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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.

INPLASY registration number: INPLASY202490041

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 11 March 2025.

INTRODUCTION

Review question / Objective The acronym PECO was used to prepare the research question as follows:

PECO

- Population – hospitalized elderly people
- Exposure – Previous use of potentially inappropriate medications for the elderly
- Comparator – no previous use of potentially inappropriate medications for the elderly
- Outcome – hospital outcome.

What is the prevalence of the use of potentially inappropriate medications in hospitalized elderly people and hospital outcomes?

The objective of this research is to analyze the prevalence of the use of potentially inappropriate medications in hospitalized elderly people and hospital outcomes, through a systematic literature review.

Rationale Drug therapy use increases with advancing age and with increased use comes an

increased risk of adverse events. Given that we are about to become a super-aged society, with 20% of our population aged 65years and over, tools that clinicians can use to guide appropriate prescribing are more valuable than ever. Among various drugs used by older patients, the potential adverse risks of a certain medication may exceed the expected benefits; such drugs are referred to as potentially inappropriate medications (PIMs). The use of potentially inappropriate medications (PIMs) is widespread yet continues to receive little attention in outpatient and patient services.

Condition being studied The previous use of potentially inappropriate medications in hospitalized elderly people and hospital outcomes.

METHODS

Search strategy DATA SOURCE SEARCH STRATEGY
PUBMED and Scopus

#1 "Aged"[Mesh] OR (elderly) OR "Aged, 80 and over"[Mesh] OR (Oldest Old)
AND
#2 "Hospitalization"[Mesh] OR (Hospitalizations) OR "Inpatients"[Mesh] OR (Inpatient)
AND
#3 "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) OR (STOPP (Screening Tool of Older Person's Potentially Inappropriate Prescriptions)) OR (STOPPs (Screening Tool of Older Person's Potentially Inappropriate Prescriptions)) OR (STOPP START Criteria) OR (Criterias, STOPP START) OR (Criteria, STOPP START) OR (START Criterias, STOPP) OR (START Criteria, STOPP) OR (STOPP START Criterias) OR (STOPP) OR (Screening Tool of Older Person's Potentially Inappropriate Prescriptions)
AND
#4 "Patient Outcome Assessment"[Mesh] OR (Assessments, Patient Outcome) OR (Outcome Assessments, Patient) OR (Patient Outcome Assessments) OR (Assessment, Patient Outcome) OR (Assessment, Patient Outcomes) OR (Patient Outcomes Assessment) OR (Outcome Assessment, Patient) OR (Outcomes Assessments, Patient) OR (Patient-Centered Outcomes Research) OR (Patient Centered Outcomes Research) OR (Research, Patient-Centered Outcome) OR "Outcome Assessment, Health Care"[Mesh] OR (Assessment, Outcomes) OR (Assessments, Outcomes) OR (Outcomes Assessments) OR (Outcomes Assessment) OR (Assessment, Outcome) OR (Assessments, Outcome) OR (Outcome Assessments) OR (Outcome Assessment) OR (Outcome Assessment (Health Care)) OR (Assessment, Outcome (Health Care)) OR (Assessments, Outcome (Health Care)) OR (Outcome Assessments (Health Care)) OR (Outcome Measures) OR (Measure, Outcome) OR (Measures, Outcome) OR (Outcome Measure) OR (Outcomes Research) OR (Research, Outcomes) OR (Outcome Studies) OR (Outcome Study) OR

(Studies, Outcome) OR (Study, Outcome) OR "Fatal Outcome"[Mesh] OR (Fatal Outcomes) OR (Outcome, Fatal) OR (Outcomes, Fatal) OR "Treatment Outcome"[Mesh] OR (Outcome, Treatment) OR (Treatment Efficacy) OR (Efficacy, Treatment) OR (Clinical Efficacy) OR (Efficacy, Clinical) OR (Rehabilitation Outcome) OR (Outcome, Rehabilitation) OR (Clinical Effectiveness) OR (Effectiveness, Clinical) OR (Treatment Effectiveness) OR (Effectiveness, Treatment) OR (Patient-Relevant Outcome) OR (Outcome, Patient-Relevant) OR (Outcomes, Patient-Relevant) OR (Patient Relevant Outcome) OR (Patient-Relevant Outcomes) OR "Adverse Outcome Pathways"[Mesh] OR (Adverse Outcome Pathway)

