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Utilization of Healthcare Sources by Elder Abuse Victim at the Emergency Department

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Abstract

Aim: Elder abuse may result in serious injuries with significant psychological consequences, leading to increased use of emergency department (ED) for trauma-related presentations. We aimed to describe the utilization of healthcare resources by victims of elder abuse.

Materials and Methods: This retrospective study was conducted. Victims of elder abuse that were 65 years or older and presented between August 2018 and December 2020 were included. Information on demographics, mode of arrival, place and mechanism of injury, sustained injuries, injury severity score (ISS), disposition, and length of stay were collected and analyzed.

Results: There were 33 (0.3%) victims of elder abuse. The median age was 69-year old (interquartile range: 66 to 76) and 23 (68.8%) participants were female. Majority (n=32, 97.0%) of patients sustained blunt injuries, with contusions to the limbs and head being the most common. The injuries were mostly minor to moderate in severity (ISS 8 or less: n=32, 97.0%). The utilization of healthcare resources was low: only two (6.1%) required ambulance transport to the ED, one (3.0%) required activation of the trauma team, one (3.0%) required surgery, and one (3.0%) required transfusion of blood products. However, 12 (36.4%) patients were admitted to the hospital, and five (15.2%) were admitted to the observation unit of the ED.

Conclusion: Utilization of healthcare resource for injuries related to elder abuse was low. However, identification remains a challenge, and it is crucial for teams in the ED to be cognizant of elder abuse, as management should go beyond treating the injuries by including case notification, psychosocial assessment, and caregiver support.

Keywords: Abuse, emergency, geriatric, trauma

Introduction

Elder abuse is an action or inaction occurring within any trusted relationship that threatens the safety or well-being of an older person and results in harm or distress (1). The types of abuse include physical, emotional, sexual, financial, neglect, and abandonment (2). The perpetrator of abuse may be a family member, friend, or even a professional who the elderly rely on for services such as healthcare, personal care, or transportation. Elder abuse may result in serious physical injuries with significant psychological consequences, leading to increased use of emergency services and hospitalization for trauma-related presentations (1).

Multiple individual, interpersonal, and community factors can lead to elder abuse, making it a complex issue. At an individual level, elderly individuals with dementia, cognitive impairment, disabilities, and functional dependence have been consistently found to have a higher risk of being victims of abuse (3-5). This finding is attributed to the need for caregivers to have higher levels of tolerance and patience when caring for vulnerable individuals. At the interpersonal level, relationships between the elderly and abuser may be strained by physical and emotional stress arising from prior violence, drugs or substance abuse, alcohol dependence, family tension, and marriage instability. At the community level, social isolation and lack of access to

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eldercare services are also associated with abuse in Mexico, Ireland and Canada (6).

This worldwide social phenomenon may be more common as the population grows older, but it is of uncertain magnitude due to poor detection and reporting rates: approximately 10% of all people above 65 years old suffer from elder abuse (7). Elder abuse is subtle, making it difficult to distinguish between accidental injury and deliberate assault. Victims may be reluctant to report perpetrators because of the fear of consequences and loss of social support. It is estimated that billions of dollars are spent in the United States (US) each year on medical expenses directly related to elder abuse (8). However, this may be just the tip of the iceberg, as fewer than 1 in 24 cases of elder abuse were reported (9).

In a scoping review on elder abuse at emergency departments (EDs) by Mercier et al (10), available evidence on the epidemiology, clinical characteristics, patient and caregiver-associated factors, screening tools, and perspectives of health care professionals on elder abuse was synthesized. They found that: (a) the prevalence of elder abuse at the ED was lower than the prevalence in the community; (b) neglect was the most common type of elder abuse, followed by physical abuse; (c) female sex, cognitive impairment, functional disability, frailty, social isolation, and lower socioeconomic status were common factors among victims of elder abuse; (d) psychiatric and substance use were common factors among caregivers of victims; (e) screening tools lacked multicenter validation and evaluation based on patient outcomes; and (f) healthcare professionals were poorly trained in elder abuse at the ED. However, the scoping review did not describe the burden that victims of elder abuse pose on EDs with regard to the utilization of healthcare resources, which may be attributed to the lack of available data.

