**Supplementary material 1: List of excluded studies**

| **Study reference** | **Reason for exclusion** |
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| Alexandre NM, Benatti MC. Occupational accidents involving the spine: study on nurses at a university hospital. *Rev Lat Am Enfermagem* 1998;**6**:65-72. | Intervention: Not flooring |
| Anderson RL, Mackel DC, Stoler BS, Mallison GF. Carpeting in hospitals – an epidemiological evaluation. *J Clin Microbiol* 1982;**15**:408-15. | Population: Solely on children |
| Anwar A, Edwards C, Singh I. Trends in recorded inpatient falls related mortality and clinical outcome over five years: Ysbyty Ystrad Fawr, Aneurin Bevan University Health Board (2012–2016). *Age Ageing* 2018;**47**:ii9-ii11. | Intervention: Not flooring |
| Birge SJ. Osteoporosis and hip fracture. *Clin Geriatr Med* 1993;**9**(1):69-86. | Study design: Not primary research |
| Brawley EC. Environment- A Silent Partner in Caregiving. In Kaplan M, Hoffman SB, editors. *Behaviors in dementia: Best practices for successful management*. Health Professions Press; 1998. pp.107-24. | Study design: Not primary research |
| Canadian Agency for Drugs and Technologies in Health. *Rubberized flooring in long term care: Clinical effectiveness and cost-effectiveness*. Rapid Response Report: Summary of Abstracts, 27 October 2010: Available from: <https://cadth.ca/sites/default/files/pdf/K0269_Rubber_Flooring_in_LTC_final.pdf>. (accessed 01 December 2020). | Study design: Not primary research |
| Carvalho C, de Brito J, Flores-Colen I, Pereira C. Inspection, Diagnosis, and Rehabilitation System for Vinyl and Linoleum Floorings in Health Infrastructures. *Journal of Performance of Constructed Facilities* 2018;**32**. <https://doi.org/10.1061/(ASCE)CF.1943-5509.0001229> | Population: Not humans |
| Center for Healthcare Enviornmental Management. Proper flooring: a critical measure for preventing slips and falls. *Healthc Hazard Manage Monit* 2003;**16**(10):1-5. | Study design: Not primary research |
| Crane B, Goodworth AD, Liquori M, Ghosh S, Certo C, McCafferty L. Multidisciplinary Testing of Floor Pads on Stability, Energy Absorption, and Ease of Hospital Use for Enhanced Patient Safety. *J Patient Saf* 2016;**12**:132-9. | Study design: Laboratory study |
| Cummings SR, Melton LJ. Epidemiology and outcomes of osteoporotic fractures. *Lancet* 2002;**359**:1761-7. | Study design: Not primary research |
| Ganokroj P. Analysis the balance, temporo-spatial gait parameters and ground reaction force of the compliant flooring comparing with the rubber flooring in elderly. Thai Clinical Trials Registry 2018: TCTR20180211001. Available from: <http://www.clinicaltrials.in.th/index.php?tp=regtrials&menu=trialsearch&smenu=fulltext&task=search&task2=view1&id=3224> (accessed 01 December 2020). | Study design: Laboratory study |
| Ganokroj P, Limroongreungrat W, Kerdsomnuek P, Riansuwan K, Keyurapan E, Wang YT, et al. Does flooring-type change the gait characteristics of the older adult? Analysis of balance and temporal-spatial gait parameters and ground reaction force. *Ageing Science & Mental Health Studies* 2018;**2**:1-8. | Study design: Laboratory study |
| Hales M, Johnson JD, Asbury G, Evans N. Influence of floor covering composition on force attenuation during falls, wheelchair mobility, and slip resistance. *AATCC Rev* 2015;**15**:44–53. | Study design: Laboratory study |
| Harper KJ, Barton AD, Bharat C, Petta AC, Edwards DG, Arendts G, et al. Risk Assessment and the Impact of Point of Contact Intervention Following Emergency Department Presentation with a Fall. *Phys Occup Ther Geriatr* 2017;**35**:182-94. | Intervention: Not flooring |
