

Urinary Incontinence Assessment and Management After Stroke: An Exploratory Qualitative Study of Physiotherapists' Perceptions of Their Practice in Aotearoa New Zealand

Tessa Downes *BPhy (Hons)*

School of Physiotherapy, University of Otago, Dunedin, New Zealand

Rachelle A. Martin *PhD*

Department of Medicine, Rehabilitation Teaching and Research Unit, University of Otago, Wellington; Burwood Academy Trust | Hā-i-mano, Christchurch, New Zealand

E. Jean C. Hay-Smith *PhD*

Department of Medicine, Rehabilitation Teaching and Research Unit, University of Otago, Wellington, New Zealand

Daniela Aldabe *PhD*

School of Physiotherapy, University of Otago, Dunedin, New Zealand

ABSTRACT

Urinary incontinence post-stroke is associated with poor rehabilitation outcomes. Current stroke guidelines recommend that physiotherapists are involved in addressing urinary incontinence problems post-stroke to improve rehabilitation outcomes; however, physiotherapists' perceptions of their role are not known. This study explored how New Zealand physiotherapists perceive their current role in urinary incontinence assessment and management post-stroke, along with exploring what limits or facilitates this role. Using an exploratory qualitative methodology, eight physiotherapists from across New Zealand were interviewed. Data were analysed using a qualitative descriptive approach presented in four main themes: (a) physiotherapists' view of their scope of practice, (b) resources and training of physiotherapists, (c) lack of collaboration between professions, and (d) physiotherapists' view of urinary incontinence assessment and management experienced by patients. The physiotherapists' practice focuses primarily on functional mobility, balance, and upper limb function to achieve patient goals. Therefore, the physiotherapists perceived their stroke assessment and management had positive, indirect benefits for those who found it difficult to toilet independently post-stroke. The physiotherapists considered that a lack of time and formal training, and uncertainty about their role in urinary incontinence rehabilitation, limited their involvement in the urinary incontinence rehabilitation area. The physiotherapists viewed nurses as the lead profession for continence. However, they believed better collaborative practice within the healthcare team would improve the delivery of continence services.

Downes, T., Martin, R. A., Hay-Smith, J., & Aldabe, D. (2023). Urinary incontinence assessment and management after stroke: An exploratory qualitative study of physiotherapists' perceptions of their practice in Aotearoa, New Zealand. *New Zealand Journal of Physiotherapy*, 51(1), 14–23. <https://doi.org/10.15619/NZJP/51.1.03>

Key Words: Barriers, Facilitators, Stroke, Urinary Incontinence, Physiotherapy, New Zealand

INTRODUCTION

In Aotearoa New Zealand (NZ), stroke is the leading cause of adult disability (Ministry of Health, 2018). Direct stroke-related costs for the NZ health sector are an estimated \$960 million annually (Anderson et al., 2005), with this expected to rise due to a predicted 40% increase in people experiencing stroke in the coming decade (Ranta, 2018). Stroke survival rates worldwide have also increased over recent years, with a drop of 36.2% between 1990 and 2016 (Johnson et al., 2019). Therefore, an increasing number of people within the community live with post-stroke related disabilities.

One common impairment post-stroke is urinary incontinence. Urinary incontinence often presents as a new problem post-stroke or, if pre-existing, can worsen significantly (Brittain et al., 2000). The prevalence of urinary incontinence reported in the literature varies greatly due to the use of different outcome measures to assess the presence of urinary incontinence.

Currently, 9–15% of patients have persisting urinary incontinence symptoms one-year post-stroke (Patel et al., 2001; Rotar et al., 2011). The most common type of incontinence post-stroke is urgency urinary incontinence, occurring in 37% to 90% of stroke patients (Gelber et al., 1993; Gupta et al., 2009; Kim et al., 2010; Mehdi et al., 2013). Other types of incontinence include overflow, stress, and functional (Mehdi et al., 2013). Functional urinary incontinence can be due to cognitive, language, or functional mobility impairments leading to the inability to reach and use the toilet correctly (Brooks, 2004).

Urinary incontinence increases rates of falling (Divani et al., 2009), reduces quality of life (Dhamoon et al., 2010; Patel et al., 2007) and increases risk of depression (Limampai et al., 2017). Depression post-stroke is associated with poorer functional outcomes, increased isolation rates, and higher mortality (Bartoli et al., 2013; Brittain & Shaw, 2007; Desrosiers et al., 2008;

Willey et al., 2010). Adverse social, psychological, and financial effects occur for family caregivers of incontinent stroke survivors (Arkan et al., 2018).

Individualised assessment and management of urinary incontinence in stroke survivors contributes to improvements in bladder function and toileting, and decreased urinary tract infections (Thomas et al., 2014; Vaughn, 2009). In fact, stroke survivors receiving individually tailored urinary incontinence interventions have a significant reduction in the burden of urinary incontinence, with more than half of the participants regaining continence (Herr-Wilbert et al., 2010). Due to the positive outcomes demonstrated from structured and individualised urinary incontinence assessment and management, some stroke guidelines make recommendations in this regard. For example, best practice within the NZ stroke services (National Stroke Network, 2017) is informed by the section on urinary incontinence in the 2017 Australian Clinical Guidelines for Stroke Management, which include a structured urinary continence assessment and management plan (Stroke Foundation, 2021).

Urinary incontinence management guidelines are not routinely and consistently followed. In Australia, more than half of stroke services did not implement a formal management plan, and when in place, these plans were not usually patient-centred (Jordan et al., 2011; Kohler et al., 2018). Nurses from Sweden, China, and the UK reported that urinary incontinence assessment was rapid, with no identification of urinary incontinence type, and management plans were not individualised (Booth et al., 2009). Reasons for lack of guideline adherence included limited evidence supporting continence recovery, a containment focus, and a lack of staff knowledge and support (Booth et al., 2009).

Urinary incontinence assessment and management has primarily been viewed as a nursing role (Arkan et al., 2018; Vaughn, 2009). However, considering the clinical features of urinary incontinence and its impact on activity and participation, a whole-team approach is recommended, including physiotherapy (Dumoulin et al., 2005; Jordan et al., 2011; Vaughn, 2009). Physiotherapy practice should involve identifying the type of urinary incontinence and developing management plans, including education, pelvic floor muscle training, and behavioural interventions (Rudd et al., 2017). Studies investigating current physiotherapy practice for urinary incontinence post-stroke are scarce. One Canadian study reported that fewer than 15% of physiotherapists use best practice assessments such as urinary incontinence identification, and only 3% conduct best practice interventions post-stroke (Dumoulin et al., 2007). Reasons for these low percentages were not formally identified.

