHIs apply solely to those with homes to make healthy. Often, those houses are not owned by tāngata whaiora, and it is the home owners who ultimately benefit from upgrades. The ideal scenario would be one of widespread home ownership where housing infrastructure is designed to promote physical and mental wellness. Race must be a consideration to close wellbeing gaps, for this crisis disproportionately impacts Māori.

When compared to New Zealand Europeans, Māori are 1.7 times more likely to experience housing instability, 1.4 times more likely to rate their housing as unaffordable, and twice as likely to live in damp housing (StatsNZ, 2021). Even when accounting for the youthfulness of the Indigenous population, Māori home ownership rates fall below those of New Zealand Europeans, with tamariki exceedingly more unlikely to live in a home owned by their parents (StatsNZ, 2021).

A 2023 investigation by *The Listener* further demonstrates that Māori mothers and children are incommensurately impacted by New Zealand's unhealthy homes (Macfie, 2023b). It tells the story of Rarangi and her toddler Te Awhenga, who will have lifelong illnesses arising from the poor quality of their Kāinga Ora house. Even if Te Awhenga is provided a healthy home now, these illnesses may hinder her educational, physical, and psychological growth.

While these realities have been systemically, and perhaps wilfully, disregarded, our community holds the power to galvanise collective awareness and action toward effecting meaningful change. As we navigate solutions, it is paramount to centre the voices and experiences of Māori mothers. This will necessarily include acknowledging and addressing the structural racism and discrimination they face.

The insights above and recommendations below should be woven into the fabric of our advocacy and policymaking under the te whare tangata banner, signifying the womb as the foundation of all human life. While figuratively beautiful, the phrase is literally significant. The health of the māmā sets the foundation for the health of the pēpi, and the health of the whare helps lay a foundation for the ability of the māmā, matua, and whānau to protect and nourish pēpi and future generations.

RECOMMENDATIONS

We here offer a preliminary outline for a deliberate, actionable, New Zealand-specific "Housing is Healthcare" framework (Lozier, 2019).

1. *Health facilities become sites of MMH/housing crisis response.* Doctors should have the ability to prescribe housing as a "form of 'preventative neuroscience'" for children (Padgett, 2020, p. 199). "Housing Prescriptions" might include not only direct placement into housing but also assistance for families/whānau navigating the private rental market and accessing legal support to address housing violations without fear of eviction (Bovell-Ammon et al., 2020; Hanssmann et al., 2022; Suglia et al., 2015). This integrative approach aligns with Māori-centred healthcare models that address relational, cultural, and community-specific needs (Wilson et al., 2021). Te Whatu Ora's (2023a) report on MMH in New Zealand's central region advocates for mental health support "regardless of severity" and emphasises targeted recruitment of Māori and Pasifika staff to ensure culturally responsive care (p. 14). This integrated model underscores the interconnectedness of housing, mental health, and culturally grounded support.
2. *Unhoused pregnant persons and parents with children in their care are offered Emergency Housing Special Needs Grants.* The first 1,000 days of life—from conception to age two—are widely recognised as a critical period for establishing the foundations of a child's development (Te Whatu Ora, n.d.; University of Auckland, 2019). MSD is currently stating that these grants will not be offered to those who have "contributed to their own homelessness," a phrase the lead author hears often in her mahi (Housing First Auckland, 2025). No child, whether born or in utero, can contribute to their own homelessness. Therefore, they should not be expected to reside in a car, tent, or makeshift shelter, particularly during winter months. While emergency housing is not a long-term solution, it provides an essential first step toward safe and stable accommodation.
3. *In keeping with Te Tiriti, hapū tāngata whaiora and matua to young tamariki receive distinct consideration via targeted housing plans.* Even before children are born, home environments, or the lack thereof, establish the basis for their later ability to flourish (DeCandia et al., 2022; Padgett, 2020). New Zealand must act on the evidence that attention to housing for Māori today—even and especially those not yet born—will result in greater wellbeing tomorrow.
4. A *decolonisation lens is more rigorously applied to housing as a healthcare issue.* The Crown must act on its adoption of the *United Nations Declaration on the Rights of Indigenous Peoples* (2007), which states the right to housing and health self-determination. There are current moves in that direction that can begin to address Māori MMH, as detailed in our two remaining recommendations.
5. *Housing should be appropriate in terms of space, culture, and a sense or promise of ownership.* Appropriate housing goes beyond living in a house-like structure. There is promise in efforts to develop papakāinga: houses and communities built on ancestral Māori land (Kake, 2019; Macfie, 2023a). Howden-Chapman et al. (2021) urge the Crown to continue working with Māori authorities in urban areas to develop a "supply of affordable, quality dwellings, including papakāinga" (p. 27). Twenty-first century papakāinga are not hypothetical, as Indigenous designers such as Hoskins et al. (2002) and Kake (2019) have offered clear plans for such communities. The title of a *E-Tangata* article summarises this prospect perfectly: "Build communities, not just houses" (O'Reilly, 2024).
6. *More support from the banking sector.* For 13 years, only Kiwibank provided mortgage loans for papakāinga, but in 2024, BNZ announced it will follow, as should all financial institutions (Kāinga Ora, 2023; Macfie, 2023a; Nine to Noon, 2024). Seventy percent of Māori land is in rural areas with attendant infrastructure concerns; focused development of the remaining 30 percent that is close to urban areas must be prioritised (Howden-Chapman et al., 2021; Macfie, 2023a). Kake (2021) commends the introduction of medium-density residential standards in the high-growth cities of Auckland, Hamilton, Tauranga, Wellington, and Christchurch as a move towards decolonising housing, as they take into account the multigenerational needs of Māori and Pasifika households. Adequate financial resources are crucial to ensure these initiatives can be effectively implemented.

