Nurses' perceptions of recommended fall prevention strategies: A rapid review

Amanda Garcia, BSN, RN,
College of Nursing, University of Florida, Gainesville, United States

Ragnhildur (Raga) I. Bjarnadottir, PhD, MPH, RN [Assistant Professor],
Department of Family, Community and Health Systems Science, College of Nursing, University of Florida, Gainesville, United States

Gail M. Keenan, PhD, RN, FAAN [Professor, and Annabel Davis Jenks Endowed Chair for Teaching and Research in Clinical Nursing Excellence],
Department of Family, Community and Health Systems Science, College of Nursing, University of Florida, Gainesville, United States

Tamara G. R. Macieira, PhD, RN [Assistant Professor]
Department of Family, Community and Health Systems Science, College of Nursing, University of Florida, Gainesville, United States

Abstract

BACKGROUND: Limited studies have synthesized evidence on nurses' perceptions of recommended fall prevention strategies and potential differences between those and the practiced strategies.

PURPOSE: To synthesize evidence about nurses' perceptions of recommended fall prevention strategies for hospitalized adults.

METHODS: Using PubMed, 50 records underwent abstract and full-text screening, and 10 studies were retained. Narrative synthesis was conducted to identify common themes across studies. Quality assessment was not performed.

RESULTS: Nurses are aware of effective fall prevention strategies but identified unit-level barriers and facilitators to implementing these in their practice. Unit culture and policies, educational offerings, nursing interventions, and style of communication and collaboration were seen to influence fall prevention.

CONCLUSIONS: Nurses recognize falls as a multifactorial issue suggesting that prevention efforts be tailored to the unit and involve all employees. We recommend that future research emphasize identifying and understanding the combination of factors that produce successful unit-level fall prevention strategies.

Corresponding author: Tamara G. R. Macieira, PhD, RN, Mailing address: 1225 Center Drive, PO Box 100197, Gainesville, FL 32610-0197, tmacie2@ufl.edu.

Keywords

Accidental Falls; Accident Prevention; Nursing; Rapid Review; Safety

Patient falls are an ongoing issue in the hospital setting. Between 700,000 to 1 million hospitalized patients fall every year.[1] Falls are a patient safety concern and a financial burden to the healthcare system, as 30-35% of patient falls result in injury, which adds an average of 6.3 hospital days and $14,000 in cost per patient.[2] Multi-angle prevention strategies have been developed, involving different members of the healthcare team and considering hospital, unit, and individual level factors.[3] However, sustained improvements have been limited, and patient falls remain an ongoing issue in the hospital setting.[3]

The existence of clinical practice guidelines does not guarantee effective implementation of them. Even after decades of attempts to implement evidence-based practice into nursing and healthcare in general, there remains a disconnect between goals for patient care and the current conditions, posing a threat to patient safety.[4] Gathering the perspectives of those involved in the implementation and delivery of fall prevention strategies may highlight why there is a mismatch between current fall prevention recommendations and the strategies that are actually practiced. Healthcare professionals' knowledge, skills, and attitudes could influence motivation to implement clinical practice guidelines.[5]

Nurses hold a unique perspective as they care for patients 24/7 in the hospitals and oversee all safety precautions utilized, including fall prevention strategies. Thus, it is valuable to investigate what nurses think about the fall prevention strategies that are currently recommended. Any discrepancies between the recommended fall prevention strategies and the perceptions that nurses hold about them could result in inconsistencies in the application of them.

Tzeng and Yin[6] found that nurses' reports of the most frequently utilized fall prevention interventions were largely inconsistent with those shown to be effective in the adult acute patient setting. This inconsistency may be attributed to nurses' lack of awareness about available fall prevention strategies and/or a disconnect between nurses' perceptions and knowledge about falls.[6] The current literature lacks a synthesis of studies pertaining to nurses' perceptions of recommended fall prevention strategies. Therefore, our purpose was to review the literature to examine nurses' perspectives on recommended fall prevention strategies and identify potential reasons for why falls are still an issue despite efforts to implement these strategies in hospitals.