With such a limited evidence base to understand what impedes or supports physiotherapy best practice in urinary incontinence assessment and management post-stroke, the primary aim of this study was to explore how New Zealand physiotherapists perceive their current role in urinary incontinence assessment and management post-stroke. The secondary aim was to identify what limits and facilitates their role. Understanding urinary incontinence services present within the NZ healthcare

system from a physiotherapy perspective could lead to initiatives to reduce stroke-related disabilities due to urinary incontinence in NZ.

METHODS

To explore the perceptions of physiotherapists, we undertook a qualitative exploratory study using one-to-one interviews and an inductive content analysis of transcribed data.

Methodology

In the absence of any previous similar exploration with physiotherapists or within NZ, a qualitative descriptive approach (Neergaard et al., 2009) enabled us to gather detailed data about a range of experiences and practices. The University of Otago Human Ethics Committee granted ethical approval for this research. Consolidated criteria for reporting qualitative research (COREQ) guidelines guided study reporting.

Participant selection and recruitment

Eligible physiotherapists needed to hold an annual practice certificate from the Physiotherapy Board of New Zealand and work with stroke survivors within NZ. Recruitment occurred via social media groups such as the Physiotherapy New Zealand Neurological Special Interest Group (NSIG) and professional contacts of the research team. An invitation to participate was sent via email to physiotherapists expressing an interest, or participants who viewed the study poster contacted the primary researcher (TD) directly. Those interested were sent a Qualtrics survey link with a unique numeric identifier. The survey screened for eligibility and included some demographic questions. The consent form was also attached.

Eleven physiotherapists registered interest. The focus of this study was to gather information about physiotherapists' perceptions of contemporary clinical practice of urinary incontinence management of stroke survivors. Hence, two physiotherapists were ineligible as they were not currently working with stroke patients. One physiotherapist did not respond to the questionnaire. Thus, a convenience sample of eight physiotherapists was recruited. One participant was known to the primary researcher (TD) before commencing the study.

Data collection

Online, single, one-to-one Zoom interviews were used. The interviewer (TD) followed a guide (Table 1) of open-ended questions to facilitate in-depth discussion (DiCicco-Bloom & Crabtree, 2006). More specific questions were used, if needed, to clarify or gain greater depth of information. In addition, field notes were taken that helped to prompt follow-up questions, captured the researcher's impression of the main points arising from discussion, and any ideas for further reflection (e.g., potential for changing the phrasing of a question, or new ideas raised).

The interview schedule was piloted by TD with JHS in the role of participant and DA as an observer. The three researchers then discussed the flow and content of questions, research interviewing skills, and assumptions and motivations being brought to the study.

The Zoom application transcribed the interview audio files, which TD then checked and edited for accuracy and de-

identification. Interviews ranged from 27 to 59 min long. The research team considered that participants' data provided sufficient information to address the research questions (Charmaz, 2006).

Analysis

We used an Inductive Content Analysis approach (Vears & Gillam, 2022). Data were managed in Word documents, with the researcher's notations made in the margins. The analysis process was done 'by hand' (i.e., data extracts were transferred into one document per coding category, and underlining,

Table 1

Interview Guide

| Checklist | Prompts |
|--|---|
| <p>Big picture</p> <p>Can you tell me the usual practices in your workplace for urinary incontinence assessment and management?</p> <p>Who is involved?</p> <p>In what ways is everyone involved? – assessment vs management roles, etc.</p> <p>Is there a dedicated team (or person) for this?</p> <p>Is this part of your team, or does it need a referral to another team/service?</p> <p>Does the information collected get passed on to other team members?</p> <p>What guidelines or protocols support these practices?</p> <p>Are there any cultural considerations you note when urinary incontinence assessment or management is undertaken?</p> | <p>Responsibilities, e.g., toileting, transfers, managing when someone is incontinent, questions</p> <p>Multi-disciplinary team meetings? Informal discussions? Notes? e.g., stroke guidelines, stroke pathway in their DHB, etc.</p> |
| <p>Assessment</p> <p>What is your role in the assessment of post-stroke urinary incontinence?</p> <p>During your subjective assessment, do you ask about urinary issues with your patients with stroke?</p> <p>If yes, what are the questions you ask?</p> <p>If not, why?</p> <p>If a patient appears to have urinary incontinence, is there anything you add to your usual assessment?</p> <p>Do you share your findings with a team?</p> <p>Do you believe physiotherapists who treat stroke survivors should conduct urinary incontinence assessments? Why or why not?</p> | <p>What parts of your usual assessment may contribute to understanding why urinary incontinence is present?</p> <p>What do you look out for around toileting?</p> <p>Frequency of urgency, voids (day vs. night), incontinent episodes, issues walking or balancing or transferring</p> <p>e.g., specific questions, specific tools, assessment of pelvic floor, outcome measures, e.g., the Barthel Index</p> |
| <p>Management</p> <p>Could you tell me about your role in treating and managing post-stroke urinary incontinence?</p> <p>Do you include anything particular for stroke patients with urinary incontinence guidelines/protocols you use?</p> <p>If a patient is being discharged from hospital with urinary incontinence, what is your role in supporting (self) management at home?</p> <p>Do you have discussions with family/whānau or others who will care for a stroke survivor at home about managing the incontinence?</p> <p>Do you believe physiotherapy has a role in the management of urinary incontinence?</p> <p>Are there any cultural considerations you use specifically when involved with patients' toileting/continence?</p> | <p>How does training mobility, balance, transfers contribute? How often is this done, by you, in a "real-life" setting such as the bathroom when the patient wants to void?</p> <p>e.g., pelvic floor muscle training or bladder training</p> <p>e.g., home visit to check environment, looking at toileting in real-life setting within hospital</p> |
| <p>Barriers/facilitators</p> <p>What do you think is going well in assessing and managing urinary incontinence after stroke?</p> <p>Specifically for physiotherapy?</p> <p>What do you think needs to change?</p> <p>Specifically for physiotherapy?</p> <p>What would enable that change to happen? What is needed?</p> | <p>Example of facilitators: clear guidelines for assessment and management of urinary incontinence by the service; interprofessional practice where physios collaborate with urinary incontinence assessment and management</p> <p>Example of barriers: time restriction; physiotherapy discharge plan is focused on gait, transfers, upper limb function; lack of knowledge/training in this area, lack of protocols</p> |