Limitations

A limitation of this study is its reliance on secondary, predominantly quantitative, research. Further qualitative research that engages directly with wāhine Māori (for instance, Adcock, 2021) across diverse housing environments could provide critical insights to inform housing development strategies. Narratives, alongside statistical data, are essential to understanding the lived experiences behind the numbers. Wāhine Māori, as a maternal demographic, face systemic challenges, including institutional racism and bureaucratic barriers, which have deep historical roots in the dispossession of land and home. However, their narratives also reflect remarkable resilience and strength (Roestenburg, 2023). Their efforts to uphold te whare tangata and advocate for the wellbeing of tamariki and whānau exemplify this resilience. Centring their voices and experiences is imperative to advancing meaningful and culturally responsive solutions in housing policy and development.

Implications for further research

The limitations above highlight directions for further research. Future studies could look at experiences in different housing contexts (such as single-family versus complexes) to inform tailored solutions for social housing. Additionally, research that documents and evaluates promising programmes designed to assist hapū wāhine across the motu, for there are many, could offer actionable insights. There is also a critical need for studies that address the practical implementation of the "Housing is Healthcare" approach. Research could explore the funding, resource distribution, and community engagement necessary to make such an approach viable. Investigating these "how" questions could bridge the gap between conceptual frameworks and real-world solutions.

CONCLUSION

This article examines the impact of housing instability on Māori MMH. Addressing this issue requires housing solutions that are evidence-based, achievable, and that honour the deep connections between motherhood, land, home, and child wellbeing. Our review of the research sought to identify the most effective societal lever to reduce Māori perinatal distress and suicide. We believe we have identified that lever: the "Housing as Healthcare" framework. The pressing question now is how to embed that framework within New Zealand's social and healthcare services. Until Aotearoa treats housing as a human right—not a privilege to be bought and sold—the wellbeing of all New Zealanders will remain compromised and our obligations under Te Tiriti unmet.

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TEACHING HOPE THROUGH SURVIVOR STORIES

Joanna Cobley

INTRODUCTION

This article explores the integration of social justice, resilience, and wellbeing within health and wellbeing education. Framed as a reflective piece, it examines the pedagogical use of survivor stories to foster emotional resilience and critical engagement—particularly when addressing complex topics such as family violence. Drawing from teaching practice in a Level 4 Health and Wellbeing programme at Ara Institute of Canterbury in Ōtautahi Christchurch, the reflection centres on the use of a historic survivor story, retold as narrative, to connect past and present issues. It advocates for a shift from didactic teaching to storytelling as a means of promoting reflective practice and professional development. This narrative approach empowers students to engage meaningfully with course content and apply the resulting insights in their future roles as support workers.

The article also considers the challenges of teaching sensitive material within the course Contemporary Issues in Health and Wellbeing (HWCI400), which critically examines six pressing social issues in Aotearoa New Zealand. Grounded in a social justice and action-oriented framework, the course encourages students to explore policy, strategy, and legislation, and to reflect on their role in addressing societal concerns at a micro, meso, and macro level. The article concludes by encouraging other educators to adopt narrative approaches to deepen student engagement, foster self-awareness, and support development of a resilient, socially responsive workforce.

REFLECTIONS ON AN IDEA: WHY USE SURVIVOR STORIES FOR TEACHING?

This reflection focuses on the use of a historic survivor narrative to cultivate hope and resilience in students. Teaching about social justice—especially in relation to family violence and sexual violence—requires equipping learners to process difficult content and bear witness to others' experiences (Harms, 2015, cited in Connolly & Healy, 2018). Survivor stories play a vital role in recovery, allowing individuals to re-author their experiences and shift from victimhood to survivorship (Connolly & Healy, 2018). These narratives offer hope and are widely used in education and mental health settings to highlight the transformative power of storytelling (Te Pou, 2025; Te Pou & Ministry of Health, 2021; Tuhiwai Smith, 2023; Tutagalevao & Mariner-Solomon, 2024).

Reflective practice enhances professional development and student learning (Zalipour, 2015). In the context of this course, it involves aligning personal insights with curriculum goals and drawing from educational literature. Initially delivered through a didactic storytelling method, the teaching approach now evolves toward participatory pedagogy (Jack, 2013)—including pre-story context, post-reading reflection, group discussion, and activities exploring historical causes and effects. This method is designed to empower students to apply narrative tools in both learning and practice.

This reflection was prompted by informal student feedback to the teacher (and author) in 2023 following a session on family violence that revealed embodied responses—the students' facial expressions, tone, and posture underscored the emotional weight of the topic. Yet, students also expressed appreciation for the theme of hope and acknowledged how the experience strengthened their coping skills and resilience. Their reflections affirmed the importance of retaining such topics in the curriculum and served as a motivator for this teaching reflection.

