CGA'S IMPACT ON MORTALITY AND READMISSION COMPARED WITH STANDARD GERIATRIC CARE

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Abstract: *The global rise in the older adult population has been accompanied by increasing rates of frailty, multiple chronic conditions, and functional decline, all of which heighten the risk of hospitalization and death. Conventional hospital care often concentrates on treating acute medical issues and may not address the broader and interconnected needs of geriatric patients. Comprehensive Geriatric Assessment (CGA) was introduced as a structured, multidisciplinary approach that evaluates medical status together with functional ability, psychological well-being, social circumstances, and nutritional needs, aiming to develop a more holistic and coordinated plan of care. This review aims to assess the effectiveness of CGA compared with standard care in reducing mortality and hospital readmission among older inpatients. A systematic search was conducted in PubMed, ScienceDirect, and the Cochrane Library for randomized controlled trials published between 2016 and 2025 involving patients aged 60 years and older. Thirty studies met the inclusion criteria and were synthesized narratively. Overall, the evidence showed that CGA did not consistently reduce mortality; however, it demonstrated a favorable effect on lowering readmission rates and improving continuity of care. These variations were influenced by differences in team structure, implementation intensity, and follow-up duration. In conclusion, CGA may enhance the overall quality of geriatric hospital care, although its impact on mortality remains uncertain and warrants further investigation*

INTRODUCTION

The steady rise in global life expectancy has resulted in a larger proportion of older adults worldwide. As individuals age, they are increasingly susceptible to multiple chronic illnesses, progressive functional decline, and frailty—an age-related syndrome marked by reduced physiological capacity and heightened sensitivity to stressors. Frailty has been linked to higher rates of mortality, repeated hospital admissions, disability, and a decline in overall quality of life, creating a significant strain on healthcare resources (Nadaraja et al.,

2020; Safari et al., 2023).

Traditional hospital care generally targets acute medical problems but often does not fully address the broad and interconnected needs of geriatric patients, including physical, psychological, social, and nutritional domains. As a result, this approach may fall short in supporting independence, preventing complications, and ensuring optimal long-term outcomes. This highlights the importance of adopting a comprehensive, multidisciplinary model tailored to the complexities of aging.

The Comprehensive Geriatric Assessment (CGA) was developed to address this gap. CGA is a structured, interdisciplinary evaluation intended to identify clinical, functional, psychological, and social issues in older adults so that a coordinated and continuous care plan can be established (Ekerstad et al., 2017) with the involvement of geriatricians, nurses, physiotherapists, dietitians, and social workers, CGA aims to deliver individualized care, strengthen coordination across services, and improve clinical outcomes and quality of life (Giger et al., 2024).

Major organizations such as the British Geriatrics Society, ASCO, and SIOG advocate for the use of CGA in hospital settings, especially for frail older adults, as it has been shown to uncover risks that may be missed in routine medical assessments (Soo et al., 2022). Despite this, findings on whether CGA outperforms standard care in lowering mortality and readmission rates remain mixed. Differences in study populations, care environments, the extent of CGA implementation, and team integration may explain these inconsistencies. Although several studies highlight improvements in function and quality of life, firm evidence regarding outcomes such as mortality and hospital readmission is still limited (Alakare et al., 2021).

Given these uncertainties, this systematic review aims to examine the effectiveness of CGA compared with standard care in reducing mortality and hospital readmission among hospitalized older adults. The results are anticipated to provide clearer insight into CGA's role in geriatric care and support future clinical and policy decisions for aging populations.

THEORETICAL FRAMEWORK

Geriatric patients comprise an aging population generally individuals aged sixty years and above who undergo progressive physiological changes that affect multiple organ systems. These age-related alterations diminish the body's adaptive capacity and heighten susceptibility to various stressors, ultimately increasing the likelihood of complex medical conditions. The interplay of multimorbidity, extensive medication use, functional deterioration, and cognitive decline creates healthcare needs that differ substantially from those of younger adults. Frailty, a clinical syndrome characterized by reduced strength, limited mobility, fatigue, and declining physiological reserves, further elevates the risk of falls, disability, recurrent hospitalization, and mortality, underscoring the importance of a more comprehensive assessment approach (Ekerstad et al., 2017).

