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Gerontology and Nursing in the Emergency Department

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Abstract

Background: With a rapid rise in our older adult population globally and due to their multimorbidities, our older adults are more likely to engage in the services provided in the emergency department at a higher rate than younger adults. The current emergency service delivery model may be ineffective against such an ageing phenomenon. Research reports most older adults having one or more co-morbidities including functional decline, dementia, and frailty. Studies have shown that older adults have been undertriaged with physicians not being able to comprehend their complex needs related to their presenting complaints in the emergency department. Geriatric emergency departments have incepted worldwide to better manage this care deficiency in the rapidly ageing society around the world.

Data Sources: A search of published literature from 2010-2020 using keywords as described below was undertaken of which, relevant literature were selected for an informed review.

Implications for Nursing: Understanding geriatric emergencies can enable healthcare workers to reduce undertriaging and provide appropriate care that improves patient's health outcomes currently and in the future in the emergency department. Further education in gerontology can also be a platform for our nurses to enhance their care and thought process, likewise upskilling themselves for the future geriatric population seeking treatment. Older healthcare workers will also be able to enhance their current job scope before retirement. In-house teachings from trained gerontologists or certified programs can shed light on the special care needs of our senior citizens globally.

Conclusion: With our rapidly increasing population, we can expect an influx of our older patients both from home and long-term care facilities to present to the emergency department with a wide range of geriatric emergencies. By being able to create a geriatric screening process and tailored care models, healthcare workers will be able to understand their care process and in turn, improve patients' health outcomes and provide a quicker transition of care.

Key Words: Nursing, Emergency Department, Gerontology, Geriatric Nursing, Geriatric Emergency, Emergency Nursing, Geriatric Emergency Unit

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Introduction

Globally, the percentage of our older adults had seen a rapid rise of 9.2% in 1990 to 11.7% in 2013, with projections anticipating a further increase to 21.1% which would constitute more than 2 billion people by 2050 (Sander et al., 2015). Throughout the past 10 years, the increase of our older adults have posed a significant burden to healthcare delivery and fiances as more than 50% of older adults aged 65 years old and above have at least two chronic conditions (multi-morbidity) [Barnett et al., 2012; Salive, 2013]. Older adults are more likely to engage in the services provided in the emergency department (ED) at a higher rate than their younger counterparts (Aminzadeh & Dalziel, 2002). Older adults might also have difficulties in articulating their concerns to the healthcare workers in the ED, thus, creating multiple opinions in their treatment process. This could lead to undertriage, in which delays, could pose a severe risk to the older adult's health outcomes, given the long waiting times present in EDs worldwide.

Apart from the evident chronic diseases, multi-drug regimen, and abnormal presentations, the seniors visiting the ED often have underlying issues not identifiable to the physician during examination (Singal et al., 1992; Salvi et al., 2007: Gray et al., 2013). Functional decline and impaired cognition, for instance, delirium or dementia, chronic diseases, frailty, falls and polypharmacy have consequential detrimental impacts on an older adult's psychosocial and physical well-being (Han & Wilber, 2013; Griffiths et al., 2014; Kessler et al., 2013; Carpenter et al., 2011; Carpenter et al., 2011). In geriatric emergency patients, the risk of adverse outcomes such as hospital (re) admission, institutionalisation, and mortality are increased compared to younger patients (Schnitker et al., 2011; Salvi et al., 2007). This discussion paper aimed to present a discussion of special care needs and geriatric emergencies for older adults seeking treatment in the emergency departments.

Background

What are the special care needs of older adults?

Functional Decline

One of the consequences of ageing is functional decline. It can be defined as the onset of new disabilities (Gill, Allore & Guo, 2003). This can significantly impact an older adult's activities of daily living (ADL) or instrumental activities of daily living (IADL). Katz et al. (1970) categorised six domains as measures of our ADL; bathing, dressing, toileting, transferring, continence and feeding. Lawton & Brody (1969) provided a more in-depth description of our IADLs such as using the telephone, shopping, preparing food, housekeeping, doing laundry, using transportation, handling medications, and handling finances. A loss of independence in ADLs or IADLs signifies a functional decline in an individual which may either be temporary or irreversible.