Programme and course context

This reflection is situated within the Contemporary Issues in Health and Wellbeing course, part of the NZ2992 Certificate in Health and Wellbeing (Ara Institute of Canterbury, 2025; New Zealand Qualifications Framework, n.d.). The qualification prepares students for entry-level support work. The course HWCI400 introduces six critical social issues in Aotearoa New Zealand: crime and restorative justice, disability, family violence, housing poverty, poverty and inequity, and racism and discrimination. Using a social justice/action framework, the course examines each issue through historical and contemporary lenses, guiding students to understand current responses via policy, strategy, and legislation. The aim is to provide students with a broad understanding of these issues and their implications for support work.

Teaching with a social justice lens

Many graduates of the certificate programme continue into social work degrees, making it valuable to introduce foundational social work literature. Social justice is central to social work in Aotearoa and Australia (Nipperess, 2018), and involves activist teaching approaches (Hargreaves, 2019; Hytten, 2017) whereby educators can facilitate discussions on micro- meso- and macro-level actions to address inequities (Harms & Maidment, 2018). Adopting the three 'm's in the HWCI400 classroom provides a framework for students to better understand the roots and impacts of social problems such as family violence on different levels. This micro-, meso-, and macro-level framework is also intentionally used to help students develop empathy and apply their learning beyond the classroom. For example, some actions they might take include:

- Micro level: Supporting clients and whānau to navigate services.
- Meso level: Advocating against new alcohol licensing in vulnerable communities.
- Macro level: Submitting feedback on legislation such as the Crimes Legislation (Stalking and Harassment) Amendment Bill (New Zealand Parliament, 2024).

Teaching with a social justice lens also means prioritizing student wellbeing (Te Kāwanatanga, n.d.a). Educators must prepare students for confronting difficult topics and explain the purpose of applying a justice-oriented framework. For example, HWCI400 Lesson 1 introduces students to defining social issues, identifying affected populations, and exploring historical and contemporary responses. As noted above, the course outcome ensures students understand the legal, policy, and ethical dimensions of support work in New Zealand.

WHY STUDY FAMILY VIOLENCE?

Family violence and sexual violence have a long history in Aotearoa New Zealand. With high reported rates today, this form of family harm remains a significant social issue that impacts individuals, families (including children), and the wider community.

Defining family violence

Family violence encompasses a range of abusive behaviours, including intimate partner violence, elder abuse, child abuse, dating violence, stalking, and violence towards other family or whānau members, such as child-to-parent violence (Te Kāwanatanga, 2021). Also referred to as domestic violence or family harm, the term family violence is used here to reflect current legislation in Aotearoa (Ministry of Justice, n.d.). At its core, family violence involves an abuse of power and control, expressed through physical, sexual, psychological, emotional, spiritual, and economic means (Te Kāwanatanga, 2021). Both men and women can be victims and perpetrators of family violence and sexual violence. Research also highlights how children exposed to domestic violence face a higher risk of becoming both a bully and a victim of bullying (Auckland Coalition for the Safety of Women and Children,

2020; New Zealand Family Violence Clearing House, 2007). Sexual violence, defined as any sexual behaviour without freely given consent, also includes exposing children under 16 to sexual material (Te Kāwanatanga, 2021). In Aotearoa New Zealand, Government policies and strategies addressing family violence and sexual violence focus on prevention, risk minimisation, and victim support. The overarching goal is to create safe homes and communities, with ongoing efforts to achieve this aim (Te Kāwanatanga, n.d.b).

Historical context and legislative evolution

In Aotearoa New Zealand, support for those experiencing violence has evolved alongside legislative reforms. For example, the Society for the Protection of Women and Children (SPWC), later known as the Home and Family Society, was established in Auckland in 1893, with branches in Wellington, Dunedin, and Christchurch. The SPWC focused on legislative advocacy, successfully lobbying to raise the age of consent to 16 in 1896 and supporting the criminalisation of incest in 1900 (Tennant, 2007). However, some changes took longer, such as recognising marital rape as a crime, which was only enacted in 1985 (Swarbrick, 2018). The SPWC also provided legal aid to women in cases of disputed paternity and prosecuted instances of cruelty, seduction, or excessive violence against women and children (Tennant, 2007). Their strategy included data collection for advocacy and encouraging women to share their survival stories. Despite legislative advancements, family violence and sexual violence remain pervasive social issues in contemporary New Zealand (Te Kāwanatanga, 2021).

Contemporary policy initiatives

To address these challenges, the sixth Labour government, supported by the Greens and Te Pati Māori, launched *Te Aorerekura,* a policy aimed at reducing family violence and sexual violence. Replacing the decades-old *Te Rito: New Zealand Family Prevention Strategy* (Ministry of Social Development, 2002), *Te Aorerekura* emphasises education and advocacy as guiding principles for systemic change. It aims to provide a "guiding light" for individuals on their journey towards recovery, or "toira" (Te Kāwanatanga, n.d.b). In late 2024, the coalition government released the *Te Aorerekura Action Plan 2025–2030*. This revised policy prioritises victim support, prevention strategies, and enhanced collaboration between agencies and communities (Te Kāwanatanga, n.d.b; Te Puna Aonui Business Unit, 2024). Reinforced by legislation such as the Family Violence Act 2018 (Ministry of Justice, n.d.), the policy underscores the message that family violence is not okay. Through these initiatives, New Zealand continues to strive for safer homes and communities, recognising that deep, systemic change is essential for long-term progress.