highlighting, and margin notes were used to capture main ideas). The sequence of analysis was a) organisation of data into categories relating to the research question (i.e. the interview questions providing an initial coding framework); b) inductive examination of ideas within and across each category to develop codes capturing the main ideas; and c) reducing overlap and redundancy of data to locate key themes (Vears & Gillam, 2022). Independent parallel coding was conducted by DA, RM, and TD for four interviews and any inconsistencies between the researchers were settled by mutual discussion. TD coded and analysed the remaining interviews, with DA checking all coding once completed. Finally, the research team held a consensus meeting to define and name the final themes.

The researchers, all women, brought physiotherapy knowledge to the analysis process – the primary researcher (TD) was a fourth-year physiotherapy Honours student, and the others (DA, RM, JHS) are academics with physiotherapy and doctorate degrees and qualitative research experience, including incontinence research with stroke survivors.

The credibility of the findings was assured in several ways. Reliability and rigour of the coding were achieved through three researchers undertaking parallel coding for the first four interviews, from which main themes were discussed and identified. Independently, and in discussion with the other researchers, TD reflected on her positioning in the research (e.g., prior knowledge of the topic, and how her experience might influence the collection and analysis of data).

RESULTS

Participants

Eight physiotherapists (seven female, one male) from across NZ participated in the study (Table 2). Three were from the North Island and five from the South Island, and they represented urban and rural settings. The participants worked in various stroke rehabilitation settings. Many participants had worked across the stroke care pathway and reflected on previous experiences in different settings. The amount of experience working with stroke patients varied considerably between participants (2–27 years). Five participants identified as NZ European (Pākehā), one as North American, and two as British.

Themes

The four main thematic categories, with contributing subthemes, are shown in Figure 1.

Physiotherapists' view on their scope of practice

When the eight participants discussed their role in assessing and managing post-stroke urinary incontinence, they did so by considering their influence in addressing functional urinary incontinence. This included improving functional mobility, upper limb function, and transfers on and off the toilet. Regaining continence, however, was rarely the focus of interventions. For one participant, the goal of getting to the toilet was “mutually beneficial for our purposes as well as incontinence” (P7).

Participants believed their scope of practice centred on empowering stroke survivors to achieve their goals. However, urinary incontinence was rarely mentioned by patients, so was often not considered as a goal by participants: “When you say to them what are your goals, what are you wanting to get out of the session, the patient themselves often doesn't highlight incontinence” (P6).

Participants' involvement in urinary incontinence intervention post-stroke changed according to their work environment. In a hospital setting, it seemed that urinary incontinence assessment or management, in general, was not a priority: “The goal is: what do we need to be able to do to help this person leave the hospital as quickly and safely as possible?” (P1). Once the patient was within a community setting, urinary incontinence intervention was focused on self-management at home and reintegration into the community: “Having a plan for when they're going out and about knowing where the toilets are and having a strategy to manage that ... it's just talking through a self-management plan collaboratively” (P2).

Resources for stroke physiotherapists

Participants felt their scope of practice was influenced by the available resources, such as time and the amount of formal and informal training they had.

Participants often focused on the limited time with patients, which was a barrier to providing continence assessment and care. As a result, urinary incontinence management was restricted and not perceived as a priority: “It's not a symptom

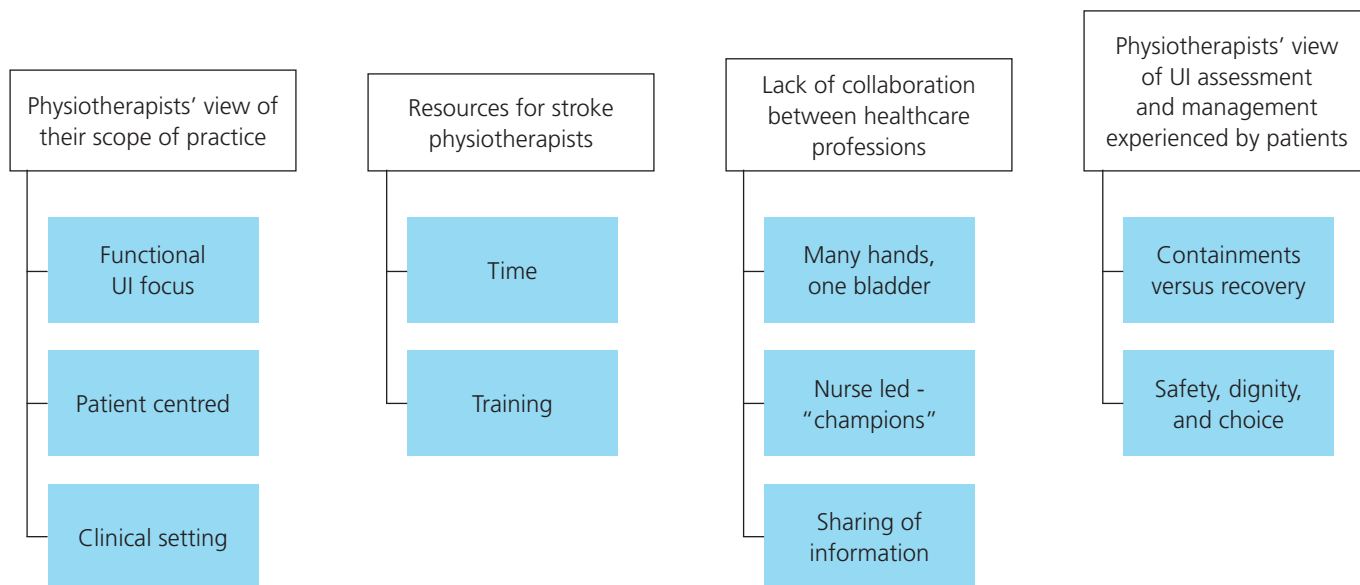
Table 2

Participant Demographics

| Participant number | Experience with stroke survivors (years) | Type of service |
|--------------------|--|---------------------------|
| 1 | 5 | Community – private |
| 2 | 14 | Community – home based |
| 3 | 15 | Community – private |
| 4 | 10 | Community – home based |
| 5 | 20 | Community – home based |
| 6 | 27 | Tertiary – rehabilitation |
| 7 | 2 | Tertiary – acute |
| 8 | 5 | Tertiary – rehabilitation |

Figure 1

Overview of Themes and Subthemes Developed From Interviews



Note. UI = urinary incontinence.

that I have a lot of time for unless somebody specifically asked for physiotherapy for that" (P4). The potential discomfort surrounding the issue also means patients may take more time to disclose information and goals relating to urinary incontinence: "It's more private issues that some people feel less comfortable disclosing ... you might ask the question on the initial assessment [then] it might not come up till later when somebody feels comfortable to disclose" (P2).

