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Original Research Article

Emergency department visits by older adults in India: a comprehensive review

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ABSTRACT

India's aging population is rapidly growing, necessitating urgent attention to the healthcare needs of older adults (≥60 years). Emergency departments (EDs) often serve as the primary access point for acute care, accommodating both critical emergencies and preventable, non-urgent visits. This comprehensive review examines the contributing factors to ED utilization by older adults in India, highlighting acute exacerbations of chronic illnesses, gaps in outpatient services, and social determinants of health. It also explores systemic challenges, including ED overcrowding and the lack of geriatric-specific services, and draws insights from international studies to contextualize these issues. Recommendations include strengthening primary care, leveraging telemedicine, establishing geriatric emergency departments (GEDs), and implementing policy reforms to optimize healthcare delivery for older adults. Addressing these challenges can improve healthcare outcomes, alleviate ED overcrowding, and ensure age-sensitive care for India's growing elderly population.

Keywords: Emergency department, Geriatric care, Multimorbidity, ED overcrowding, Primary healthcare

INTRODUCTION

India's aging population is rapidly growing, with older adults (≥60 years) expected to constitute nearly 20% of the population by 2050. This demographic shift significantly impacts healthcare utilization, particularly emergency departments (EDs). Older adults frequently visit EDs for acute exacerbations of chronic illnesses, including diabetes, hypertension, cardiovascular diseases, and chronic obstructive pulmonary disease.[1] These visits are often justified, given the increased vulnerability of older adults to sudden health crises and multimorbidity, but a substantial proportion involve non-critical conditions such as minor infections, musculoskeletal pain, or routine medication management. This dual challenge balancing the management of life-threatening emergencies while addressing preventable, non-urgent ED visits highlights critical gaps in India's healthcare infrastructure. This review aims to examine the multifaceted nature of ED utilization by older adults in India and offers tailored recommendations to improve healthcare delivery for this demographic.

CONTRIBUTING FACTORS TO ED UTILIZATION PATTERNS

Acute exacerbations of chronic illnesses and multimorbidity

Older adults in India often present to EDs with acute complications arising from chronic conditions such as diabetes, hypertension, and cardiovascular diseases. The prevalence of multimorbidity-defined as the coexistence of two or more chronic conditions-is notably high in this

demographic, complicating treatment regimens and increasing the likelihood of emergency visits.[2] A study conducted in a rural health training centre in India found that 75% of elderly patients had one or more comorbid medical conditions, with an average of 4.02 drugs prescribed per patient, indicating a significant burden of polypharmacy.[3]

Polypharmacy, the concurrent use of multiple medications, is prevalent among older adults and is associated with adverse outcomes such as drug interactions, increased hospitalizations, and higher mortality rates. A systematic review and meta-analysis reported a pooled prevalence of polypharmacy at 49% among older adults in India, with regional variations ranging from 39% in Northern states to 72% in Northeast India. Poor adherence to treatment plans further exacerbates the risk of acute exacerbations. For instance, a cross-sectional study in Dakshina Kannada, India, revealed that while 72% of elderly diabetic patients were adherent to their medications, factors such as forgetfulness and lack of awareness contributed to non-adherence.[4,5]

Non-critical conditions and systemic healthcare gaps

A significant proportion of ED visits by older adults are for non-critical conditions that could be managed in outpatient settings. This trend is often attributed to systemic issues within the primary healthcare infrastructure, including long waiting times, inadequate availability of healthcare workers, and the absence of geriatric-specific outpatient care. These deficiencies compel older adults to seek immediate attention in EDs, even for minor ailments, leading to overcrowding and strain on emergency services. Moreover, the lack of routine monitoring and follow-up care for chronic conditions in primary care settings contributes to the progression of diseases to acute stages, necessitating emergency interventions.[2]

Social determinants of health

Social determinants such as isolation, lack of caregiving support, and socioeconomic challenges significantly influence ED utilization patterns among older adults. Elderly individuals living alone or without adequate caregiver support often resort to EDs as their primary point of healthcare access, even for non-urgent issues. A study analyzing data from the National Health Interview Survey highlighted that older adult with multimorbidity and adverse social determinants of health had higher odds of ED visits. In the Indian context, socioeconomic vulnerabilities, including low education levels and limited financial resources, have been associated with increased physical frailty among older adults, further predisposing them to emergency healthcare needs.[6,7]

The utilization of emergency departments by older adults in India is multifactorial, driven by clinical complexities like multimorbidity and polypharmacy, systemic inadequacies in primary healthcare services, and social determinants such as isolation and socioeconomic vulnerabilities. Addressing these challenges requires a comprehensive approach, including strengthening primary healthcare infrastructure, implementing targeted interventions to improve medication adherence, and developing social support systems to assist the elderly population.

