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What are the perceptions and experiences of falls amongst people with stroke who live in the community?

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Title: What are the perceptions and experiences of falls amongst people with stroke who live in the community?

Running Head: Perceptions of falls in stroke

Abstract:

Purpose: To explore the perceptions and experiences of people with stroke living in the community with regard to the perceived causes, impact and solutions to minimise falls.

Method: A qualitative research approach underpinned by a constructivist paradigm utilising a phenomenological methodology. 12 people with stroke participated in focus groups; the data was analysed using thematic analysis.

Results: Three themes and one foundation theme were identified.

1. Trips and Triggers: falls were perceived to be linked to external triggers, one of which was walking aids.

2. Blame and Burden: self-blame and worry about being a burden may be associated with underreporting of falls.

3. Restrict and Reduce: people with stroke restrict activity and reduce participation to manage falls.

The underpinning theme of self-efficacy highlights the apparent diminished falls self-efficacy, and the perception amongst the participants that falls are inevitable.

Conclusions:

This study highlights the perceived negative consequences of falls amongst people with stroke, and the potential contribution of falls to the reduced levels of physical activity often seen following a stroke. Our findings emphasise the need to address falls and balance related self-efficacy alongside strategies to promote safe mobility. A paradigm shift may be needed to highlight potentially modifiable intrinsic risk factors and emphasise the relevance and value of proactive fall prevention to people with stroke.

Keywords:

Accidental falls; stroke; perceptions; qualitative; participation; self-efficacy.

1 **Implications for rehabilitation**

- 2
- 3 • People with stroke may not report falls or may minimise their significance, using
4 alternative terms such as trips and stumbles. Rehabilitation staff need to approach
5 falls in a way that emphasises the positive value of reporting and addressing falls
6 management proactively.
- 7 • People with stroke may focus on extrinsic rather than intrinsic factors, so it is
8 important to identify and highlight potentially modifiable intrinsic falls risks during
9 assessment and treatment.
- 10 • Falls are associated with the use of mobility aids, and people frequently report using
11 multiple aids obtained from a range of sources. Our study findings suggest that
12 assessment and education about the appropriate use of mobility aids should be
13 integral to stroke-specific falls interventions.
- 14 • Falls are often associated with activity reduction and avoidance, which could
15 contribute to reduced participation and increased secondary issues. Approaches to
16 encourage physical activity after stroke need to include recognition of falls risk and
17 methods to optimise safe mobility.
- 18 • The relationship between self-efficacy and people's attitudes and responses to
19 falling is an important consideration. It is likely that that self-efficacy strategies could
20 positively contribute to the effectiveness of stroke falls management interventions.

21 **Introduction**

22

23

24 Stroke features in the top 10 most prevalent long-term health conditions in England [1] and is
25 the third largest cause of enduring disability in the world [2,3]. People with stroke are nearly
26 twice as likely to fall as their age and gender matched counterparts [4] and their risk of hip
27 fracture is doubled [5]. Falls after stroke can lead to a cycle of injury, distress, fear of falling,
28 deconditioning and increased costs of care [6], and qualitative studies have highlighted the
29 significant impact of falls on independence, activity and participation levels, both early [7]
30 and later [8] after a stroke. Thus, post-stroke falls present a significant concern, both for the
31 individual and wider society.

32

33 In order to minimise the negative consequences of falls post-stroke, researchers
34 have investigated the implementation of falls interventions, but systematic reviews are
35 inconclusive as to their effectiveness [9,10]. Research with older people suggests that two
36 hours of challenging balance training per week for six months is considered the optimum

intensity to reduce falls [11]. This level of engagement has been highlighted as a challenge for people with stroke, requiring a high degree of commitment and self-motivation [12]. Researchers who have applied pre-existing treatment programmes that have proved effective for older people to the stroke population have had limited success [13,14]. This could be because stroke-specific factors which are unaddressed by generic programmes are contributing to falls risk [15], or, alternatively issues around programme design and approach may be significant. Within the community-dwelling stroke population, balance self-efficacy is diminished [16], and poor balance self-efficacy is linked with high falls risk and dissatisfaction in community integration [17]. A recent systematic review found that physical activity was effective in enhancing self-efficacy after stroke, with those participants undertaking more intensive, strengthening, balance and functional exercise making greater improvements [18]. This evidence implies that any intervention designed to reduce falls post-stroke needs to account for the complex stroke specific impairments and will need to ensure intensity and duration of engagement is sufficient to bring about meaningful change.

