Example B

Report on Search Method

Problem statement

The 'Preventing Falls and Harm from Falls in Older People: Best Practice Guidelines for Australian Hospitals' recommends that all patients at risk of falling should have toileting practices and protocols in place (Australian Commission on Safety and Quality in Healthcare, 2009). The relationship between falling, old age and toileting has been well established (Batchelor, Dow, & Low, 2013). As such, after-hours toileting regimes are commonly provided for incontinent older adult patients at risk of falling. The potential benefit of the same intervention for continent older adult patients at risk of falling, however, has not yet been explored.

Research question

In continent older adult patients at risk of falling, does a structured after-hours toileting regime reduce the incidence of after-hours falls in hospital?

The Patient Intervention Outcome (PIO) framework (Del Mar, Hoffman, & Glasziou, 2017) was used to structure this quantitative research question and guide the literature search. A comparator was not considered necessary as continent older adult patients at risk of falling are not proactively toileted by nursing staff after-hours and therefore, the intervention is considered a novel approach to falls prevention. The outcome measure represents the intention of fall prevention strategies that address extrinsic risk factors, which is to reduce the rate at which patients fall, not necessarily reduce their risk of falling (Udell, Drahota, Dean, Sander, & Mackenzie, 2011). The research question satisfies all three elements of the PIO framework, as outlined below:

- **P**atient: Continent older adult patients at risk of falling
- **I**ntervention: Structured after-hours toileting regime
- **O**utcome: Reduce the incidence of after-hours falls in hospital.

Search strategy

The Scopus, MEDLINE with Full Text, CINAHL Plus with Full Text, and Academic Search Premier electronic databases, accessible via the [redacted] Library, were used to conduct systematic searches for literature. These databases were chosen as they

broadly focus on healthcare interventions and clinical effectiveness (Hoffman, Bennett, & Del Mar, 2017). In addition, they are unfiltered and hence contain primary evidence.

The following key search terms were selected and combined with Boolean operators: patient, fall, toilet, and continence. Delimiters were used to filter results by language, age group and publication year. Secondary and grey sources of literature were excluded from this review. The search strategy, including the databases, key search terms and the number of articles found using this method, is presented in Table 1.

The literature search was undertaken during March 2019. It was limited to articles published from 2000 onwards as this marked the release of the World Health Organisation (2002) 'Injury: a leading cause of the global burden of disease, 2000' report. This identified falls as a leading cause of burden of disease and hence demanded greater global attention to preventive efforts. The following inclusion criteria were applied during article selection:

Study design

- Studies that were designed as quantitative, qualitative or mixed-method;
- All three study designs were considered in an attempt to broaden the search.

Intervention and outcome

- Studies that included a toileting regime, schedule or program.
- Studies were considered if this intervention formed part of a multi-component fall prevention strategy;
- Studies that aimed to prevent or reduce falls or fall-related injuries.

Participants and setting

- Studies that included adults of any age who were at risk of falls;
- Studies that trialled a relevant intervention in a hospital or community setting;
- Studies were considered even if they did not specify the continence status of the participants;
- Studies were not limited to continent older adults or hospital settings in an attempt to broaden the search.

Publication type and language

- Studies that were undertaken in Australia and internationally;
- Studies published in English to enable accurate interpretation of results;
- Studies that presented unfiltered, primary evidence;
- Studies that were published in scholarly journals and peer reviewed.

Table 1. Databases and search terms used to identify literature for review

Database	Search terms	Number of articles
Scopus	(Fall*)	30
AND	(Toilet*)	
AND	(Continen* OR Incontinen*)	
Limiters	2000 – 2019; English	
MEDLINE with Full Text	(MH "Accidental Falls")	86
AND	("Toilet*")	
Limiters	2000 – 2019; English	
CINAHL Plus with Full Text	(MH "Accidental Falls" OR "Fall*")	77
AND	(MH "Toileting" OR "Toilet")	
Limiters	2000 – 2019; Scholarly (Peer Reviewed) Journals; English	
Academic Search Premier	(Fall*)	73
AND	(Toilet*)	
AND	(Patient*)	
Limiters:	2000 – 2019; Scholarly (Peer Reviewed) Journals; English	
Total records identified after database searching		266
Total records after duplicates removed		188

