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Exploring falls prevention capabilities, barriers and training needs among patient sitters in a hospital setting: a pilot survey.

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Introduction

Falls are one of the most frequently reported adverse events in hospitals^{1,2} and occur in between 13-23% of patients.^{3,4,5} Between 23-42% of falls in hospital are associated with physical injuries,^{3,4,6,7} of which between 2-7% result in hip fractures.^{8,9}

Results from several meta-analyses have suggested that multifactorial falls prevention interventions^{10,11,12} and nonpharmacological delirium interventions¹³ can be effective in reducing the number of falls in hospitals, although one recent large-scale multifactorial intervention study conducted in acute wards¹⁴ showed no difference in falls or fall injuries. Results from another randomised controlled trial³ demonstrated that an intervention which involved providing individualised falls education to patients with good levels of cognition, training of hospital staff to support such a programme, and provision of patient feedback to staff significantly reduced the rates of falls and injurious falls in rehabilitation wards. Hence, the latter may be key elements of an effective multifactorial intervention. To date it is not yet clear which interventions or combinations of interventions will lead to the most optimal reduction in hospital falls. Fall rates in hospitals are higher among older people with cognitive impairment,^{8,15,16} and it has been shown that delivering patient falls education is less effective in this subgroup of patients.³ Additionally, research has demonstrated that falls mainly occur when patients are unsupervised.^{9,17,18,19} In light of these findings, some hospitals choose to increase direct supervision and observation of patients who have a high risk of falling by using volunteers²⁰ or care staff^{21,22} as one strategy within their multifactorial falls prevention programs. In hospitals in Australia and the United States, nursing assistants and care assistants are sometimes employed to directly observe patients specifically to reduce their risk of falling.²³ Results from small prospective and feasibility studies have suggested that the deployment of these so-called *patient sitters* on hospital wards could lead to decreased falls rates.^{24,25} However, several other studies have reported that sitter use is ineffective and costly,^{26,27} and that reducing the number of sitter hours did not increase overall fall rates.²⁸ A systematic review found that there is lack of rigorous research and scant evidence that patient sitter use is an intervention that leads to falls reduction on hospital wards.²⁹ One factor

that could explain the lack of effect of patient sitters in reducing fall rates could be their lack of knowledge and awareness of falls management best practice principles.

The COM-B (*Capability, Opportunity, Motivation* to undertake a health *Behavior*) is a health behavior change framework,³⁰ which can be applied to the patient sitters' behavior necessary to provide care which aims to reduce the falls risk of hospital patients, conceptualizes that one requires the skills (*capability*: knowledge and awareness), *opportunity* (environmental and social) and the intention (*motivation*) to undertake falls risk reducing *behavior*. A survey conducted among care staff in nursing homes, who have similar roles to sitters (nursing assistants) in hospitals, found that low levels of capability regarding falls and falls prevention may have limited their abilities to effectively translate falls prevention evidence into practice despite their high motivation to prevent falls among the residents they cared for.³¹ To date, patient sitters' knowledge and awareness about falls among hospitalized patients has never been considered. Therefore, the purpose of this study was to pilot-test a survey among patient sitters in hospitals in preparation for a future larger survey. The survey was based on a previous survey³¹ which evaluated care staff who worked in nursing homes regarding falls prevention practice, using the COM-B health behavior change framework. The aim of the study was to explore the patient sitters' falls prevention capability (knowledge, awareness, self-efficacy) and opportunity (perceived barriers in keeping their patients safe from falling, and enablers that might help them to reduce the risk of falls). The secondary aim was to gain their feedback regarding their training needs in this area.

Methods

Design and ethics

This was a descriptive exploratory pilot survey.³² The study was approved by the Sir Charles Gairdner Group Human Research Ethics Committee (Quality Improvement Activity 11155). All participants were provided with written and verbal information about the study, which included statements about the survey being anonymous and that no personal details were sought. Participants consented to participate by completing the survey.