TEACHING WITH STORIES

From a teaching perspective, stories help make learning relevant and practical (Honeyfield & Fraser, 2013; Jack 2013). For example, an excerpt from a children's story book provided a useful tool for teaching first year nursing students to consider the meaning of becoming older (Jack, 2013). Jack (2013) advises teachers to provide students with the pedagogical purpose of such an activity before embarking on the storytelling exercise. Humans create meaning by crafting narratives. While the individual is still central, there are transformative possibilities in the collective survivor story (Richardson, 1990). Collective experiences reassure us that we are not alone (Richardson, 1990). Survivor stories are designed to evoke hope. Being able to appreciate the power of hope is an essential skill within the social support space (Te Pou, 2025; Te Pou & Ministry of Health, 2021). Hope means that those people who experience harm can seek a safe place for refuge and recovery, and that those who use violence against others feel empowered to seek help (Tennant, 2007). Therefore, teachers as facilitators can enable students who plan to work in this field, and who may have experienced family violence and/or sexual violence, understand that support networks are already in place. For example, survivor case studies are used in New Zealand police force training practices to help new recruits better understand the complexities of family violence (Te Kāwanatanga, 2021; Stuff, 2021).

The method of teaching through storytelling is also widely used in Ara's Certificate in Health and Wellbeing programme (Ara, 2025). In the context of HWCI400, drawing from the historic survivor story enables teachers to facilitate a student discussion on the cause and effect of family violence from the safe distance of a different time and social context. It also provides scope to plant the idea that learning from history can lead to change today. The challenge that teachers face is that classroom situations change depending on the student cohort. The story of Ada Wells was selected for discussion in this course because of the teacher's experience teaching about feminist politics in Ōtautahi Christchurch around 1890. Christchurch was the hub for feminist politics in New Zealand during the late nineteenth century (Pickles, 2020).

ADA WELLS: A TRAILBLAZER IN SOCIAL JUSTICE AND WOMEN'S RIGHTS

Ada Wells (1863–1933) was a pioneering figure in Christchurch, New Zealand, whose life and work were deeply influenced by her experiences as a survivor of domestic violence. Her advocacy for social justice, women's rights, and community welfare left an indelible mark on the city and the nation (Fogarty, 1993; Sharfe, 1987).

Early life and education

Born in England in 1863, Ada Wells migrated to Christchurch with her family in 1873. Her early years were shaped by her father's strict Plymouth Brethren beliefs, which instilled a sense of discipline and resilience that would later underpin her activism. By 1877, Ada began her career as a pupil-teacher, later attending Canterbury College and working as an assistant teacher at Christchurch Girls' High (Fogarty, 1993).

Marriage and challenges

In 1884, Ada married Harry Wells, an organist 11 years her senior (Peters, 1986). Their marriage was fraught with challenges, including Harry's struggles with alcoholism and employment instability (Ehrhardt and Beaglehole, 1993; Newton, 197?). Despite these difficulties, Ada managed to support her family through teaching and healing work. Her experiences as a survivor of domestic violence profoundly influenced her political and social views (Amey, 2014; Brown, 2000; Fogarty, 1993).

Ada Wells herself did not initiate divorce proceedings. It appears that the Wellses came to some sort of arrangement. During the later 1800s and early 1900s, the church and the law discouraged divorce. Divorce was the preserve of the wealthy elite, so most couples sought alternate options such as simple desertion, incarceration, or institutionalisation (usually the woman was 'put away') (Cook, 2018). Women like Ada Wells had very minimal legal rights to apply for divorce or retain custody of their children. They also had limited work options and were less likely to have a private income (Cook, 2018). Meanwhile, the feminist movement advocated for women to have the same rights as men to apply for a divorce. Each legislative change, starting with the 1898 Divorce Act, which broadened the grounds for divorce, also led to an increase in the number of divorce applications (Cook, 2018).

Advocacy and social justice

Ada Wells was deeply involved in various social justice initiatives at micro, meso and macro levels. She co-founded the Canterbury Women's Institute in 1892 and joined the National Council of Women in 1896. In 1898 her work extended to the Canterbury Children's Aid Society and the Housewives' Union, where she advocated for affordable housing, nutritious food, and education for women (Dalziel, 1993; Fogarty, 1993; Fry, 1985; Tennant, 1986). Ada's spiritual beliefs intermingled with her political ideology influenced her involvement in the Women's Christian Temperance Movement, which played a significant role in advocating for universal suffrage, and her stance against conscription during World War I (Vesty & Cobley, 2015).

Legacy

In 1917, Ada Wells made history as the first woman elected to the St Albans Ward of the Christchurch City Council. Her contributions to local and national politics, as well as her advocacy for women's rights and social welfare, continue to inspire generations. Ada Wells' decision to seek alternatives to divorce and continue supporting her family despite limited legal and financial options reflects personal resilience and agency. Ada Wells' life was also testament to the power of advocacy. For example, her involvement in the Women's Christian Temperance Movement connected spiritual beliefs with social reform, particularly around alcohol abuse and conscription. In addition, her political advocacy challenged patriarchal norms and contributed to national feminist movements, advocating for equal rights, education, and social justice including divorce reform. Thus, her work laid the foundation for many social reforms, making her a true heroine of Christchurch and New Zealand (Fogarty, 1993; Sharfe, 1987).