Functional decline can occur through various facets, particularly during and after hospitalization. Functional decline post-hospitalization is a prevalent adverse outcome that occurs in the elderly, mainly caused by immobilization, polypharmacy, isolation, delirium, and pressure sores (Asplund et al., 2000). As informed by Covinsky et al. (2003) an estimate of a third of older adults encounter functional incapacity post hospitalization. The association of

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acute complaints and geriatric disorders are significant indicators of adverse outcomes during hospital admission which are also often correlated with functional and cognitive impairment, institutionalisation, and mortality after discharge (Boyd et al., 2008; Creditor, 1993; Inouye et al., 1993; Lee et al., 2006; McCusker, Kakuma & Abrahamowicz, 2006; Rothschild, Bates & Leape, 2000).

During a hospital stay deconditioning resulting in functional decline is a major problem (English & Paddon-Jones, 2010). When functional decline occurs, independence is affected in physical, cognitive, and social/emotional domains. Despite the ability to walk, older people spend most of their time in hospital in bed (Brown et al., 2009). Abilities for self-care when lost, are not easily regained by an older person (Covinsky, Pierluissi, & Johnson, 2011; Lakhan et al., 2011; Landefeld, 2006; Zisberg et al., 2011).

Frailty

While there is no standard definition of frailty, it is generally explained as muscle weakness, fatigue, slowness, low physical activity, and unintended weight loss (Fried et al., 2001; Woods et al., 2005; Sternberg et al., 2011; Avila-Funes et al., 2012; Kalyani et al., 2012). Gobbens et al. (2010) also defined frailty as a dynamic state affecting an individual who experiences losses in one or more domains of human functioning. Frail older patients have higher ED conversion rates (Latham & Ackroyd-Stolarz, 2014) that result in longer admissions (Khandelwal et al., 2012) with a greater likelihood of re-admission (Kahlon et al., 2015) and higher inpatient mortality (Khandelwal et al., 2012). By identifying patients who are frail at the EDs, potential interventions could be initiated to ensure their safety, preventing adverse events that could potentially occur in the ED such as falls, skin tears, pressure sores, and delirium. Interventions such as placing the patient on a trolley bed instead of a wheelchair would greatly aid in the prevention of wandering that could occur amidst the overcrowded ED.

Falls

Falls are a common reason for older adults attending the ED, and older adults with a fall-related ED visit have increased risk for subsequent falls, hospital re-admission, functional decline, and mortality (Castro et al., 2014; Ayoung-Chee et al., 2014; Bloch et al., 2009; Carpenter et al., 2014; Denkinger et al., 2015). Research has shown, patients who have sustained a fall are most likely to fall again. Recurrent falls are often sub-sequential falls that are not investigated the first time it occurs (Evans, 1990). 30% of fall victims are predisposed to recurrent falls. Recurrent falls are described as two or more falls per annum with low attribution to a 'mechanical' (i.e. accidental) cause. Common precipitating factors for falls are attributed to issues such as co-morbidities that could be preventable. Associating factors with fear of fall 'post-fall anxiety syndrome' can occur with a near fall incident that results in self-imposed reduced mobility causing anxiety and eventually despair. These are often witnessed in seniors living alone with impaired cognition and mobility and poor gait which precipitates subsequent falls (Murphy, Dubin & Gill, 2003).

There are several factors toward fall prevention that can be modified amongst our seniors that includes poor and or impaired mobility due to joint or medical diseases (e.g., Arthritis, Parkinson's disease, and cerebrovascular accident), polypharmacy (e.g., sedatives and antipsychotics), cognition or vision deficit (e.g., Alzheimer's or cataracts), non-elder friendly environment and improper foot gear (Ang, Low & How, 2020). Usually, ED

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assessments for falls require a targeted review to rule out acute trauma and therefore do not address modifiable risk factors to prevent recurrent falls (Davies & Kenny, 1996; Khan et al., 1996; Carpenter et al., 2011). Preventing subsequent falls is critical to stop the cascade of functional decline, loss of independence, hospitalization, and death, which frequently follows a fall. Thus, a patient with a fall that can be discharged to home should undergo a teaching session led by a geriatric nurse, gerontologist, or in some places, patient navigators. Education related to the prevention of subsequent falls should be well informed to the patient.

