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Clinical Implications for Management of Falls in Hospital Patients with Communication Disability After Stroke: A Qualitative Meta-Synthesis

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ABSTRACT

Background: Falls in hospital are a common patient safety incident after stroke. Despite the reprevalence of communication disability following stroke, there is little guidance for health professionals to provide effective falls prevention strategies for this population.

Objectives: To provide a synthesis of findings across a selected set of related studies on falls in hospital patients with communication disabilities following stroke and guidance for health professionals to enhance falls prevention strategies for this group.

Methods: A qualitative meta-synthesis of six integrated studies using a content thematic analysis.

Results: Communication disability often lacks visibility in falls research, hospital policies, and clinical management. Whilst the relationship of communication disability as a risk factor for falls is unclear, communication disability contributes to falls and is a barrier to falls prevention and management. Suggestions for falls prevention include involving family members, tailored falls and stroke education programmes, and improved documentation of the functional impacts of communication disability.

Conclusion: In recognising the complexities of falls in patients with communication disability, health professionals could provide more targeted, patient-specific falls prevention plans. Further research, inclusive of patients with communication disability following stroke, could provide important insights into their falls and falls management. Research examining the effectiveness of falls prevention strategies for this group is indicated.

Implications for Patient Care: Insights from this review could enhance falls prevention programmes for patients with communication disabilities after stroke.

Impact: This meta-synthesis combined a set of integrated studies to provide guidance for the management and prevention of falls in hospital patients with communication disabilities after stroke. Three interconnected content themes were identified: (a) An invisible problem: communication disability is invisible, and consideration of this in research and falls management has been lacking; (b) Painting the falls picture: the nature of communication disability and falls; and (c) A complex problem: the multiple impacts of communication disability on falls management. Falls prevention themes identified in the individual studies that specifically target the needs of patients with communication disability after stroke are presented as 'The Way Forward: Potential Falls Prevention Strategies to Improve Care for Hospital Patients with Communication Disability Following Stroke'. The integration of these findings into clinical practice should mean that (a) healthcare professionals

provide more patient-specific falls prevention plans that include considerations of communication disability, and (b) hospital managers should take steps towards improving falls prevention and management policies to include patients with communication disability following stroke.
Reporting Method: This review is reported according to the Standards for Reporting Qualitative Research.
Patient or Public Contribution: No patient or public contribution.

1 | Introduction

Falls are one of the most common patient safety incidents to occur after a stroke and remain a persistent and challenging problem for patients, staff, and managers in hospitals (Morris et al. 2022; Denissen et al. 2019; Stroke Foundation 2020). Falls in hospital can lead to poorer outcomes for patients (e.g., injuries) and health services (e.g., increased costs of care) (Hill et al. 2007). Communication disability affects approximately 64% of people with stroke, and patients with communication disability are three times more likely to experience a patient safety event, such as a fall or medication error, during their hospital admission (O'Halloran et al. 2009; Bartlett et al. 2008).

Risk factors for a fall in hospital after stroke have been shown to be multifactorial and include muscle weakness, difficulties with visual and spatial awareness, and difficulties with balance (Denissen et al. 2019). However, there is good reason to focus on communication disability as another risk and contributing factor to falls after stroke, given that successful communication between patients and healthcare professionals is integral to providing safe and effective healthcare (Stans et al. 2017; Hurtig et al. 2019). Communication disability can lead to breakdowns in communication between patients and healthcare providers, inhibiting patients' ability to convey their healthcare needs, and call for help when needed or follow safety instructions; which may lead to falls (Hemsley et al. 2013; O'Halloran et al. 2012; Zdobysz et al. 2005). While there is some evidence to suggest that patients with communication disability, particularly more severe communication disability, are at higher risk of falls compared to those without communication disability, the nature of this risk relationship is not yet clear (Sinanovic et al. 2012; Sze et al. 2001; Sullivan and Harding 2019; Sullivan et al. 2020; Hemsley et al. 2019).

Falls prevention has received much attention, and numerous interventions -including patient education, environmental adaptations and using assistive devices -have been recommended in clinical guidelines globally (McKercher et al. 2024). However, there is little guidance for health professionals and hospital staff to enable falls prevention strategies for hospital patients with communication disabilities following stroke (Hemsley et al. 2019; Douglas et al. 2024).

2 | The Review

This review synthesises the findings from six sequential, integrated studies (Sullivan et al. 2020, 2024, 2023c, 2023a, 2021, 2023b) into a single set of conclusions that can inform the safe and effective care of this patient population. All six studies aimed to understand more about the relationship between falls and communication disability following left hemisphere stroke and used the Generic Reference Model of patient safety as the analytic lens (Runciman et al. 2006). These studies involved: a systematic review of the literature with meta-analysis (Sullivan et al. 2020) and qualitative meta-synthesis (Sullivan et al. 2021), a scoping review of Australian hospital falls policies (Sullivan et al. 2023c), an analysis of medical records and incident reports of patients with communication disability after stroke who experienced falls (Sullivan et al. 2023a, 2023b), and focus groups with hospital staff (Sullivan et al. 2024). A qualitative meta-synthesis of these studies was selected as important to identify clinical and policy implications for translation at the policy and hospital ward level so as to improve the care quality and safety of hospital patients with communication disability following stroke.

3 | Aim

Qualitative meta-synthesis studies involve analysing, synthesising and interpreting the results from a group of related studies to build an evidence base that assists in greater translation and transferability of the research than the individual studies alone (Finfgeld-Connett 2018; Major and Savin-Baden 2010). A qualitative meta-synthesis can culminate in a series of recommendations designed for implementation to improve patient care and strengthen a cohesive translation of the findings in a complex area of practice seeking to address a persistent problem (Finfgeld-Connett 2018; Major and Savin-Baden 2010). Therefore, the aim of this meta-synthesis is to: (a) synthesise the findings of an integrated set of studies reporting on the nature of and circumstances surrounding falls in hospital patients with communication disability following left hemisphere stroke, and (b) provide health professionals, managers and policy makers with implications and guidance to reduce falls, and improve the care, quality and safety of hospital patients with communication disability following stroke.