Setting

The survey was conducted in the acute stroke, medical, cardiac, renal, geriatric rehabilitation, general surgical, and older adult mental health wards of a large tertiary hospital, and in the stroke and aged care rehabilitation wards of a secondary hospital in the Greater Perth region in Western Australia.

Participants and recruitment

Potential participants were Assistants in Nursing or Personal Care Assistants from both private and government agencies who were employed to complete a shift in either of the two selected hospitals, with the specific task of providing one-to-one supervision for older patients at risk of falls. Eligible participants had to have worked at least one supervisory shift in the 12 months prior to recruitment and be able to read and write English sufficiently to respond to the survey. Recruitment took place in February and March 2016.

Questionnaire development

Prior to the study a bespoke questionnaire was constructed.³³ All questions were formulated at the seventh-grade English literacy level using the Flesch-Kincaid readability index program^{34,35} since it was known that sitters' education levels could be low.³¹ Questions were designed based on the constructs of the COM-B health behavior change framework, a theoretical psychological model of behavior change.³⁰ The wording of the questionnaire items was also derived from previous work in which self-efficacy for preventing falls among nursing staff and knowledge about falls prevention among hospital patients were assessed,^{36,37} but modified to suit the context of this questionnaire. Nine items collected the participants' background characteristics and 12 (comprising a mix of open- and closed-ended Likert scale,³⁸ multiple choice, and categorical) items assessed falls prevention capability (knowledge, awareness, self-efficacy), opportunity (barriers, enablers) in keeping their patients safe from falling, and training needs (Table 1). The response options for the two multiple choice questions were based on the advice that nurses would give sitters on

their wards (these were derived from recommendations found in national falls prevention guidelines²²). Prior to the survey, face validity of the questionnaire was evaluated during a “talk through”³³ session amongst a convenience sample of five hospital employees who operated within a falls prevention community of practice, and six patient sitters from different wards in the hospital to rate clarity and ease of use of the questions. Questions were amended according to the outcome of this evaluation.

Procedure

Two surveyors (a registered nurse and a physiotherapist) who worked at the hospitals identified potential participants at the sites’ nursing resource centres. Subsequently they approached the clinical areas’ senior nurse at the wards where potential participants were working that day to inform them of the survey. Patient sitters who were willing to participate and who had not previously completed the survey were presented with a written explanation of the study and were given the opportunity to have their questions answered. Participants were subsequently checked for the inclusion criteria and eligible participants were asked to complete the questionnaire on a paper printout or on a tablet via SurveyMonkey[®]. The surveyors took the position of the patient sitter while the participant was completing the survey. After completion, paper-based surveys were directly handed to the surveyor who then entered the responses manually into SurveyMonkey[®].

Statistical analysis

Quantitative results were summarized using frequencies and percentages. All verbatim responses from participants were extracted from SurveyMonkey[®] and organized using Microsoft Excel. Content analysis of the open ended questions was undertaken using a deductive approach.³⁹ The categorization matrix was developed based on concepts of behavior change³⁰ and previous work, which identified a framework for how falls are likely to occur in hospital.⁴⁰ This framework conceptualises that when there is effective interaction between three domains in a hospital ward (patient actions, staff actions and the surrounding environment) then falls are less likely to occur. Two researchers (LDdJ, A-MH) independently read

through the data several times. Responses were coded by theme and first assigned to the pre-determined generic category. Subcategories with similarities were grouped within each generic category and then grouped under higher order headings to reduce the number of categories through the collapse of like and unlike categories. Subsequently, both researchers met to discuss and compare their coding and grouping results. Any disagreements were resolved by consensus. The final generic categories were grouped with the overarching main categories which were the behavior change concepts of capability and opportunity. Frequencies of responses were presented where applicable. These matrices were then sent to the third researcher (SK) for review and final presentation of the results was agreed after consensus by all three researchers.