DISCUSSION: ON SURVIVOR STORIES, HOPE, AND RESILIENCE

Family violence is a pervasive issue across societies, including Aotearoa New Zealand. This historic survivor story examines the life of Ada Wells, remembered for her feminist politics and as a survivor of domestic violence (Amey, 2014; Ehrhardt & Beaglehole, 1993; Fogarty, 1993). Despite these challenges, Wells sustained her spiritual, physical, mental, and emotional wellbeing through extensive community support. Her story conveys a powerful message of hope: "you are not alone" (Richardson, 1990; Tolerton, 2008).

While Wells' experiences reflect those of an educated, white, middle-class woman (Sharfe, 1987), her story also highlights broader societal issues, such as the dangers posed by alcohol dependency and the precarious conditions of employment in late nineteenth and early twentieth century New Zealand (Fordyce, 2022). These historical factors provide critical insights into the enduring nature of family violence today.

The retelling of Ada Wells' story serves as a pedagogical tool, offering students a relatable, local example of how survivor narratives can inspire resilience and hope. However, it is essential to critically engage with less palatable aspects of her story, such as the influence of eugenicist ideas on her feminist politics (Wanhalla, 2001). Eugenics, which sought to 'improve' humanity through practices like selective breeding and enforced sterilisation, shaped social attitudes in white settler New Zealand, including those towards Māori. The promotion of intermarriage between Māori and Pākehā as a means of 'improving' the race reflects these problematic ideologies (Wanhalla, 2001). Additionally, this study does not address traditional Māori knowledge systems, which historically provided guidance on respectful relationships and appropriate behaviour between men and women. These cultural practices, disrupted by colonisation, contrast sharply with the high levels of family violence experienced by Māori wāhine today (Pihama et al., 2020). One idea to address this would involve expanding the storytelling repertoire to draw in cultural stories, such as traditional Māori folklore and children's stories. For example, the story of Mataora and Niwareka is often used as an origin narrative for tā moko, the art of Māori tattoo, but it also reveals insights into a domestic violence situation and how the whānau sought redress and reconciliation (Higgins, 2013). The children's storybook *I Am a Little Voice* by Linda Tuhiwai Smith (2023), is another useful teaching resource for children and adults. The book includes exercises designed to nurture resilience in tamariki, exemplifying how storytelling can be adapted across age groups and contexts to address family violence.

By examining Ada Wells' story within its historical and cultural contexts, students are encouraged to critically reflect on the complexities of family violence and the resilience required to overcome it. This approach not only has potential to deepen their understanding of the subject matter but also equips them with the analytical tools needed to address such issues in their future practice. This is particularly effective when the teacher is attuned to identifying teachable moments within the story to deepen students' understanding of support work practices in action (Treloar, 2017).

CONCLUSIONS

This article has explored how storytelling and social justice can be harnessed to teach resilience, especially when navigating difficult topics in the classroom. Through this process, the educator gained confidence in using narrative as a pedagogical strategy, recognising its capacity to deepen self-awareness and enhance teaching effectiveness for both educators and learners.

Looking ahead, this storytelling approach will be embedded across future learner intakes, laying the groundwork for further research into how narrative-based teaching influences student outcomes. Lived experience narratives have proven to be powerful pedagogical tools. They foster empathy, encourage critical reflection, and reinforce the importance of hope and resilience—reminding students that recovery is possible, and support is available. For students preparing for roles in health and wellbeing, particularly in family violence support or social justice advocacy, these stories offer more than inspiration—they provide practical insight into lived realities. The historic survivor story presented here enables learners to connect past and present, interrogate shifts in social attitudes, and critically examine enduring issues such as discrimination, racism, and inequality.

A resilient health and wellbeing workforce depends on ongoing professional development and reflective practice (Te Pou, 2025; Te Pou & Ministry of Health, 2021). Training must be relevant and applicable (Te Puna Aonui, 2024), equipping students with knowledge of legislation, privacy protocols, government roles, and specialist services. Good practice also involves cultivating a mindset open to expanding professional knowledge and navigating complex, often painful topics with sensitivity and skill. Ultimately, sharing lived experience stories offers a meaningful way to explore themes of resilience, hope, and transformation. Addressing family violence requires not only individual commitment but also systemic change across macro, meso, and micro levels (Harms & Maidment, 2018). With bold approaches and supportive environments, society can move toward real and lasting solutions.

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REKINDLING OUR INNER RESOURCES

Pam McKinlay, Jackie Herkt and Fiona Clements

INTRODUCTION

Since 2020, craft practitioners from Resourceful Craft (formerly Rekindle) have journeyed from Ōtautahi / Christchurch to Ōtepōti / Dunedin to facilitate a long weekend of workshops. These are hosted by Otago Polytechnic and Res.Awesome, a company that supports businesses, community groups, events, and individuals to become zero waste.