4 | Method

4.1 | Design

A qualitative meta-synthesis was used to combine, triangulate, and synthesise findings from the six integrated studies, described above (Sullivan et al. 2020, 2024, 2023c, 2023a, 2021, 2023b). The characteristics and main findings of the studies contributing data to the meta-synthesis are presented in Table 1. Each of the studies subsequently informed the next, building a continuous line of inquiry allowing the researchers to (a) produce a meta-synthesis grounded in the findings of the individual studies and (b) identify themes connecting studies in the group

Summary

- What does this paper contribute to the wider global clinical community?
  - To date, the specific needs of patients with communication disabilities following stroke have been overlooked in falls policies and clinical management.
  - By understanding the unique aspects of communication disability and the common circumstances of falls, health professionals will be better able to identify the needs of these patients in relation to falls prevention.

(Major and Savin-Baden 2010). For clarity of reporting the results of the analysis, each study has been given a study number (e.g., Study 1). This study is reported according to the Standards for Reporting Qualitative Research (SRQR) (O'Brien et al. 2014).

4.2 | Data Abstraction and Synthesis

Initially, the first author (in consultation with all authors) conducted an inductive content thematic analysis across the results presented in each of the published studies using MaxQDA software (Major and Savin-Baden 2010; Elo and Kyngäs 2008; VERBI Software 2021). This involved reading and re-reading the results of each study, extracting the content categories and themes already reported, and identifying categories of meaning; noting any that appeared repeatedly across the studies (Major and Savin-Baden 2010). Through this process of engagement with the findings of each study, the authors together also considered any relationships between these categories of meaning that might help to explain the findings (Major and Savin-Baden 2010). Finally, the categories of meaning and content themes were combined in one 'set' as a synthesis of findings in relation to falls in hospital patients with communication disability following left hemisphere stroke.

This study was conducted within a social constructivist paradigm whereby the background of the researchers shapes the interpretation of the data. All co-authors of the component studies, representing the disciplines of speech-language pathology, occupational therapy, and physiotherapy, have experience working in clinical settings with patients with stroke. To verify the interpretation, the first author discussed these content categories and overall analysis with the final author to check if all findings were represented in the synthesis and adjustments made to the categories and themes based on consensus. Finally, all co-authors of the component studies and of this synthesis met to discuss the findings, make any final adjustments, and agree on the policy and clinical implications.

5 | Results

Across the six studies, three interconnected main content themes were identified: (a) An Invisible Problem: communication disability is invisible, and consideration in research and falls management has been lacking; (b) Painting the Falls Picture: the nature of communication disability and falls; and (c) A Complex Problem: the multiple impacts of communication disability on falls management. The contributions of each study towards the meta-synthesis and resulting interconnecting themes are presented in Table 2. The integration of the themes relating to the multiple impacts of communication disability on falls in patients with communication disability is illustrated in Figure 1.

5.1 | An Invisible Problem: Communication Disability Is Invisible and Not Properly Considered in Research and Falls Management

The studies' findings reflected that communication disability was not always considered in the assessment, management and prevention of falls in patients with communication disability following stroke. Furthermore, elucidation of a patient's communication skills or function and the role of this in the patient's fall is often lacking.

The findings of the systematic review (Study 1 and 2) (Sullivan et al. 2020, 2021) suggest that communication disability following stroke has not yet been adequately considered in research relating to the falls of patients with stroke, evident by: (a) relatively low inclusion rates of participants with communication disability (particularly severe communication disability) in these studies—when compared to the incidence of communication disability in patients with stroke, and (b) inadequate reporting across studies of the assessment and severity of the communication disability within the study populations. In Study 3 (Sullivan et al. 2023c), the authors reported that patients with communication disability are rarely discussed in hospital policies and documents that concern falls. While aspects of communication disability, in particular difficulties following simple or complex instructions, appear in some falls risk screening and assessment tools, this content is typically presented in the context of cognitive difficulties and does not address the specific needs of patients with communication disability following stroke.

Substantiating these findings, Studies 4 and 5 (Sullivan et al. 2023a, 2023b), which involved medical record data analysis, found that the documentation of communication disability was commonly conflated with cognitive disability or impairment. For example, some patients who were unable to describe the circumstances of their falls (due to severe communication disability) were described in the medical record as 'poor historians', implying difficulties with recall more than reflecting issues with communication. In Study 6, health professionals in focus groups reported that they do not usually consider communication disability at any stage of their falls management; with a tendency to focus instead on the patient's cognitive impairments: as in 'we talk more about the cognitive impairment and don't look too much into the communication disability.' (12, page 5).

5.2 | Painting the Picture: The Nature of Communication Disability and Falls

Aphasia was the most common type of communication disability reported in the systematic review Studies 1 and 2, and the medical record document data analysis in Studies 4 and 5

TABLE 1 | Authors, study number, title, aims, methods, main findings of the studies in the meta-synthesis.

First author, year	Study number	Title	Aims	Methods	Key findings
Sullivan et al. 2020	1	Falls in hospital patients with acquired communication disability secondary to stroke: A systematic review and meta-analysis	To determine the association between communication disability secondary to stroke and falls in people with stroke in hospital	Systematic review with narrative synthesis and meta-analysis	• Three studies report an increased risk of falls in patients with communication disability after stroke • Meta-analysis showed no statistically significant association between non-specific classification of communication disability and increased of falls • Some studies reported a higher risk of falls may be associated with severe communication disability • Half of the studies excluded participants with severe stroke who were non mobile or were unable to communicate or understand instructions
Sullivan et al. 2021	2	Circumstances and outcomes of falls in hospital for adults with communication disability secondary to stroke: A qualitative synthesis	To determine the circumstances and outcomes of falls in hospital patients with communication disability secondary to stroke, including factors leading up to, occurring during, or following a fall	Qualitative synthesis—secondary analysis of studies in the systematic review	• The inclusion of participants with communication disability ranged from 9%–68%. • Intrinsic factors to falls were investigated with little in common • Falls typically occurred in the patient's bedroom, during the day and during transfers • Reported outcomes of falls was variable and included injury and increased length of stay • No studies specifically reported on the circumstances and outcomes of falls in patients with communication disability after stroke • Family members may provide protection from falls for example by providing reminders to use the call bell
Sullivan et al. 2023a	3	Hospital policies on falls in relation to patients with communication disability: a scoping review and content analysis	To determine how to content of hospital falls policies relate to patients with communication disability and to identify gaps in policy that need to be addressed	Scoping review and content analysis	• Communication disability is not consistently identified on falls risk assessment and screening tools; however, aspects of communication disability are subsumed into the cognitive domains • All policies suggested patients be involved in falls prevention plans and receive education about risk and prevention strategies. However, the patient information reviewed was not modified for patients with a communication disability • Family members may have a role in preventing falls • The role of speech pathology is unclear