This literature search method yielded 266 articles. Once duplicates (n = 78) were removed, the titles of 188 articles were screened for inclusion in this review. The majority of the rejected articles (n = 101) were excluded for one or more of the following reasons:

- Study title did not satisfy any inclusion criteria, for example: Ndugwa and Zulu (2008);
- Study participants were unrelated, for example: Merryweather et al. (2018);

- Study intervention was unrelated, for example: Shogo, Tetsuya, Yasuhiro, and Yu (2018);
- Study outcome was unrelated, for example: Parish (2007).

The abstracts of the remaining 87 articles were screened for inclusion in this review. Following the review of abstracts, a further 68 articles were excluded for one or more of the following reasons:

- Study assessed the effectiveness of one or more fall prevention interventions, however, these did not include a toileting regime, schedule or program, for example: Tzeng (2011);
- Study assessed the effectiveness of a tool or a questionnaire that predicted falls or night-time voiding, or assessed an individual's risk of falling, for example: Rosario, Kaplan, Khonsari, and Patterson (2014);
- Study investigated the characteristics, extent, pattern, and/or the context of falls, for example: Tripathy, Jagnoor, Patro, Dhillon, and Kumar (2015);
- Study investigated the incidence of and risk factors for falls in a bathroom or toilet, however, did not identify interventions that could prevent them, for example: Tanaka et al. (2012);
- Study provided background information on the prevalence of incontinence and the influence this has on falls, for example: Kaşikçi, Kiliç, Avşar, and Şirin (2015);
- Study assessed the effectiveness of a toileting intervention, however, the aim of the intervention was not to prevent or reduce the incidence of falls, for example: Lee et al. (2018);
- Study provided secondary evidence, for example: Spoelstra, Given, and Given (2012).

The remaining 19 full-text articles were screened for inclusion in this review. A further 10 articles were excluded for one or more of the following reasons:

- Study recognised the value in hourly rounding, which included toileting, but did not assess the effectiveness of this intervention in reducing falls, for example: Alcée (2000);
- Study investigated nursing staff perceptions of toileting patients at high risk of falls, for example: Barrett, Vizgirda, and Zhou (2017);
- Study investigated patient perspectives of falling and perceptions of fall prevention interventions or barriers to engaging in these, for example: Radecki, Reynolds, and Kara (2018).

In an attempt to further locate articles which assessed the effectiveness of a toileting-related fall prevention intervention, citation tracking of the included articles was undertaken. This search strategy yielded two new articles, which were included in this review.

See Figure 1 for the PRISMA flow diagram.