WEB OF SCIENCE and CINAHL

#1 (Aged) OR (elderly) OR (Aged, 80 and over) OR (Oldest Old)

AND

#2 (Hospitalization) OR (Hospitalizations) OR (Inpatients) OR (Inpatient)

AND

#3 (Potentially Inappropriate Medication List) 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 (Beers Criteria) OR (Beers Potentially Inappropriate Medications)

AND

#4 (Patient Outcome Assessment) OR (Assessments, Patient Outcome) OR (Outcome Assessments, Patient) OR (Patient Outcome Assessments) OR (Assessment, Patient Outcome) OR (Assessment, Patient Outcomes) OR (Patient Outcomes Assessment) OR (Outcome Assessment, Patient) OR (Outcomes Assessments, Patient) OR (Outcome Assessment, Health Care) OR (Assessment, Outcomes) OR (Assessments, Outcomes) OR (Outcomes Assessment) OR (Assessment, Outcome) OR (Assessments, Outcome) OR (Outcome Assessments) OR (Outcome Assessment) OR (Outcome Measures) OR (Measure, Outcome) OR (Measures, Outcome) OR (Outcome Measure) OR (Fatal Outcome) OR (Fatal Outcomes)

PORTAL REGIONAL DA BVS and Scielo Brasil

#1 MH:"Aged" OR "Aged" OR "Anciano" OR "Idosos" OR "Pessoa Idosa" OR "Pessoa de Idade" OR "Pessoas Idosas" OR "Pessoas de Idade" OR "População Idosa" OR MH:"Aged, 80 and over" OR "Aged, 80 and over" OR "Idoso de

80 Anos ou mais" OR "Anciano de 80 o más Años" OR "Idoso de 80 ou mais Anos" OR "Idosos de 80 Anos ou mais" OR "Idosos de 80 ou mais Anos" OR "Velhíssimos"

AND

#2 MH:"Hospitalization" OR "Hospitalization" OR "Hospitalização" OR "Hospitalización" OR "Comunicação de Internação Hospitalar" OR "Internação Hospitalar" OR "Internação Voluntária" OR MH:"Inpatients" OR "Inpatients" OR "Pacientes Internados" OR "Pacientes Internos" OR "Paciente Internado"

AND

#3 MH:"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" OR "STOPP (Screening Tool of Older Person's Potentially Inappropriate Prescriptions)" OR "STOPPs (Screening Tool of Older Person's Potentially Inappropriate Prescriptions)" OR "STOPP START Criteria" OR "Criterias, STOPP START" OR "Criteria, STOPP START" OR "START Criterias, STOPP" OR "START Criteria, STOPP" OR "STOPP START Criterias" OR "STOPP" OR "Screening Tool of Older Person's Potentially Inappropriate Prescriptions"

AND

#4 MH:"Avaliação de Resultados da Assistência ao Paciente" OR "Avaliação de Resultados da Assistência ao Paciente" OR "Patient Outcome Assessment" OR "Evaluación del Resultado de la Atención al Paciente" OR MH:"Avaliação de Resultados em Cuidados de Saúde" OR "Análise de Resultados" OR "Avaliação de Resultado" OR "Avaliação de Resultados OR "Avaliação de Resultados, Assistência Médica" OR "Avaliação do Resultado" OR "Avaliação do Resultado de Cuidado de Saúde" OR "Avaliação do Resultado do Cuidado de Saúde" OR "Avaliação dos Resultados" OR "Avaliação dos Resultados da Assistência Médica" OR "Avaliação dos Resultados dos Cuidados de Saúde" OR "Estudos de Resultados" OR "Estudos dos Resultados" OR "Estudos sobre o Resultado" OR "Estudos sobre os Resultados" OR "Medidas de Desfecho" OR