Within hospital settings, mortality and readmission rates serve as key indicators of the quality of care delivered to older adults. Mortality is influenced by the degree of frailty, the burden of comorbidities, nutritional deficits, and the healthcare system's capacity to manage geriatric complexity. Readmissions, meanwhile, frequently stem from unstable clinical conditions, inadequate medication supervision, limited social support, or poorly structured

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discharge plans. High readmission rates often reveal gaps in conventional care that fail to address the multidimensional challenges faced by geriatric patients.

Standard hospital care generally concentrates on acute disease management and stabilization of organ-specific problems. This disease-centered and episodic approach tends to create fragmented services and often overlooks crucial functional, nutritional, psychological, and social factors that significantly shape clinical outcomes. In contrast, the Comprehensive Geriatric Assessment (CGA) was developed to meet the multidimensional needs of older adults. CGA conducts structured evaluations across medical, functional, psychological, social, and nutritional domains and integrates these findings into a coordinated care plan, delivered by a multidisciplinary team. Evidence indicates that CGA contributes to safer transitions of care, better functional recovery, and fewer adverse clinical events (Soo et al., 2022).

The theoretical underpinnings of CGA support its potential to lessen complications, including mortality and hospital readmission. Early identification of issues such as polypharmacy, malnutrition, cognitive impairment, emotional disturbances, and mobility deficits allows for timely, targeted interventions that can prevent further clinical decline. Strengthened interprofessional coordination minimizes fragmentation of care and ensures appropriate follow-up after discharge. In addition, CGA enhances discharge planning by refining medication regimens, educating family members, and linking patients with community-based resources (Safari et al., 2023)

A fundamental distinction between CGA and standard care lies in their orientation: while standard care emphasizes disease processes, CGA adopts a holistic and patient-centered focus. This allows CGA to more effectively maintain functional capacity, improve quality of life, and reduce complications that contribute to rehospitalization. Although studies vary in reporting CGA's direct effect on mortality, its comprehensive and structured nature suggests a greater theoretical capacity to improve clinical outcomes among older adults. CGA has also shown promise in specific geriatric subgroups, such as older adults with osteoarthritis, where improvements in functional measures and multidimensional frailty have been observed (Veronese et al., 2025).

METHODS

Study Design and Rationale

This research was conducted as a systematic review to assess how Comprehensive Geriatric Assessment (CGA) performs compared with standard care in lowering mortality and hospital readmission among older adults receiving inpatient treatment. The review was undertaken to consolidate current evidence and offer updated perspectives on the usefulness of CGA as an evidence-based approach in geriatric care. The study took place from October 27 to October 30 2025, and followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 framework.

Ethical Considerations

Because this review only analyzed information from previously published studies and did not involve direct contact with human participants or identifiable personal data, formal ethical approval was not required. Nevertheless, the review process maintained ethical principles, including transparency, accuracy, and proper acknowledgment of all sources.

Search Strategy

A thorough search of PubMed, ScienceDirect, and the Cochrane Library was performed to locate eligible studies. The search strategy incorporated Medical Subject Headings (MeSH) and relevant keywords relating to the target population, intervention, and outcomes. Boolean operators ("AND," "OR") were used to combine terms: ("Comprehensive Geriatric Assessment" OR "CGA") AND ("Aged" OR "Elderly" OR "Older Adult*" OR "Geriatric*") AND ("Standard Care" OR "Usual Care" OR "Conventional Care") AND ("Mortality" OR "Hospital Readmission" OR "Readmission" OR "Rehospitalization"). Filters were applied to include full-text articles published between 2016 and 2025 in English or Indonesian. Reference lists of selected studies were also checked for additional eligible papers.

Eligibility Criteria

Inclusion criteria:

1. Randomized Controlled Trials (RCTs) as primary research.
2. Studies examining CGA versus standard care in hospitalized older adults.
3. Reporting mortality and/or hospital readmission outcomes.
4. Full-text availability in English or Indonesian, published from 2016–2025.

Exclusion criteria:

1. Reviews, case studies, editorials, or papers lacking primary data.
2. Studies involving non-geriatric groups or conducted outside hospital settings.
3. Articles without a comparison between CGA and usual or standard care.

Quality Assessment

The literature was screened and selected using the Preferred Reporting Items for Systematic Reviews (PRISMA) method. The PRISMA Flow Diagram illustrating the selection process for this study is presented in Figure 1.