Founded in 2010 in Tāmaki Makaurau / Auckland by Juliet Arnott, Rekindle relocated to Ōtautahi / Christchurch in 2012. Rekindle has since evolved to include more than 10 projects such as *Necessary Traditions* (Rekindle, 2018) and *Whole House Reuse*. All have focused on resourcefulness by engaging with local natural and upcycled materials through mindfulness and skill sharing. Resourceful Craft is an offshoot of Rekindle. Its workshops are currently based in community venues in Ōtautahi / Christchurch and Rīkona / Lincoln, with additional opportunities in Whakatū / Nelson and Ōtepoti / Dunedin (Rekindle, 2025).

As the hosts, we are a small group of crafters and regenerative practitioners who have become close friends as a result of this ongoing collaboration. Jackie is an occupational therapist and senior lecturer at Otago Polytechnic; Pam is an artist from the Dunedin School of Art with a social collaborative arts-research practice, and Fiona is a zero waste practitioner and chocolatier. The workshops bring together our host group's values of inspiring social and environmental connection, active resourcefulness, and supporting community resilience to improve health and wellbeing for the planet and people. Through valuing and transforming natural resources that are often neglected as waste or deemed a nuisance, we have observed how the workshops teach people to engage with their inner resources, building relationships with each other and connecting to the environment. We value this ongoing exchange which strengthens our own sense of the entangled nature of all life on Earth. We learn new skills in crafting and acknowledging our connection to land. The pieces crafted in the workshops are valued for being handmade as well as useful.

In this photo essay, we share aspects of past workshops from our perspectives as both observers and participants. Photographs by Pam McKinlay.

Figure 1. Tutors 2023 (top left to right): Gemma Stratton, Douglas Horrell, Simone Bensdorp, and Diana Duncan.

CONNECTING

When thinking about the social aspects of crafting, for this essay, we settled on the theme of "connections" as a way to encompass the many aspects of the workshops. We asked ourselves: what does it mean to make connections? What kind of connections are being made? What are the processes of the connections being made? How does making connections deepen our understanding of the world around us and strengthen the commons in our communities?

A connector is something that links two or more things together. In *The Tipping Point*, Malcolm Gladwell talks about connectivity as a way in which ideas are passed on—how traditions are shared among groups of peers and from generation to generation (Penn, 2019). In our workshops, this role is taken by a tutor who shares ideas and skills. Over the past five years, it has been our pleasure and privilege to come to know Rekindle tutors Diana Duncan, Simone Bensdorp, Douglas Horrell, Gemma Stratton, and Hannah Wilson Black as they travel the country with their philosophy of promoting traditional crafting skills and resourcefulness and connection through their eco-crafts workshops. *The New Zealand Curriculum* recommends that students be encouraged to value, connect to, and care for the natural environment, and that an approach through crafting (which is recreative, skilful, and immersive) "is a natural fit for supporting this goal" (Education Gazette editors, 2014).

Rekindle honours and acknowledges tangata whenua and tikanga. While they are not teaching traditional Māori 'crafts,' they acknowledge the whakapapa (genealogy) of the natural resources in our backyards and teach people to value these as taonga (treasures) instead of treating them as 'weeds' and 'waste' destined for landfill. The workshops not only create opportunities for learning new skills but offer a lens for re-looking while creating. The 'making-knowledges' shared by hands-on instruction offer a way of looking at what we can create by looking at all life around and within us. To connect to life is to connect to every aspect of our lives. Most important of all is to connect to ourselves, and to our own movement within life.

Figure 2. Composite image of a variety of materials used in workshops. The unrefined imprints of nature are apparent in the materials such as the bits and insects in the wool.

RESOURCEFULNESS

The word resource was originally derived from the Latin *resurgō* meaning to rise again (Rekindle 2025). Being resourceful means rethinking our connection to our planet and our culture of over-consumption. The fast-paced quest for the latest off-the-shelf consumer goods not only places an environmental burden on the planet, but it also fails to meet our psychological needs. Home décor items are often marketed as interior 'fashion' to change with the seasons. Disposable design fails to consider the energy and cost investments in materials, and products designed to have short life-spans are often destined for the tip, as the next 'season' of products rolls out. In this economic and social environment, we need to consider ways to make, mend, maintain, and to reduce our consumption. Investing our time in learning and creating hand-crafted items is a way to exit the psychological demands of consumption and to instead fulfil our personal needs.

We learn from our Rekindle visitors that being mindful of resources means being aware of the seasons, times of harvest, and the uses of materials in their various forms, or their preservation and preparation for other uses. Are the leaves we are gathering green or fresh fallen or weathered; is the bark green or over-wintered? How should we select for lowest environmental impact? When is the best time to harvest materials for natural dyes, what parts of plants are best to use, and what plants need protecting and should never be used? What plants will give us fibres for use in string, what parts of the plant can we bend or carve into useful tools and objects? Where can we gather and where not? For example, with tī kōuka (cabbage trees), we only gather the fallen leaves, in order to protect the native cabbage tree moth, or te pūrēhua noho tī (Manaaki Whenua, n.d.). What are other overlooked resources in our back yards, our 'waste-lands' and forest edges that can be transformed with patience and skill into crafted objects which are both useful and beautiful, for instance ivy, or blackberry bramble? These ideas imprint upon us a whole world of previously unseen but readily available resources.