Findings

Thirty-two patient-sitters were approached to undertake the survey. One declined to participate. The characteristics of the 31 participants who completed the survey are presented in Table 2. The majority of participants had done more than 6 sitter shifts in the last year ($n = 26, 84\%$) and had received training about falls prevention in the past two years ($n = 23, 74\%$).

Participants' capability (knowledge and awareness) about why falls occur in hospital.

Responses to the open-ended question, which asked participants to list reasons for patient falls in a hospital, identified 12 subcategories under the three generic categories relating to patient, environment and staff (see Figure 1).

The most frequent reasons identified were patient-related ($n = 91, 64\%$), which predominantly included cognitive and medical subcategories such as patients being “*confused*” or using different “*medications*”.

Thirty percent ($n = 43$) of responses identified environmental factors as reasons for falls, including the presence of hazards such as a “*wet floor*” and clutter, and issues with aids such as not being able to “*access walking aids*”.

Open-ended responses identifying strategies that participants suggested could help patients stay safe from falling were also able to be grouped within the three generic categories (Figure 2). The most frequent responses identified strategies that targeted the hospital environment ($n = 54$, 64%), comprising subcategories such as “*using walker or stick to walk*”, keeping “*clear walkways*” and keeping the area free of hazards and clutter, and using assistive technologies such as “*non-slip socks/shoes*” and “*a sensor mat*”. Responses categorized as strategies targeting hospital staff ($n = 25$, 29%) most frequently suggested close supervision by “*stay(ing) with them*” or “*assist them to walk*”, but also included nurses’ timely responses to the call bell by “*Attending bell ASAP*” and adequate handovers. Strategies targeting the hospital patients ($n = 6$, 7%) such as their “*medications*” were mentioned the least frequently.

Participants’ self-efficacy regarding caring for patients at high risk of falls

Nearly all ($n = 28$, 90%) of participants agreed or strongly agreed with a statement about feeling confident in knowing what to do when looking after patients who were at risk of falling (Table 1). Open responses to the question about actions participants would take after a patient had fallen (question 5) could be captured under three generic categories: calling for help, taking care of the patient, and taking follow-up actions. Twelve participants (40%) responded that they would (only) call for help while 16 (53%) participants stated that they would additionally take (precautionary) measures such as “*reassure patient*”, or “*make patient comfortable*”. Two participants (7%) responded that they would take even further actions such as “*updat(ing) falls risk documentation*” or “*implement(ing) interventions with team*”. One participant wrote that “*(the patient) should stay in bed*”.

Opportunities (barriers and enablers) for effectively providing care for patients at high risk of falls.

Participants listed patient-related factors ($n = 36$, 62%) as the most frequent barrier that potentially impacted on their ability to keep their patient safe from falling (Table 3). The identified subcategories included behavioral factors (“*when patient is violent*”) and cognitive characteristics (“*If they are confused*”) of patients. Reported staff-related barriers ($n = 17$, 29%) included work practices such as not

receiving “*more information about the patient*” due to an inadequate handover from the staff, too high a workload (“*when you are looking after 4 patients and all of them will be trying to get out of bed. It’s a big challenge*”) and a lack of knowledge of “*how to deal with non-compliant patients*”. Only a few participants ($n = 5, 9\%$) considered environmental hazards as barriers.

Open responses to the survey item which asked participants about what would enable them to do their work properly (Table 3) were most frequently categorized as being related to staff ($n = 20, 83\%$). The most notable subcategory identified the need to “*improve handover practices*”. Some participants further indicated that being provided with more tailored information about the patients they were going to observe, such as about their medical background, would assist them in providing better patient care. Responses less frequently made focused on the sitters’ need for “*support nurse(s to) come more often to patient*” for regular checks of the patient and their need for a nurse’s “*immediate answering of the bell*” in case of emergency. Two participants specifically wrote that “*falls risk signs*” (environment-related category) would be helpful to them.