| Harper KJ, Arendts G, Geelhoed EA, Barton AD, Celenza A. Cost analysis of a brief intervention for the prevention of falls after discharge from an emergency department. *J Eval Clin Pract* 2018;**25**:244-50. https://doi.org/10.1111/jep.13041 | Intervention: Not flooring |
| Harris DD. The Influence of Flooring on Environmental Stressors: A Study of Three Flooring Materials in a Hospital. *HERD-Health Environments Research & Design Journal* 2015;**8**:9-29. https://doi.org/10.1177/1937586715573730 | Study design: Other (no contemporaneous control) |
| He C, Zhu WJ, Chen BD, Xu L, Jiang T, Han CB, et al. Smart Floor with Integrated Triboelectric Nanogenerator As Energy Harvester and Motion Sensor. *ACS Appl Mater Interfaces* 2017;**9**:26126-33. https://doi.org/10.1021/acsami.7b08526 | Study design: Laboratory study |
| Hester AL. Preventing injuries from patient falls. *Am Nurse Today* 2015;**10**:9-12. | Study design: Not primary research |
| Hignett S, Wolf L, Taylor E, Griffiths P. Firefighting to Innovation: Using Human Factors and Ergonomics to Tackle Slip, Trip, and Fall Risks in Hospitals. *Hum Factors* 2015;**57**:1195-207. | Study design: Multi-component case study |
| Kearns R, Cronin C, Jusmanova K, Arif S, McFeely A, Corcoran R, et al. Outcomes of Older Surgical Patients with Frailty After Geriatric EMergency Service (GEMS) Acute Floor Intervention. *Age Ageing* 2018;**47**:v1-v12. | Intervention: Not flooring |
| Lachance CC, Korall AMB, Russell CM, Feldman F, Robinovitch SN, Mackey DC. External Hand Forces Exerted by Long-Term Care Staff to Push Floor-Based Lifts: Effects of Flooring System and Resident Weight. *Hum Factors* 2016;**58**:927-43. | Study design: Laboratory study |
| Lachance CC, Korall AMB, Russell CM, Feldman F, Robinovitch SN, Mackey DC. Hand forces exerted by long-term care staff when pushing wheelchairs on compliant and non-compliant flooring. *Appl Ergon* 2018;**71**:95-101. | Study design: Laboratory study |
| Lachance CC, Mackey DC. Feasibility of compliant flooring in long-term care: results from a stakeholder symposium. *Can J Aging* 2018;**37**:84-94. | Study design: Knowledge translation workshop. |
| Laing AC, Tootoonchi I, Hulme PA, Robinovitch SN. Effect of compliant flooring on impact force during falls on the hip. *J Orthop Res* 2006;**24**(7):1405-11. | Study design: Laboratory study |
| Laing AC, Robinovitch SN. Low stiffness floors can attenuate fall-related femoral impact forces by up to 50% without substantially impairing balance in older women. *Accid Anal Prev* 2009;**41**:642-50. | Study design: Laboratory study |
| Lalumiere M, Desroches G, Gourdou P, Routhier F, Bouyer L, Gagnon DH. Manual wheelchair users gradually face fewer postural stability and control challenges with increasing rolling resistance while maintaining a rear-wheel wheelie. *Hum Mov Sci* 2018;**62**:194-201. | Study design: Laboratory study |
| Lee SY, Chaudhury H, Hung L. Exploring staff perceptions on the role of physical environment in dementia care setting. *Dementia* 2016;**15**:743-55. | Intervention: Not flooring |
| Ling C, Henderson S, Henderson R, Henderson M, Pedro T, Pang L. Cost benefit considerations of preventing elderly falls through environmental modifications to homes in Hana, Maui. *Hawaii Med J* 2008;**67**:65-8. | Setting: Own home |
| Losco EL, Hanger HC, Wilkinson TJ. Ease of Walking on Low-Impact Flooring in Frail Older People. *J Am Med Dir Assoc* 2019;**20**:385-6. | Study design: Laboratory study |
| McFeely A, Corcoran R, Jusmanova K, Kearns R, Marks E, Ward L, et al. 288Geriatric EMergency Services (GEMS): An Acute Floor Frailty Service Model. *Age Ageing* 2018;**47**:v1-v12. | Intervention: Not flooring |
| Minns J, Tracey S. Wheelchair pushing forces over a vinyl and a new shock-absorbing flooring. *Br J Occup Ther* 2011;**74**:41-3. | Study design: Laboratory study |
