

Supplement 3. Excluded articles with reason

References	Reason for exclusion
1. Aguiar JP, Brito AM, Martins AP, Leufkens HG, Alves da Costa F. Potentially inappropriate medications with risk of cardiovascular adverse events in the elderly: a systematic review of tools addressing inappropriate prescribing. <i>J Clin Pharm Ther</i> 2019;44:349-60. https://doi.org/10.1111/jcpt.12811	Prevalence not reported
2. Al-Jumaili AA, Doucette WR. Comprehensive literature review of factors influencing medication safety in nursing homes: using a systems model. <i>J Am Med Dir Assoc</i> 2017;18:470-88. https://doi.org/10.1016/j.jamda.2016.12.069	Other settings
3. Anfinogenova ND, Trubacheva IA, Popov SV, Efimova EV, Ussov WY. Trends and concerns of potentially inappropriate medication use in patients with cardiovascular diseases. <i>Expert Opin Drug Saf</i> 2021;20:1191-206. https://doi.org/10.1080/14740338.2021.1928632	Specific disease or medication
4. Ayalew MB, Dieberg G, Quirk F, Spark MJ. Potentially inappropriate prescribing for adults with diabetes mellitus: a scoping review protocol. <i>JBI Evid Synth</i> 2020;18:1557-65. https://doi.org/10.11124/JBISRIR-D-19-00136	Other kinds of reviews
5. Bala SS, Chen TF, Nishtala PS. Reducing potentially inappropriate medications in older adults: a way forward. <i>Can J Aging</i> 2019;38:419-33. https://doi.org/10.1017/S0714980819000084	Other kinds of reviews
6. Barry PJ, Gallagher P, Ryan C. Inappropriate prescribing in geriatric patients. <i>Curr Psychiatry Rep</i> 2008;10:37-43. https://doi.org/10.1007/s11920-008-0008-3	Other kinds of reviews
7. Baxter S. A quantitative and qualitative analysis of potentially inappropriate prescribing in older adults [dissertation]. Belfast: Queen's University Belfast; 2020.	Thesis
8. Buetow SA, Sibbald B, Cantrill JA, Halliwell S. Prevalence of potentially inappropriate long term prescribing in general practice in the United Kingdom, 1980-95: systematic literature review. <i>BMJ</i> 1996;313:1371-4. https://doi.org/10.1136/bmj.313.7069.1371	No separate data for older adults
9. Chang CB, Chan DC. Comparison of published explicit criteria for potentially inappropriate medications in older adults. <i>Drugs Aging</i> 2010;27:947-57. https://doi.org/10.2165/11584850-000000000-00000	Prevalence not reported
10. Chen LJ, Trares K, Laetsch DC, Nguyen TN, Brenner H, Schottker B. Systematic review and meta-analysis on the associations of polypharmacy and potentially inappropriate medication with adverse outcomes in older cancer patients. <i>J Gerontol A Biol Sci Med Sci</i> 2021;76:1044-52. https://doi.org/10.1093/gerona/glaa128	Specific disease or medication
11. Chiatti C, Bustacchini S, Furneri G, Mantovani L, Cristiani M, Misuraca C, et al. The economic burden of inappropriate drug prescribing, lack of adherence and compliance, adverse drug events in older people: a systematic review. <i>Drug Saf</i> 2012;35 Suppl 1:73-87. https://doi.org/10.1007/BF03319105	Prevalence not reported
12. Chutka DS, Takahashi PY, Hoel RW. Inappropriate medications for elderly patients. <i>Mayo Clin Proc</i> 2004;79:122-39. https://doi.org/10.4065/79.1.122	Symposium
13. Corsonello A, Onder G, Abbatecola AM, Guffanti EE, Gareri P, Lattanzio F. Explicit criteria for potentially inappropriate medications to reduce the risk of adverse drug reactions in elderly people: from Beers to STOPP/START criteria. <i>Drug Saf</i> 2012;35 Suppl 1:21-8. https://doi.org/10.1007/BF03319100	Prevalence not reported
14. Cullinan S, O'Mahony D, Fleming A, Byrne S. A meta-synthesis of potentially inappropriate prescribing in older patients. <i>Drugs Aging</i> 2014;31:631-8. https://doi.org/10.1007/s40266-014-0190-4	Thesis
15. O'Mahony D. Pharmacists and prevention of inappropriate prescribing in hospital. <i>Age Ageing</i> 2016;45:181-3. https://doi.org/10.1093/ageing/afw006	Editorial
16. O'Mahony D. STOPP/START criteria for potentially inappropriate medications/potential prescribing omissions in older people: origin and progress. <i>Expert Rev Clin Pharmacol</i> 2020;13:15-22. https://doi.org/10.1080/17512433.2020.1697676	Perspective