Figure. 1 Prisma Flow-diagram

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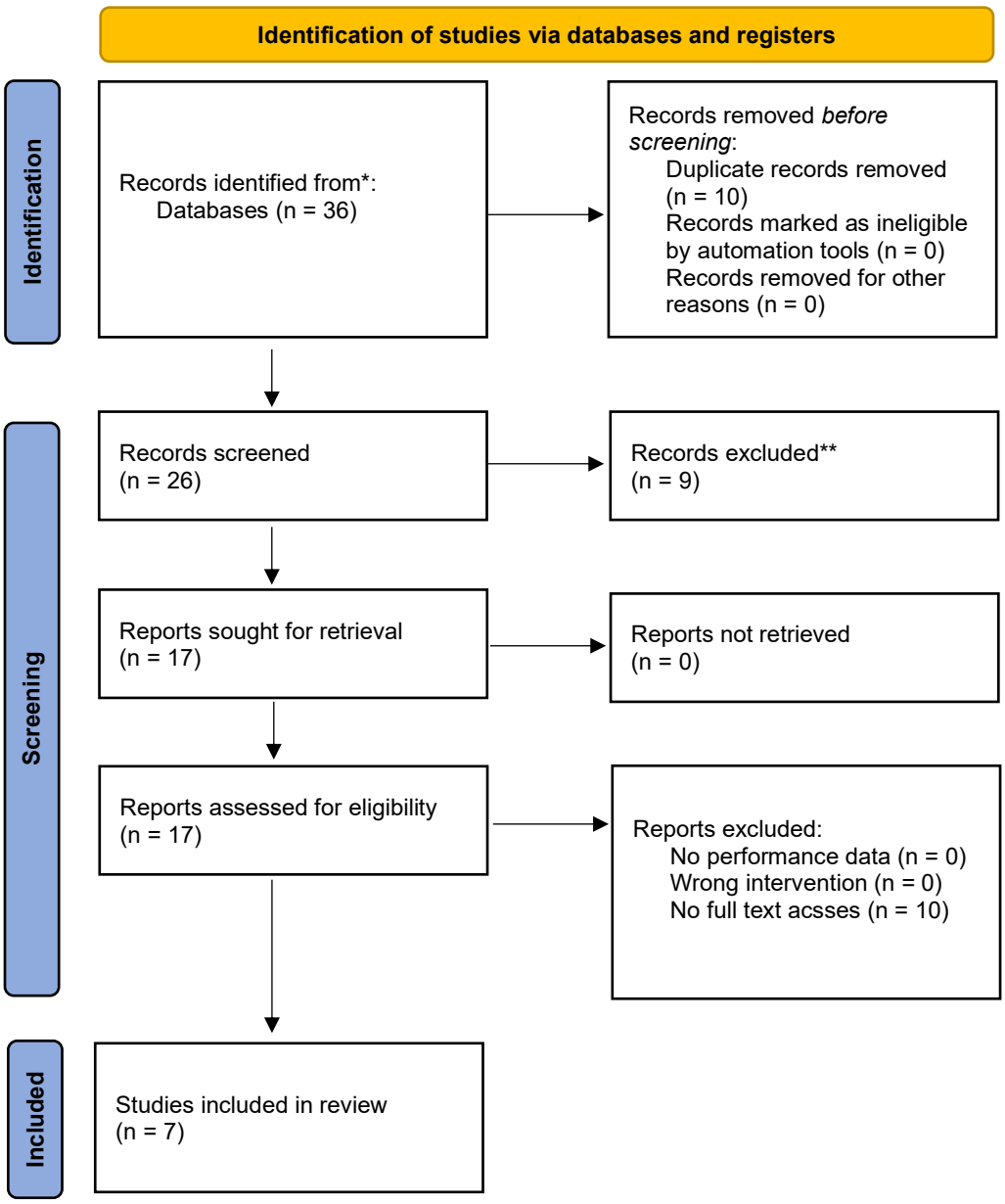

Pico

The scope of the review was defined using the PICO framework as follows:

Table 1. Summary of the PICO Framework

Component	Description
Population	Geriatric patients or patients with frailty conditions who are hospitalized in inpatient units
Intervention	Comprehensive Geriatric Assessment (CGA
Comparison	Standard care or usual care without the application of CGA
Outcomes	Mortality (death rate/survival rate) and hospital readmission (readmission/rehospitalization)

Study Selection

Using the PRISMA framework, 36 articles were initially retrieved. Of these, 10 were excluded because they contained duplicate data, 9 did not satisfy the predefined eligibility criteria, and another 10 could not be included because the full text was unavailable. In total, 7 studies fulfilled all inclusion requirements and were incorporated into this review.