(Continues)

TABLE 1 | (Continued)

First author, year	Study number	Title	Aims	Methods	Key findings
Sullivan et al. 2023b	4	Falls in patients with communication disability secondary to stroke	To examine the falls of patients with communication disability following stroke, including the circumstances, contributing factors and outcomes of the fall	Mixed methods medical record and incident report review—descriptive analysis using the Generic Reference Model (Runciman et al. 2006)	• The majority of patients had a severe or profound communication disability • Aphasia was the most common type of communication disability • Patients also typically needed assistance with activities of daily living, were non-ambulant and incontinent • The most common type of fall was an unwitnessed roll from bed, with the patient found on the floor by staff • Patient factors contributed to the majority of falls including balance impairments, changes in medical condition and mobility impairments • The provision of equipment was the most common falls prevention strategy used • Injuries occurred in 15% of falls and impacts to the hospital system included additional cost and staffing
Sullivan et al. 2023c	5	'Patient unable to express why he was on the floor, he has aphasia.' A content thematic analysis of medical records and incident reports on the falls of hospital patients with communication disability following stroke	To examine hospital medical records and incident reports relating to falls of patients with communication disability following stroke for content codes, categories and themes relating to communication Medical record and incident report reviews	Content thematic analysis of medical record and incident reports	• The majority of participants had a severe or profound communication disability and aphasia was the most common type of communication disability • Hospital staff viewed that patient having difficulties following simple instructions as a risk factor for a fall as well as other elements of impaired receptive language • Difficulties gaining the attention of staff and communicating basic needs were contributing factors for falls and related to patients falling when attempting to address an unmet need or taking a risk • Falls occurred when the patient was having difficulties following an instruction • There were falls where the circumstances were unknown due to the fall being unwitnessed and the patient unable to describe the fall due to communication disability • Difficulties with post fall assessment of injury and implementing falls prevention strategies due to communication disability were noted

(Continues)

TABLE 1 | (Continued)

First author, year	Study number	Title	Aims	Methods	Key findings
Sullivan et al. 2024	6	'We don't look too much into the communication disability': Clinicians' views and experiences on the effect of communication disability on falls in hospital patients with stroke	To explore the views of hospital-based health professionals on (a) the effect of communication disability on the falls in patients with stroke; (b) falls prevention strategies for patients with communication disability following stroke; and (c) the roles of speech pathologists in the assessment, management and prevention of falls in this population	Content thematic analysis of clinician focus groups	• Communication disability after stroke complicates both falls assessment and prevention strategies • Communication disability is not often considered in falls risk assessment or post fall reviews • Patients with communication disability following stroke require multiple, patient specific falls prevention strategies that integrate the risk associated with communication disability and include strong patient-provider and family relationships • Falls in this patient population are complex and personally and professionally challenging

(Sullivan et al. 2020, 2023a, 2021, 2023b). Indeed, most participants in studies 4 and 5 had severe or profound communication disability (62.4% and 69.1%) and other stroke-related conditions including incontinence, difficulties with ambulation, and needing assistance for all activities of daily living.

Hospital falls in patients with communication disability after stroke (Study 4) were most commonly unwitnessed falls and rolling from bed (44%), occurring across all times of the day and night, where patients were often found on the floor by nursing staff (Sullivan et al. 2023a). Almost half of the participants in this study fell more than once. A thematic analysis of the content of medical records (Study 5) found that falls often occurred when a patient was attempting to address a need (e.g., toileting), taking a risk (e.g., transferring from a bed to a chair independently) or having difficulties following instructions (Sullivan et al. 2023b).

5.3 | A Complex Problem: The Multiple Impacts of Communication Disability on Falls Management

Studies included in the systematic review that specified the inclusion of patients with severe communication disability were more likely to report a relationship between communication disability and falls, suggesting that the relationship between communication disability and falls may be more prominent for patients with severe communication disability (Sullivan et al. 2020). Subsequently, communication disability was identified in medical record data analysis (Studies 4 and 5) and focus groups of hospital staff (Study 6) as impacting on all aspects of falls management for patients with communication disability following stroke (Sullivan et al. 2024, 2023a, 2023b). These studies supported the hypothesis of a relationship between severe communication disability and falls and identified specific aspects of communication disability as potential risk and contributing factors to falls. These aspects included having difficulty: (a) gaining the attention of staff (e.g., using the call bell), (b) communicating basic needs (e.g., the need for the toilet), and (c) following simple instructions. Across studies, communication disability was also reported to be a barrier to identifying the circumstances of a fall, assessing patients for injury and implementing falls prevention strategies. Studies 4, 5 and 6 provided results contributing to a greater understanding of how these aspects of communication disability contributed to: (a) the circumstances of falls for patients (e.g., falling whilst attempting addressing a basic need such as toileting); (b) the difficulties health professionals had identifying and documenting the contributing factors of falls, particularly when falls were unwitnessed and could not be described by the patient due to severe communication disability; (c) difficulties assessing for injury following a fall; and (d) difficulties implementing effective falls prevention strategies (Sullivan et al. 2024, 2023a, 2023b). The medical record data analysis reported in Studies 4 and 5 revealed that the most common falls prevention strategy for these patients was the use of equipment (e.g., floor line bed) (Sullivan et al. 2023a, 2023b). However, the difficulties implementing effective falls prevention strategies reported also reflected a relatively high proportion of patients with stroke and communication disability (47% in Study 4, and 45.8% in Study 5) who had experienced

TABLE 2 | Content themes, contributing study numbers and categories of meaning in the studies in the meta-synthesis.