METHODS

We conducted a rapid review of studies that described and/or measured nurses' perspectives on recommended fall prevention strategies for adult medical-surgical or specialized units in the hospital setting. A rapid review method was selected so that the most recent literature on this issue could be evaluated to establish a baseline on how much evidence is available in this area and the applicable major findings.[7] No quality assessment was performed. Our review was developed in accordance with the Preferred Reporting Items for Systematic

Reviews and Meta-Analyses (PRISMA) Statement.[8] The phases of our review are illustrated in Supplemental Digital Content, Figure.

Data source and search strategy

The question sought to be answered by this rapid review is: What evidence exists on nurses' perceptions of recommended fall prevention strategies for hospitalized adults? In our question, we used the word "nurses" to represent any nurse who works in a hospital setting. "Perceptions" was used to illustrate feelings, beliefs, opinions, perspectives that nurses might have about fall prevention strategies implemented in their work settings. We designated "fall prevention strategies" as policies/protocols, guidelines, toolkits, technology, or interventions to prevent falls. Finally, we used the word "recommended" in our question to capture existing fall prevention strategies published by different sources, including, but not limited to, the Joint Commission, national associations, hospitals, or specific units within a hospital. In the search strategy, the words "prevention", "control", "protocol", "strategy", and "guideline" were used to capture the recommended fall strategies. Our search was also targeted at fall prevention strategies for hospitalized adults (aged 18 and older).

The database PubMed was searched for studies published in the last 5 years, to capture only the most current evidence. No other restrictions were applied to the search. The authors developed a search strategy including a comprehensive set of text words and MeSH (Medical Subject Headings) terms. Supplemental Digital Content, Table 1, provides the detailed search strategy. Only one database was searched due to the time-sensitive and simplified nature of conducting a rapid review. This is consistent with the methodological approaches generally used in rapid reviews, including searching fewer databases, limiting the use of grey literature, and eliminating or limiting hand searching of reference lists and relevant journals.[7] Since one database was searched, there were no duplicated records.

Abstract and full-text screening

Three reviewers participated in the abstract and full-text review phases. The database search was conducted in February 2021 and updated in August 2021. One nursing student (A.G.) and two faculty members (G.K., T.M.) screened a total of 94 abstracts captured in the search strategy. Each abstract was screened by 2 reviewers independently using these inclusion criteria: 1) patients falls were a theme, outcome, or indicator in the study, 2) nurses were subjects/population in the study, 3) qualitative or quantitative information/data on nurses' opinions/attitudes/perceptions about fall prevention strategies already in place were collected, and 4) the study was conducted in the hospital setting (eg, adult medical-surgical or specialty units). No records were excluded based on geographic location, patient diagnosis, or nursing specialty. The discrepancies between the pairs of reviewers for the abstract selection were discussed until consensus was reached. A sample of 18 records were included in the full-text review phase.

The same pairs of reviewers (A.G. and G.K., T.M. and G.K.) then participated in the full-text review of the 18 selected records using the inclusion criteria described above. Articles that focused on only patients' perspectives of (or experience with) falls, nurses' perceptions of a fall event, or the implementation and evaluation of a fall prevention strategy as part

of a study were excluded. In addition, letters, commentaries, new reports, announcements, bulletins, and opinion articles were also excluded. Each full text article was independently reviewed by a pair of reviewers. Interrater reliability score was calculated for the full-text screening phase. The first pair of reviewers (A.G. and G.K.) agreed on 72% (8/11) of the full-text articles selected and the second pair of reviewers (T.M. and G.K.) agreed on 86% (6/7). The discrepancies were discussed until consensus was reached. A final sample of 14 studies was included in this rapid review.

Data extraction and synthesis

We extracted the following key data elements from each study when available: authors and year of publication, study purpose, study design, setting, and sample, data collection methods and analysis, and study results. One reviewer (A.G.) extracted the data for the included studies. Three expert reviewers (G.K., R.B., T.M.) examined the data extracted for clarity and completeness. A narrative synthesis of the data extracted was performed to inform the results described in the present review.