Training- and educational needs

A majority of participants ($n = 26, 84\%$) stated that they would like to receive further training regarding preventing patient falls in hospitals (Table 1). Responses to the question about *what* other training about patient falls would be helpful to them ranged on a continuum between having “*no idea*”, to a specified kind of training such as “*training for dementia patient*” and receiving “*any*” training. One participant wrote that “*there are different causes that might create falls. It would be great if all the situations and causes known*” could be part of the training.

Discussion

Capability (falls prevention knowledge and awareness) and self-efficacy

Participants’ responses identifying reasons for their patients’ falls were concordant with many identified patient risk factors for falls in hospitals. These included cognitive impairments, medication issues, impaired gait, impaired balance and attentional dysfunction.^{41,42} This finding suggests that participants were aware

of some of these risk factors. Registered nurses who were asked a similar question previously gave similar responses.⁴³ However, despite the fact that patient-related risk factors were seen as the primary cause for falls, this study concurred with other research which found that staff perceived modifying the hospital environment as the most effective way to keep patients safe from falling.^{43,44} The majority (64%) of participants suggested environment-related falls preventive strategies, which included using walking aids, and keeping the area free of clutter. This forms a potential gap in targeting the identified problem as, although these preventive measures are commonly recognized as 'universal' fall precautions,²¹ they do not target patient or staff-related falls risk factors. While most (90%) participants stated that they felt confident in knowing what to do when looking after patients who were at risk of falling, responses about what they would do after a patient had fallen revealed that some sitters had limited knowledge. Responses also varied widely, which suggests that sitters may not receive standardized falls prevention information through staff handover and training in the hospitals where they are employed. Overall these results concur with the results of a previous survey that found low levels of capability among care staff in nursing homes.³¹ This is problematic if sitter care is thought to be an effective falls reducing strategy, because concepts of health behavior change indicate that developing capability (awareness and knowledge) is essential for individuals to engage in a desired health behavior.³⁰ In order to have patient sitters effectively translate falls prevention evidence into practice their capability need to be improved. It is also problematic for researchers who attempt to evaluate what effect sitters have on falls prevention, because if work practice and capability vary widely for individual sitters and across different wards, then it cannot be assumed that there would be intervention fidelity between settings.

Barriers and enablers

Barriers identified to providing safe care were similar to those identified in previous work.³¹ Over half of all participants' responses identified that patients' aggressive or agitated behaviors or cognitive impairment were the key barriers to effective falls prevention. Staff-related barriers such as inadequate handovers and too high a workload were identified less frequently, but some participants' open responses suggested that

nursing staff needed to provide sitters with more support to enable them to provide safe care for the patients. For example, one participant noted that the *"difference between a good shift and a bad one is the nurse"*. In addition, the majority of responses listing ideas about what kind of support was needed to enable the patient sitters to do their work properly were staff-related: the need for more adequate handovers with tailored information about the patients, and the need for regular checks as well as prompt responses to the call bell by the nursing staff. Research has identified inadequate handover practices^{45,46} and delays in nurses' response to patients' call bells²⁵ previously, which may also act as barriers that prevent patient sitters from doing their work properly. Since barriers identified were predominantly patient-related and enablers were predominantly staff-related, this suggests that there is a potential gap in the sitters' ability to address barriers they encounter during their sitter shifts. National hospital falls guidelines recommend that patient handovers incorporate information and discussion of fall risk factors and interventions,⁴⁷ but participants' responses suggested that this does not happen consistently. Feelings about seeking staff assistance and thoughts about delays in provision of help (not wanting to bother the nurses because they might be busy) has been found to act as safety-behavior limiting barriers in patients,⁴⁸ but might also apply to patient sitters.

Training- and educational needs

Previous research has shown that gaps in care staff education and training regarding falls knowledge and skills exist.³¹ Although our study found that 74% of sitters had received training it was unclear how effective the training had been. A majority (84%) of participants indicated a preference to receive further training, even though they were undecided about what training would be helpful. It has been suggested that training and ongoing education is essential to the success of sitter use,²⁴ and that all sitters should receive the same training with the aim of reducing differences in patient outcomes.²⁹ We argue that an effective program such as the Hospital Elder Life Program⁴⁹ could be used for this purpose. In addition to providing a theoretical (evidence-based) background regarding falls and falls prevention, it might also be worthwhile

to provide sitters with practical, hands-on training in purposefully engaging with patients or assisting them to mobilize safely⁵⁰ rather than just passively observe them.