Understanding the challenges faced by people with stroke, and the methods they use to cope with falls in the community, is essential to ensure an intervention provides optimum long-term support and assistance. Despite the prevalence and significance of falls, review findings offer some evidence that people with stroke may not perceive adopting falls prevention strategies as either desirable, or achievable [19]. Similarly, research with older people suggests that they are reluctant to engage with 'falls prevention' exercise classes [20] as they do not perceive the relevance [21]. However, 'lifestyle physical activity' programmes are viewed more positively [22], and generic exercise within a supportive community environment has been viewed positively by stroke survivors [23]. Given the likelihood that an effective falls prevention programme for stroke will require long-term commitment and significant engagement from participants, it is essential to develop an appreciation of how falls are experienced and viewed, and the factors likely to impact on the success of such a programme are fully explored. This study therefore aimed to gain an in-depth understanding of the perceptions and experiences of falls from the perspective of adult people with stroke living in the community, with regard to the perceived causes, impact and solutions to minimise falls.

Methods

The qualitative paradigm underpinning this study was social constructivism, utilising a phenomenological methodology [24]. An assumption of the constructivist worldview is that individuals actively seek meaning and understanding of the world they live in and their

experiences within it [25]. The use of a phenomenological methodology was selected to achieve the aim of the study by exploring the 'lived experiences' of individuals [26], whilst focus groups were the chosen method of enquiry to capitalise on the opportunity for social interactions amongst the participants to support them to explore their experiences and to collectively develop meaning [27]. The pragmatic decision was made to run three focus groups, aiming to balance the goal of achieving a comprehensive exploration of the phenomenon with the need to undertake a study which was manageable in a constrained time period [28]. All participants gave written informed consent and the study was approved by Plymouth University Faculty of Health and Human Sciences ethics committee (Reference: HS14/15-153).

Participants

A convenience sample of community-dwelling adults with stroke was recruited via awareness raising visits to local support groups, and advertisements distributed through private therapy practices and a stroke support website. People who expressed an interest in participating were provided with the study information sheet, reply slip and consent form: Those replying were screened by telephone call to ensure they met the inclusion criteria (see table 1), and eligible participants were organised into three focus groups depending upon their availability, aiming for a range of three to five participants per group [29]. Having experienced a fall (defined as 'an unexpected event in which the participant comes to rest on the ground, floor or lower level') [30] was **not** part of the inclusion criteria.

Table 1 about here

Data collection

The focus groups were held in a quiet meeting room on university premises, chosen for its accessible location and familiarity to participants. During the focus groups, the primary researcher referenced an interview schedule (table 2) which had been piloted prior to data collection. The meetings were audio-recorded, and a second researcher was present to observe, take field notes and provide a non-attributable record of proceedings whilst the primary researcher was part of the group discussions. In line with guidance, each focus group ran for approximately 60-90 minutes, being allowed to come to a natural close [31].

Table 2 about here

Data analysis

1 Data were analysed using the systematic, flexible six-phase process of thematic analysis as
2 described by Braun and Clarke (Figure 1) [32]. Recordings were transcribed verbatim by the
3 primary researcher and the transcripts entered into QSR Nvivo v10 [33] to enable efficient
4 data management. Initial codes were developed which linked to the study objectives; these
5 were then grouped and developed into themes in discussion with the second researcher. An
6 inductive approach was used to ensure the themes were data driven rather than matched
7 with a pre-existing framework.

8
9 *Figure 1 about here*

10 11 **Study quality**

12 In addition to the participants' cultural and historical experiences influencing the
13 discussion, social constructivists recognise that the researcher's own personal experience
14 may influence the interpretation of the data and the inductive generation of meaning [34]. In
15 this study the primary researcher kept a reflexive diary [26], and regular discussions
16 between the researchers were undertaken to explore their assumptions and the potential
17 impact of these on the research. To maximise credibility, one participant from each of the
18 three focus groups was invited to member check the accuracy of the draft main themes [34].
19 Two of the three participants confirmed that the summary was an accurate representation of
20 the focus group they attended; there was no reply from the third person.

21 22 23 **Results**

24 Nineteen people with stroke expressed an interest, however, seven were excluded
25 after screening, leaving a final sample of 12 individuals (see table 3). Most participants were
26 male and had their stroke over 10 years ago, with the time since stroke ranging from four to
27 17 years. A greater number of the participants were recruited from community stroke
28 groups; all had a history of falls and there were broadly equal numbers of people with right
29 and left sided hemiplegia. Participants had a range of levels of mobility; the majority used a
30 mobility aid of some kind, mostly walking sticks. Only one participant known as *Jackie had a
31 carer with her. *(All participant names have been replaced with a pseudonym to ensure
32 confidentiality but also to maintain an element of personality to each participant).