17. Delgado J, Bowman K, Clare L. Potentially inappropriate prescribing in dementia: a state-of-the-art review since 2007. <i>BMJ Open</i> 2020;10:e029172. https://doi.org/10.1136/bmjopen-2019-029172	Specific disease or medication
18. Desnoyer A, Guignard B, Lang PO, Desmeules J, Vogt-Ferrier N, Bonnabry P. Potentially inappropriate medications in geriatrics: which tools to detect them? <i>Presse Med</i> 2016;45:957-70. https://doi.org/10.1016/j.lpm.2016.06.033	Non-English
19. Dimitrow MS, Airaksinen MS, Kivela SL, Lyles A, Leikola SN. Comparison of prescribing criteria to evaluate the appropriateness of drug treatment in individuals aged 65 and older: a systematic review. <i>J Am Geriatr Soc</i> 2011;59:1521-30. https://doi.org/10.1111/j.1532-5415.2011.03497.x	Prevalence not reported
20. Disalvo D, Luckett T, Agar M, Bennett A, Davidson PM. Systems to identify potentially inappropriate prescribing in people with advanced dementia: a systematic review. <i>BMC Geriatr</i> 2016;16:114. https://doi.org/10.1186/s12877-016-0289-z	Specific disease or medication
21. Dorks M, Allers K, Schmiemann G, Herget-Rosenthal S, Hoffmann F. Inappropriate medication in non-hospitalized patients with renal insufficiency: a systematic review. <i>J Am Geriatr Soc</i> 2017;65:853-62. https://doi.org/10.1111/jgs.14809	Specific disease or medication
22. Eshetie TC, Nguyen TA, Gillam MH, Kalisch Ellett LM. A narrative review of problems with medicines use in people with dementia. <i>Expert Opin Drug Saf</i> 2018;17:825-36. https://doi.org/10.1080/14740338.2018.1497156	Other kinds of reviews and specific disease or medication
23. Farhat A, Al-Hajje A, Csajka C, Panchoad A. Clinical and economic impacts of explicit tools detecting prescribing errors: a systematic review. <i>J Clin Pharm Ther</i> 2021;46:877-86. https://doi.org/10.1111/jcpt.13408	Prevalence not reported
24. Gallagher P, Barry P, O'Mahony D. Inappropriate prescribing in the elderly. <i>J Clin Pharm Ther</i> 2007;32:113-21. https://doi.org/10.1111/j.1365-2710.2007.00793.x	Other kinds of reviews
25. Ganassin AR, de Matos VT, Toffoli-Kadri MC. Potentially inappropriate medications and their use in elderly populations residing in long-term care facilities. <i>Int J Pharma Res Rev</i> 2014;3:74-83.	Other settings
26. Hill-Taylor B, Walsh KA, Stewart S, Hayden J, Byrne S, Sketris IS. Effectiveness of the STOPP/START (Screening Tool of Older Persons' potentially inappropriate Prescriptions/Screening Tool to Alert doctors to the Right Treatment) criteria: systematic review and meta-analysis of randomized controlled studies. <i>J Clin Pharm Ther</i> 2016;41:158-69. https://doi.org/10.1111/jcpt.12372	Prevalence not reported
27. Hukins D, Macleod U, Boland JW. Identifying potentially inappropriate prescribing in older people with dementia: a systematic review. <i>Eur J Clin Pharmacol</i> 2019;75:467-81. https://doi.org/10.1007/s00228-018-02612-x	Specific disease or medication
28. Hyttinen V, Jyrkka J, Valtonen H. A systematic review of the impact of potentially inappropriate medication on health care utilization and costs among older adults. <i>Med Care</i> 2016;54:950-64. https://doi.org/10.1097/MLR.0000000000000587	Prevalence not reported

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References	Reason for exclusion
29. Jano E, Aparasu RR. Healthcare outcomes associated with beers' criteria: a systematic review. <i>Ann Pharmacother</i> 2007;41:438-47. https://doi.org/10.1345/aph.1H473	Prevalence not reported
30. Johnell K. Inappropriate drug use in people with cognitive impairment and dementia: a systematic review. <i>Curr Clin Pharmacol</i> 2015;10:178-84. https://doi.org/10.2174/1574884710666150609154741	Specific disease or medication
31. Kim B, Nolan S, Beaulieu T, Shalansky S, Ti L. Inappropriate opioid prescribing practices: a narrative review. <i>Am J Health Syst Pharm</i> 2019;76:1231-7. https://doi.org/10.1093/ajhp/zxz092	Other kinds of reviews