Strengths and Limitations

The main limitation of this study is the limited sample size. Additionally, individual participant level data on age, gender, role and level of working experience was not collected to keep the survey as anonymous as possible so that sitters would feel confident that they could not be identified within our small sample. These limitations hinder the generalizability of our findings. It would be worthwhile to investigate whether sitters' work experience, or their levels of education and training influences their falls prevention capability, opportunity and motivation. Although participants did not report any issues with completing the survey, analysis of the responses have prompted consideration of some modifications to the survey design before further evaluation of its validity and reliability and use in more hospitals among a larger sample. This includes following up some of closed-ended items with open-ended questions. This type of survey may also be useful in home-care services and other settings where staff with limited professional training are expected to deliver falls prevention strategies as part of their regular care for older adults.

Conclusion

Results from this pilot survey demonstrated that hospital patient sitters' have limited capability regarding falls prevention. There was a gap between what sitters perceived to be the main causes for falls (patient-related risk-factors) and what they subsequently suggested as interventions (environment-related interventions). Participants perceived that the main barriers to keeping patients safe from falling were patient related, including behavioral factors and cognitive impairment. However, opportunities that would enable them to do their work properly were most frequently categorized as being related to staff, suggesting a gap in the sitters' ability to address barriers they encounter during their sitter shifts. These gaps in sitters' capability suggest that providing sitters on wards to reduce falls may not have a desired or consistent effect on reducing falls. If sitter use is being continued as a falls reducing intervention strategy,

improving and standardizing patient-sitters' training and work-practices should be seriously considered because this research has shown that sitters may not receive standardized falls prevention information through staff handover and training in the hospitals where they are employed. Further research should also continue to evaluate the effect of providing sitters as a strategy for reducing falls in hospital wards.

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Table 1. Overview of all survey items including the open-ended questions (no values), and the patient-sitters response frequencies (percentages) to the closed-ended items regarding their capabilities (knowledge, awareness and self-efficacy), opportunities and training needs.

Survey item	Value
Capability	
<i>Knowledge and awareness</i>	
1. Patients in hospital can fall for many reasons. Please list as many reasons as you can.	
2. Name three things that can help patients stay safe from falling.	
3. You are caring for one patient who is confused and restless. They need the help of one person and a walking frame. They are trying to get out of bed to go for a walk. What do you do? ^a	
Distract them to try to stop them getting up ^b	13 (42)
Give the walking frame and let them walk alone	0 (0)
Call the nurse and observe the patient until the nurse arrives	21 (68)
Give the walking frame and walk with them ^b	24 (77)
Restrain them in bed until help arrives	2 (7)
4. A confused patient wants to use the toilet and insists on being alone in the toilet. What do you do? ^a	
Allow them the privacy to go into the toilet alone	2 (7)
Ask the patient to ring the bell when done	3 (10)
Stand with the door slightly open to check on the patient ^b	23 (74)
Tell the patient that you have to stay with them for safety ^b	14 (45)
Let the patient go in and then ring the bell for their nurse	3 (10)
5. Your patient has a fall. Please list what you would do.	
<i>Self-efficacy</i>	
6. I feel confident knowing what to do when looking after patients who are at risk of falling falls	
Strongly agree	19 (61)

Agree	9 (29)
Neutral	2 (7)
Disagree	1 (3)
Strongly disagree	0 (0)

Opportunities

Barriers

7. Please list anything that you think makes it hard to keep your patient safe from falling.

Enablers

8. List any ideas you have about how we can help you when you are working a companion shift that is aimed to prevent patient falls?

