INPLASY

Potentially inappropriate medications in hospitalized elderly people – systematic review of prevalence

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 September 2024 and was last updated on 9 March 2026.

INTRODUCTION

*R*eview question / Objective What is the prevalence of the use of potentially inappropriate medications among hospitalized older adults?

Rationale The use of Potentially Inappropriate Medications (PIMs) among hospitalized older adults is an increasingly relevant issue, given the aging population and the clinical complexity of this age group. The Beers Criteria are widely applied to identify such medications and serve as the basis for numerous studies and reviews. The prescription of PIMs is associated with a higher risk of adverse events, prolonged hospital stays, increased mortality, and higher healthcare costs. In the outpatient setting, a prevalence of 36.7% in PIM use among older adults has been identified, with a growing trend over recent decades. Nevertheless, there remains a lack of robust systematic reviews addressing the prevalence and impact of PIM use in hospital settings.

Condition being studied To identify the prevalence of potentially inappropriate medication use among hospitalized older adults.

METHODS

Search strategy This is a systematic review of prevalence, conducted in accordance with the recommendations of the Joanna Briggs Institute (JBI).
PubMed
"Aged"[Mesh] OR (elderly) OR "Aged, 80 and over"[Mesh] OR (Oldest Old) AND "Hospitalization"[Mesh] OR (Hospitalizations) OR "Inpatients"[Mesh] OR (Inpatient) AND "Potentially Inappropriate Medication List"[Mesh] OR (Potentially Inappropriate Medication) OR (Potentially Inappropriate Medications) OR (Inappropriate Medication, Potentially) OR (Inappropriate Medications, Potentially) OR (Medication, Potentially Inappropriate) OR (Medications, Potentially Inappropriate) OR

(Potentially Inappropriate Medication) OR (PIM List) OR (PIM Lists) OR (Medication Appropriateness Index) OR (Appropriateness Index, Medication) OR (Appropriateness Indices, Medication) OR (Index, Medication Appropriateness) OR (Indices, Medication Appropriateness) OR (Medication Appropriateness Indices) OR (Beers Criteria) OR (de Beers Criteria) OR (Beers Criteria, de) OR (Beers Potentially Inappropriate Medications)

Embase

'aged'/exp OR 'aged patient' OR 'aged people' OR 'aged person' OR 'aged subject' OR 'elderly' OR 'elderly patient' OR 'elderly people' OR 'elderly person' OR 'elderly subject' OR 'senior citizen' OR 'senium' OR 'aged' OR 'very elderly'/exp OR 'aged, 80 and over' OR 'centenarian' OR 'centenarians' OR 'nonagenarian' OR 'nonagenarians' OR 'octogenarian' OR 'octogenarians' OR 'very old' OR 'very elderly' AND 'hospitalization'/exp OR 'hospital stay' OR 'short stay hospitalization' OR 'hospitalization' OR 'hospital patient'/exp OR 'hospitalised patient' OR 'hospitalised patients' OR 'hospitalized patient' OR 'hospitalized patients' OR 'in-hospital patient' OR 'in-hospital patients' OR 'in-patient' OR 'in-patients' OR 'inpatient' OR 'inpatients' OR 'patient, hospital' OR 'hospital patient' AND 'potentially inappropriate medication'/exp OR 'medication appropriateness index' OR 'PIM list' OR 'potential inappropriate medication' OR 'potential inappropriate prescribing' OR 'potential inappropriate prescription' OR 'potentially inappropriate medication list' OR 'potentially inappropriate medications' OR 'potentially inappropriate prescribing' OR 'potentially inappropriate prescription' OR 'potentially inappropriate prescriptions' OR 'potentially inappropriate medication'

CINAHL, Scopus e Web of Science
Aged OR Aged, 80 and over AND Hospitalization OR Inpatients AND Potentially Inappropriate Medication List

Participant or population Hospitalized elderly people over 60 years of age.

Intervention None.

Comparator None.

Study designs to be included Observational studies, including prospective and retrospective cohort studies, case-control studies, and cross-sectional studies.

Eligibility criteria The inclusion criteria for study selection were as follows: observational studies, including prospective and retrospective cohort,

case–control, and cross-sectional designs; explicit reporting of the variable of interest, "use of potentially inappropriate medications in older adults," specifically classified according to any version of the Beers Criteria; having been conducted in a hospital setting; involving older adults aged 60 years or older; and full-text articles published in any language, with no restriction on publication date.

The exclusion criteria were: studies that did not use the Beers Criteria (for example, those relying exclusively on STOPP/START, PRISCUS, or local lists) or in which it was not possible to clearly identify the prevalence of PIMs according to the Beers Criteria; studies that assessed only the incidence of new PIM use during hospitalization without reporting prevalence at any time point (admission, during hospitalization, or at discharge); pharmaceutical interventions or implementation studies in which baseline PIM prevalence could not be obtained; and studies with inadequate methodology to estimate prevalence (such as undefined samples, unclear target population, absence of a denominator, or insufficient description preventing calculation or interpretation of the proportion of PIM users).

CINAHL, Scopus e Web Of Science

#1 Aged OR Aged, 80 and over
AND
#2 Hospitalization OR Inpatients
AND
#3 Potentially Inappropriate Medication List

Main outcome(s) Estimate the prevalence and synthesize evidence on the past use of potentially inappropriate medications in hospitalized elderly people. Once the data record is released, it will search the databases and, if possible, perform a meta-analysis.

Quality assessment / Risk of bias analysis For the methodological quality assessment of the included studies, the JBI Critical Appraisal Tool will be used.

Strategy of data synthesis Information including Author, date, country of origin, target population, percentage of women, sample size, study design, minimum age, mean age, PIM (prior use), PIM (during hospitalization), PIM (at discharge), Beers Criteria version.

Subgroup analysis We will perform a subgroup analysis based on hospital phase (admission vs. during hospitalization vs. at discharge, already

aggregated but further refinable by study design) and on the Beers Criteria version (2003, 2012, 2015, 2019, and 2023).

Sensitivity analysis To assess if the study results were stable, we will conduct a sensitivity analyses and will find if the pooled effects size did not have a material change.

Language restriction There will be no language restrictions.

Country(ies) involved Brazil.

Keywords Potentially Inappropriate Medication List; Aged; Hospitalization; Systematic Review; Meta-analysis.

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