Many participants believed urinary incontinence assessment or management was out of their scope due to a lack of formal training. None of the participants indicated doing any formal training for urinary incontinence assessment or management outside of their undergraduate degree, and even then, "you don't really get taught it at Uni" (P1). This lack of training meant participants "don't feel confident with it" (P3). It seemed continence-specific knowledge came from reading literature, talking to and watching colleagues, or personal experience (e.g., knowledge of pelvic floor muscle exercises gained after childbirth). One participant stated that the continence questions included within her initial assessment weren't following a form or guide but rather, "I've been in this job for like six years, and that's just the kind of things that have come up regularly to know what to ask" (P4).

Lack of collaboration between healthcare professions

Participants indicated that the components of stroke rehabilitation are split between the professions aligning with professional strengths, with most participants believing that nurses championed urinary incontinence assessment and management. One participant highlighted that different professions tackled different aspects of incontinence within a

community rehabilitation context. This may mean multiple visits and regularly communicating with different professions in a community setting.

If it's a case of the person not having the capacity to walk safely and quickly to get to the toilet, then that becomes us. If it's an issue of them getting on and off the toilet, [then] it's more OT [occupational therapy]. If it's an issue of having no bladder control, then the nurses and the continence team would get involved... (P4)

Some indicated that they thought physiotherapists should have a more active role in managing continence. However, the knowledge surrounding patients' continence was rarely discussed as a team, particularly within the hospital setting.

So continence and toileting themselves [were] a bit variable around problem-solving and how to manage it, it wasn't very transparent ... Not saying that the nurses weren't doing it, but they definitely weren't bringing it to the table to talk about. (P5)

Physiotherapists' view of urinary incontinence assessment and management experienced by patients

Participants also reflected on the experiences of patients regarding continence assessment and management. Interestingly, these reflections were about the patient experience as a whole rather than physiotherapy specifically. Participants' core concerns were that urinary incontinence management often focused on containment rather than on recovery, and the impact this had on patient choice and dignity. Professionals who opt to contain continence with strategies such as catheterisation, uridomes, continence pads, etc., was seen as a

missed opportunity by participants to solve the root cause of the incontinence.

If we were to put it into context as a physio, we would be saying, let's just focus on getting them transferring into a wheelchair, because you know, in a wheelchair they've got mobility, without actually seeing whether we can stop and teach them how to walk again. I kind of feel like that's what we're doing with our patients [regarding continence]. (P6)

A few participants questioned how much choice patients were offered. It seemed that patient choice could be forgotten in the use of containment products and discouragement to mobilise independently for toileting: "They put pads on people who actually don't need them, and then it doesn't encourage them to self-manage and to make that decision for themselves" (P8).

I think it's a common issue in both hospitals and in residential care that there's a tendency to be risk-averse to ensure people are safe and make sure people are not falling, which is really important. But I think sometimes it's too far that people don't have the chance to take a risk ... but actually, I feel like it's a human right to choose to take that chance and some people would prefer to have dignity of going to the toilet when they want and occasionally having a fall. (P2)

Participants recognised there were reasons that influenced healthcare team behaviour, such as resources, staffing, time, and concerns for patient safety.

DISCUSSION

To our knowledge, this is the first study in NZ exploring the practice and perspectives of physiotherapists on urinary incontinence assessment and management post-stroke. This was done to gain an understanding of the current role of physiotherapists within urinary incontinence assessment and management and to identify what might limit and facilitate the role. Four main themes were developed from the data: (a) physiotherapists' view of their scope of practice, (b) resources for stroke physiotherapists, (c) lack of collaboration between healthcare professions, and (d) physiotherapists' view of urinary incontinence assessment and management experienced by patients. In addition, subthemes were identified for each main theme.

Physiotherapists' view of their scope of practice

Participant data suggest that continence interventions provided by physiotherapists for stroke patients are related mainly to, but not directly focused on, functional urinary incontinence. The primary urinary incontinence-related assessments that participants felt confident conducting were related to functional mobility and toilet transfers to aid in self-management. According to the participants, the interventions they provided were mostly focused on improving functional mobility, balance, and upper limb function. These skillsets align with the Australian Guidelines' description of the primary role of physiotherapists in stroke rehabilitation (Stroke Foundation, 2021) and will allow patients with functional urinary incontinence to toilet more easily. However, participants did not feel competent in other skills relating to urgency and stress incontinence following stroke, such as pelvic floor assessment, bladder training, pelvic floor muscle training, and neuromodulation.

Participants perceived their practice as patient-centred, empowering patients to achieve their goals. Patient-centred practice is the cornerstone of rehabilitation, according to the Patient and Whānau Centred Care model (Darlow & Williams, 2018). One of the actions of this model is that physiotherapists support and encourage patients and whānau to develop the skills and knowledge they need to be actively involved in their healthcare (Darlow & Williams, 2018). However, some participants mentioned that they were unlikely to ask about or explore issues around continence with their patients. Such a lack of discussion could be problematic, as previous research suggests that continence is a "quiet" issue – meaning patients and healthcare workers are unlikely to raise the subject unless prompted (Horrocks et al., 2004). Therefore, setting patient-centred goals inclusive of continence could be possible if patients received all relevant information about the issues that physiotherapists can play a role in, including urinary incontinence.