Training needs

9. Would you like training on preventing falls in hospital wards and what to do if a patient falls?

Yes	26 (84)
No	5 (16)

10. How would you like training on preventing falls in hospital wards and what to do if a patient falls?^a

Lectures/presentations	26 (84)
Written information especially for Assistants in Nursing and Patient Care Assistants	25 (81)
Online training	17 (55)

11. What other training about patient falls would be helpful to you?^c

12. Any further comments to this topic?

^a Participants were allowed to give more than one answer.

^b Statement describing the recommended actions as described in falls guidelines and as suggested by nursing staff.

^c Seven responses missing.

Table 2. Participant characteristics ($n = 31$).

Characteristic, n (%)	Value
What is your highest level of education? ^a	
Completed high-school	3 (11)
TAFE certificate	12 (44)
University	11 (41)
Other	1 (4)
What is your preferred language ^a	
English	26 (96)
Other	1 (4)
In the last year, how many falls prevention companion shifts have you done?	
1-5	5 (16)
6-20	10 (32)
> 20	16 (52)
During your last falls prevention companion shift, who gave you a handover that explained <i>why</i> your patient might fall?	
The nurse looking after the patient told me	1 (3)
The last companion told me	3 (10)
Both the nurse and the companion told me	25 (81)
I did not receive information about why the patient might fall	2 (7)
During your last falls prevention companion shift, who gave you a handover that explained <i>how</i> to stop your patient from falling?	
The nurse looking after the patient told me	4 (13)
The last companion told me	5 (16)
Both the nurse and the companion told me	15 (48)
I did not receive information about how to stop the patient from falling	7 (23)

Have you had training about falls prevention in the past 2 years?

Yes	23 (74)
No	8 (26)

Did your training include information about falls that happen in hospitals?

Yes	21 (68)
No	3 (10)
Do not remember	7 (23)

From whom did you receive training on prevention of falls prevention in the past 2 years?^b

Staff recruitment agency	21 (68)
Hospital	19 (61)
University	14 (45)
TAFE	10 (32)

How did you receive training on prevention of falls in the past 2 years?^b

Lectures or presentations	25 (81)
Online training	19 (61)
Written information	19 (61)
Independent reading	16 (52)
Do not remember	7 (23)

^a $n = 27$: four responses on highest level of education and preferred language missing. The "other" highest level of education was Associate Diploma in Business Management, the "other" preferred language was Cantonese.

^b Participants were allowed to pick more than one answer.

Abbreviation: TAFE, Technical And Further Education (Australian institutions that provide a wide range of predominantly vocational tertiary education courses).