Dementia

Dementia originates from the Latin term 'de mens' (Gustafson, 1996) which means 'without a mind'. It is a broad conception of various gradual illnesses that consequentially interferes with one's cognition leading to behavioural issues such as inability toward self-care and daily maintenance (World Health Organisation, 2017). The World Health Organisation in 2012, had announced dementia as a leading public health issue due to accelerating prevalence with population ageing. The global incidence of dementia had been estimated at 46 million people, a number that is expected to triple to 131.5 million people by the year 2050, on top of prevailing medical expenses reportedly calculated at US$818 billion (Prince et al., 2015). The financial strain is felt worldwide as dementia is expected to become a trillion-dollar health condition. In 2018, dementia had met the predictions made a few years prior, costing the global economy over US$ 1 trillion with dementia being the 7th leading cause of death worldwide.

Behavioural and Psychological symptoms of dementia (BPSD), particularly impaired cognition and perception, recurrent mood shifts, and agitation (Finkel & Burns, 1999), have posed dreadful impacts to either the person with dementia (PWD) or caregiver. The standard of living and ability to function could be diminished for the PWD (Klapwijk et al., 2016), while BPSD could also render the role of caregiving unbearable and depressing (Klapwijk et al., 2016; Gaugler et al., 2010; Porter et al., 2016; Zimmerman et al., 2005). Studies also reveal in clinical settings, the motives of PWD are commonly misunderstood as destructive behaviours (Jensen et al., 2018), when in fact, unfamiliar environments and people pose a threat to PWDs during their hospital visit. Therefore, to improve patient centric care, specialty training and resources must be made available for health care workers to render appropriate psychosocial strategies in crisis interventions (Handley, Bunn, and Goodman, 2019; Hung, Son, & Hung, 2018; Mohler & Meyer, 2014).

End-of-Life Care

Death is the final stage in our life course process. In the ED, healthcare workers have become accustomed to death daily, despite their valiant life-saving measures. Nevertheless, end-of-life (EOL) care is seldom regarded as a fundamental knowledge component of emergency care. By the course of their practice, with maximum active resuscitation strategies, many emergency physicians are conditioned to cope with acute and severe illnesses in the ED. Nonetheless, this might be inappropriate in the management of critically ill patients experiencing impending death with a low survival rate (Grudzen et al., 2010; Lamba, 2009).

Quality EOL care recognises the intricate worldview perspectives of dying, which promotes holistic patient centric care and familial support by paying attention to their physical, psychosocial, and spiritual requests for comfort (Izume et al., 2012). In doing so, assurance of a "good death" follows regarding respect of the dying which upheld the ethical excellence in palliative care (Emanuel & Emanuel, 1998). The demand for quality EOL care has become

more significant with ageing population and increasing prevalence of co-morbidities (Quest, Marco & Derse, 2009).

Data Sources

To inform this discussion a general keyword search was undertaken to locate appropriate literature from 2010-2020. The keywords included: 'nursing', 'emergency department', 'gerontology', 'geriatric nursing', 'geriatric emergency', 'emergency nursing', 'geriatric emergency unit'. The search aimed to identify relevant literaure to create a discussion rather than perform a comprehensive and exhaustive search. Databases searched were CINAHL, MEDLINE, Google Scholar, ProQuest, ScienceDirect, and Wiley.