Content theme	Study number	Categories of meaning
An invisible problem: Communication disability is invisible and not properly considered in research and falls management	1	• Low inclusion rates of patients with communication disability across the included studies (9.8%–68%) • Poor reporting of assessment, diagnosis and severity of communication disability • Exclusion criteria across some studies means patients with severe stroke are excluded
	2	• Low inclusion rates of patients with communication disability across the included studies (9.8%–68%) • No studies specifically report on the circumstances or outcomes for falls in patients with communication disability following stroke
	3	• Limited consideration of communication disability on assessment and screening tools • Aspects of communication disability (e.g., ability to follow instructions) is subsumed into the cognitive domains of falls assessment/screening tools • No adaptations for patients with communication disability to understand falls prevention education
	4	• Impaired receptive language is described using cognitive terms by staff • Patients who experience multiple falls were described using terms related to cognitive impairment
	6	• Communication disability is not considered in relation to assessment or management, cognitive and physical impairments are more routinely discussed • Falls prevention education is not modified to suit patients with communication disability and there are no standard processes to provide this education
Painting the picture: The nature of communication disability and falls	1	• Aphasia most common type of communication disability reported among patients who fell • No increased risk of falls with a non-specific classification of communication disability • Individual studies with increased risk of falls in patients with severe communication disability
	2	• Falls most commonly occurred during the day, in the patient's bedroom
	4	• Aphasia was the most common type of communication disability reported among patients who fell. • Most patients had a severe (56%) or profound (6.4%) communication disability. • Majority of patients had other stroke related impairments • Falls occurred across the day and night, in the patient's bedroom, and were an unwitnessed roll from bed • Nearly half of the patients experienced multiple falls
	5	• Aphasia was the most common type of communication disability reported among patients who fell • Most patients had a severe or profound communication disability (69.4%) • Majority of patients had other stroke related impairments • Falls occurred when patients were attempting to address a need, taking a risk or having difficulties following instructions • Nearly half of the patients experienced multiple falls

(Continues)

TABLE 2 | (Continued)

Content theme	Study number	Categories of meaning
A complex problem: The multiple impacts of communication disability on falls in patients with communication disability following stroke in hospital	3	• Difficulties following instructions is identified on falls risk screening tools
	4	• In 32% of falls, a contributing factor; was not identified as the patient was unable to describe the fall due to severe communication disability, and the fall was unwitnessed
	5	• Staff documentation in the medical record and incident report identifies that communication disability is a contributing factor to falls • Staff documentation in the medical record reflected their view that the patient's difficulties following instructions was a risk factor for some falls • Elements of impaired receptive language were identified by staff as potentially impacting on falls risk • Staff documentation reflected their views that the patient's difficulties gaining attention, communicating basic needs, and following instructions contributed to the patient's • Difficulties identifying the circumstances of falls as the patient was unable to describe the fall due to severe communication disability and the fall was unwitnessed • Difficulties with post fall assessment of injury in patients who have difficulties communicating basic needs and following instructions
	6	• Staff view that communication disability contributes to falls • Staff view that it is difficult to identify the circumstances of falls when the patient is unable to describe the fall due to severe communication disability and a fall was unwitnessed • Staff find it difficult to conduct post fall assessment of injury in patients who have difficulties communicating basic needs and following instructions

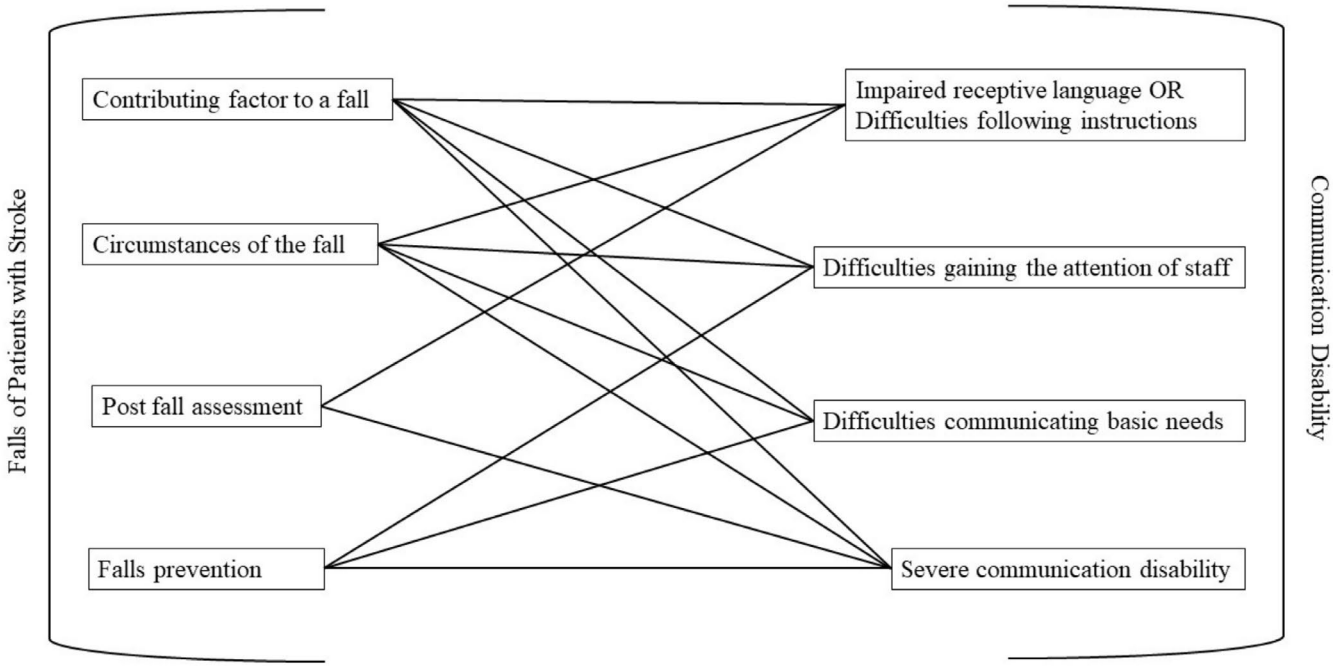

FIGURE 1 | The multiple impacts of communication disability on falls in patients with communication disability following stroke in hospital.

multiple falls (Sullivan et al. 2023a, 2023b). These challenges, particularly for patients with severe communication disability, were confirmed in focus group discussions (Study 6) (Sullivan et al. 2024).

6 | Discussion

As a group, the results of the six studies included in this meta-synthesis provide important insights into the nature of falls in

patients with communication disability following stroke. A key area of future research highlighted across the studies involves identifying and examining interventions that may be effective in mitigating falls risk in patients with communication disability following stroke. Effective falls prevention programmes are implemented because of comprehensive assessment of falls risk and contributing factors, with multifactorial interventions designed by a multidisciplinary team specifically to address these factors (Morris et al. 2022; Australian Commission on Safety and Quality in Health Care 2019).

The authors of the six studies in this meta-synthesis discussed potential falls prevention strategies arising from the individual studies that specifically target the needs of patients with communication disability after stroke. These strategies are presented below in a connecting theme as 'The Way Forward: Potential Falls Prevention Strategies to Improve Care for Hospital Patients with Communication Disability Following Stroke'. Encapsulating all the strategies across the six studies, Figure 2 provides guidance for clinicians to support the translation of this research into clinical practice and Table 3 details the contribution of each study towards these strategies.