RESULTS

Fourteen studies were retained and examined for the present review. Thirteen of the 14 studies were qualitative, while one was a mixed methods study. Examples of qualitative methods used for data collection included one-to-one interviews with study participants, focus groups, and surveys. Seven of the 14 studies were conducted outside of the U.S., including Turkey,[9–10] Australia,[11–14] and Bhutan.[15] In 4 studies,[9,14,16–17] only nurses were recruited as participants, while in the remaining studies,[10–13,15,18–22] a diverse sample of participants were recruited including physicians, unit managers, safety and risk management personnel, health assistants/support staff, patients, and family members. Nurse participants across the studies included registered nurses (RNs), directors of nursing, nursing educators, nurse managers, and clinical nurse specialists. In 2 studies,[12,17] certified nursing assistants (CNAs) were grouped with the nursing staff.

Nine studies were conducted on medical-surgical units[11–12,14–15,17–19,21–22] while 4 studies were conducted on specialized units, such as palliative care,[10] internal disease,[9–10] surgery,[9–10] orthopedics,[10] gynecology,[9] intensive care,[9] geriatrics,[13] and rehabilitation units.[13,16] The settings in which the studies were conducted varied in unit sizes and bed capacities. Reported bed capacities of the included hospitals ranged from 81 beds[18] to 672 beds.[12] A detailed description of the studies can be found in the Supplemental Digital Content, Table 2.

The purposes of the studies included in this review can be grouped into the following categories: to explore nurses' personal experiences with/recounts of fall prevention strategies,[12,15–18] to investigate nurses' views/opinions of fall prevention strategies,[9–11,13–14,19–20,22] and to gather nurses' suggestions for improved fall prevention practices.[10–11,20–21] The most prevalent method used was interviews ranging from 10-120 minutes and involving some form of audio recording/transcription.[9–10,12–13,15,17–18,20–22] Other methods used were surveys[11,16,18,22] and focus groups.[13–14,20]

Our narrative synthesis summarized the studies' reported nurses' perceptions of recommended fall prevention strategies into five themes: 1) unit culture and procedures/policies related to fall prevention, 2) fall prevention education, 3) nursing interventions for fall prevention, 4) communication and collaboration, and 5) perceived barriers to the implementation of fall prevention strategies.

Unit culture and procedures/policies related to fall prevention

The term unit culture in this theme refers to the general attitude toward fall prevention that is upheld by the unit/facility administration. The terms procedures/policies in this theme refers to the fall prevention efforts adopted by the unit/facility administration, not the nurses themselves (eg, fall messaging, disciplinary procedures).

Two[11,18] of the 14 studies included data related to nurses' perceptions of unit culture and messaging related to fall prevention. The two studies described that nurses express anxiety related to their institutions' policies toward falls[11,18] found that nurses fear and have anxiety related to the zero falls narrative enforced by their unit and the intense messaging from administration to achieve zero falls. The nurses within the study felt that the cascade of messages sent monthly, weekly, and sometimes daily from mid-level and senior-level nurse administrators to get the number of fall incidences down were often overwhelmingly abundant and delivered with a tone of blame and shame.[18] To avoid the personal shame of a falls event and getting their unit labeled as bad, nurses often altered their care by restricting patient movement. This involved limiting ambulation and promoting prolonged bed rest, even though they acknowledged that doing so was associated with poorer patient outcomes like loss of muscle strength.[18]

Fehlberg et al[17] found similar results, as the nurses in this study felt anxiety and shame surrounding the disciplinary repercussions of falls, such as the post-fall huddle that took place after a patient fall, in which the nurse would have to attend a conference to be questioned by multiple hospital administrators about the events leading up to the fall. This fear seemed to be a motivator behind the fall prevention strategies that the nurses implemented. Some nurses would implement strategies that are deemed as effective, like utilizing the bed alarm, just to avoid disciplinary procedures even though they felt that the strategy was unnecessary and ineffective.[17] However, this study also found nurses agreed with yellow fall bands and socks for patients over a specified fall score so that all staff members could easily identify fall risk patients.[17]