Discussion

It is imperative to understand that the special care needs for our older adults are generally not the primary complaints that they would present within the ED. Although the ED is intended to handle the chronically ill or wounded, it is also a sub-optimal setting for the treatment of the frail, older individual (Hwang & Morrison, 2007; Wilber et al., 2006). Previous research suggests that older adults who present to the ED with an acute illness or an exacerbation of a chronic condition have complicated medical needs, and physicians and nurses who oversee their initial treatment frequently have little expertise in geriatric medicine (Briggs et al., 2013; Kennedy et al., 2014). Multiple studies have shown that this lack of expertise leads to the under-triage of the seniors, compounded with increased rates of admission, delayed or disorganised treatment, increased waiting times in the ED, unnecessary diagnostic procedures, and invasive interventions (Crilly & Wallis, 2006; Crilly et al., 2008; Mudge, Denaro & O'Rourke, 2012; Hastings & Heflin, 2005; McCusker et al., 2001; Dwyer et al., 2014; Ackroyd-Stolarz et al., 2011; Geelhoed & de Klerk, 2012; Coleman, 2003; Schnitker et al., 2011). To mitigate these shortcomings, different types of scales can be incorporated into the triage questionnaire. With consideration of quick turnovers at triage, short and validated scales should be adapted to highlight seniors at risk of functional decline.

Safety Implications

Older patients are at an increased risk for several specific events during their ED visit as compared to their younger counterparts. Impaired hearing and vision will often limit site awareness and adaptation of the older patient to an unfamiliar environment. Similarly, baseline confusion, delirium, poor balance, and spatial awareness increase the risk to the older patient of injuries in the typically designed healthcare facility (Gray et al., 2013; Bradshaw et al., 2013). Safety implications included hazards associated with flooring (Doig & Morse, 2010; Hewawasam, 1996; Latimer et al., 2013; Simpson et al., 2004; Warren & Hanger, 2013), lighting illumination (Thuesen et al., 2011), problems with inpatient bathrooms (Fink, Pak, & Battisto, 2010), use of therapeutic lighting to reduce agitation (Barrick et al., 2010), and problem-solving activities supported by wayfinding (Caspi, 2014; Nolan, Mathews, & Harrison, 2001; Yates Bolton et al., 2012).

To expand ED based services, the creation of 'geriatric emergency departments' and 'senior emergency rooms' aiming senior citizens within ages 65 years old and above (Hwang & Morrison, 2007). For EDs that are looking to modify their environment, they can seek help with the use of the Geriatric Emergency Department Accreditation (GEDA) guidelines

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developed by the American College of Emergency Physicians, Emergency Nurses Association, American Geriatrics Society, and the Society for Academic Emergency Medicine in 2013. GEDA details the changes that can be made to improve the environment for EDs to make it more geriatric-friendly. However, what it lacks is the service delivery model, which, would differ across all EDs, given the various cultural perspectives of ageing and emergency care. Thus, EDs globally would need to widely consider their ability to not only restructuring their environment but their care processes as well.

Harm was also implied when noise interrupted sleep to diminish healing and well-being (Aaron et al., 1996). The overall configuration and conditions of overcrowding created physical space limitations that were deemed unsafe (Kelley et al., 2011). This included the use of acceptable furniture/equipment to support function. For example, reclining chairs to reduce pain (Wilber et al., 2005) and proper chair height to promote standing from sitting safely (Weiner et al., 1993). Shock-absorbing flooring (Latimer et al., 2013) and grab bar placement (Sanford & Megrew, 1995) may decrease the impact of injury in falls. The use of art may yield a sense of calm (Wallace et al., 2012). Artwork of landmarks should be used in the EDs to help in the orientation of location. Older adults will feel a higher sense of calm when they recognise landmarks of their country. Evidence has shown us that cost-effective measures can greatly impact the senior patients' wellbeing throughout their stay, such as allowing a caregiver by his or her bedside.

Crowding as described by the American College of Emergency Physicians (2017) is a circumstance when the need for emergency services outweigh possible ED or hospital reserves for patient care. Crowding, an unsought circumstance could consequentially jeopardise standards of patient care causing detrimental effects on patients' well-being (Derlet & Richards, 2000; Gordon et al., 2001; Sun et al., 2013). Backlogs in inpatient transfer to the wards after ED triage and assessment seem to be a primary feature of ED overcrowding, contributing to patients' overstay in the ED (van der Linden et al., 2016). Additional influences, such as the advent of improved healthcare needs, an aging society, a growing proportion of patients with complexities, and the emergence of advanced diagnostic technologies, can also lead to ED overcrowding (Patterson et al., 2019).

