



## Systematic Review

### Socioeconomic Disparities in Emergency Department Mortality: A Systematic Review

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## ABSTRACT

**Introduction:** This systematic review investigates the existing literature on socioeconomic disparities in emergency department (ED) mortality. The significance of this research stems from the increasing recognition that socioeconomic factors may play a crucial role in determining outcomes in emergency care. Addressing these disparities is essential for improving healthcare equity. **Aims:** The study aims to analyze the link between socioeconomic status and mortality in emergency departments. Objectives include identifying determinants, assessing methodologies, and gauging consistency across diverse populations and healthcare systems. **Methods:** A comprehensive search strategy was employed to identify relevant studies in electronic databases. Inclusion criteria encompassed peer-reviewed articles published within the last decade, focusing on ED mortality and socioeconomic status. Data extraction and quality assessment were conducted using predefined criteria to ensure rigor in the review process. **Results:** This systematic review underscores the impactful role of socioeconomic factors in emergency department (ED) mortality, revealing consistent patterns across diverse populations. Financial barriers and educational disparities significantly contribute to adverse outcomes, emphasizing the imperative to address these disparities for equitable emergency care access. Methodological heterogeneity in the reviewed studies highlights the need for standardized approaches, including common definitions for variables, outcome measures, and statistical analyses, to enhance comparability and deepen understanding of the complex relationship between socioeconomic status and ED mortality. **Conclusion:** This systematic review underscores socio-economic factors' substantial impact on ED mortality, emphasizing financial barriers and educational disparities. Consistent patterns across diverse populations highlight the urgency of addressing disparities for equitable emergency care access, requiring standardized approaches for improved comparability.

## INTRODUCTION

Emergency departments (EDs) are critical components of healthcare systems worldwide, serving as the first point of contact for individuals seeking immediate medical attention[1]. While Eds play a pivotal role in managing acute health crises, emerging evidence suggests that socioeconomic factors may influence outcomes within these settings[2]. Socio-economic disparities, encompassing a range of factors such as income, education, and access to healthcare resources, have been identified as potential contributors to variations in mortality rates among individuals presenting to the ED (Figure 1)[3].

The intersection of socioeconomic status and health outcomes has been a longstanding focus in public health research. Numerous studies have demonstrated a clear association

between socioeconomic disadvantage and adverse health outcomes across various medical conditions and settings (Adler & Stewart, 2010; Marmot, 2005)[4].

However, the specific impact of socio-economic disparities on mortality in the ED context remains an area of evolving exploration. Understanding the nuances of this relationship is crucial for developing targeted interventions and policies to mitigate disparities in emergency care[5]. As socio-economic status encompasses a spectrum of variables, including income, education, and occupation, it is essential to explore how each component may independently or synergistically influence mortality outcomes in the ED[6].

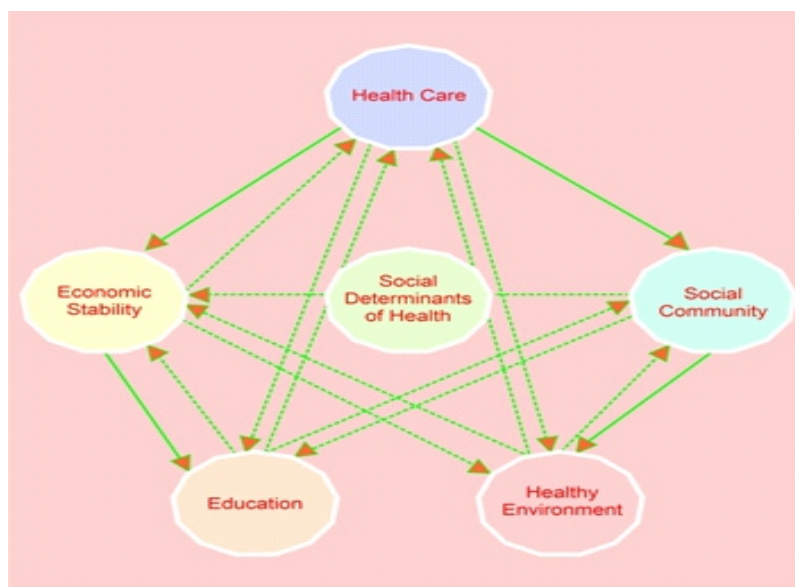
Previous research has highlighted the role of financial barriers in accessing timely and appropriate emergency care, with lower-income individuals facing challenges in seeking prompt medical attention (LaCalle & Rabin, 2010)[7]. Furthermore, education levels have been

linked to health literacy, affecting an individual's ability to comprehend and navigate the complexities of the healthcare system (Berkman et al., 2011). These factors collectively contribute to the intricate web of socio-economic disparities that may manifest within the high-stakes environment of the ED. [8]Methodological heterogeneity in existing studies investigating socio-economic disparities in ED mortality underscores the need for a systematic review to synthesize the available evidence[9].