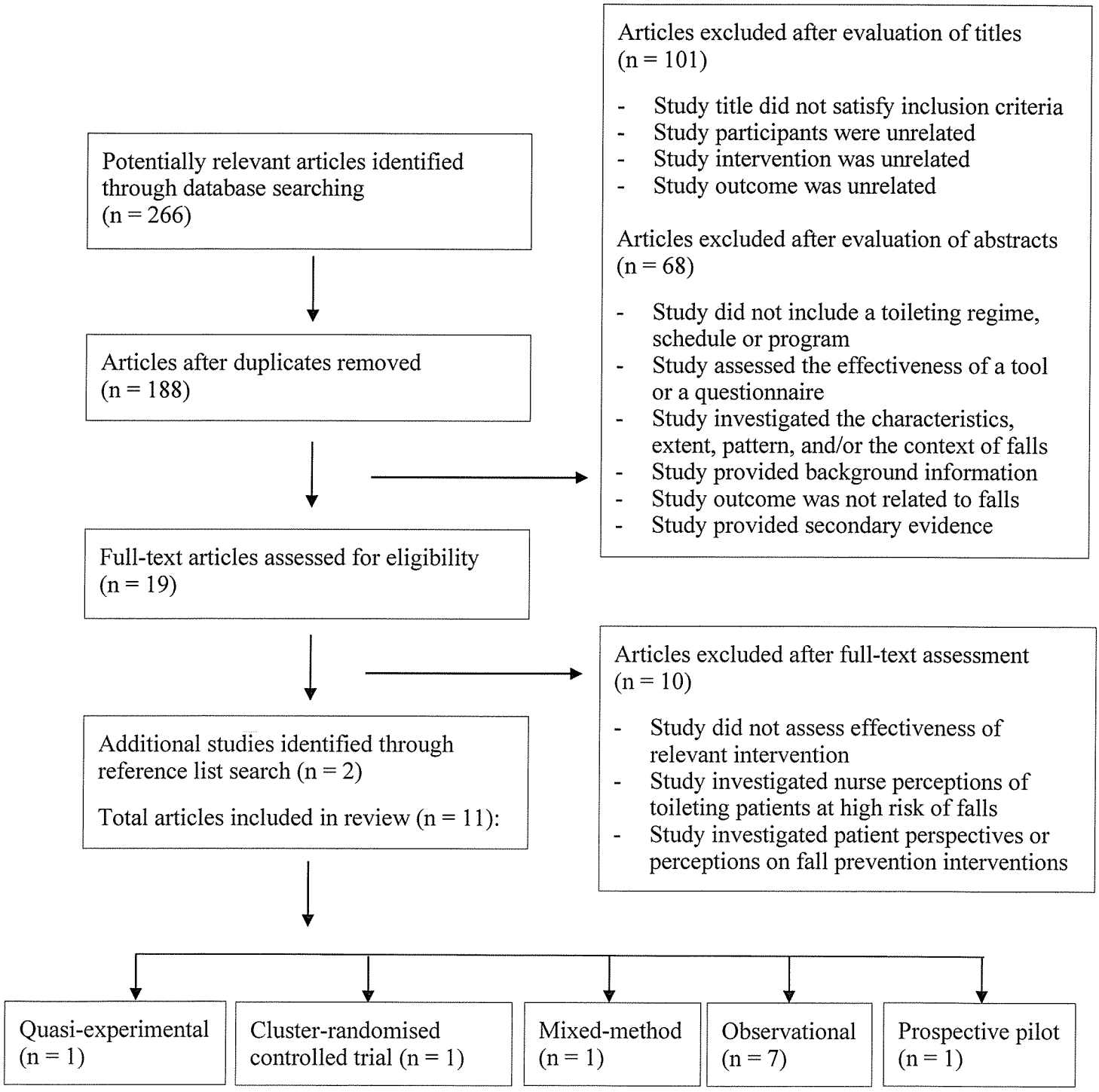

Figure 1. PRISMA flow diagram of article screening and selection

References

Alcée, D. (2000). The experience of a community hospital in quantifying and reducing patient falls. *Journal of Nursing Care Quality, 14*(3), 43-53.

Australian Commission on Safety and Quality in Healthcare. (2009). *Preventing falls and harm from falls in older people: Best practice guidelines for Australian hospitals.* Retrieved from https://www.safetyandquality.gov.au/wp-content/uploads/2009/01/Guidelines-HOSP.pdf.

Barrett, M. B., Vizgirda, V. M., & Zhou, Y. (2017). Registered nurse and patient care technician perceptions of toileting patients at high fall risk. *MedSurg Nursing, 26*(5), 317-323.

Batchelor, F. A., Dow, B., & Low, M.-A. (2013). Do continence management strategies reduce falls? A systematic review. *Australasian Journal on Ageing, 32*(4), 211-216. doi:10.1111/ajag.12047

Del Mar, C., Hoffman, T., & Glasziou, P. (2017). Information needs, asking questions, and some basics of research studies. In T. Hoffman, S. Bennett, & C. Del Mar (Eds.), *Evidence-based practice across the healthcare professions* (3rd ed.). Chatwood, NSW: Churchill Livingstone/Elsevier.