6.1 | The Way Forward: Potential Falls Prevention Strategies to Improve Care for Hospital Patients With Communication Disability Following Stroke

6.1.1 | Identification of Communication Disability as a Contributing Factor for Falls

6.1.1.1 | Improving Identification and Collaboration. The risk and contributing factors for falls in hospital are known to be multifactorial (Denissen et al. 2019), and whilst there is no tool designed to identify these factors for patients with stroke, clinical judgement of falls risk factors by health professionals has been shown to be as good as using a screening or assessment tool (Haines et al. 2007; Strini et al. 2021). Identifying which communication disability factors contribute to falls may help health professionals provide a more targeted, patient-specific falls prevention plan (Australian Commission on Safety and Quality in Health Care 2019). Health professionals in Study 6 focus groups (Sullivan et al. 2024) suggested that speech-language pathologists have a significant role to play in the assessment and prevention of falls for patients with stroke. It is possible that speech-language pathologists could be involved in screening for, assessing, and describing any aspects of the patient's communication disability that may contribute to falls within a multidisciplinary, collaborative assessment of patients at risk of communication disability. Findings from the speech-language pathologist's assessment of communication disability should be documented clearly, include the functional impact of the communication disability in the hospital setting (e.g., on following instructions), and be communicated with the multidisciplinary team who identifies the most effective interventions to prevent that patient from falling (Australian Commission on Safety and Quality in Health Care 2019; Strini et al. 2021). This approach might also foreseeably assist other health professionals in identifying the role of communication disability in falls, potentially improving the clinical judgement of falls risks for health professionals who work with patients with communication disability following stroke.

6.1.2 | Possible Falls Prevention Strategies for Patients With Communication Disability

6.1.2.1 | The Role of Family Members. The role of family members in falls prevention appeared in Studies 2, 3, 4 and 6

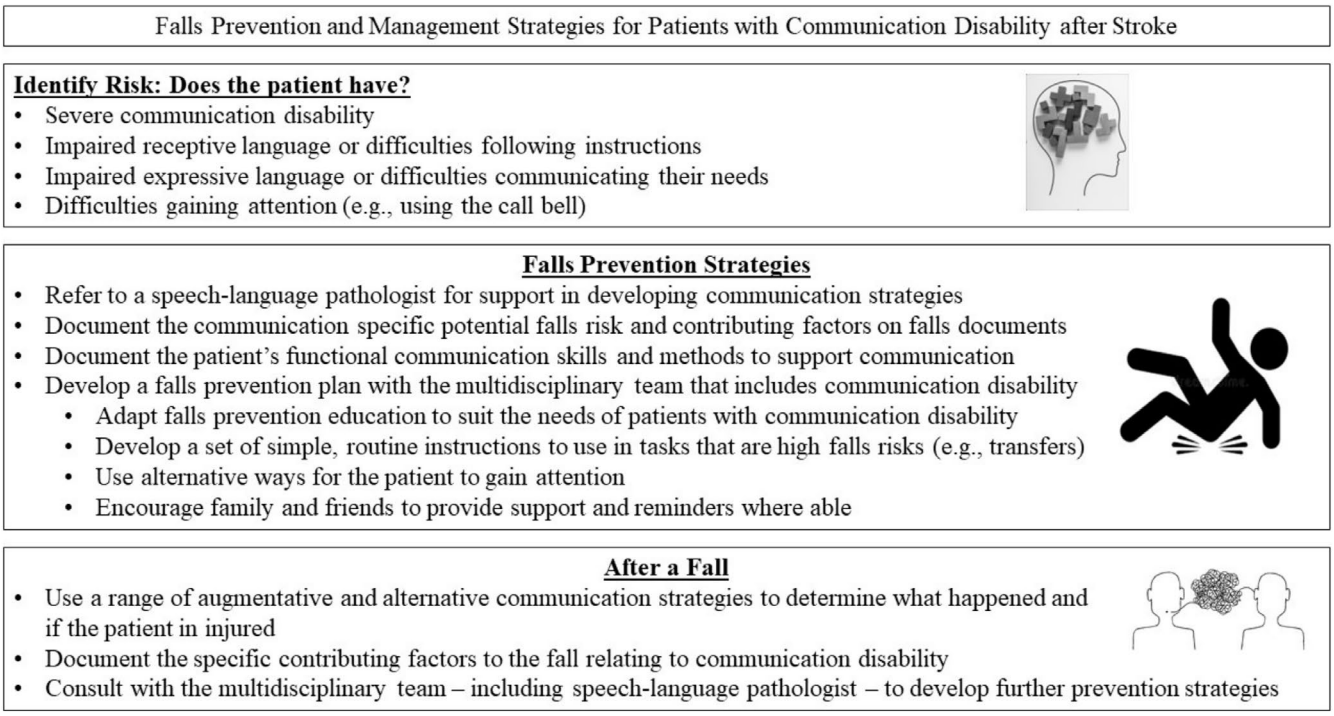

FIGURE 2 | Suggested falls prevention and management strategies for hospital patients with communication disability following stroke.

TABLE 3 | Contribution of each study towards the way forward: Potential falls prevention strategies.

Content theme	Study number	Categories of meaning
Improving identification and collaboration	5	• Medical record entries suggest staff have difficulties implementing falls prevention strategies, particularly for patients who experience multiple falls
	6	• Current falls prevention strategies are not meeting the needs of this population • Falls prevention needs to be multifactorial and consider communication disability • Multidisciplinary teamwork is required to develop effective, individualised falls prevention strategies and understand the circumstances of falls, where the patient has severe communication disability, and the fall is unwitnessed • Speech pathologists could contribute more to falls prevention by raising awareness of the influence of communication disability on falls
The role of family members	2	• Family members provided protection against falls
	3	• Policy documents outline that family members should take an active role in falls prevention when the patient is unable to do this for themselves
	4	• Family members may provide supervision to help prevention falls • Falls prevention strategies currently used include floor line beds, bed/chair alarms and high visibility rooms
	5	• Family members may help to implement falls prevention strategies
Falls prevention and stroke education programs	3	• Policy documents outline that falls prevention education should be provided to all patients or family members if the patient is unable to participate
	6	• Speech pathologists could contribute more to falls prevention by using augmentative and alternative communication to assist the patient to comprehend education programs
Documentation, and adapted communication	5	• Physiotherapists and occupational therapists documented using adaptations to communication during high-risk tasks
	6	• Speech pathologists could contribute more to falls prevention by identifying and documenting the specific communication disability risk and contributing factors for falls; integrating the risk into falls prevention plans; and using augmentative and alternative communication to assist the patient to communicate injuries or the circumstances of falls