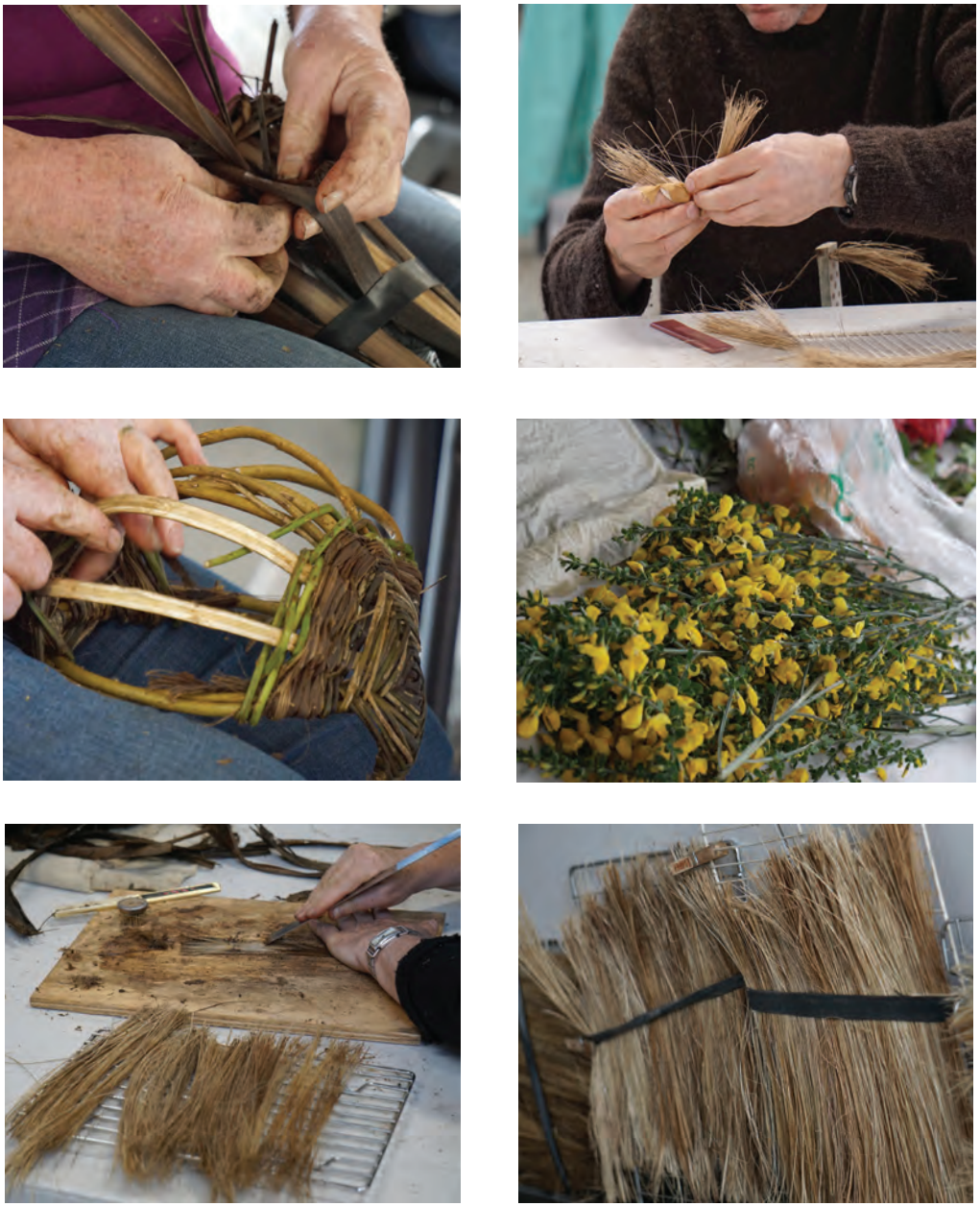

Figure 3. Composite image of variety of materials used in workshops. The unrefined imprints of nature are apparent in the materials such as the bits and insects in the wool.

CIRCLES OF ENGAGEMENT

Being truly resourceful connects us within communities as we share the resources we have. Working with natural materials using traditional technologies is a way of reconnecting to the world around and within us (Shrestha et al., 2025). Last year Fi (Fiona) introduced us to the kaupapa (the correct way of doing things) of Hua Parakore—the Māori Organics Framework (Hutchings, 2021). This means being mindful of what is in the local environment and how it grows, and the mantra of stop, watch, listen. Where does the sun rise, and where are the prevailing winds? Where is the rain shadow? What is the tikanga (the right way of doing something) of gathering? All parts of the plant material gathered are honoured. Nothing goes in the 'rubbish bin.'

We are mindful not only of the gathering of materials and resources, but in providing the processes that allow the connections and mahi to occur. It is the way in which spaces are set up for mahi and for kai. Kai (food) is another connecter, through a shared lunch with people often bringing dishes prepared from food they have grown in their own gardens. Kōrero (conversation, discussion) around the table furthers the building of relationships which in turn allow for working together. People are open as we share stories of why we have come together to experience these workshops: having a go at something new, personal growth, supporting a friend who is coming, 'me' time away from family, or a restorative break from stressful life events such as death and illness.