Ayton et al[14] found that nurses felt that some general policies/procedures for those with fall risk did not pertain to all. For example, the unit's patient education on fall prevention and the use of gait aids were ineffective among patients with dementia. Nurses suggested the need to tailor fall prevention strategies to accommodate a specific population's characteristics including providing one-on-one supervision to patients with dementia. Similarly, Gibson et al[21] found that issues such as low staff ratios and high patient acuity frequently prevented nurses from implementing standard fall risk policies. Nurses felt frustrated and helpless when conditions blocked them from implementing fall strategies forcing them to face the inevitability of falls.

Falls prevention education

A perceived need for increased falls education was described in three studies.[11,13,16] Ayton et al[11] found that nursing staff perceived staff and patient education to be one of the greatest barriers to implementation of fall prevention practices and advocated for training/education sessions that would promote staff use and patient compliance with effective fall prevention practices. Nurses suggested hands-on training with case studies and education on the treatment of delirium/cognitive impairment and connection of fall risk scores to be appropriate interventions.[11]

Hill et al[13] found that nurses perceived the implementation of the Safe Recovery Program (an individualized patient education program) to facilitate teamwork and support a positive culture around fall prevention. This patient education program provided patients with teaching about their own fall risk, multimedia information about falls and falls prevention (DVD and workbook), tailored follow-up, and facilitation in setting goals to reduce fall risk behaviors including ringing the bell for assistance or using a prescribed walking aid when mobilizing.[13] Nursing staff also reported that a falls educator on the unit empowered patients and enhanced awareness and knowledge of safety. The falls educator was a trained health professional who provided the education program to the patients and facilitated mutual understanding of fall prevention goals between patients and staff.[13] Bok et al[16] found that after a fall event, nurses would often change their practice by providing new staff with education on observing room safety and would provide patients and families with teaching regarding transfer safety and the importance of calling for help with ambulation.[16]

Nursing interventions for fall prevention

Five of the 14 studies[9–10,16–17,20] reported nursing interventions (ie, strategies to prevent falls that are directly implemented by nurses), which nurses see as effective for fall prevention. Nurses within these studies described the following interventions as being effective in preventing falls for hospitalized adults: assistive mobilization (presence of personnel like nurses and family members and assistive devices like walkers and gait belts),[10] assessment of fall risk on admission,[9–10,20] limitation of risky ambulation[10] and education of patients on medication side effects that could contribute to falls, like dizziness.[10] Nurses within all five studies described bed brakes, bed alarms, and/or side rails as effective in the prevention of falls.[9–10,16–17,20] Bok et al[16] found that after a fall event nurses changed their practice by increasing fall prevention interventions like use of chair alarms, hourly intentional rounds, and frequent checks on the patients. Baris and Intepeler[10] found that nurses suggested use of the Foley catheter in patients who have frequent urination/get up to use the bathroom often is helpful in preventing risky ambulation. However, the authors acknowledged the increased risk of unnecessary catheter-associated urinary tract infections associated with use of urinary catheters and recommended instead the use of bedpans.[10]

Communication and collaboration

Five studies[15–16,19–20,22] collected information on nurses' perspectives of fall prevention strategies that are primarily based on communication and collaboration with another member of the healthcare team. Bok et al[16] and Pelzang and Hutchinson[15] found that

nurses advocated for improving interdisciplinary support through means including enhanced team communications, safety training, and changing attitudes among professionals. Bok et al[16] reported that nurses stated a need for a more clear, consistent handoff process with other members of the healthcare team who ambulate or transport the patient somewhere else during the shift. For example, nurses could clarify before and after therapy which patients need alarms turned back on upon returning to the unit. Pelzang and Hutchinson[15] found that nurses identified the need for proper communication between patients, visitors, and the healthcare workers because miscommunication about treatment plans and proper interventions threatened patient safety. Participants within the study also reported that a lack of competency in some skills and a complacent attitude among some healthcare professionals led to safety risks.[15] These participants stated that healthcare professionals with a complacent attitude would often take shortcuts and exhibit carelessness by not applying appropriate patient safety measures despite having knowledge about Standard Operating Protocols and guidelines.[15]