(Sullivan et al. 2024, 2023c, 2023a, 2021). For example, in Australian falls prevention policies (Study 3), a family member was to take an active role in preventing a patient fall wherever patients were unable to understand or participate in falls prevention strategies and education (Sullivan et al. 2023c). Indeed, it is known that family members of people with communication disabilities take on support roles and assist in patient-provider communicative interactions to increase the likelihood of successful communication (Burns et al. 2015). In focus groups (Study 6), health professionals suggested that family members may be able to provide insights to further understand the patient's personality and comment on which falls prevention strategies might be effective, as well as provide support to implement falls prevention strategies including supervision, orientation, reorientation and prompts to follow safety instructions (Sullivan et al. 2024).

However, relying upon family members as a strategy to support falls prevention places demands upon the family which may be difficult for them to meet and sustain, as family members are not always able to attend the hospital or to fulfil roles in falls prevention. Furthermore, the responsibilities of family members to be vigilant and protect a loved one in hospital can be stressful, and family members report feeling overwhelmed and exhausted in such a protective role (Hemsley and Balandin 2014). The development of a falls prevention plan that considers the family members' roles as well as their ability to provide support, provides education to multiple family members and outlines a potential schedule for sharing the role may also help to address these challenges.

6.1.2.2 | Falls Prevention and Stroke Education Programs. Patients with stroke should have education about their function following stroke, and falls prevention education is known to be effective in reducing falls rates in patients in hospital (Morris et al. 2022; Hill et al. 2015; Shrubsole et al. 2024). Further, education customised to individual patient

needs reduces falls in patients in hospital, and the provision of information about stroke contributes to stroke recovery (Hill et al. 2015; Hubbard et al. 2012). All hospital falls policies examined in Study 3 included recommendations that all patients be provided with falls prevention education (Sullivan et al. 2023c). However, the functional implications of a patient's communication disability may mean that such patients have difficulties understanding education that is not adapted to meet their communication needs (Eames et al. 2003; Crocker et al. 2021). Speech-language pathologists' training and experience in adapting communication for improved accessibility may facilitate falls prevention and stroke-related education to be more inclusive of patients with communication disability following stroke (Sullivan et al. 2020; Rose et al. 2003; Blackstone and Pressman 2016). Delivering adapted falls prevention and stroke education materials in accessible formats could foreseeably (a) empower patients with communication disability to take an active role in their falls prevention, through greater understanding of their physical function and knowledge on how to meet their basic needs in hospital; (b) help to meet the Australian clinical guidelines for stroke management; (c) translate falls prevention policies into clinical practice (Sullivan et al. 2023c; Stroke Foundation 2023); and (d) enhance falls prevention plans.

6.1.2.3 | Documentation and Adapted Communication. Information about the patient's communication disability, function, and any need for adapted, assistive, or supportive communication strategies should be documented and communicated to all members of the healthcare team so that they all know how to optimise communication with patients during high-risk tasks (e.g., transfers) (Simmons-Mackie et al. 2016). The medical record review (Study 5) found some documentation from physiotherapists and occupational therapists using adapted communication during high risks tasks (Sullivan et al. 2023b). The documentation and use of adapted communication by health professionals could be supported by a speech-language pathologist as suggested in the focus groups (Study 6) (Sullivan et al. 2024). Examples include recommendations to use consistent short sentences, and single step instructions with gestures to support the patient's comprehension of safety requirements during functional tasks.

The difficulties staff reported in identifying the circumstances and outcomes of falls in patients with severe communication disability in Studies 5 and 6 (Sullivan et al. 2024, 2023b) limit the ability of health professionals to implement falls prevention strategies matching the contributing factors and risks (Batchelor et al. 2010). Following a fall, speech-language pathologists could support the patient to describe the fall using adapted communication strategies (e.g., communication board, visual scenes, supported conversations) allowing staff to further develop individualised and targeted falls prevention plans.

6.2 | Limitations and Directions for Future Research

This meta-synthesis was, by design, limited to an integrated set of studies sharing the main aim and analytic lens, the Generic Reference Model of patient safety (Runciman et al. 2006), to build the evidence base and improve care for patients with communication disability following stroke who experience a fall in hospital. The synthesis of a related group of papers by one research group carries the potential for bias, and had other studies been sought for inclusion, further insights into this topic may have been gained. However, this study adds to the knowledge base by integrating the findings of six related studies into a single set of conclusions that can inform policy and practice to improve patient care and guide future research. The six studies were conducted in an Australian context, and the implications and recommendations arising from the studies may not be applicable to other settings. However, the broad issue of communication disability as an under-recognised risk and contributing factor for falls highlighted by this research is likely to be highly relevant across cultures and health systems.

There is much to attend to in future research examining the falls of hospital patients with communication disability, particularly considering the ongoing lack of research including patients with severe communication disability following stroke who have fallen in hospital. As these studies occurred during the COVID-19 pandemic, it was not possible to conduct in situ observations of patients on stroke wards and interviews with patients with communication disability following stroke who had fallen in hospital. As such, the component studies in this meta-synthesis examined falls as documented in incident reports and medical records, and from health professional perspectives; it did not include either observations or interviews with patients with lived experience of communication disability after stroke who had fallen in hospital. Thus, it remains vital that observational research is conducted, and that the perspectives of patients with communication disability who have fallen are included in falls research (Sullivan et al. 2023a). Such studies could triangulate the findings of the medical record studies and provide clinicians and hospital management with further evidence to assist in appropriately managing falls in this population.