Data Synthesis

All eligible studies were analyzed using a narrative synthesis method. This approach was chosen due to considerable variation among the studies in terms of design, participant characteristics, and the nature of the interventions, making a quantitative meta-analysis inappropriate.

The synthesis involved evaluating and comparing the key findings of each study based on their methodological features, clinical context, and outcome measures. Results were summarized descriptively and organized in both narrative and tabular forms to illustrate the differences and similarities across studies. The aim was to provide a clear understanding of how Comprehensive Geriatric Assessment (CGA) performs relative to standard care in influencing mortality and hospital readmission among geriatric inpatients.

Data Extraction

Data extraction was carried out using a standardized form applied consistently across all included studies. Information collected comprised author details, publication year, research design, sample size and participant characteristics, type of CGA intervention, comparison with standard care, and primary outcomes such as mortality and rehospitalization.

Extraction was conducted independently by different members of the research team to reduce bias and ensure reliability. Any inconsistencies were resolved through discussion until agreement was reached. All validated information was subsequently compiled into a summary table to support the analysis and narrative synthesis.

RESULT AND DISCUSSION

Results

A number of randomized controlled trials (RCTs) investigating the role of Comprehensive Geriatric Assessment (CGA) compared with standard care in hospitalized older adults reported varied outcomes. These studies were carried out in multiple regions—including Sweden, Denmark, Finland, Ireland, Australia, Italy, Germany, and Turkey—and involved elderly patients who commonly exhibited frailty and multiple chronic conditions.

In terms of mortality, most trials did not show a clear benefit of CGA over usual care. Findings from (Alakare et al., 2021; Ekerstad et al., 2017; Nadaraja et al., 2020) indicated no significant differences in death rates between intervention and control groups. Although (Giger et al., 2024) noted a slight reduction in mortality among patients receiving CGA, the trend did not meet statistical significance.

Results related to hospital readmissions were more favorable. Evidence from (Leahy et al., 2024; Soo et al., 2022) demonstrated that CGA contributed to fewer readmissions and shorter hospital stays. (Giger et al., 2024) also reported comparable improvements, though the overall evidence base remains modest.

Differences in study outcomes likely reflect variations in care environments, the level

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of multidisciplinary involvement, and follow-up length. Altogether, the available evidence indicates that CGA may help reduce rehospitalization and strengthen continuity of care in geriatric inpatients, while its influence on mortality has yet to be clearly established.

Table 2. Summary of Included Randomized Controlled Trials on Comprehensive Geriatric Assessment (CGA) Compared to Standard Care

Author (Year)	Country	Population	Result
(Soo et al., 2022)	Australia	154 participants *Intervention (CGA):* 76 *Control:* 78	Mortality: CGA 8% vs Control 9% (NS) Unplanned readmissions reduced: CGA 15% vs Control 25% ($p < 0.05$) CGA did not show a significant reduction in mortality; however, it effectively reduced the number of unplanned hospital readmissions and the duration of unplanned hospital stays.
(Veronese et al., 2025b)	Italy, Germany, Turkey, Czech Republic	70 participants *Intervention (CGA):* 35 *Control:* 35	No deaths, hospitalizations, or falls were detected in either the CGA or control groups.
(Alakare et al., 2021)	Finland	432 participants *Intervention (CGA):* 213 *Control:* 219	1-year mortality: CGA 27.7% vs Control 26.9% (NS) 1-year readmission: CGA 36% vs Control 38% (NS) CGA therapy showed no significant differences in mortality or hospital readmissions. No reduction in one-year mortality or rehospitalization rates was observed following systematic CGA implementation in the emergency department.
(Giger et al., 2024)	Denmark	178 participants *Intervention (CGA):* 87 *Control:* 91	Mortality trend lower in CGA (not significant, $p = 0.09$) Fewer recurrent hospitalizations in CGA ($p < 0.05$) CGA may reduce recurrent hospitalizations; however, current