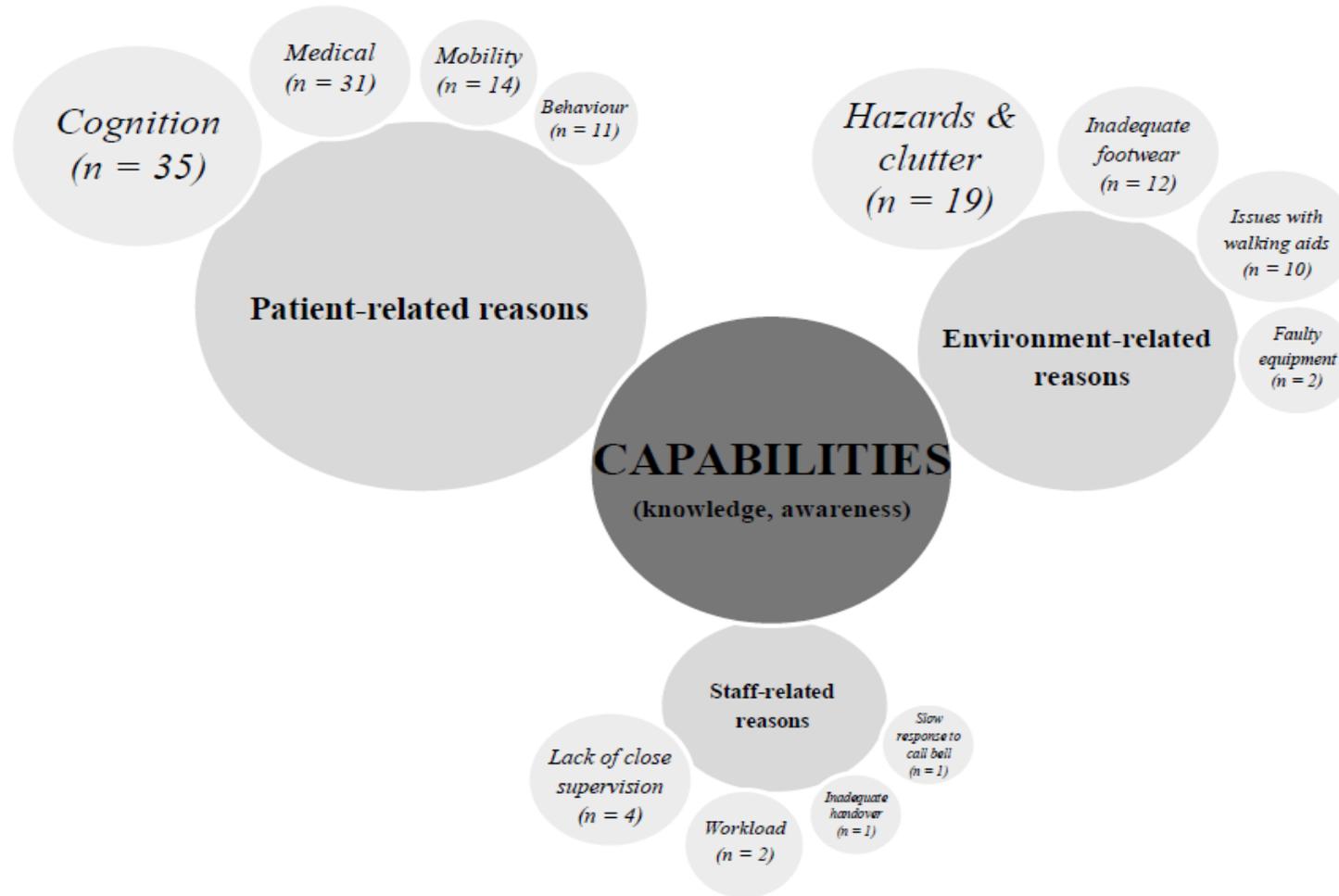
Table 3 Participants' identified barriers and enablers that impacted their ability to keep their patient safe from falling during their sitter shifts.

Main category	Generic category	Subcategory (response frequency)
Opportunities		
<i>Barriers</i>	Patient-related	Behaviour (19)
		Cognition (13)
		Medical (2)
		Mobility (2)
	Staff-related	Inadequate handover (7)
		Workload too high (6)
		Lack of knowledge (3)
		Lack of timely response in case of emergency (1)
	Environment-related	Clutter (2)
		Layout of the room (2)
		Faulty equipment (1)
	<i>Enablers^a</i>	Staff-related
Better provision of tailored information about the patient (5)		
Regular checks by nursing staff (3)		
Prompt response (to call bell) by nursing staff in case of emergency (2)		
Good teamwork (1)		

	Manageable workload (1)
	Better training (1)
Environment-related	Fall risk signs (2)
	Non-slip socks (1)
	“good environment” (1)