Porter et al[20] described differences in nurses and non-nurse clinicians' perspectives of fall prevention strategies. The authors report that nurses rely mostly on fall risk assessment scores (FRAS), while non-nurse clinicians tend to use their own role-specific fall assessment. In addition, inconsistency was seen for fall prevention understanding among healthcare team members. The study found that non-nurse clinicians are usually unaware of the FRAS and nursing interventions used by nurses to prevent falls. Though nurses and non-nurses within the study found nursing staff to be primarily responsible for fall risk assessment and prevention, teamwork was ultimately found to be an overarching component of fall prevention.[20]

Another source of communication/collaboration is the monitoring system in place for fall risk patients. Hebb et al[19] found that, when given the option between continuous video monitoring (CVM) and sitters, staff preferred having sitters to observe fall risk patients, as 70% of staff participants in the survey stated they were satisfied with the use of sitters and that CVM was not as effective. However, only 50% of the staff reported satisfaction with the initial education received about CVM upon initiation, suggesting that inadequate education may have led to staff viewing it as less effective.[19] Sand-Jecklin et al[22] however found that 73% of the nursing staff believed that CVM was effective in preventing falls. In this study, CVM was not compared with other fall prevention strategies.[22]

Perceived barriers to the implementation of fall prevention strategies

Six studies[11–12,14–15,17,21] reported nurses' perceived barriers to implementation of fall prevention strategies. Fehlberg et al[17] reported low staffing as an inhibitor to effective fall prevention, as lower patient load promotes more attention to safety for the assigned patients. Other reasons mentioned in the study include nurse-patient trust (claim that trust develops after getting to know the patient, and thus the nurse may not follow strict fall risk interventions), duty/dignity (may allow independence for certain fall risk patients who are independent), risk vs. benefit (eg exceptions to the bed alarm like when someone has a specialty bed that needs airflow), and lastly, nurse judgement (look at the whole clinical picture to determine necessary fall prevention strategies).[17] Barriers to fall prevention

implementation shared among the studies include complexity of patient conditions and management of multiple risks, system problems like lack of resources and poor communication among staff, and factors of human error including lapses and violations, and lack of knowledge, skills, and attitudes on safety competency.[11–12,14–15,17–21]

Four studies[9–10,15,20] reported nurses' perspectives of the physical environment as a factor in fall prevention. Nurses within these studies suggested the environmental changes of having less slippery floors, enhancing lighting within rooms, installing ramps and elevators, and having more staff available on the unit to assist in fall prevention. Baris and Intepeler[10] found that nurses expressed preference over regular, shared rooms rather than private rooms, so that more than one patient could be monitored at a given time. Porter et al[20] found that nurses reported closed room doors to impede fall prevention. Unit layouts were also identified as contributors to falls, as room locations and wall placement may inhibit proper viewing of fall risk patients.

DISCUSSION

This rapid review examined studies to investigate nurses' perceptions of recommended fall prevention strategies among hospitalized adults. The 14 studies provided a range of nurses' perspectives on strategies including unit culture, policies, nursing interventions, falls education, and communication/collaboration, as well as perceived barriers to fall prevention practices. The findings do not offer a clear-cut outline for effective fall prevention posed by nurses, but they do offer some implications for potential practice changes and trajectories for future falls research based on nurses' perspectives. We discuss these implications below.