HEALTHCARE SYSTEM CHALLENGES

The healthcare system faces significant challenges in managing the growing demands of an aging population, particularly in emergency departments (EDs). Overcrowding and the lack of geriatric-specific services are pressing issues that compromise the quality and efficiency of care.

OVERCROWDING IN EMERGENCY DEPARTMENTS

Emergency departments worldwide are experiencing increased visits from older adults, many of which involve non-critical conditions that could be managed in outpatient settings. This trend exacerbates ED overcrowding, leading to delayed care for true emergencies, increased operational costs, and reduced patient satisfaction.

A cross-sectional observational study conducted in Singapore highlighted this issue. The study found that a significant proportion of older adults visiting the ED with urgent but non-emergent conditions could have been managed in alternative care settings, such as urgent care centers or primary care clinics. This suggests a need to strengthen outpatient services to alleviate the burden on Eds.[8]

In India, similar patterns have been observed. A study conducted in a teaching hospital in North India reported that elderly patients constituted a substantial portion of ED visits, with higher rates of hospital admissions and ICU transfers compared to younger patients. This underscores the need for better triage and alternative care pathways for non-critical cases among the elderly 4.

LACK OF GERIATRIC-SPECIFIC SERVICES

Most emergency departments are not adequately equipped to address the unique needs of older patients. Conditions such as dementia, frailty, and falls require specialized interventions that are often unavailable in general EDs. A retrospective analysis in Brazil examined over 333,000 ED visits and found that older adults represented a significant proportion of hospital admissions and deaths. Notably, patients aged 80 and above had the highest odds of hospitalization and mortality, emphasizing the need for tailored care strategies for this age group.[9] In India, the situation is further complicated by disparities in healthcare infrastructure. A study assessing health facilities for the aging population in Indian cities revealed that advanced

healthcare services are concentrated in metropolitan areas, leaving smaller cities and rural regions underserved. This uneven distribution hampers access to geriatric care for a significant portion of the elderly population.[10]

Additionally, rural India faces acute shortages of trained healthcare professionals in geriatrics. The lack of specialized training and resources in these areas further limits the quality of care available to older adults.[11]

The challenges of overcrowding in emergency departments and the lack of geriatric-specific services are interrelated issues that require comprehensive solutions. Enhancing outpatient care capabilities, improving triage systems, and investing in geriatric training and infrastructure are critical steps toward optimizing healthcare for the aging population.

RECOMMENDATIONS FOR ADDRESSING CHALLENGES

To effectively address the challenges associated with non-urgent emergency department (ED) visits among older adults, a multifaceted approach is essential. This includes strengthening primary healthcare, integrating telemedicine, and establishing geriatric emergency departments (GEDs). Each of these strategies plays a crucial role in optimizing care for the elderly population.

STRENGTHENING PRIMARY HEALTHCARE

A significant proportion of ED visits by older adults are for non-urgent issues that could be managed within primary care settings. A retrospective study at King Abdullah bin Abdulaziz University Hospital in Saudi Arabia analyzed 30,737 ED visits over one year and found that 61.4% were categorized as less-urgent or non-urgent (Canadian triage and acuity scale levels 4 or 5). The most common reasons for these visits included routine examinations (40.9%), medication refills (14.6%), and upper respiratory tract infections (9.9%). Most of these visits resulted in prescriptions (94.2%), laboratory tests (62.8%), and referrals to primary healthcare clinics (3.6%).[12]

These findings suggest that enhancing primary healthcare services, such as expanding primary care networks and establishing geriatric clinics, could effectively manage such cases. Community outreach programs, health camps, and home-based care tailored to older adults can address chronic conditions before they escalate into emergencies. Additionally, improving public awareness about appropriate ED use and enhancing the quality of care in primary healthcare centres are crucial steps in reducing unnecessary ED visits.[13-15]

INTEGRATING TELEMEDICINE

Telemedicine offers a viable solution for managing minor health concerns among older adults, especially in rural areas. By facilitating teleconsultations, patients can receive medical advice and care without the need to visit the ED physically. This approach not only reduces unnecessary ED visits but also improves access to specialist care and enhances chronic disease management. Implementing telemedicine services can bridge the gap between patients and healthcare providers, ensuring timely interventions and continuous monitoring of chronic conditions.[16]

A study conducted in senior living communities demonstrated that high-intensity telemedicine services significantly reduced ED visits among residents. The program provided acute illness care through telemedicine, leading to an 18% annualized reduction in ED use without increasing other healthcare utilization or mortality.[17]