No matter the circumstance, ED overcrowding may result in unfavourable patient outcomes, such as potential delay to treatment and diagnosis and higher fatality for patients admitted to inpatient and those outpatients discharged from the ED (Pines et al., 2010; Timm et al., 2008). Functioning in stressful circumstances may jeopardise public and staff safety. Also, hastening staff "burn-out", fortifying potential dissension amongst staff, and jeopardising the quality of care (Moksop et al., 2009; Barishansky & O'Connor, 2004; Barrett & Schriger, 2008; Bernstein et al., 2009; Weber et al., 2012).

Implementation of Comprehensive Geriatric Assessment

A comprehensive geriatric assessment (CGA) was described as a multi-dimensional interdisciplinary diagnostic process aimed at evaluating the medical, psychosocial, and functional capacities of the frail senior to establish an organised and integrative treatment plan for continuity (Rubenstein et al., 1991). Also, several researchers had suggested early detection of geriatric diseases using CGA in targeted patient demographics may minimise adverse outcomes pre and post hospitalisation (Landefeld et al., 1995; Naylor et al., 1999; Van Craen et al., 2010). Early detection of geriatric diseases can also lead to improved function and cognition capacities following hospitalisation (Van Craen et al., 2010; Baztan et al., 2009; Ellis

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& Langhorne, 2004). When we look back at the special care needs of our seniors, we must understand that their complaints are more than meets the eye.

There are many different scales that we can use to achieve a thorough CGA which can begin at the point of triage. Firstly, a measure of functional independence. We recommend the use of the Katz Index which was created as a generalised numerical scale in order to assess, provide care, create a diagnosis, identify functional dependence in older people and people with multimorbidities (Hartigan, 2007; Katz et al., 1963). Along with the Barthel Index, it has been widely used for ADL evaluation of patients regardless of their medical condition. Hartigan (2007) and Roedl, Wilson, and Fine (2016) have described the Katz Index as the most appropriate scale to assess patients' ability to perform ADL independently. The Katz Index has been chosen over the Barthel Index as it was initially developed for use in the assessment of patients with neuromuscular and musculoskeletal disorders, however, its use spread to the assessment of functional changes for patients undergoing rehab as well.

Secondly, the measure of frailty. The Clinical Frailty Scale (CFS) is a well-validated frailty measurement that originated from Dalhousie University in Canada (Rockwood et al., 2005). It is scored on a scale from 1 (very fit) to 9 (terminally ill) and is based on clinical judgement (Rockwood et al., 2005). Every one of the 9 levels of scores highlights a detailed explanation of the severity of the patients frailty which is accompanied by a visual aid. A score ≥5 is considered to be frail (Rockwood et al., 2005). Information of CFS can be extracted through data from the patient's medical charts, and therefore can also be derived from CGAs. The CFS has been validated as an adverse outcome predictor in hospitalised older people (Basic & Shanley, 2015; Wallis et al., 2015). Simply, the CFS summarises the total fitness or frailty of a senior once they had been assessed by a competent healthcare worker (Rockwood et al., 2005). Its clinical use had been further augmented to screen for frailty as it is not a questionnaire of sorts but a judgement of an encounter with the senior to report their overall health status.

Thirdly, a fall risk assessment which is currently being performed at the point of triage for all patients' in the ED. Most EDs incorporate various measures in which they would undertake fall risk assessments. Lastly, patients undergoing palliative care. With anticipation for numerous EOL dialogues required in the ED, communication skills training is necessary for swift and effective dialogues with distraught relatives with no previous rapport built (Smith et al., 2009). It is always difficult in such situations to have an assessment in such times. However, a proper assessment will promote patient's comfort during his or her stay in the A&E.