32. Knol W, Verduijn MM, Lelie-van der Zande AC, van Marum RJ, Brouwers JR, van der Cammen TJ, et al. Detecting inappropriate medication in older people: the revised STOPP/START criteria. <i>Ned Tijdschr Geneesk</i> 2015;159:A8904.	Non-English
33. Lam MP, Cheung BM. The use of STOPP/START criteria as a screening tool for assessing the appropriateness of medications in the elderly population. <i>Expert Rev Clin Pharmacol</i> 2012;5:187-97. https://doi.org/10.1586/ecp.12.6	Other kinds of reviews
34. Lanke S, Bandi T, Sridhar ST, Srinivas JV. A review on potentially inappropriate drug prescribing using Beers Criteria 2015. <i>Glob Health [Internet]</i> 2020 [cited 2023 May 20];7. Available from: http://journals.findlay.edu/index.php/gh/article/view/134	Other kinds of reviews
35. Lee CS, Liew TM. Inappropriate prescribing among older persons in primary care: protocol for systematic review and meta-analysis of observational studies. <i>BMJ Open</i> 2017;7:e015395. https://doi.org/10.1136/bmjopen-2016-015395	Protocol
36. Lee JQ, Ying K, Lun P, Tan KT, Ang W, Munro Y, et al. Intervention elements to reduce inappropriate prescribing for older adults with multimorbidity receiving outpatient care: a scoping review. <i>BMJ Open</i> 2020;10:e039543. https://doi.org/10.1136/bmjopen-2020-039543	Other kinds of reviews
37. Liew TM, Lee CS, Goh Shawn KL, Chang ZY. Potentially inappropriate prescribing among older persons: a meta-analysis of observational studies. <i>Ann Fam Med</i> 2019;17:257-66. https://doi.org/10.1370/afm.2373	Prevalence not reported
38. Lindsay J, Dooley M, Martin J, Fay M, Kearney A, Barras M. Reducing potentially inappropriate medications in palliative cancer patients: evidence to support deprescribing approaches. <i>Support Care Cancer</i> 2014;22:1113-9. https://doi.org/10.1007/s00520-013-2098-7	Specific disease or medication
39. Lou MF. Current state of appropriate medication use in older adults and future prospects. <i>Hu Li Za Zhi</i> 2019;66:4-6. https://doi.org/10.6224/JN.201908_66(4).01	Non-English
40. Schiavo G, Forgerini M, Lucchetta RC, de Carvalho Mastroianni P. Potentially inappropriate medications criteria-based tools for the elderly: a systematic scoping review [Internet]. [place unknown]: OSF; 2020 [cited 2023 May 20]. Available from: https://osf.io/cyub4/download	Other kinds of reviews
41. Lucchetti G, Lucchetti AL. Inappropriate prescribing in older persons: a systematic review of medications available in different criteria. <i>Arch Gerontol Geriatr</i> 2017;68:55-61. https://doi.org/10.1016/j.archger.2016.09.003	Prevalence not reported
42. Manias E, Kabir MZ, Maier AB. Inappropriate medications and physical function: a systematic review. <i>Ther Adv Drug Saf</i> 2021;12:20420986211030371. https://doi.org/10.1177/20420986211030371	Prevalence not reported
43. Manley HJ, Cannella CA, Bailie GR, St Peter WL. Medication-related problems in ambulatory hemodialysis patients: a pooled analysis. <i>Am J Kidney Dis</i> 2005;46:669-80. https://doi.org/10.1053/j.ajkd.2005.07.001	Specific disease or medication
44. Masnoon N, Shakib S, Kalisch-Ellett L, Caughey GE. Tools for assessment of the appropriateness of prescribing and association with patient-related outcomes: a systematic review. <i>Drugs Aging</i> 2018;35:43-60. https://doi.org/10.1007/s40266-018-0516-8	Prevalence not reported
45. Mimica Matanovic S, Vlahovic-Palcevski V. Potentially inappropriate medications in the elderly: a comprehensive protocol. <i>Eur J Clin Pharmacol</i> 2012;68:1123-38. https://doi.org/10.1007/s00228-012-1238-1	Prevalence not reported
46. Mekonnen AB, Redley B, de Courten B, Manias E. Potentially inappropriate prescribing and its associations with health-related and system-related outcomes in hospitalised older adults: a systematic review and meta-analysis. <i>Br J Clin Pharmacol</i> 2021;87:4150-72. https://doi.org/10.1111/bcp.14870	Other settings
47. Miller MG, Kneuss TG, Patel JN, Parala-Metz AG, Haggstrom DE. Identifying potentially inappropriate medication (PIM) use in geriatric oncology. <i>J Geriatr Oncol</i> 2021;12:34-40. https://doi.org/10.1016/j.jgo.2020.06.013	Specific disease or medication and other kinds of reviews