The participants' view of their scope around urinary incontinence varied considerably between the clinical settings in which they worked, particularly between hospital care and community care. Participants' experiences indicated that they felt it was too early to explore options while patients were in acute hospital settings; however, discussions may start in the inpatient rehabilitation unit. Findings also suggest that participants see a more significant role around education and self-management once a person transfers to living in the community. Furthermore, in the private community setting, participants tend to refer people to physiotherapy specialists if continence is highlighted as an issue. High rates (32–79%) of urinary incontinence prevalence at admission (Brittain et al., 1998) and some resolution occurring with time (Brocklehurst et al., 1985) may contribute to the "wait-and-see" approach reported in acute care. A 2008 review, however, stated that thorough assessment and management of urinary incontinence might have the greatest impact in the acute phase (Thomas et al., 2008). If physiotherapists do not consider urinary incontinence a key factor from the beginning of a patient's rehabilitation, this may influence the flow-on rehabilitation focus.

Resources for stroke physiotherapists

A lack of time to appropriately conduct assessments and explore management options for urinary incontinence was regularly raised by participants throughout the interviews. Often participants viewed time as limiting what they should prioritise, especially given the focus on neuroplasticity in post-acute rehabilitation services. Urinary incontinence was not a priority rehabilitation focus for participants; instead, they focused more on functional mobility, balance, and upper limb function. As a result, improvements in functional urinary incontinence were incidental rather than explicitly focused on.

Time may also be considered a barrier because participants believed urinary incontinence was a subject that takes time to be disclosed by the patients. Findings suggested that patients and health professionals needed rapport and a deeper relationship before patients were willing to discuss continence openly. However, past research has shown that patients are often not informed about urinary incontinence being related to their

stroke and believe healthcare professionals view incontinence as an irrelevant issue (Arkan et al., 2018; White et al., 2014). In addition, embarrassment and shame can be associated with incontinence for patients (Clark & Rugg, 2005), and healthcare professionals have reported discomfort and difficulty initiating discussion around “difficult” topics such as sexuality and urinary incontinence (Mellor et al., 2013). Therefore, patients may not think to discuss continence due to a perception of irrelevance or discomfort, and physiotherapists may not explore continence due to a perception of patient- or self-discomfort. Consequently, both patient and healthcare professionals’ perspectives may be barriers to addressing continence assessment and management.

Participants felt they lacked formal training and indicated this was one reason why physiotherapists do not undertake a formal assessment of urinary incontinence. Participants also reported they lacked confidence prescribing specific interventions such as pelvic floor muscle training. Evidence-based best practice recommends that physiotherapists be trained before undertaking comprehensive assessment and management of urinary incontinence (Bø, 2015; Martin et al., 2006). Due to the recommendation that physiotherapists should be involved in urinary incontinence intervention post-stroke (Dumoulin et al., 2005; Dumoulin et al., 2007), formal training should be available to physiotherapists working with stroke patients. However, undergraduate training in urinary incontinence management in NZ is limited. This aligns with previous research conducted in Canada, where physiotherapists were taught an average of 5.36 hr on urinary incontinence at undergraduate level (Dumoulin et al., 2007).

Interestingly, many participants were keen to upskill within the area of urinary incontinence by undertaking formal training. However, they identified barriers such as accessibility, time, and finances that prevented them from upskilling. Five out of eight participants indicated that they followed the Australian Guidelines for Stroke Rehabilitation. Still, none mentioned utilising the structured urinary continence assessment and management plan and its associated modules within the guidelines (Stroke Foundation, 2021). However, the incontinence information is not present within the physiotherapy discipline-specific summary, which is an additional barrier for physiotherapists. Participants with knowledge of urinary incontinence assessment and management indicated that their knowledge came from informal sources, such as observing and talking to colleagues, and online resources, potentially explaining discrepancies in participant involvement. Physiotherapists seemingly gained confidence in their role within post-stroke urinary incontinence from increased exposure to urinary incontinence assessment and management, developing confidence to ask questions and an awareness of available resources.

Lack of collaboration between healthcare professions

Effective collaboration between and within healthcare professions is vital for patient safety within the complex healthcare system (Babiker et al., 2014). Collaboration improves care coordination, reduces the time and cost of hospitalisation, and enhances satisfaction from the patient in their care (Babiker et al., 2014). The key features of effective collaborative practice include open and clear communication, shared decision-making,

effective leadership and organisation, and a respectful team culture (Nijhuis et al., 2007). Data from this study suggest that urinary incontinence rehabilitation components were often siloed into professional roles, with participants expressing little knowledge about what other healthcare team members were assessing or managing. While some participants knew about management approaches being offered to patients, discussion within the team was lacking. Without full knowledge of what the other team members are doing, and discussions being limited, it could be difficult for physiotherapists to raise questions around incontinence or know where their role lies.

Most participants’ believed continence was a nurse-led issue, and nurses were considered the “champion” voice for managing patients presenting with urinary incontinence. This view aligns with previous literature (Booth et al., 2009; Brittain et al., 2000; Thomas et al., 2019). However, nurses were not always involved in team meetings, and participants believed it depended on the confidence and experience of each nurse as to the focus and depth of continence assessment and management discussions within the team. Participants were keen to know more about nurse practice and where they could contribute more to the team and the collaborative management of the patient.

Implementing urinary incontinence guidelines may be one way to improve collaboration between professions. They have been shown to increase discussion, promote awareness of urinary incontinence impacts, structure cues and processes, and provide role clarity (Vaughn, 2009). They also led to better patient outcomes, such as improved bladder function and toileting, and decreased urinary tract infections at discharge (Brooks, 2004; Vaughn, 2009).

Physiotherapists’ view of urinary incontinence assessment and management experienced by patients

When reflecting on the urinary incontinence assessment and management that patients receive, participants were vocal about their concerns about the non-individualised management of urinary incontinence. They also felt that assessment and management frequently did not seek to solve the underlying continence problem. Instead, they focused on continence containment strategies, including catheterisation, uridomes, continence pads, and net knickers. One of the participants likened the containment practice to putting people in wheelchairs to achieve mobility rather than seeing if walking function could be improved. Participants believed that a containment focus might be an automatic response of the team without anyone stopping to query the individual patient’s status. Alternatively, perhaps, the ease of providing containment products to “deal” with the issue, compared to the resource required for developing an individual assessment and management plan. This was seen as a missed opportunity to solve the root cause of the incontinence.