The findings indicate that nurses acknowledge the complexity of falls and the multiple factors involved in them. Many nurses within these studies addressed a mix of policies, patient circumstances, and system issues as factors that influence fall prevention. This is especially evident among the perceived barriers to fall prevention indicated by nurses, as the participants expressed factors like patient complexity, poor communication, and lack of resources and staffing.[17] This suggests that consistency in nurse-patient assignments could be instrumental in reducing falls. Within the theme of communication and collaboration, nurses identified a need for improved communication systems like handoff reports with other health care professionals to help prevent falls.[16] This implies that fall prevention should not be considered the purview of nurses alone but rather be the responsibility of the entire health care team that includes other disciplines and staff. Collaboration among member of the healthcare team has been acknowledged as a target strategy to improve patient safety, since the role of the nurse is complex and involves multiple demands, posing a risk to achieving optimal outcomes when support is not adequate.[23] Perhaps further research may be conducted on the level of involvement other non-nursing healthcare professionals have on fall prevention.

Our synthesis reveals that there are some current practices that nurses agree with and others that nurses perceive as ineffective or in need of change. For example, nurses within the studies agreed with hospital policies including yellow socks and fall bands and disagreed with other policies like the post-fall conferences that reprimanded the involved nurse.[17]

These findings indicate that units may benefit from surveying their nurses to understand the clinical needs present that are specific to their own facility's policies.

Nurses perceived the zero falls narrative and harsh penalties for patient falls as ineffective fall prevention efforts, reporting experiencing anxiety that blocks their ability to confidently provide safe care and feel supported in their safety efforts.[18] This has implications for hospitals to take a different approach to the culture of fall prevention that is promoted in ones' facility. Perhaps imparting a more supportive and encouraging message of fall prevention may lead to less anxiety and improved patient outcomes, as the nurses stated that the fear of falls often led to restricting patient activity that in in itself could create other adverse outcomes.[18] Previous literature has also suggested that when hospital administrators and managers seek to create a trusting and nonpunitive environment surrounding safety and error reporting, it improves safety culture by allowing healthcare workers to learn from their mistakes.[24–25] The idea that nurses do not benefit from a harsh safety narrative may also imply that governing bodies who create fall prevention recommendations may need to consider making recommendations for non-tangible fall prevention strategies that may go unregulated, like the culture and messaging about falls fostered by hospital administration.

Fall prevention changes may need to be made on an individualized basis depending on the current message of safety, fall bundles, and policies in place on particular units/within certain hospitals. Some nurses suggested that fall prevention strategies could be more effective if tailored to the needs of the unit. For example, nurses within one study suggested assessment of fall risk on admission since no official fall risk scale or form was available at the institution.[9] Adaption of a tool designed to assess fall risk specific to the unit's population may also provide more precision in risk assessment, as nurses in one study suggested connecting fall risk scores with the treatment needs of patients with delirium/ cognitive impairment.[11] A generalized suggestion across the studies seemed to be patient and staff education/training about falls as an effective fall prevention effort. Since this seems to be a universal theme, more in-depth, structured education guidelines may be created nationally or on an individualized level for hospitals. This is supported by previous research that shows that a multifaceted, tailored approach to implementing clinical practice guidelines into nursing practice improves nursing personnel knowledge, awareness, and attitudes toward patient safety.[4]

The studies included were mostly conducted on medical-surgical units, presenting a potential for more research to be conducted on specialized units to investigate the nuances of safety that exist among the specialty areas. More studies may also be conducted separating the specific fall prevention interventions and studying the nuances of nurses' perceptions specific to one intervention at a time.

Limitations of this rapid review were searching one database and not performing quality/risk of bias assessment for the included studies. Nonetheless, the purpose of our review was to summarize the current evidence on nurses' perceptions of recommended fall prevention strategies. Further research is needed to assess the quality of the evidence and compare patients' and nurses' perceptions of fall prevention strategies, in addition to expand the literature search to other years and databases.