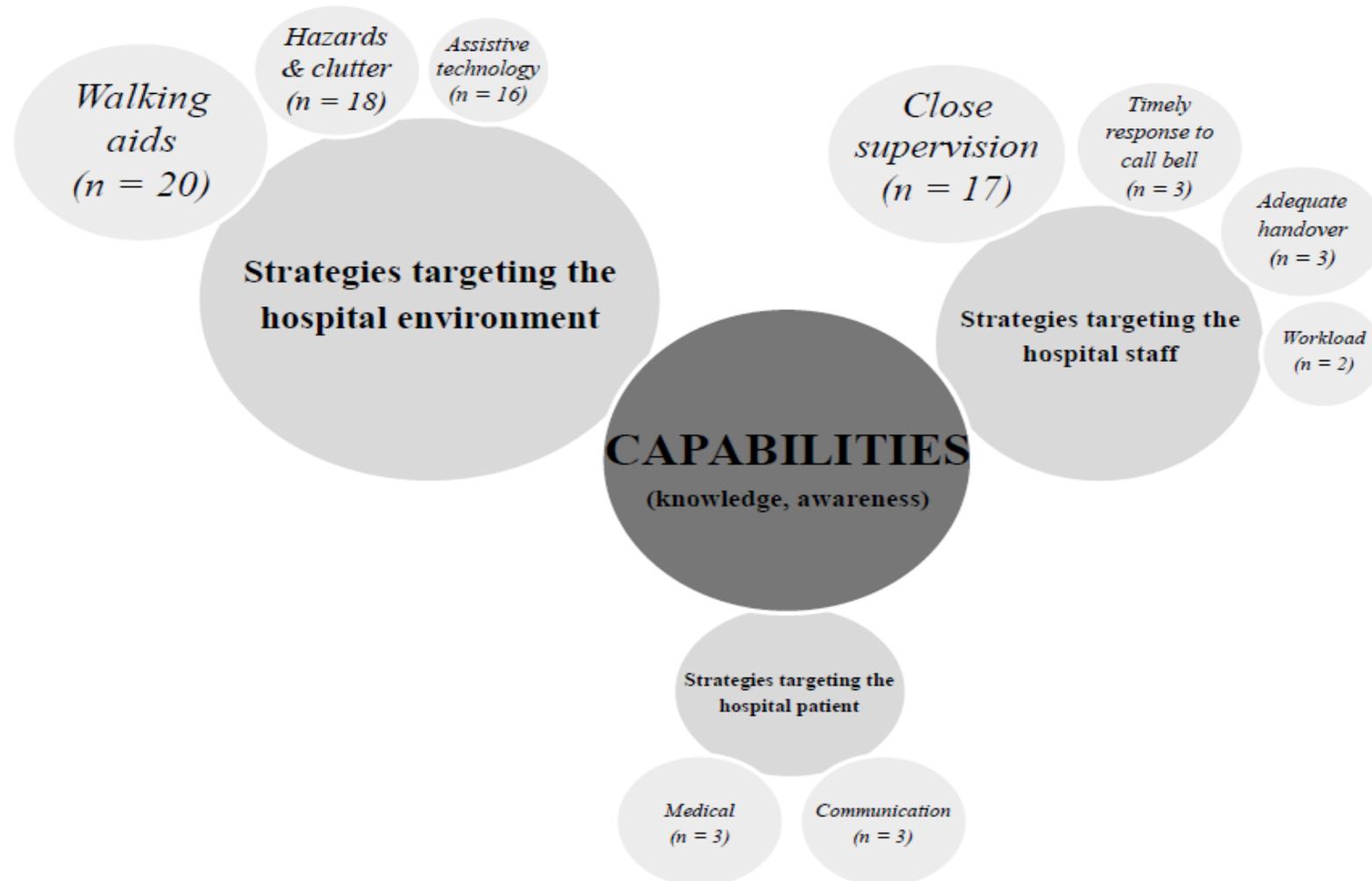
^aSix participants did not respond to the question about the enablers.

Figure 1 The participants' responses describing what they perceived to be the most prevalent reasons for patient falls in hospital.



Legend The main category is depicted by the darkest, middle circle. Lighter circles represent the three identified generic categories (**bold text**). Outer circles represent the 12 identified subcategories (*italic text*).

Figure 2 The participants' responses describing what they perceived to be three strategies ('things') that could help their patients stay safe from falling.



Legend The main category is depicted by the darkest, middle circle. Lighter circles represent the three identified generic categories (**bold text**). Outer circles represent the nine identified subcategories (*italic text*).