One participant also questioned the practice of controlling people’s choices to mobilise to the toilet independently. Prioritising a “zero falls policy” within facilities often means patients do not have the right to choose to go to the toilet without assistance. This assistance can often take a long time, leading to patients soiling themselves and causing humiliation.

This brings into question Right 3 of the Code of Patients' Rights in NZ, the right to dignity and independence (Health and Disability Commissioner, 1996). With depression being twice as high in patients with urinary incontinence post-stroke compared to those without urinary incontinence (Limampai et al., 2017), it is essential to consider the impact that incontinence has on a patient's psychological state.

Strengths and limitations of the study

Participants had worked within stroke rehabilitation services for a range of years (2–27 years). They worked throughout NZ and within different clinical settings. However, participants were predominantly female. Nevertheless, this mirrors the physiotherapy profession as a whole in 2018 (76%) (Reid & Dixon, 2018). The gender ratio within the stroke rehabilitation setting is unknown; however, it is likely biased towards females. No participants identified as Māori, and with no current literature surrounding Māori physiotherapists' views on urinary incontinence assessment and management, it is unknown how their perceptions of practice may differ. To better achieve equity and partnership for Māori within NZ, it is crucial to gain a Māori perspective on delivering health services (Waitangi Tribunal, 2019).

Participants knew the study was exploring physiotherapy practices within urinary incontinence rehabilitation before indicating whether they wanted to participate, indicating a source of self-selection bias. Therefore, the study results may over-represent physiotherapists with knowledge and experience of urinary incontinence rehabilitation and believe it fits their scope of practice. Conversely, stroke physiotherapists with minimal knowledge and experience around urinary incontinence may have believed their input would not benefit the study.

CONCLUSION

Study findings suggest that physiotherapists' involvement in urinary incontinence assessment and management post-stroke in NZ varies across clinical settings, particularly between hospital and community roles. Participant narratives indicated that physiotherapy is not the leading profession for urinary incontinence as their skillset is based around gross motor skills and functional mobility. However, participants perceived their assessment and management had positive, indirect benefits for those who found it difficult to toilet independently post-stroke. Participants indicated that they want a more significant role in urinary incontinence management. Further education and training for specialised urinary incontinence assessment and management would be needed for physiotherapists to feel confident to include this within their scope of practice. Participants wished to have more collaborative discussions around continence decision-making and goals to improve patient care.

KEY POINTS

1. Physiotherapists want to be more involved in urinary incontinence assessment and management discussions within the healthcare team.
2. Physiotherapists believe they are undertrained to perform formal assessment and management of urinary incontinence.

3. Physiotherapists believe that urinary incontinence is not being assessed or managed thoroughly by the healthcare team, leading to missed opportunities for best patient care.

DISCLOSURES

No funding was obtained for the completion of this study. There are no conflicts of interest that may be perceived to interfere with or bias this study.

PERMISSIONS

This research has been approved by the University of Otago School of Physiotherapy Ethics Committee (SoP/EC/2021/03).

ACKNOWLEDGEMENTS

The authors would like to thank the physiotherapists who generously participated in the interviews and to Donna Keen (research advisor) for her valuable support for the development of this research.

CONTRIBUTIONS OF AUTHORS

Conceptualization and methodology, DA, JH-S and RM; Formal analysis, TD, DA and RM; Investigation, TD; Writing – original draft preparation, TD; Writing – review and editing, DA, JH-S and RM; Supervision, DA, JH-S and RM.

ADDRESS FOR CORRESPONDENCE

Daniela Aldabe, School of Physiotherapy, University of Otago, Dunedin, New Zealand.

Email: daniela.aldabe@otago.ac.nz

REFERENCES

- Anderson, C. S., Carter, K. N., Hackett, M. L., Feigin, V., Barber, P. A., Broad, J. B., & Bonita, R. (2005). Trends in stroke incidence in Auckland, New Zealand, during 1981 to 2003. *Stroke*, 36(10), 2087–2093. <https://doi.org/10.1161/01.STR.0000181079.42690.bf>
- Arkan, G., Beser, A., & Ozturk, V. (2018). Experiences related to urinary incontinence of stroke patients: A qualitative descriptive study. *Journal of Neuroscience Nursing*, 50(1), 42–47. <https://doi.org/10.1097/jnn.0000000000000336>
- Babiker, A., El Hussein, M., Al Nemri, A., Al Frayh, A., Al Juryyan, N., Faki, M. O., Assiri, A., Saadi, M.I, Shaikh, F., & Al Zamil, F. (2014). Health care professional development: Working as a team to improve patient care. *Sudanese Journal of Paediatrics*, 14(2), 9–16. <https://pubmed.ncbi.nlm.nih.gov/27493399>
- Bartoli, F., Lillia, N., Lax, A., Crocamo, C., Mantero, V., Carrà, G., Agostoni, E., & Clerici, M. (2013). Depression after stroke and risk of mortality: A systematic review and meta-analysis. *Stroke Research and Treatment*, 2013, 862978. <https://doi.org/10.1155/2013/862978>
- Bø, K. (2015). *Evidence-based physical therapy for the pelvic floor* (2nd ed.). Churchill Livingstone. <https://doi.org/10.1016/B978-0-7020-4443-4.00001-7>
- Booth, J., Kumlien, S., Zang, Y., Gustafsson, B., & Tolson, D. (2009). Rehabilitation nurses practices in relation to urinary incontinence following stroke: A cross-cultural comparison. *Journal of Clinical Nursing*, 18(7), 1049–1058. <https://doi.org/10.1111/j.1365-2702.2008.02688.x>
- Brittain, K. R., Perry, S. I., Peet, S. M., Shaw, C., Dallosso, H., Assassa, R. P., Williams, K., Jagger, C., Potter, J. F., & Castleden, C. M. (2000). Prevalence and impact of urinary symptoms among community-dwelling stroke survivors. *Stroke*, 31(4), 886–891. <https://doi.org/10.1161/01.STR.31.4.886>