As suggested in the included studies in this meta-synthesis, further research is needed to examine the effectiveness of the fall prevention strategies, particularly for patients with severe communication disability and those who also have cognitive impairments. Patients with severe stroke often have co-occurring impairments, including difficulties with mobility, communication disability, and cognitive impairment. Across the studies included in this meta-synthesis, it was apparent that the increasing severity of a patient's communication disability impacted the management of all aspects of falls. In some patients, the functional implications of their communication disability may be too significant for these strategies to be effective, particularly impacting patients with profound communication disability and patients with significant cognitive impairment (Sullivan et al. 2023b). For these patients, falls prevention resources may need to be focused elsewhere, and further research should investigate how best to direct falls prevention resources in these patient populations. Research exploring the communicative interactions between patients with severe communication disability and their healthcare providers on the ward (e.g., in relation to gaining attention, requesting assistance, following instructions) could also provide further critical information on the role of communication disability in falls and enhance our understanding to more informed falls prevention strategies. This research should include diverse methodologies, including large-scale quantitative studies that adequately identify

and report on communication disability across large groups of patients who fall, and rigorous qualitative research drawing upon observational studies and interviews with patients with lived experience of falling and falls prevention strategies, and of family members fulfilling a protective role.

7 | Conclusion

This meta-synthesis analysed and re-presented evidence relating to falls of hospital patients with communication disability following stroke to assist with knowledge translation. To date, the needs of these patients in relation to falls management have been overlooked in policies and clinical management. In understanding the aspects of communication disability that impact falls and the common circumstances of falls, clinicians may be able to identify the unique needs of patients with communication disability in relation to falls prevention. Interventions suggested to reduce falls should be implemented by the multidisciplinary team, informed by speech-language pathologists' knowledge and experience of both communication disability and adapted communication. The team should also include family members in their management strategies. Further research that includes patients with communication disability, particularly those with severe communication disability, and determines effective falls prevention strategies for these patients is required. Integrating the findings of this meta-synthesis into clinical practice should help healthcare professionals provide more targeted, patient-specific falls prevention plans. It should also help hospital managers to take meaningful steps towards improving falls prevention and management policies to include patients with communication disability following stroke.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are openly available through the relevant publisher websites.

Peer Review

The peer review history for this article is available at https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/jan.16903.

References

Australian Commission on Safety and Quality in Health Care. 2019. "Australian Commission on Safety and Quality in Health Care." https://www.safetyandquality.gov.au.

Bartlett, G., R. Blais, R. Tamblyn, R. J. Clermont, and B. MacGibbon. 2008. "Impact of Patient Communication Problems on the Risk of Preventable Adverse Events in Acute Care Settings." *CMAJ* 178, no. 12: 1555–1562.

Batchelor, F., K. Hill, S. MacKintosh, and C. Said. 2010. "What Works in Falls Prevention After Stroke?: A Systematic Review and Meta-Analysis." *Stroke* 41, no. 8: 1715–1722.

Blackstone, S. W., and H. Pressman. 2016. "Patient Communication in Health Care Settings: New Opportunities for Augmentative and Alternative Communication." *AAC: Augmentative and Alternative Communication* 32, no. 1: 69–79.

Burns, M., C. Baylor, B. J. Dudgeon, H. Starks, and K. Yorkston. 2015. "Asking the Stakeholders: Perspectives of Individuals With Aphasia, Their Family Members, and Physicians Regarding Communication in Medical Interactions." *American Journal of Speech-Language Pathology* 24, no. 3: 341–357.

Crocker, T. F., L. Brown, N. Lam, F. Wray, P. Knapp, and A. Forster. 2021. "Information Provision for Stroke Survivors and Their Carers." *Cochrane Database of Systematic Reviews* 11: CD001919. https://doi.org/10.1002/14651858.CD001919.pub4.

Denissen, S., W. Staring, D. Kunkel, et al. 2019. "Interventions for Preventing Falls in People After Stroke." *Cochrane Database of Systematic Reviews* 10: CD008728. https://doi.org/10.1002/14651858.CD008728.pub3.

Douglas, N. F., S. E. Wallace, C. I. Cheng, N. C. Mayer, E. Hickey, and K. Minick. 2024. "A Role for Health Literacy in Protecting People With Limited English Proficiency Against Falling: A Retrospective, Cohort Study." *Archives of Physical Medicine and Rehabilitation* 106, no. 1: 37–41. https://doi.org/10.1016/j.apmr.2024.08.011.

Eames, S., K. McKenna, L. Worrall, and S. Read. 2003. "The Suitability of Written Education Materials for Stroke Survivors and Their Carers." *Topics in Stroke Rehabilitation* 10, no. 3: 70–83.

Elo, S., and H. Kyngäs. 2008. "The Qualitative Content Analysis Process." *Journal of Advanced Nursing* 62, no. 1: 107–115.

Finfgeld-Connett, D. 2018. *A Guide to Qualitative Meta-Synthesis*. 1st ed. Routledge.

Haines, T. P., K. Hill, W. Walsh, and R. Osborne. 2007. "Design-Related Bias in Hospital Fall Risk Screening Tool Predictive Accuracy Evaluations: Systematic Review and Meta-Analysis." *Journal of Gerontology: Medical Sciences* 2A, no. 6: 664–672.

Hemsley, B., and S. Balandin. 2014. "A Metasynthesis of Patient-Provider Communication in Hospital for Patients With Severe Communication Disabilities: Informing New Translational Research." *AAC: Augmentative and Alternative Communication* 30, no. 4: 329–343.

Hemsley, B., J. Steel, L. Worrall, et al. 2019. "A Systematic Review of Falls in Hospital for Patients With Communication Disability: Highlighting an Invisible Population." *Journal of Safety Research* 68: 89–105.

Hemsley, B., M. Werninck, and L. Worrall. 2013. "That Really Shouldn't Have Happened: People With Aphasia and Their Spouses Narrate Adverse Events in Hospital." *Aphasiology* 27, no. 6: 706–722.

Hill, A. M., S. M. McPhail, N. Waldron, et al. 2015. "Reducing Falls in Rehabilitation Hospital Units Using Individualised Patient and Staff Education: A Pragmatic Stepped-Wedge Cluster Randomised Controlled Trial." *Lancet* 27: 2592–2599.

Hill, K. D., M. Vu, and W. Walsh. 2007. "Falls in the Acute Hospital Setting - Impact on Resource Utilisation." *Australian Health Review* 31, no. 3: 471–477.

Hubbard, I. J., D. Harris, M. F. Kilkenny, S. G. Faux, M. R. Pollack, and D. A. Cadilhac. 2012. "Adherence to Clinical Guidelines Improves Patient Outcomes in Australian Audit of Stroke Rehabilitation Practice." *Archives of Physical Medicine and Rehabilitation* 93, no. 6: 965–971.