48. Mohamed MR, Ramsdale E, Loh KP, Arastu A, Xu H, Obrecht S, et al. Associations of polypharmacy and inappropriate medications with adverse outcomes in older adults with cancer: a systematic review and meta-analysis. <i>Oncologist</i> 2020;25:e94-108. https://doi.org/10.1634/theoncologist.2019-0406	Specific disease or medication
49. Morin L, Laroche ML, Texier G, Johnell K. Prevalence of potentially inappropriate medication use in older adults living in nursing homes: a systematic review. <i>J Am Med Dir Assoc</i> 2016;17:862. https://doi.org/10.1016/j.jamda.2016.06.011	Other settings
50. Motter FR, Fritzen JS, Hilmer SN, Paniz EV, Paniz VM. Potentially inappropriate medication in the elderly: a systematic review of validated explicit criteria. <i>Eur J Clin Pharmacol</i> 2018;74:679-700. https://doi.org/10.1007/s00228-018-2446-0	Prevalence not reported
51. Nothelle SK, Sharma R, Oakes AH, Jackson M, Segal JB. Determinants of potentially inappropriate medication use in long-term and acute care settings: a systematic review. <i>J Am Med Dir Assoc</i> 2017;18:806. https://doi.org/10.1016/j.jamda.2017.06.005	Other settings
52. O'Connor MN, Gallagher P, O'Mahony D. Inappropriate prescribing: criteria, detection and prevention. <i>Drugs Aging</i> 2012;29:437-52. https://doi.org/10.2165/11632610-000000000-00000	Other kinds of reviews
53. O'Dwyer M, McCallion P, McCarron M, Henman M. Medication use and potentially inappropriate prescribing in older adults with intellectual disabilities: a neglected area of research. <i>Ther Adv Drug Saf</i> 2018;9:535-57. https://doi.org/10.1177/2042098618782785	Specific disease or medication
54. Oelke M, Becher K, Castro-Diaz D, Chartier-Kastler E, Kirby M, Wagg A, et al. Appropriateness of oral drugs for long-term treatment of lower urinary tract symptoms in older persons: results of a systematic literature review and international consensus validation process (LUTS-FORTA 2014). <i>Age Ageing</i> 2015;44:745-55. https://doi.org/10.1093/ageing/afv077	Specific group of medications
55. Page RL 2nd, Linnebur SA, Bryant LL, Ruscini JM. Inappropriate prescribing in the hospitalized elderly patient: defining the problem, evaluation tools, and possible solutions. <i>Clin Interv Aging</i> 2010;5:75-87. https://doi.org/10.2147/cia.s9564	Other kinds of review and other settings

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References	Reason for exclusion
56. Parsons C. Polypharmacy and inappropriate medication use in patients with dementia: an underresearched problem. <i>Ther Adv Drug Saf</i> 2017;8:31-46. https://doi.org/10.1177/2042098616670798	Specific disease or medication
57. Patel T, Slonim K, Lee L. Use of potentially inappropriate medications among ambulatory home-dwelling elderly patients with dementia: a review of the literature. <i>Can Pharm J (Ott)</i> 2017;150:169-83. https://doi.org/10.1177/1715163517701770	Specific disease or medication
58. Petrarca AM, Lengel AJ, Mangan MN. Inappropriate medication use in the elderly. <i>Consult Pharm</i> 2012;27:583-6. https://doi.org/10.4140/TCP.n.2012.583	Other kinds of reviews
59. Poudel A, Peel NM, Mitchell C, Nissen LM, Hubbard RE. A systematic review of prescribing criteria to evaluate appropriateness of medications in frail older people. <i>Rev Clin Gerontol</i> 2014;24:304-18. https://doi.org/10.1017/S0959259814000161	Specific disease or medication
60. Redston MR, Hilmer SN, McLachlan AJ, Clough AJ, Gnjidic D. Prevalence of potentially inappropriate medication use in older inpatients with and without cognitive impairment: a systematic review. <i>J Alzheimers Dis</i> 2018;61:1639-52. https://doi.org/10.3233/JAD-170842	Specific disease or medication and other settings
61. Renom-Guiteras A. Potentially inappropriate medication among people with dementia: towards individualized decision-making. <i>Eur Geriatr Med</i> 2021;12:569-75. https://doi.org/10.1007/s41999-021-00502-7	Specific disease or medication