33
34
35 *Table 3 about here.*

Three themes were identified which capture the essence of the data and reflect the objectives of the study. These themes are underpinned by one foundation theme of self-efficacy.

Insert figure 2 about here

1. Trips and Triggers: The nature of impairments and how they contribute to the perceived causes of falls

Despite all participants reporting multiple falls (according to the accepted definition [30]) during screening, many of the discussions referenced alternative descriptions of falls, such as trips and stumbles.

"I see, so, how many falls have you had since your stroke? Approximately...five to ten? Ten to twenty?"

Researcher

"Something like that. Just tripping... y'know what I mean, catchin' the edge of the curb"

Terry

"Have they caused you to land on the floor?"

Researcher

"Aye, a couple of them, yeah"

Terry

Participants reported a variety of perceived causes for their trips and falls (see table 4). They also identified that falls often occurred when they were distracted or had lost focus on the task they were carrying out.

[referring to the supervisor at the gym] "...somebody who will keep an eye on me and he knows that when I'm on the treadmill... I have the odd stumble on that even, yeah"

Peter

"Yeah I can't do that without holding on..."

Doug

"...Nor me..."

Peter

"...because if I get cocky and try and have a drink and.... Ooof! I'm off"

Doug

Insert table 4 about here

Extrinsic factors such as walking aids were frequently perceived to contribute to falls, and were viewed negatively by many participants, perhaps as they highlighted their disability. Several reported using multiple types of walking aid, sourced from various locations.

"...I mean, I need my stick to keep my balance - I don't need my stick because I'm a cripple or anything, I just need it to keep my balance"

Mike

"I went to the toilet in the middle of the night and I had one of those well, I suppose it is a zimmer frame... normally I went with my stick but on this occasion I thought 'it's here, I will use it', and on the way back there was just a little tiny bump coming from the landing to my door and the wheel got caught and I went over..."

Christine

"I went to a thing for people who have had survived a stroke... and says 'I think I'm going to have to get one of these 3 wheeler things' and the lady that was a carer said

'I've got one of those in my garage, my mother had it, she passed on a few years ago and it is in perfect condition'... so she just gave it to me" Jackie

Whilst participants highlighted a range of intrinsic factors contributing to their inability to avoid falling, the majority appeared to focus any falls prevention activities on the modification of extrinsic risk factors.

"See, I have moved everything in my house so I don't trip over it... but I still trip over things"
Jackie

2. *Blame and Burden: The impact of falls as experienced by people with stroke.*

People with stroke described risk of falls as a source of concern for both themselves and family members.

<i>"Do your family worry about you falling?"</i>	Researcher
<i>"Oh yes, my sons do, they say 'Take more care dad, take more care'. I say 'I do my best'. He is always there for me.</i>	Terry

The external impact of falls appeared to be a significant concern amongst participants, who particularly emphasised the potential negative effect of their falls on other people; this appeared to continue throughout the post-stroke journey. However, in some circumstances, participants appeared to downplay or avoid reporting falls, apparently to minimise negative consequences to themselves, such as externally imposed activity limitations.

"I had falls in [hospital] a number of times. I fell out of bed... it's bad because it is triple paperwork (laughs)..... When I was getting a little bit fitter and I would fall out of bed I would manage to get back in before they [the nurses] got to me and they would see a foot or hand coming out from under the screens (laughs) and I would get a wagging finger at me...."

Peter (10 years post stroke)

"Yeah... it worries her [participant's wife] a bit.... she isn't strong enough to get me on my feet so she will ask somebody, but it worries her and it worries her when we go on holiday. I only go because I know she enjoys her holidays, but I always feel that I am holding her back"

Mike

“So you don’t.... I wouldn’t tell her if I fell” Doug
[clarifies] “You wouldn’t tell your wife if you fell?” Researcher
“Well not my arm one because she would say ‘what the hell have you done!’ ...This big bruise... I had to explain that one but not otherwise- she would try and stop me going out” Doug

3. Restrict and reduce: Peoples' solutions to minimising and managing falls.

Participants reported adopting a range of strategies in an attempt to manage their falls. Several people with stroke chose to restrict their activity as one strategy.

1 *"Stay still"*

Jackie

2
3 *"Drive instead of walk"*

Elizabeth

4
5 Interestingly, as with the impact of falling, the attitudes of family and external individuals
6 appeared to reinforce the use of activity restriction as a method of reducing falls risk.