All the workshops take place in one open space, with groups of tables where a hard surface is required. Sometimes we work in circles. Participants and practitioners stand or sit wherever is most comfortable for the tasks at hand.

Crafting is way for people to get into a "flow" state by dis-connecting from intrusive daily thoughts (Csikszentmihalyi et al., 2005). It is a state where we are so involved in the task that we don't notice time passing. We aren't simultaneously thinking over other things—making plans for the future or rehashing the past (Csikszentmihalyi et al., 2005). Although she did not use the term 'flow,' occupational therapist Mary Riley identifies the same attributes as having positive effects on mood in her address for the 1961 Eleanor Clarke Slagle Lecture: "Man, through the use of his hands, as they are energized by mind and will, can influence the state of his own health" (1963, p. 18).

We begin by connecting hands to the material and having an awareness of others engaging in a shared task around us. Mark Jones, senior lecturer and outdoor education coordinator at Auckland University of Technology, points out that 'relating to others' is a key competency of The New Zealand Curriculum:

> Crafting often requires students to help one another, as well as share knowledge and skills. Inevitably, crafting creates a medium through which students can get to know and understand others. Crafting also presents the opportunity to coach others, to assist them, to gift a crafted object to someone else, and simply to engage with others in a common task. (cited in Education Gazette editors, 2014)

Crafting requires patience, focus, persistence, and problem solving which are essential in building inner resilience (Einarsson, 2021). Engaging in a common task such as a workshop enables people to get to know each other and to understand other points of view. The finished items are embedded with memories of the creative process and personal experience. They become "echo objects"—a term invented by Barbara Stafford in *Echo Objects: The Cognitive Work of Images* (2007). For Stafford such creative pieces can evoke emotional and cognitive responses for the maker by sensory means. The objects not only embody the maker's physical gestures but invite the viewer to connect by not only looking but also through touch, texture, and appreciating the material presence of the item.





Figure block 4. Composite image of workshops in progress, circles of engagement.

CRAFTING

Traditional craft objects are designed to accommodate the shape, movements, or needs of humans. Crafting does not celebrate the 'creative genius,' but the creativity of everyday life. It is an embodiment of the interconnections between tools and hands, and resources.

Research into creativity in makerspaces found there were three distinct practices, described as crafting, connecting, and commoning (Einarsson, 2021). "Crafting," Einarsson writes, "is an individual, recreative, skilful, and immersive practice that connects to an individual's personal workspace" (Einarsson, 2021, p. 1). The makers' practices inform a discussion of the agency. "Connecting" is "creative [and] object-oriented" with the potential to connect to everyday life situations, while "commoning is a social and communal practice that connects" makers in and to the community (Einarsson, 2021, p. 1). The Rekindle workshops are inclusive spaces open to all levels of skill and ability, from those who have never made anything before to experienced crafters who are adding a new technique to their skill set. A crafted item can assist in transfer and retention of learning not just about making, but about putting ourselves into the making.

Figure block 5. Composite image of hands-on skills and hands-on mahi with workshop materials.

LAST THOUGHTS

Being resourceful means rethinking our connection to our planet and how our culture of over-consumption and depleting natural resources both defines us and fails to meet our social, psychological, and spiritual needs. To be truly resourceful we must develop healthy relationships with, and become intimately connected to, the places and people around us and the resources around and within us.

People are social beings with a need to collaborate, share, and develop relationships to both sustain life and to live a meaningful life—one where the things we do define and build our own identity and contribute to our communities' identities, values, and beliefs. Such a life is one where we can acknowledge our connectedness with nature, where nature is us and we are nature.

As October rolls around for another year, we look forward to inviting the Resourceful Craft tutors to Ōtepoti once more to share in their mahi of rekindling through crafting.

Figure 6. Composite image of items 'made from scratch'—from resource to product.

Pam McKinlay (Tangata Tiriti) has a background in applied science and history of art. As an artist she works in collaboration with other artists locally and nationally, in community outreach, and education projects around the theme of climate change, sustainability and biodiversity. She is an independent curator and convenor of the Art+Science Project based in Ōtepoti Dunedin, New Zealand. Her writing has been widely published including, in 2024, a book on her ArtScience and Community work, *Flows Like Water.*

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Jackie Herkt is an Academic Leader and Principal Lecturer in the School of Occupational Therapy at Otago Polytechnic. After working for many years as an occupational therapist working with children she moved to working with adults and later into teaching roles. She is an avid weaver and since 2020 has helped Pam McKinlay with hosting Rekindle Eco-crafts workshops in Ōtepoti Dunedin, using materials such as ivy and cabbage tree leaves which are often overlooked as "waste" materials instead of being valued as resources.

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Fiona Clements (Waitaha, Kāti Māmoe, Kāi Tahu) is the former director of Ōtepoti / Dunedin based business Res.Awesome, a company that supported businesses, community groups, events and individuals to become zero waste. In 2022, Fiona participated in the Cacao Emissary training in Ōtautahi and in 2023 set up as a chocolatier manufacturing cacao and dark chocolate in Waitati under the brand Ka kā wā Confectionery.

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GUIDELINES FOR CONTRIBUTORS

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

Scope (Health & Wellbeing) 10 theme: Open.

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.

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: original research, reflections, commentary and debates, poems, book reviews, interviews, 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.