62. Santos AP, da Silva DT, dos Santos Junior GA, Silvestre CC, Nunes MA, Lyra DP Jr, et al. Evaluation of the heterogeneity of studies estimating the association between risk factors and the use of potentially inappropriate drug therapy for the elderly: a systematic review with meta-analysis. <i>Eur J Clin Pharmacol</i> 2015;71:1037-50. https://doi.org/10.1007/s00228-015-1891-2	Prevalence not reported
63. Santos NS, Marengo LL, Moraes FD, Barberato Filho S. Interventions to reduce the prescription of inappropriate medicines in older patients. <i>Rev Saude Publica</i> 2019;53:7. https://doi.org/10.11606/S1518-8787.2019053000781	Prevalence not reported
64. Schiavo G, Forgerini M, Lucchetta RC, de Carvalho Mastroianni P. Assessment tool for potentially inappropriate medication use in the elderly: a scoping review protocol. <i>Rev Cienc Farm Basica Apl</i> 2018;39:e637	Other kinds of reviews
65. Shade MY, Berger AM, Chaperon C. Potentially inappropriate medications in community-dwelling older adults. <i>Res Gerontol Nurs</i> 2014;7:178-92. https://doi.org/10.3928/19404921-20140210-01	The extracted data was not presented
66. Sharma M, Loh KP, Nightingale G, Mohile SG, Holmes HM. Polypharmacy and potentially inappropriate medication use in geriatric oncology. <i>J Geriatr Oncol</i> 2016;7:346-53. https://doi.org/10.1016/j.jgo.2016.07.010	Other kinds of reviews
67. Soares MA, Fernandez-Llimos F, Cabrita J, Morais J. Tools to evaluate potentially inappropriate prescription in the elderly: a systematic review. <i>Acta Med Port</i> 2011;24:775-84.	Non-English
68. Spinewine A, Schmader KE, Barber N, Hughes C, Lapane KL, Swine C, et al. Appropriate prescribing in elderly people: how well can it be measured and optimised? <i>Lancet</i> 2007;370:173-84. https://doi.org/10.1016/S0140-6736(07)61091-5	Prevalence not reported
69. Stewart D, Mair A, Wilson M, Kardas P, Lewek P, Alonso A, et al. Guidance to manage inappropriate polypharmacy in older people: systematic review and future developments. <i>Expert Opin Drug Saf</i> 2017;16:203-13. https://doi.org/10.1080/14740338.2017.1265503	Prevalence not reported
70. Storms H, Marquet K, Aertgeerts B, Claes N. Prevalence of inappropriate medication use in residential long-term care facilities for the elderly: a systematic review. <i>Eur J Gen Pract</i> 2017;23:69-77. https://doi.org/10.1080/13814788.2017.1288211	Other settings
71. Tesfaye WH, Castelino RL, Wimmer BC, Zaidi ST. Inappropriate prescribing in chronic kidney disease: a systematic review of prevalence, associated clinical outcomes and impact of interventions. <i>Int J Clin Pract</i> 2017;71. https://doi.org/10.1111/ijcp.12960	Specific disease or medication
72. Todd A, Husband A, Andrew I, Pearson SA, Lindsey L, Holmes H. Inappropriate prescribing of preventative medication in patients with life-limiting illness: a systematic review. <i>BMJ Support Palliat Care</i> 2017;7:113-21. https://doi.org/10.1136/bmjspcare-2015-000941	Specific disease or medication
73. Vermeulen Windsant-van den Tweel AM, Verduijn MM, Derijks HJ, van Marum RJ. Detection of inappropriate medication use in the elderly; will the STOPP and START criteria become the new Dutch standards? <i>Ned Tijdschr Geneeskd</i> 2012;156:A5076.	Non-English
74. Vernet N, Mouchoux C. Impact of the potentially inappropriate prescribing among the elderly: a literature review. <i>J Pharm Clin</i> 2019;38:7-23. https://doi.org/10.1684/jpc.2019.0408	Non-English
75. Wiggin DA, Timmons S, Rukundo A, Walsh KA. Improving the appropriateness of psychotropic prescribing for nursing home residents with dementia: an overview of reviews. <i>Aging Ment Health</i> 2022;26:1087-94. https://doi.org/10.1080/13607863.2021.1922601	Other kinds of reviews and other settings and specific disease or medication
76. Zaidi AS, Peterson GM, Bereznicki LR, Curtain CM, Salahudeen M. Outcomes of medication misadventure among people with cognitive impairment or dementia: a systematic review and meta-analysis. <i>Ann Pharmacother</i> 2021;55:530-42. https://doi.org/10.1177/1060028020949125	Specific disease or medication