| Minns J, Nabhani F, Bamford JS. Can flooring and underlay materials reduce hip fractures in older people? *Nurs Older People* 2004;**16**:16-20. | Study design: Laboratory study |
| Nabavi SH, Hatami ST, Norouzi F, Gerivani Z, Hatami SE, Ziarat HM, et al. Prevalence of Fall and Its Related Factors Among Older People in Bojnurd in 2015. *Salmand: Iranian Journal of Ageing* 2016;**11**:466-73. | Setting: own home |
| Papaioannou A, Santesso N, Morin SN, Feldman S, Adachi JD, Crilly R, et al. Recommendations for preventing fracture in long-term care. *Can Med Assoc J* 2015;**187**:1135-44. | Study design: Not primary research |
| Redfern MS, Moore PL, Yarsky CM. The influence of flooring on standing balance among older persons. *Hum Factors* 1997;**39**:445-55. | Study design: Laboratory study |
| Rowe J. Hip protectors. Carpets can be used to reduce injury from falls. *BMJ* 2002;**324**:1454. | Study design: Not primary research |
| Shimizu T, Yoshitani K. Impact-reduction effect of tatami floor mat made of nonwoven fabric for head injuries in fall accidents. *Journal of Building Engineering* 2019;**24**:100728. | Study design: Laboratory study |
| Singh S. *Floor Finish Selection in Hospital Design: A Survey of Facility Managers.* Master’s Thesis. Texas A & M University; 2017. Available from <http://hdl.handle.net/1969.1/165733>. (accessed 01 December 2020) | Study design: Other (cross-sectional survey) |
| Soangra R, Jones B, Lockhart TE. Effects of anti-fatigue flooring on gait parameters. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* 2010;**54**:2019–2022-. https://doi.org/10.1177/154193121005402324 | Study design: Laboratory study |
| Stephens JM, Goldie PA. Walking speed on parquetry and carpet after stroke: effect of surface and retest reliability. *Clin Rehabil* 1999;**13**:171-81. | Study design: Laboratory study |
| Struksnes S, Bachrach-Lindström M, Hall-Lord ML, Slaasletten R, Johansson I. The nursing staff's opinion of falls among older persons with dementia. A cross-sectional study. *BMC Nurs* 2011;**10**:13. https://doi.org/10.1186/1472-6955-10-13 | Intervention: Not flooring |
| Thorne CG. Flooring for geriatric wards: report of an investigation at West Middlesex Hospital. *The Builder* 1993; March 15:557-9. | Study design: Other (descriptive case study) |
| The Engineer. *Absorbent flooring could help to reduce hospital injuries*. Press release, 9th November 2010. | Study design: Not primary research report |
| Tibbitts GM. Patients who fall: how to predict and prevent injuries. *Geriatrics* 1996;**51**:24-8, 31. | Study design: Not primary research |
| Tideiksaar R, Fletcher B. Keeping Elderly on their Feet. *Issues Sci Technol* 1989;**5**:78-81. | Study design: Not primary research |
| Tideiksaar R. Mechanisms of falls in community residing older persons. *Pride Inst J Long Term Home Health Care* 1993;**12**:3-11. | Study design: Not primary research |
| Vlodaver Z, Ortega HW, Arms J, Vander Velden H, Smith GA. Throw rug-related injuries treated in US EDs: Are children the same as adults? *Am J Emerg Med* 2014;**32**:1494-8. | Setting: Not hospital or care home |
| Wan J, Hanger HC, Tarawhiti L. Fallers on different wards have different types of falls, with different outcomes and require different fall interventions. *Australas J Ageing* 2012;**31**:20. | Intervention: Not flooring |
| Willmott M. The effect of a vinyl floor surface and a carpeted floor surface upon walking in elderly hospital inpatients. *Age Ageing* 1986;**15**:119-20. | Study design: Laboratory study |
| Wright AD, Heckman GA, McIlroy WE, Laing AC. Novel safety floors do not influence early compensatory balance reactions in older adults. *Gait Posture* 2014;**40**:160-5. | Study design: Laboratory study |
| Yarme J, Yarme H. Flooring and safety. *Nursing Homes Long Term Care Management* 2001; October: 82-3. | Study design: Other (Before-after study) |