CONCLUSION

This review was motivated by the sheer perplexity of why sustained patient fall prevention in hospitals remains an issue when so many multi-faceted strategies have been developed to address it. To learn more, we set out to discover nurses' perspectives on fall prevention strategies. While we found only 14 studies in our rapid review, mostly qualitative, important insights emerged for us. First, it appears that nurses are aware of effective fall prevention strategies. Indeed, generic guidelines, educational programs, admission assessments, video monitoring devices, bed alarms, visual reminders, consistency in nurse assignment, and avoidance of shaming around fall incidents all have a place in preventing falls. Hit-or-miss use of these strategies, however, does little to ensure that the right conditions are routinely in place to prevent falls. Most apparent to us is need for unit level fall prevention solutions that all unit employees (not just nurses) understand, adopt, and maintain. To fill this gap, we recommend that future research in this area put greater emphasis on identifying and understanding the combination of factors that produce successful unit level fall prevention strategies.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Funding statement:

REFERENCES

1. Preventing Falls in Hospitals. Agency for Healthcare Research and Quality. 2021. Accessed April 20, 2021. https://www.ahrq.gov/patient-safety/settings/hospital/fall-prevention/toolkit/index.html

2. Fingar KR, Liang L, Stocks C. Inpatient hospital stays and emergency department visits involving influenza. 2019. Accessed April 20, 2021. www.hcup-us.ahrq.gov/reports/statbriefs/sb253-Influenza-Hospitalizations-ED-Visits-2006-2016.jsp

3. Tucker S, Sheikholeslami D, Farrington M, et al. Patient, nurse, and organizational factors that influence evidence-based fall prevention for hospitalized oncology patients: An exploratory study. Worldviews Evid Based Nurs. 2019;16:111–120. doi:10.1111/wvn.12353 [PubMed: 30919563]

4. Breimaier HE, Halfens RJG, Lohrmann C. Effectiveness of multifaceted and tailored strategies to implement a fall-prevention guideline into acute care nursing practice: a before-and-after, mixed-method study using a participatory action research approach. BMC Nurs. 2015;14(1):1–12. doi:10.1186/s12912-015-0064-z [PubMed: 25598706]

5. Stenberg M, Wann-Hansson C. Health care professionals' attitudes and compliance to clinical practice guidelines to prevent falls and fall injuries. Worldviews Evid Based Nurs. 2011;8(2):87–95. doi:10.1111/j.1741-6787.2010.00196.x [PubMed: 20663118]

6. Tzeng HM, Yin CY. Perceived top 10 highly effective interventions to prevent adult inpatient fall injuries by specialty area: A multihospital nurse survey. Appl Nurs Res. 2015;28(1):10–17. doi:10.1016/j.apnr.2014.04.005 [PubMed: 24933119]

7. Haby MM, Chapman E, Clark R, Barreto J, Reveiz L, Lavis JN. What are the best methodologies for rapid reviews of the research evidence for evidence-informed decision making

in health policy and practice: A rapid review. Health Res Policy Syst. 2016;14(1):83. doi:10.1186/s12961-016-0155-7 [PubMed: 27884208]

8. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. Ann Intern Med. 2009;151 (4):264–70. doi:10.7326/0003-4819-151-4-200908180-00135 [PubMed: 19622511]

9. Atay S, Vurur S, Erdugan N Opinions of nurses about the evaluation of risk of falling among inpatients. Rehabil Nurs. 2017;42(6):E19–E24. doi:10.1002/rnj.281 [PubMed: 27278821]

10. Baris VK, Intepeler S. Views of key stakeholders on the causes of patient falls and prevention interventions: A qualitative study using the international classification of functioning, disability and health. J Clin Nurs. 2019;28(3-4):615–628. doi:10.1111/jocn.14656 [PubMed: 30182477]

11. Ayton DR, Barker AL, Morello RT, et al. Barriers and enablers to the implementation of the 6-PACK falls prevention program: A pre-implementation study in hospitals participating in a cluster randomised controlled trial. PloS one, 2017;12(2): e0171932. doi:10.1371/journal.pone.0171932 [PubMed: 28207841]