A comprehensive geriatric assessment of older adults is just one way to improve their health outcomes in the EDs. With quick turnovers, CGAs can be time consuming thus its assessment can be broken up into multiple layers, such as one assessment at triage and the next with a physician. The information can be further combined to develop an appropriate plan of care for the older adult.

Implications to Nursing

As healthcare providers, we need to understand that there is more beyond the scope of a patient's complaint. The seniors that present to our ED may have an underlying medical history of dementia, frailty, functional decline, and an EOL status which could potentially be ignored. We need to be able to understand the complexity of their issues to provide appropriate treatment through different frameworks such as person-centered care or the biopsychosocial model. As such, the special care needs of older adults reiterate the importance of the

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environment and the role it plays in their well-being. These are also opportunities for healthcare workers to further upgrade themselves to adapt to the demands of changing demographics of our healthcare landscape to broaden their care processes in geriatrics and move away from former roles that make them task orientated.

The initial triage carried out at the "front door" of the acute hospital setting is a specialist process, which is developed for the rapid prioritization and management of life-threatening conditions. For older people, however, this triage has failed, in the past, to identify the many complexities which precipitate their admission (Ellis, Marshall & Ritchie, 2014). Assessment of cognitive impairment, functional problems, and existing home care must be essential information for older adults in the ED (Wilber et al., 2005; Carpenter et al., 2011; Healthcare Improvement Scotland, 2014).

Typical emergency department planning focuses on rapid patient assessment, evaluation, and turnover. Patient's privacy and comfort are forsaken for greater staff manoeuvrability and flexible capacity. As such, the traditional model of emergency medical care may no longer suit the growing needs of the silver generation who seek treatment in Singapore's ED yearly. This demographic shift brings about more challenges to our healthcare system as more older people are likely to seek treatment for their multiple acute or chronic conditions. As of now, there are no workflows or processes that differentiate older adult patients from their younger counterparts. Patients presenting to the ED are triaged based on their presenting symptoms regardless of the patient's age or functionality and our current focus is solely based on their chief complaints.

In-house training opportunities for our healthcare workers who are keen on upgrading themselves to appropriately care for our ageing population and our ageing patients' should be conducted. Education such as lifting and transferring would also go a long way in reducing injuries that healthcare workers could sustain while caring for an older adult. Besides the older adults at risk of falling in the bathrooms, (Buzink et al., 2005), healthcare workers that aid these individuals in their daily activities are at risk of injuries as well. Due to these, problems with posturing due to lifting and transferring are common in which, back pain usually follows (Kothiyal & Yuen, 2004; Garg, Owen & Carlson, 1992). This could also be a platform for re-designing and re-skilling older workers' job scopes who are nearing their retirement. Modified job scopes can allow these older groups of healthcare workers to provide teachings for both staff and the general public to enhance their awareness of the special care needs of our senior patients.

Conclusion

With our rapidly increasing population globally, we can expect an influx of our older patients both from home and long-term care facilities to present to the emergency department with a wide range of geriatric emergencies. By being able to adapt and understand their care process, we can improve patients health outcomes and provide a quicker transition of care. However, we also do need to consider the appropriate model of care in our service delivery towards our senior patients. Research has yet to show a validated service delivery model for senior patients seeking treatment in the emergency departments. By being able to create a geriatric screening process and tailored care models, healthcare workers will be able to understand their care process and in turn, improve patients' health outcomes and provide a quicker transition of care. Further research can be performed to find solutions in improving patients' health outcomes and their service experience in the emergency department.

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Declarations

Ethics Approval and Consent to Participate

Ethics approval was not required for this systematic review.

Consent for Publication

Not applicable

Availability of Data and Materials

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Competing Interest

The authors declare that there is no competing interests.

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Authors' Contributions

All authors had significant contribution to this paper and meet at least one of the following criteria; (i) conception and design, or analysis and interpretation of data; (ii) drafting the article or revising it critically for important intellectual content; and (iii) final approval of the version to be published. GC, SL and MS had conceptualised and designed this discussion. GC drafted the article, which was reviewed by SL and MS. All authors approved the final version for submission.

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