ESTABLISHING GERIATRIC EMERGENCY DEPARTMENTS

Older adults often present with complex health issues that require specialized care. Establishing GEDs staffed with trained geriatricians and tailored protocols can optimize care delivery for older patients. These units can effectively address both critical and non-critical needs, ensuring that older adults receive appropriate and timely care.[18]

A population-based study conducted in Finland examined ED visits by patients aged 80 and older. The study included 6,944 patients who made 17,769 ED visits over two years, accounting for 15% of all ED visits. The incidence of ED visits increased with age, reaching 768 visits per 1,000 person-years among octogenarians and 1,007 per 1,000 among nonagenarians, compared to 233 per 1,000 among those under 80. Common diagnoses included pneumonia (4.8%), malaise and fatigue (4.5%), and heart failure (4.3%). The mean cost per ED visit was €422, highlighting the financial burden on the healthcare system.[15]

These findings underscore the need for chronic care and preventive strategies to reduce avoidable ED visits. GEDs can serve as models for integrating geriatric principles into mainstream emergency care, focusing on comprehensive assessments, care coordination, and appropriate discharge planning.[19]

Addressing the challenges of non-urgent ED visits among older adults requires a comprehensive approach that includes strengthening primary healthcare, integrating telemedicine, and establishing GEDs. By implementing these strategies, healthcare systems can improve care for older adults, reduce unnecessary ED visits, and alleviate the burden on emergency services.

POLICY INTERVENTIONS AND EDUCATION

India's rapidly aging population poses significant challenges to its healthcare infrastructure, calling for targeted policy interventions and educational reforms. To address these challenges, the Government of India has

implemented the national programme for health care of the elderly (NPHCE), a dedicated initiative aimed at providing comprehensive, accessible, and affordable healthcare services to the elderly. The NPHCE focuses on three major components: infrastructure development, capacity building, and community-based outreach. Infrastructure improvements have included the establishment of geriatric units in district hospitals and tertiary care institutions. At the same time, the programme has prioritized human resource development by introducing postgraduate courses in geriatric medicine and offering in-service training for healthcare workers to improve the quality of care delivered to older adults.[20,21]

Furthermore, several Indian states have initiated their own elderly care programmes. Kerala's "Vayomithram" project, for instance, provides a model of integrated care that includes mobile medical units, palliative care services, and psychosocial support. This state-level intervention exemplifies how decentralized healthcare models can effectively address the unique needs of elderly populations through a combination of home-based care and institutional support.[23]

In parallel with policy measures, educational initiatives play a pivotal role in equipping both healthcare professionals and older individuals with the knowledge required for effective healthcare navigation. Educational campaigns targeting older adults and their families have been shown to improve understanding of appropriate emergency department (ED) utilization versus outpatient care.

Misuse or overuse of emergency services by older adults is often linked to a lack of awareness, which can be mitigated through community outreach and self-care training. Organizations like GRAVIS have developed training modules for the elderly, emphasizing non-communicable disease (NCD) management, fall prevention, and medication adherence. A recent study reported that more than 85% of participants in these programs felt more confident and better informed about managing their health conditions independently.[23]

On the professional side, efforts have been made to integrate geriatric medicine into medical education curricula. The Medical Council of India has encouraged the inclusion of geriatric topics in undergraduate and postgraduate syllabi. There are also innovative training models emerging, such as the adoption of modular and simulation-based learning focused on geriatric assessment, which aim to enhance clinical competence among future doctors. These educational approaches are expected to produce a workforce that is not only technically proficient but also empathetic and culturally sensitive to the needs of elderly patients.[24]

Overall, a coordinated approach that combines strategic policy interventions with robust educational reforms is essential to effectively support India's aging demographic. Investing in geriatric infrastructure, training healthcare professionals, and educating older adults and their caregivers are pivotal steps in optimizing healthcare delivery and ensuring that emergency and routine care are utilized appropriately. Such efforts, grounded in both central and state-level initiatives, reflect a promising direction for geriatric healthcare reform in India.

CONCLUSION

The aging population in India presents a dual challenge to emergency healthcare systems: managing critical emergencies and addressing non-urgent ED visits. These patterns reflect systemic gaps, including inadequate primary care, insufficient geriatric-specific services, and a lack of caregiver support. Overcrowding in EDs, resource misallocation, and delayed care for critical patients further complicate healthcare delivery. By implementing strategies such as strengthening primary care, introducing GEDs, leveraging telemedicine, and enacting targeted policy reforms, India can ensure equitable and efficient healthcare for its older population while relieving the burden on EDs.

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