12. Grealish L, Chaboyer W, Darch J, et al. Caring for the older person with cognitive impairment in hospital: Qualitative analysis of nursing personnel reflections on fall events. J Clin Nurs. 2019;28(7-8):1346–1353. doi:10.1111/jocn.14724 [PubMed: 30520196]

13. Hill AM, Waldron N, Francis-Coad J, et al. 'It promoted a positive culture around falls prevention': staff response to a patient education programme - a qualitative evaluation. BMJ open. 2016;6(12):e013414. doi:10.1136/bmjopen-2016-013414

14. Ayton D, O'Brien P, Treml J, Soh SE, Morello R, Barker A. Nurses' perceptions of preventing falls for patients with dementia in the acute hospital setting. Australas J Ageing. 2017;36(4):E70–E72. doi:10.1111/ajag.12474 [PubMed: 29171133]

15. Pelzang R, Hutchinson AM. Patient safety issues and concerns in Bhutan's healthcare system: a qualitative exploratory descriptive study. BMJ open. 2018;8(7):e022788. doi:10.1136/bmjopen-2018-022788

16. Bok A, Pierce LL, Gies C, Steiner V. Meanings of falls and prevention of falls according to rehabilitation nurses: A qualitative descriptive study. Rehabil Nurs. 2016;41(1):45–53. doi:10.1002/rnj.221 [PubMed: 26332851]

17. Fehlberg EA, Cook CL, Bjarnadottir RI, McDaniel AM, Shorr RI, Lucero RJ. (2020). Fall prevention decision making of acute care registered nurses. J Nurs Adm. 2020;50(9):442–448. doi:10.1097/NNA.0000000000000914 [PubMed: 32826513]

18. King B, Pecanac K, Krupp A, Liebzeit D, Mahoney J. Impact of fall prevention on nurses and care of fall risk patients. Gerontologist. 2018;58(2):331–340. doi:10.1093/geront/gnw156 [PubMed: 28011591]

19. Hebb A, Kistler M, George E, Zamboni B. Satisfaction and technology acceptance of staff regarding use of continuous video monitoring in comparison with sitters. J Nurs Adm. 2021;51(2):60–62. doi:10.1097/NNA.0000000000000970 [PubMed: 33449593]

20. Porter RB, Cullen L, Farrington M, Matthews G, Tucker S. CE: Original Research: Exploring clinicians' perceptions about sustaining an evidence-based fall prevention program. Am J Nurs. 2018;118(5):24–33. doi:10.1097/01.NAJ.0000532806.35972.29

21. Gibson TL, Lloyd SL. Nursing staff perceptions of fall risk: The emergence of learned helplessness as a theme. J Nurs Adm. 2018;48(1):5–7. doi:10.1097/NNA.0000000000000562 [PubMed: 29219903]

22. Sand-Jecklin K, Johnson J, Tringhese A, Daniels C, White F. Video monitoring for fall prevention and patient safety: Process evaluation and improvement. J Nurs Care Qual. 2019;34(2):145–150. doi:10.1097/NCQ.0000000000000355 [PubMed: 30198947]

23. DiGerolamo KA, Chen-Lim ML. An educational intervention to improve staff collaboration and enhance knowledge of fall risk factors and prevention guidelines. J Pediatr Nurs. 2021;57:43–49. doi:10.1016/j.pedn.2020.10.027 [PubMed: 33221696]

24. Lee SE, Vincent C, Dahinten VS, Scott LD, Park CG, Dunn Lopez K. Effects of individual nurse and hospital characteristics on patient adverse events and quality of care: A multilevel analysis. J Nurs Scholarsh. 2018;50(4):432–440. doi:10.1111/jnu.12396 [PubMed: 29902354]

25. Sammer CE, Lykens K, Singh KP, Mains DA, Lackan NA. (2010). What is patient safety culture? A review of the literature. J Nurs Scholarsh. 2010;42(2):156–165. doi:10.1111/j.1547-5069.2009.01330.x [PubMed: 20618600]