7 *"The trouble is, everybody is looking at you... making sure that you don't do this, or*
8 *you can't do that, and I'm not allowed to do this... and I'm getting bored because I*
9 *just want to get on with it..."*

Doug

10
11 In addition to restricting activity levels, participants suggested behavioural changes such as
12 slowing down, being more careful, being sensible, planning their route, taking rests, only
13 doing one thing at a time and weighing the risk involved with each activity as strategies to
14 manage falls. Practical strategies included asking for help, purchasing a call alarm, adapting
15 the home, using mobility aids and orthotics. Participants appeared to be used to problem-
16 solving, and seemed to value identifying solutions:

17 *"I got out of the bath one day and tripped over. I got wedged between the toilet and*
18 *the radiator and I thought 'What the hell do I do now?' So... I had a shower put in and*
19 *handrails, they call it a wet room ... that is brilliant, now I can look after myself"*

Fred

22 **Foundation theme of self-efficacy**

23 During analysis, self-efficacy (or participants' personal perceptions and beliefs about their
24 ability to avoid falls during daily activities) appeared to be a recurring theme associated with
25 participants' attitudes to falling and their choices of falls-management strategies. Participants
26 described how falling led to feelings of inadequacy and embarrassment, particularly if falls
27 had happened outside. If a member of the public did see them, participants worried what
28 they would think, and that they would not provide any assistance.

29 *"... What do you do after you have fallen?..."*
30 *...I think 'What an idiot!' and 'Why did I do it?'"*

Researcher
Terry

31
32 *"You have got to realise, it embarrasses you this [the falls], you think 'What the hell*
33 *has happened to me! I was only taking three steps'..."*

Fred

34
35 *"It's a pride thing- in town... I fell on my arse and I thought 'this isn't right' and then*
36 *people walked by..."*

Ian

37 *...They probably thought you were drunk..."*

Jackie's carer

38 *...Yeah! They didn't help me; they said 'He's [drunk]'"*

Ian

39
40
41 Diminished self-efficacy was particularly apparent when participants discussed blaming
42 themselves for their falls and their belief that falls were an inevitable part of daily life after
43 stroke.

44 *"Is there anything that can be done to reduce your falls?..."* Researcher
45 *...No I don't think so no, they are going to happen on aren't they?..."*

1 Terry
2 ...You will continue to fall, it's just accidental. It's your fault if you stuck your toe on
3 uneven flagstone because you should be looking for it. No, there's nothing that can
4 cure you. Nothing to sort of, prevent you from falling. Everybody falls."
5 Mike
6

7 Discussion

8 Participants in this study reported relatively negative attitudes to falling and appeared to view
9 falls as an inevitable consequence of having a stroke. There was a general tendency to
10 minimise the focus on falls. In discussions, participants frequently referred to 'trips' and
11 'stumbles', which would satisfy the accepted definition of a fall [30]. Differences in
12 perspective and meaning of the term 'fall' have been identified previously across cultures,
13 languages and between older people and health professionals [35]. One reason could be
14 that people associate falls with ageing or disability [36], whereas it may be perceived that
15 trips could occur at any time of life. Older people have suggested that the phrase 'falls
16 prevention' implies vulnerability, therefore the term should be avoided in favour of more
17 positive promotion of strength and balance in order to increase uptake to rehabilitation [21,
18 37]. This is relevant, as the term 'fall' appeared uncomfortable for people with stroke in this
19 study to identify with. In the future, different terminology and the impact of this on attitudes
20 towards falls prevention amongst people with stroke could be explored.

21
22 Under-reporting of falls was widespread amongst our participants, which primarily appeared
23 to be due to not wanting to worry family and friends. Studies of older people highlight similar
24 concerns, with reporting falls being perceived to be associated with loss of independence
25 and control [37]. Importantly, participants used vivid descriptions of their experiences of
26 falling whilst in hospital, despite the length of time since their original stroke (e.g. Peter, who
27 described "wagging fingers" from health professionals when he was in hospital following his
28 stroke 10 years previously). In studies of older people, reasons for not reporting falls to
29 healthcare professionals included the perception that they were not a medical problem, were
30 not serious enough to be reported and people not wanting to be a burden on health services
31 [38]. Our study suggests that following a stroke, people may perceive additional reasons to
32 avoid reporting their falls, emphasising that clinicians need to strongly promote the positive
33 benefits of taking a proactive response to falls to encourage people to report them. This may
34 require work to change attitudes to falls amongst people with stroke, carers and healthcare
35 professionals, for example as suggested by Buetow et al in their recent paper relating to falls
36 in Parkinson's disease [39].
37