- Brittain, K. R., Peet, S. M., & Castleden, C. M. (1998). Stroke and incontinence. *Stroke*, 29(2), 524–528. <https://doi.org/10.1161/01.str.29.2.524>
- Brittain, K. R., & Shaw, C. (2007). The social consequences of living with and dealing with incontinence: A carers perspective. *Social Science and Medicine*, 65(6), 1274–1283. <https://doi.org/10.1016/j.socscimed.2007.04.002>
- Brocklehurst, J. C., Andrews, K., Richards, B., & Laycock, P. J. (1985). Incidence and correlates of incontinence in stroke patients. *Journal of the American Geriatrics Society*, 33(8), 540–542. <https://doi.org/10.1111/j.1532-5415.1985.tb04618.x>
- Brooks, W. (2004). The use of practice guidelines for urinary incontinence following stroke. *British Journal of Nursing*, 13(20), 1176–1179. <https://doi.org/10.12968/bjon.2004.13.20.17006>
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage Publications Ltd.
- Clark, J., & Rugg, S. (2005). The importance of independence in toileting: The views of stroke survivors and their occupational therapists. *British Journal of Occupational Therapy*, 68(4), 165–171. <https://doi.org/10.1177/030802260506800404>
- Darlow, B., & Williams, A. (2018). *Person and whānau centred care. A model for physiotherapy in Aotearoa New Zealand*. Physiotherapy New Zealand. https://pnz.org.nz/pwcc/Attachment?Action=Download&Attachment_id=1032
- Desrosiers, J., Demers, L., Robichaud, L., Vincent, C., Belleville, S., & Ska, B. (2008). Short-term changes in and predictors of participation of older adults after stroke following acute care or rehabilitation. *Neurorehabilitation and Neural Repair*, 22(3), 288–297. <https://doi.org/10.1177/1545968307307116>
- Dhamoon, M. S., Moon, Y. P., Paik, M. C., Boden-Albala, B., Rundek, T., Sacco, R. L., & Elkind, M. S. V. (2010). Quality of life declines after first ischemic stroke. The Northern Manhattan study. *Neurology*, 75(4), 328–334. <https://doi.org/10.1212/WNL.0b013e3181ea9f03>
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314–321. <https://doi.org/10.1111/j.1365-2929.2006.02418.x>
- Divani, A. A., Vazquez, G., Barrett, A. M., Asadollahi, M., & Luft, A. R. (2009). Risk factors associated with injury attributable to falling among elderly population with history of stroke. *Stroke*, 40(10), 3286–3292. <https://doi.org/10.1161/STROKEAHA.109.559195>
- Dumoulin, C., Korner-Bitensky, N., & Tannenbaum, C. (2005). Urinary incontinence after stroke: Does rehabilitation make a difference? A systematic review of the effectiveness of behavioral therapy. *Topics in Stroke Rehabilitation*, 12(3), 66–76. <https://doi.org/10.1310/ENMX-RUV5-15WL-VNA2>
- Dumoulin, C., Korner-Bitensky, N., & Tannenbaum, C. (2007). Urinary incontinence after stroke: Identification, assessment, and intervention by rehabilitation professionals in Canada. *Stroke*, 38(10), 2745–2751. <https://doi.org/10.1161/strokeaha.107.486035>
- Gelber, D. A., Good, D. C., Laven, L. J., & Verhulst, S. J. (1993). Causes of urinary incontinence after acute hemispheric stroke. *Stroke*, 24(3), 378–382. <https://doi.org/10.1161/01.str.24.3.378>
- Gupta, A., Taly, A. B., Srivastava, A., & Thyloth, M. (2009). Urodynamics post stroke in patients with urinary incontinence: Is there correlation between bladder type and site of lesion? *Annals of the Indian Academy of Neurology*, 12(2), 104–107. <https://doi.org/10.4103/0972-2327.53078>
- Health and Disability Commissioner. (1996). *Code of health and disability services consumers' rights*. <https://www.hdc.org.nz/your-rights/about-the-code/code-of-health-and-disability-services-consumers-rights/>
- Herr-Wilbert, I. S., Imhof, L., Hund-Georgiadis, M., & Wilbert, D. M. (2010). Assessment-guided therapy of urinary incontinence after stroke. *Rehabilitation Nursing*, 35(6), 248–253. <https://doi.org/10.1002/rj.2048-7940.2010.tb00055>
- Horrocks, S., Somerset, M., Stoddart, H., & Peters, T. J. (2004). What prevents older people from seeking treatment for urinary incontinence? A qualitative exploration of barriers to the use of community continence services. *Family Practice*, 21(6), 689–696. <https://doi.org/10.1093/fampra/cmh622>
- Johnson, C. O., Nguyen, M., Roth, G. A., Nichols, E., Alam, T., Abate, D., Abdelalim, A., Abraha, H. N., Abu-Rmeileh, N. M., Adebayo, O. M., Adeoye, A. M., Agarwal, G., Agrawal, S., Aichour, A. N., Aichour, I., Aichour, M. T. E., Alahdab, F., Ali, R., Alvis-Guzman, N., . . . Abu-Rmeileh, N. M. (2019). Global, regional, and national burden of stroke, 1990–2016: A systematic analysis for the global burden of disease study 2016. *Lancet Neurology*, 18(5), 439–458. [https://doi.org/10.1016/s1474-4422\(19\)30034-1](https://doi.org/10.1016/s1474-4422(19)30034-1)
- Jordan, L.-A., Mackey, E., Coughlan, K., Wyer, M., Allnut, N., & Middleton, S. (2011). Continence management in acute stroke: A survey of current practices in Australia. *Journal of Advanced Nursing*, 67(1), 94–104. <https://doi.org/10.1111/j.1365-2648.2010.05480.x>
- Kim, T. G., Yoo, K. H., Jeon, S. H., Lee, H. L., & Chang, S. G. (2010). Effect of dominant hemispheric stroke on detrusor function in patients with lower urinary tract symptoms. *International Journal of Urology*, 17(7), 656–660. <https://doi.org/10.1111/j.1442-2042.2010.02547.x>
- Kohler, M., Mayer, H., Kesselring, J., & Saxer, S. (2018). (Can) not talk about it – urinary incontinence from the point of view of stroke survivors: A qualitative study. *Scandinavian Journal of Caring Sciences*, 32(1), 371–379. <https://doi.org/10.1111/scs.12471>
- Limampai, P., Wongsrithep, W., & Kuptniratsaikul, V. (2017). Depression after stroke at 12-month follow-up: A multicenter study. *International Journal of Neuroscience*, 127(10), 887–892. <https://doi.org/10.1080/00207454.2016.1277344>
- Martin, J. L., Williams, K. S., Abrams, K. R., Turner, D. A., Sutton, A. J., Chapple, C., Assassa, R. P., & Cheater, F. (2006). Systematic review and evaluation of methods of assessing urinary incontinence. *Health Technology Assessment*, 10(6), 1–132, iii–iv. <https://doi.org/10.3310/hta10060>
- Mehdi, Z., Birns, J., & Bhalla, A. (2013). Post-stroke urinary incontinence. *International Journal of Clinical Practice*, 67(11), 1128–1137. <https://doi.org/10.1111/ijcp.12183>
- Mellor, R. M., Greenfield, S. M., Dowswell, G., Sheppard, J. P., Quinn, T., & McManus, R. J. (2013). Health care professionals' views on discussing sexual wellbeing with patients who have had a stroke: A qualitative study. *PloS One*, 8(10), e78802–e78802. <https://doi.org/10.1371/journal.pone.0078802>
- Ministry of Health. (2018). *Mortality 2015 data tables*. <https://www.health.govt.nz/publication/mortality-2015-data-tables>
- National Stroke Network. (2017). *Clinical guidelines for stroke management 2017*. <https://www.strokenetwork.org.nz/resources/7a9ojybceu7z08mily7myqztdjgksl>
- Neergaard, M. A., Olesen, F., Andersen, R. S., & Sondergaard, J. (2009). Qualitative description – the poor cousin of health research? *BMC Medical Research Methodology*, 9, 52. <https://doi.org/10.1186/1471-2288-9-52>
- Nijhuis, B. J., Reinders-Messelink, H. A., de Blécourt, A. C., Olijve, W., Groothoff, J. W., Nakken, H., & Postema, K. (2007). A review of salient elements defining team collaboration in paediatric rehabilitation. *Clinical Rehabilitation*, 21(3), 195–211. <https://doi.org/10.1177/0269215506070674>
- Patel, M., Coshall, C., Rudd, A. G., & Wolfe, C. D. (2001). Natural history and effects on 2-year outcomes of urinary incontinence after stroke. *Stroke*, 32(1), 122–127. <https://doi.org/10.1161/01.str.32.1.122>
- Patel, M. D., McKeivitt, C., Lawrence, E., Rudd, A. G., & Wolfe, C. D. A. (2007). Clinical determinants of long-term quality of life after stroke. *Age and Ageing*, 36(3), 316–322. <https://doi.org/10.1093/ageing/afm014>
- Ranta, A. (2018). Projected stroke volumes to provide a 10-year direction for New Zealand stroke services. *New Zealand Medical Journal*, 131(1477), 15–28.