"Medidas de Desfechos" OR "Medidas do Desfecho" OR "Medidas do Resultado" OR "Monitoramento de Resultados" OR "Pesquisa de Resultados" OR "Outcome Assessment, Health Care" OR "Evaluación de Resultado en la Atención de Salud" OR MH:"Evolução Fatal" OR "Fatal Outcome" OR "Resultado Fatal" OR MH:"Resultado do Tratamento" OR "Treatment Outcome" OR "Resultado del Tratamiento" OR "Efetividade Clínica" OR "Efetividade de Tratamento" OR "Efetividade do Tratamento" OR "Eficácia Clínica" OR "Eficácia de Tratamento" OR "Eficácia do Tratamento" OR "Resultado Relevante ao Paciente" OR "Resultado da Reabilitação" OR "Resultado de Reabilitação" OR "Resultado de Tratamento" OR "Resultados Intermediários de Saúde" OR "Resultados da Promoção de Saúde" OR "Resultados de Intervenções em Saúde" OR "Resultados de Saúde" OR MH:"Rotas de Resultados Adversos" OR "Adverse Outcome Pathways" OR "Rutas de Resultados Adversos" OR "Rota de Resultado Adverso" OR "Rota de Resultados Adversos" OR "Via de Resultado Adverso" OR "Via de Resultados Adversos" OR "Vias de Resultados Adversos"

Embase

#1 '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

#2 '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

#3 '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'

AND

#4 'outcome assessment'/exp OR 'health care outcome assessment' OR 'healthcare outcome assessment' OR 'outcome assessment (health care)' OR 'outcome assessment, health care' OR 'outcome measurement' OR 'patient outcome assessment' OR 'outcome assessment' OR 'fatality'/exp OR 'fatal case' OR 'fatal outcome' OR 'fatality' OR 'treatment outcome'/exp OR 'health care outcome and process assessment' OR 'healthcare outcome and process assessment' OR 'medical futility' OR 'outcome and process assessment (health care)' OR 'outcome and process assessment, health care' OR 'outcome management' OR 'patient outcome' OR 'therapeutic outcome' OR 'therapy outcome' OR 'treatment outcome' OR 'adverse outcome pathway'/exp OR 'adverse outcome pathways' OR 'adverse outcome pathway'

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

Intervention None.

Comparator Previous use or not of potentially inappropriate medications for the elderly.

Study designs to be included Observational or interventional studies.

Eligibility criteria Observational or intervention studies that include hospitalized elderly people \geq 60 years of age, have endorsed the previous use of PIM, which includes in-hospital outcome assessment.

Information sources A specific search strategy for the language of each database was developed using, initially, the Medical Subject Headings (MeSH) descriptor and later translated to specific descriptors (Descriptors in Health Sciences (DeCS) and Embase Subject Headings (Emtree)). The search strategy will be applied by the researchers in the MEDLINE databases through the Pubmed Portal; Scopus; EMBASE, CINAHL, Web of Science through the CAPES Journal Portal.

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

Quality assessment / Risk of bias analysis Newcastle-Ottawa scale.

Strategy of data synthesis Information including age, percentage of female, authors, years, country, participant type, potentially inappropriate medications, polypharmacy prevalence sample size and data. Data will independent extracted by 2 authors.

Subgroup analysis We will conduct a subgroup based in past use of potentially inappropriate medications (PIM) in hospitalized elderly people to show if the use of PIM change the outcomes during the hospitalization. Outcomes: delirium, death, prolonged hospital length-of-stay.

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 Elderly; Potentially Inappropriate Medication List; Hospitalization; Patient Outcome Assessment; Prevalence.

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