1 In agreement with other studies [40,41], despite demonstrating an awareness of intrinsic risk
2 factors, our participants primarily focussed on extrinsic triggers as the main causes and
3 potentially modifiable contributors to falls. It has been proposed that this may be because
4 extrinsic factors are perceived as more controllable than intrinsic changes [42], however, it
5 may also add evidence to the suggestion that peoples' response to falling is influenced by
6 their struggle to acknowledge internal limitations associated with their stroke [19]. Given that
7 addressing modifiable intrinsic factors is likely to be a central tenet of falls interventions,
8 supporting people to recognise and prioritise these is essential. This is particularly important
9 given the likelihood that interventions will require considerable investment of time, energy
10 and commitment by participants.

11
12 The role of mobility aids in preventing or contributing to falls is an important consideration.
13 Despite negative attitudes towards them and frequently citing them as a contributing factor to
14 falls, our participants often reported using multiple walking aids. Whilst walking aids are
15 recommended to improve mobility after stroke [43], it is recognised that they may increase
16 risk of falls [44]. The use of multiple aids amongst people with stroke is common [45], and it
17 is possible that this may further contribute to risk, as has been highlighted amongst people
18 with Multiple Sclerosis [46]. In addition, many participants reported obtaining aids from 'non-
19 traditional' sources. The sharing of old mobility aids that may not be safe or suitable may
20 reduce their effectiveness [47] and is likely to further increase falls risk. Our study findings
21 suggest that assessment and education about the appropriate use of mobility aids should be
22 integral to stroke-specific falls interventions.

23
24 Avoidance related behaviours and activity reduction were common responses to falls in this
25 study. Whilst reducing activity and restricting participation may avoid falls in the short-term,
26 there are significant long-term consequences with this approach. Individuals who have had a
27 stroke are less physically active than their age matched counterparts [48], and the
28 implications of restricting activity are dramatic, both for healthcare use and costs [49] and for
29 the individuals' health, function and quality of life [50]. A tendency to restrict activity may
30 negatively impact people's willingness to engage with the exercise-based activities which are
31 likely to be an essential component of a stroke-specific falls intervention, as well as
32 preventing secondary complications associated with sedentary behaviour. The phenomenon
33 of carers encouraging activity reduction to reduce falls is supported in the literature [9],
34 however, this may lead to an additional cycle of secondary deconditioning, increasing
35 dependence and reduced community participation. The presumption that falls equate to
36 restriction of activity appears to be one reason why older people can feel hostile to the
37 concept of falls prevention [51]. Therefore, supporting the individual who has had a stroke

1 and their carers and family members to collaboratively develop empowering and enabling
2 strategies to falls management [1] rather than simply restricting activity will be essential.

3
4 The relationship between self-efficacy and people's attitudes and responses to falling is an
5 important consideration. Following stroke, low self-efficacy is a known risk factor for
6 recurrent falls and deteriorating quality of life [52], whilst higher self-efficacy is linked with
7 greater functional independence and reduced incidence of falls [53]. In our study,
8 participants consistently expressed negative perceptions of falls, and an external locus of
9 control in their response to falling was a recurrent theme which is highly suggestive of poor
10 self-efficacy. It is likely that such nihilistic attitudes amongst our participants would
11 significantly affect their enthusiasm to engage with falls management interventions, as well
12 as the likelihood of them achieving the greatest benefit from a programme. However, the
13 positive responses from participants when they reported successfully solving problems to
14 reduce falls risk is encouraging. A systematic review has indicated that stroke specific self-
15 management programmes may be effective in improving confidence and self-efficacy [54].
16 The included interventions were not falls-specific, and the review was unable to indicate
17 optimal content, theory or outcomes due to the variety of programmes being offered,
18 however it is encouraging, and suggests that self-efficacy strategies could positively
19 contribute to the effectiveness of stroke falls management interventions.

20
21 A strength of this study is that its primary aim was to gain an in-depth understanding of the
22 perceptions and experiences of falls amongst people with stroke. However, there are a
23 number of limitations. Firstly, all participants involved in this study were considered
24 cognitively unaffected by their stroke, had sufficient communication skills to interact in a
25 focus group and none were housebound or wheelchair dependant. Therefore, this study
26 represents the perceptions and experiences of a relatively narrow group of participants.
27 Specifically engaging subgroups of the community stroke population could be one potential
28 method of expanding this study in future, as would utilising alternative methods (such as
29 one-to-one interviews), which would enable those who would struggle to engage fully in a
30 group setting to participate.