- Reid, A., & Dixon, H. (2018). *Analysis of the physiotherapy workforce, making sense of the numbers*. BERL. https://pnz.org.nz/Folder?Action=View%20File&Folder_id=1&File=PNZ%20Workforce%20Issues%20December%202018.pdf
- Rotar, M., Blagus, R., Jeromel, M., Škrbec, M., Tršinar, B., & Vodusek, D. B. (2011). Stroke patients who regain urinary continence in the first week after acute first-ever stroke have better prognosis than patients with persistent lower urinary tract dysfunction. *Neurourology and Urodynamics*, 30(7), 1315–1318. <https://doi.org/10.1002/nau.21013>
- Rudd, A. G., Bowen, A., Young, G. R., & James, M. A. (2017). The latest national clinical guideline for stroke. *Clinical Medicine*, 17(2), 154–155. <https://doi.org/10.7861/clinmedicine.17-2-154>
- Stroke Foundation. (2021). *Clinical guidelines for stroke management*. <https://informme.org.au/Guidelines/Clinical-Guidelines-for-Stroke-Management>
- Thomas, L. H., Coupe, J., Cross, L. D., Tan, A. L., & Watkins, C. L. (2019). Interventions for treating urinary incontinence after stroke in adults. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD004462.pub4>
- Thomas, L. H., Cross, S., Barrett, J., French, B., Leathley, M., Sutton, C. J., & Watkins, C. (2008). Treatment of urinary incontinence after stroke in adults. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD004462.pub3>
- Thomas, L. H., French, B., Burton, C. R., Sutton, C., Forshaw, D., Dickinson, H., Leathley, M.J., Britt, D., Roe, B., Cheater, F.M., Booth, J., Watkins, C.L., & ICONS Project Team; ICONS Patient, Public and Carer Involvement Groups. (2014). Evaluating a systematic voiding programme for patients with urinary incontinence after stroke in secondary care using soft systems analysis and Normalisation Process Theory: Findings from the ICONS case study phase. *International Journal of Nursing Studies*, 51(10), 1308–1320. <https://doi.org/10.1016/j.ijnurstu.2014.02.009>
- Vaughn, S. (2009). Efficacy of urinary guidelines in the management of post-stroke incontinence. *International Journal of Urological Nursing*, 3(1), 4–12. <https://doi.org/10.1111/j.1749-771X.2009.01066.x>
- Vears, D. F., & Gillam, L. (2022). Inductive content analysis: A guide for beginning qualitative researchers. *Focus on Health Professional Education: A Multi-Professional Journal*, 23(1), 111–127. <https://doi.org/10.11157/fohpe.v23i1.544>
- Waitangi Tribunal. (2019). *Hauora: Report on stage one of the health services and outcomes kaupapa inquiry*. Legislation Direct. <https://www.waitangitribunal.govt.nz/inquiries/kaupapa-inquiries/health-services-and-outcomes-inquiry/>
- White, J. H., Patterson, K., Jordan, L.-A., Magin, P., Attia, J., & Sturm, J. W. (2014). The experience of urinary incontinence in stroke survivors: A follow-up qualitative study. *Canadian Journal of Occupational Therapy*, 81(2), 124–134. <https://doi.org/10.1177/0008417414527257>
- Willey, J. Z., Disla, N., Moon, Y. P., Paik, M. C., Sacco, R. L., Boden-Albala, B., Elkind, M. S. V., & Wright, C. B. (2010). Early depressed mood after stroke predicts long-term disability: The Northern Manhattan Stroke Study (NOMASS). *Stroke*, 41(9), 1896–1900. <https://doi.org/10.1161/strokeaha.110.583997>