Hoffman, T., Bennett, S., & Del Mar, C. (2017). Introduction to evidence-based practice. In T. Hoffman, S. Bennett, & C. Del Mar (Eds.), *Evidence-based practice across the health professions* (3rd ed.). Chatwood, NSW: Churchill Livingstone/Elsevier.

Kaşikçi, M., Kiliç, D., Avşar, G., & Şirin, M. (2015). Prevalence of urinary incontinence in older Turkish women, risk factors, and effect on activities of daily living. *Archives Of Gerontology And Geriatrics, 61*(2), 217-223. doi:10.1016/j.archger.2015.06.008

Lee, S. J., Sanford, J., Calkins, M., Melgen, S., Endicott, S., & Phillips, A. (2018). Beyond ADA Accessibility Requirements: Meeting Seniors' Needs for Toilet Transfers. *HERD, 11*(2), 32-44. doi:10.1177/1937586717730338

Merryweather, A. S., Thiese, M. S., Kapellusch, J. M., Garg, A., Fix, D. J., & Hegmann, K. T. (2018). Occupational factors related to slips, trips and falls among home healthcare workers. *Safety Science, 107*, 155-160. doi:10.1016/j.ssci.2017.07.002

Ndugwa, R. P., & Zulu, E. M. (2008). Child morbidity and care-seeking in Nairobi slum settlements: The role of environmental and socio-economic factors. *Journal of Child Health Care, 12*(4), 314-328.

Parish, C. (2007). New commodes and mattresses lead to dramatic fall in infections. *Nursing Standard, 21*(41), 11-11.

Radecki, B., Reynolds, S., & Kara, A. (2018). Inpatient fall prevention from the patient's perspective: A qualitative study. *Applied Nursing Research, 43*, 114-119. doi:10.1016/j.apnr.2018.08.001

Rosario, E. R., Kaplan, S. E., Khonsari, S., & Patterson, D. (2014). Predicting and assessing fall risk in an acute inpatient rehabilitation facility. *Rehabilitation Nursing: The Official Journal Of The Association Of Rehabilitation Nurses, 39*(2), 86-93. doi:10.1002/rnj.114

Shogo, H., Tetsuya, N., Yasuhiro, K., & Yu, I. (2018). Lower garment-lifting postural control characteristics during toilet-related activities in healthy individuals and a post-stroke hemiplegic patient undergoing rehabilitation. *Journal of Physical Therapy Science, 30*(12), 1462-1467.

Spoelstra, S. L., Given, B. A., & Given, C. W. (2012). Fall prevention in hospitals: An integrative review. *Clinical Nursing Research, 21*(1), 92-112. doi:10.1177/1054773811418106

Tanaka, B., Sakuma, M., Ohtani, M., Toshiro, J., Matsumura, T., & Morimoto, T. (2012). Incidence and risk factors of hospital falls on long-term care wards in Japan. *Journal Of Evaluation In Clinical Practice, 18*(3), 572-577. doi:10.1111/j.1365-2753.2010.01629.x

Tripathy, N. K., Jagnoor, J., Patro, B. K., Dhillon, M. S., & Kumar, R. (2015). Epidemiology of falls among older adults: A cross sectional study from Chandigarh, India. *Injury, 46*(9), 1801-1805. doi:10.1016/j.injury.2015.04.037

Tzeng, H.-M. (2011). A feasibility study of providing folding commode chairs in patient bathrooms to reduce toileting-related falls in an adult acute medical-surgical unit. *Journal of Nursing Care Quality, 26*(1), 61-68. doi:10.1097/NCQ.0b013e3181d94f4d

Udell, J. E., Drahota, A., Dean, T. P., Sander, R., & Mackenzie, H. (2011). Interventions for preventing falls in older people: An overview of Cochrane reviews. *Cochrane Database of Systematic Reviews*(4). doi:10.1002/14651858.CD009074.

World Health Organisation. (2002). *Injury: a leading cause of the global burden of disease, 2000*. Retrieved from file:///Users/Grace/Downloads/9241562323.pdf.