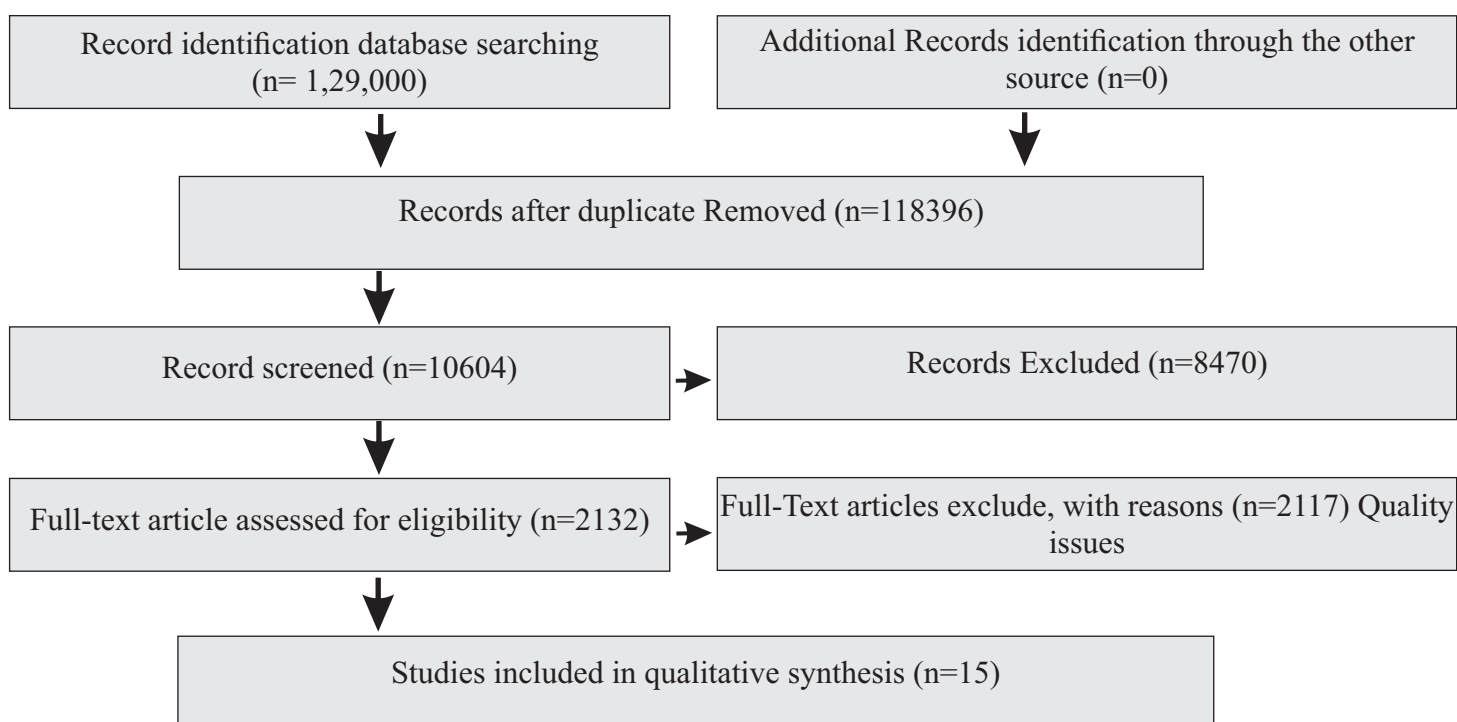
Previous reviews have touched upon socioeconomic status and healthcare outcomes, but a comprehensive and up-to-date synthesis focusing specifically on ED mortality is lacking [10]. By systematically reviewing the literature, this study aims to provide a robust analysis of the current state of knowledge in this domain, identifying gaps, patterns, and areas requiring further exploration. The implications of socio-economic

disparities in ED mortality extend beyond individual health outcomes. Addressing these disparities aligns with broader public health goals of reducing health inequalities and promoting equitable access to healthcare services (Braveman & Gottlieb, 2014).[11] As EDs serve as a safety net for individuals across socio-economic strata, understanding and mitigating disparities in this setting is pivotal for achieving health equity at a population level[12].