			evidence remains insufficient to demonstrate a significant impact on mortality rates.
(Ekerstad et al., 2017)	Sweden	408 participants *Intervention (CGA):* 206 *Control:* 202	No significant difference in 1-year mortality between groups ($p > 0.05$) No significant difference in 3-month readmission ($p > 0.05$) No significant differences were observed in mortality or hospital readmission between the CGA and control group
(Nadaraja et al., 2020)	Denmark	94 participants *Intervention (CGA):* 48 *Control:* 46	Mortality: CGA 10% vs Control 12% ($p = 0.72$) Readmission: CGA 31% vs Control 34% ($p = 0.68$) No significant differences were found between the CGA and control groups regarding severe toxicity, hospital admissions, or other clinical outcomes including mortality and readmission.
(Leahy et al., 2024)	Ireland	228 participants *Intervention (CGA):* 113 *Control:* 115	Mortality: CGA 5% vs Control 7% (NS) Readmission at 180 days: CGA 19% vs Control 29% ($p < 0.05$) The study showed that CGA was associated with lower hospital readmission rates and reduced nursing home admissions within 180 days after the initial hospital visit.

Discussion

The Comprehensive Geriatric Assessment (CGA) serves as a structured, multidisciplinary method intended to address the complex and interconnected needs of older adults. In contrast to standard care, which frequently concentrates on acute symptoms or a single diagnosis, CGA evaluates multiple domains—ranging from medical issues and functional ability to psychological well-being, social support, and nutritional health. Its central aim is to produce an individualized, holistic care plan that supports functional stability and enhances the overall well-being of older patients (Ekerstad et al., 2017). Rather than focusing solely on disease treatment, CGA emphasizes the preservation of independence and daily functioning.

Findings from this review suggest that CGA does not consistently lower mortality, yet it appears to contribute meaningfully to reducing hospital readmissions and improving coordination of care. This is likely because CGA targets early identification and management of complex geriatric concerns—such as inappropriate medication use, malnutrition, cognitive decline, falls, and limited social support—which, when properly managed, may prevent deterioration and subsequent hospitalization (Leahy et al., 2024). However, since CGA is not primarily designed to influence underlying disease mortality pathways, its short-term effects on survival often remain minimal (Alakare et al., 2021).

CGA's effectiveness is strongly influenced by how comprehensively it is carried out and the extent of multidisciplinary collaboration. Studies utilizing robust, well-coordinated teams—including geriatricians, nurses, physiotherapists, dietitians, pharmacists, and social workers—have shown more favorable outcomes than those where CGA functioned only as an initial assessment (Giger et al., 2024). This indicates that CGA must operate as an ongoing process that includes post-assessment interventions, discharge planning, and structured follow-up (Leahy et al., 2024).

Variability in mortality outcomes may also reflect differences in patient characteristics and clinical environments. Older adults differ widely in frailty levels, comorbidity profiles, and functional reserve (Veronese et al., 2025). In severely frail or terminally ill patients, CGA may only delay functional decline without influencing survival, while individuals with moderate impairment may benefit more through complication prevention and reduced rehospitalization (Ekerstad et al., 2017).

Beyond direct clinical outcomes, CGA contributes to system-level efficiency by facilitating early risk identification, avoiding unnecessary interventions, shortening recovery time, and lowering costs linked to repeated admissions. This aligns with modern value-based care principles, which prioritize enhanced quality of life and consistent care delivery over mortality alone (Soo et al., 2022).

In summary, the review affirms the importance of CGA in managing hospitalized older adults, even though its effect on mortality remains inconsistent. CGA should be recognized as a continuous, team-driven care process, with its effectiveness depending on multidisciplinary involvement, coordinated follow-up, and institutional readiness to adopt geriatric-centered care models (Safari et al., 2023).

CONCLUSION

The Comprehensive Geriatric Assessment (CGA) represents a structured, multidimensional method that examines the medical, functional, psychological, social, and nutritional needs of older adults. Based on the studies included in this review, CGA has not consistently been associated with a significant reduction in mortality; however, it demonstrates a beneficial effect in lowering hospital readmission rates and strengthening collaboration among healthcare professionals.

The success of CGA is closely linked to how well it is implemented, the expertise and completeness of the multidisciplinary team involved, and the continuity of care provided after patients leave the hospital. Although its impact on definitive outcomes such as mortality remains inconsistent, CGA contributes meaningfully to improving the overall quality of geriatric care and enhancing hospital efficiency.

Given these findings, CGA may be recommended as a key component of hospital systems that aim to be more accommodating and responsive to the needs of older adults. Its role is particularly valuable in preventing further functional decline, reducing the likelihood of rehospitalization, and supporting a better quality of life. Nevertheless, additional prospective research with more uniform patient populations is required to better clarify the long-term effects of CGA on mortality and other clinically important outcomes.

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