Hurtig, R. R., R. M. Alper, K. N. T. Bryant, K. R. Davidson, and C. Bilskemper. 2019. "Improving Patient Safety and Patient-Provider Communication." *Perspectives of ASHA Special Interest Groups* 4, no. 5: 1017–1027.

Major, C., and M. Savin-Baden. 2010. *An Introduction to Qualitative Research Synthesis: Managing the Information Explosion in Social Science Research*. Taylor & Francis Group.

McKercher, J. P., C. L. Peiris, A. M. Hill, et al. 2024. "Hospital Falls Clinical Practice Guidelines: A Global Analysis and Systematic Review." *Age and Ageing* 53, no. 7: afae149. https://doi.org/10.1093/ageing/afae149.

Morris, M. E., K. Webster, C. Jones, et al. 2022. "Interventions to Reduce Falls in Hospitals: A Systematic Review and Meta-Analysis." *Age and Ageing* 51, no. 5: 1–12.

O'Brien, B. C., I. B. Harris, T. J. Beckman, D. A. Reed, and D. A. Cook. 2014. "Standards for Reporting Qualitative Research: A Synthesis of Recommendations." *Academic Medicine* 89, no. 9: 1245–1251.

O'Halloran, R., L. Worrall, and L. Hickson. 2012. "Stroke Patients Communicating Their Healthcare Needs in Hospital: A Study Within the ICF Framework." *International Journal of Language & Communication Disorders* 47, no. 2: 130–143.

O'Halloran, R., L. E. Worrall, and L. Hickson. 2009. "The Number of Patients With Communication Related Impairments in Acute Hospital Stroke Units." *International Journal of Speech-Language Pathology* 11, no. 6: 438–449.

Rose, T., L. Worrall, and K. McKenna. 2003. "The Effectiveness of Aphasia-Friendly Principles for Printed Health Education Materials for People With Aphasia Following Stroke." *Aphasiology* 17, no. 10: 947–963.

Runciman, W. B., J. A. H. Williamson, A. Deakin, K. A. Benveniste, K. Bannon, and P. D. Hibbert. 2006. "An Integrated Framework for Safety, Quality and Risk Management: An Information and Incident Management System Based on a Universal Patient Safety Classification." *Quality & Safety in Health Care* 15, no. Suppl. 1: i82–i90.

Shrubsole, K., M. Stone, D. A. Cadilhac, et al. 2024. "Establishing Quality Indicators and Implementation Priorities for Post-Stroke Aphasia Services Through End-User Involvement." *Health Expectations* 27, no. 5: e14173. https://onlinelibrary.wiley.com/doi/10.1111/hex.14173.

Simmons-Mackie, N., A. Raymer, and L. R. Cherney. 2016. "Communication Partner Training in Aphasia: An Updated Systematic Review." *Archives of Physical Medicine and Rehabilitation* 97, no. 12: 2202–2221.

Sinanovic, O., B. Raicevic, M. Brkic, et al. 2012. "Falls in Hospitalized Acute Stroke Patients." *Medicinski Arhiv* 66, no. 1: 33–34. https://doi.org/10.5455/medarh.2012.66.33-34.

Stans, S. E. A., R. J. P. Dalemans, L. P. de Witte, H. W. H. Smeets, and A. J. Beurskens. 2017. "The Role of the Physical Environment in Conversations Between People Who Are Communication Vulnerable and Health-Care Professionals: A Scoping Review." *Disability and Rehabilitation* 39, no. 25: 2594–2605.

Strini, V., R. Schiavolin, and A. Prendin. 2021. "Fall Risk Assessment Scales: A Systematic Literature Review." *Nursing Reports* 11, no. 2: 430–443.

Stroke Foundation. 2020. "National Stroke Audit—Rehabilitation Services Report 2020." Accessed May 2022. https://informme.org.au/media/drtlcbvp/rehab_strokeservicesreport_2020.pdf.

Stroke Foundation. 2023. Clinical Guidelines for Stroke Management.

Sullivan, R., and K. Harding. 2019. "Do Patients With Severe Poststroke Communication Difficulties Have a Higher Incidence of Falls During Inpatient Rehabilitation? A Retrospective Cohort Study." *Topics in Stroke Rehabilitation* 26, no. 4: 288–293.

Sullivan, R., K. Harding, I. Skinner, and B. Hemsley. 2020. "Falls in Hospital Patients With Acquired Communication Disability Secondary to Stroke: A Systematic Review and Meta-Analysis." *International Journal of Language & Communication Disorders* 55, no. 6: 837–851.

Sullivan, R., K. Harding, I. Skinner, and B. Hemsley. 2021. "Circumstances and Outcomes of Falls in Hospital for Adults With Communication Disability Secondary to Stroke: A Qualitative Synthesis." *Advances in Communication and Swallowing* 24, no. 2: 99–110.

Sullivan, R., K. Harding, I. Skinner, and B. Hemsley. 2023a. "Falls in Patients With Communication Disability Secondary to Stroke." *Clinical Nursing Research* 32, no. 3: 478–489.

Sullivan, R., K. Harding, I. Skinner, and B. Hemsley. 2024. "We Don't Look Too Much Into the Communication Disability: Clinicians' Views and Experiences on the Falls of Hospital Patients With Communication Disability Following Stroke." *Disability and Rehabilitation* 46, no. 26: 6334–6344.

Sullivan, R., B. Hemsley, K. Harding, and I. Skinner. 2023b. "Patient Unable to Express Why He Was on the Floor, He has Aphasia. A Content Thematic Analysis of Medical Records and Incident Reports on the Falls of Hospital Patients With Communication Disability Following Stroke." *International Journal of Language & Communication Disorders* 58, no. 6: 2033–2048.

Sullivan, R., B. Hemsley, I. Skinner, and K. Harding. 2023c. "Hospital Policies on Falls in Relation to Patients With Communication Disability: A Scoping Review and Content Analysis." *Australian Health Review* 47, no. 4: 487–493.

Sze, K. H., E. Wong, H. Y. Leung, and J. Woo. 2001. "Falls Among Chinese Stroke Patients During Rehabilitation." *Archives of Physical Medicine and Rehabilitation* 82, no. 9: 1219–1225.

VERBI Software. 2021. *MaxQDA 2022*. VERBI Software.

Zdobysz, J. A., P. Boradia, J. Ennis, and J. Miller. 2005. "The Relationship Between Functional Independence Scores on Admission and Patient Falls After Stroke." *Topics in Stroke Rehabilitation* 12, no. 2: 65–71.