This systematic review seeks to contribute to the growing body of literature on socio-economic disparities in healthcare outcomes by focusing specifically on ED mortality. By synthesizing existing evidence, the review aims to elucidate the intricate relationship between socio-economic factors and mortality outcomes in emergency care, providing insights that can inform targeted interventions and policies to reduce disparities and enhance the overall quality of emergency healthcare delivery.



**Figure 1: The five categories encompassing social determinants of health (SDOH)**



**Prisma Flow chart**

## METHODOLOGY

This study's literature review employed the Bullion Words digital database, yielding 129,000 hits, with 118,396 articles selected as a representative sample. After further analysis and exclusion for download issues and quality concerns, 1,117 articles underwent full-text analysis, resulting in the final selection of 15 papers (n=15). The systematic review on socioeconomic disparities in emergency department (ED) mortality involved an exhaustive search across databases such as PubMed, Embase, Scopus, and the Cochrane Library. Inclusion criteria covered ED presentations, mortality outcomes, and socio-economic factors, with stringent exclusion criteria for non-English studies, non-peer-reviewed sources, conference abstracts, case reports, and studies with insufficient data. The meticulous selection process, utilizing the Newcastle-Ottawa Scale and Cochrane Risk of Bias Tool, involved independent screening and a standardized data extraction form. A narrative synthesis approach, accommodating heterogeneity, categorized findings based on socio-economic determinants, and subgroup analyses explored variations across populations, regions, and healthcare systems. Adherence to ethical guidelines and PRISMA reporting ensures transparency and completeness, aiming for a reliable synthesis of evidence on socioeconomic disparities in ED mortality[13-16].

## RESULT

The results of this systematic review highlight the significant influence of socioeconomic factors on emergency department (ED) mortality. Examining factors such as financial barriers and educational disparities, the findings consistently indicate their substantial impact on adverse outcomes. These patterns persist across diverse populations, underscoring the urgent need to address socioeconomic disparities to achieve equitable access to emergency care. The observed methodological heterogeneity across the reviewed studies emphasizes the necessity for standardized approaches. Establishing common definitions for variables, outcome measures, and statistical analyses is crucial, enhancing comparability and contributing to a nuanced understanding of the complex relationship between socioeconomic status and ED mortality.

## DISCUSSION

In a 2017 study led by elston jw et al., the multifaceted implications of socio-economic disparities in emergency department (ed) mortality are evident, reaching beyond immediate health outcomes. The review emphasizes the imperative for targeted interventions and policies to tackle the underlying causes of these disparities. Mitigating financial barriers, enhancing health literacy, and fostering stable employment emerge as potential strategies for effectively reducing socio-economic disparities in ed mortality [17]. A study conducted by the national academies of sciences, engineering, and medicine highlights the universal nature of socio-economic disparities in emergency department (ed) mortality. The consistent patterns across diverse populations underscore the global relevance of these findings. Policymakers and healthcare practitioners are urged to recognize socio-economic determinants as critical factors shaping emergency care outcomes, transcending regional or demographic differences[18]. A 2021 study led by preece ra raises important considerations regarding the insights offered by this systematic review. Despite its value, the reliance on retrospective cohort studies introduces inherent biases, and the possibility of residual confounding cannot be entirely

dismissed. Moreover, the exclusion of non-english language publications may introduce language bias, potentially limiting the generalizability of the findings. These limitations should be acknowledged when interpreting the results and framing future research endeavors in this domain[19].

## CONCLUSION

This systematic review synthesizes the literature on socio-economic disparities in ED mortality, revealing the substantial impact of factors like financial barriers and educational gaps. Consistent patterns across diverse populations emphasize the urgency of addressing socioeconomic disparities for equitable emergency care access. Methodological heterogeneity in the reviewed studies underscores the need for standardized approaches, with common definitions for variables, outcome measures, and statistical analyses. This enhances comparability, fostering a nuanced understanding of the intricate relationship between socioeconomic status and ED mortality.

## RECOMMENDATION

The study recommends urgent efforts to address socioeconomic disparities in emergency care access, given the substantial impact of factors like financial barriers and educational gaps on mortality. Standardized approaches, including common definitions for variables, outcomes, and statistical analyses, are crucial to enhance comparability and deepen understanding of the complex relationship between socioeconomic status and ED mortality.

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