31
32 Secondly, although we aimed to recruit people from across the spectrum, it is possible that
33 our recruitment strategy (specifically, publicising the study primarily through long-term
34 community support groups rather than in more acute settings) led to some bias, as the
35 average time since stroke amongst our participants was 13 years. This reduces the
36 transferability of our findings; for example, falls amongst people just going home after a
37 stroke are likely to be associated with different mechanisms to those who have had their

stroke a long time ago. Falls risk factors are also likely to differ, and it is also probable that perceptions and attitudes change significantly over time. Therefore, our findings should be interpreted with caution, and further work to explore the experiences of people whose stroke was more recent is important. Additionally, whilst we aimed to maximise diversity within each focus group, logistical considerations meant that this was not entirely achieved. Due to the necessity to share transport, the first focus group included three male friends who were all ambulant with left sided weakness. It could be argued that pre-existing relationships may have had a polluting or inhibiting effect on the discussion due to pre-established norms and hierarchies [55]. However, by exploring the perceptions of people who were in some cases, already acquainted, the researcher was able to examine issues and decisions made by individuals in a naturally occurring group. Therefore, perhaps the level of honesty and opinions shared were enhanced by pre-existing relationships in this group.

Finally, carers were not invited to take part in this study, although one carer did spontaneously attend the second focus group to support a participant, and also contributed to the discussions. Exploring the views and perceptions of falls from a carer's perspective is essential, particularly given the importance placed on the impact of falls on others by our participants. Carer involvement, engagement and burden are all significant factors affecting engagement with rehabilitation interventions [56] and this would be particularly significant in a falls programme, which would be likely to require a substantial amount of individual practice.

Conclusions

This study suggests that people with stroke perceive falls as a source of embarrassment and frustration, and to be associated with restriction of activity and participation. It is important that open and honest discussions involving people with stroke, carers and professionals address falls as a manageable issue, and encourage open reporting of falls. Whilst our participants represent a small proportion of the spectrum, the need to promote falls and balance related self-efficacy is a recurring theme which is likely to impact all aspects of falls management for people who have had a stroke. Further research is needed to explore how this may be best achieved, particularly in the context of stroke-specific falls management interventions.

4263 words

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Figure captions

Figure 1: thematic analysis

Figure 2: themes in the data

Tables:

Table 1

Inclusion criteria
Diagnosed with a stroke
Live in the community
Able to communicate to be able to participate in a focus group
Cognitively intact
Able to travel to attend focus group

Table 1: Inclusion criteria

Table 2

Introduction and welcome

Experiences of falls

Frequency

Consequences

Response

Perceptions of falls

Causes

Risk factors

Impact of falls

Activities/ Participation

Concerns re: future falls

Thanks and close

3

4 **Table 3**

[illegible]

-Diagnosed with a TIA rather than stroke	2
-Unable to communicate verbally to be able to participate in a focus group	1
-Confused	1
-Carer unwell - unable to travel to attend focus group	2
-Too busy	1

1

2 *years; M: male; F: female. Y: yes; N; no. TSA: The Stroke Association; PP: private practice. WS: with
3 stick; WS+S: with stick and scooter; WC: wheelchair; 3WW: 3 wheeled walker; PWC: powered
4 wheelchair.

5

6 Table 3: Participant demographics

7

Table 4

Intrinsic	Extrinsic
stroke-specific issues including: balance deficits, muscle weakness, reduced co-ordination, the feeling of legs giving way, fatigue, memory and confidence.	furniture (type and configuration), uneven pavements/ flooring, steps, busy crowds, slopes, in/out of car, noisy environments, walking aids.

Table 4: summary of risk factors for falling identified by participants.

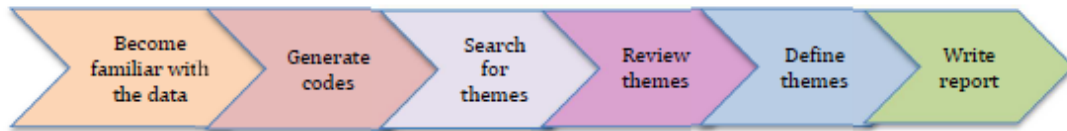


Figure 1: The six phases of thematic analysis adapted from Braun and Clarke [28].

Figure 2: Themes captured in the data