To fill this gap in the existing literature, this study aimed to describe the utilization of healthcare resources by victims of elder abuse who presented to the ED with trauma-related presentations so that EDs could ensure the availability of resources to care for them.

Materials and Methods

Study Setting

This study was conducted at the general ED of a 1000-bed tertiary public hospital in Singapore. The annual ED attendance was 105.000, with 15% having trauma-related presentations. The ED was staffed by emergency physicians certified by the Specialists Accreditation Board.

Paramedics from Singapore Civil Defence Force (SCDF) provide pre-hospital trauma care by evaluating and treating injured patients at the accident site before transporting them by ambulance to the ED of the nearest public hospital. Injured patients may also be transported to the ED by personal transport. Upon arrival at the ED, patients are triaged by nurses using the Patient Acuity Category Scale to emergent (P1), urgent (P2), or ambulatory (P3) based on assessment of their presenting complaints and vital signs. Emergent (P1) patients are in a state of cardiovascular collapse or at imminent risk of collapse, urgent (P2) patients are non-ambulant and ill with severe symptoms, and ambulatory (P3) patients are ambulant with mild to moderate symptoms (11). Subsequently, they will be attended to by physicians who will manage their conditions and devise disposition plans.

Our hospital has a single-tier trauma team that is activated by a pre-defined criteria consisting of the mechanism of injury, anatomical injury, and physiological parameters. The trauma team is led by a general surgery consultant and consists of members from the ED, general surgery, and orthopedic departments. Other departments, such as neurosurgery, may provide assistance to the trauma team when necessary.

Study Design

This retrospective study involved the review of case records from the hospital's trauma registry. Patients were included if they were 65 years or older, attended the ED for trauma-related presentations between August 2018 and December 2020, or were victims of elder abuse identified by a report of physical injury due to an assailant during the ED consult. Information including demographics, mode of arrival to the ED, place and mechanism of injury, sustained injuries, injury severity score (ISS), disposition, and length of stay were collected in standardized forms and analyzed. ISS is calculated based on the abbreviated injury scale (AIS), which consists of minor (1 point), moderate (2 points), serious (3 points), severe (4 points), critical (5 points), and not survivable (6 points), as well as six body systems, consisting of the head, face, chest, abdomen, extremity, and external (12). The scores of the three body systems with the highest AIS scores were squared individually and then added together to compute the ISS. Utilization of healthcare resources was defined as the need for ambulance at the pre-hospital level, as well as the need for hospital admission, trauma team activation, blood product transfusion, and surgery at the hospital level.

This study was determined by the SingHealth Centralized Institutional Review Board (decision no: 2021/2417, date: 03.07.2021) to not require ethical deliberation because it involved de-identified data. A waiver of informed consent was granted.

Statistical Analysis

For statistical analysis, Statistical Package for the Social Sciences (SPSS) version 22 (SPSS, Chicago, IL) was used. Categorical and continuous data were presented using frequencies with percentages and medians with interquartile ranges (IQR), respectively. Chi-square test was used to assess associations between categorical variables. Statistical significance was set at a p value of 0.05.

Results

A total of 39995 patients presented to the ED with trauma during the study period. There were 10095 (25.2%) patients who were 65 years or older, and among these, there were 33 (0.3%) patients who were victims of elder abuse: two (6.1%) patients were triaged as emergent (P1), 18 (54.5%) patients were triaged as urgent (P2), and 13 (39.4%) patients were triaged as ambulatory (P3).

Demographics

The median age of the 33 victims was 69 years (IQR: 66 to 76). Among the participants, 23 (69.7%) were female and 10 (30.3%) were male. Table 1 presents the circumstances of elder abuse. Cognitive impairment (n=8, 24.2%) and psychiatric illness (n=6, 18.2%) were the most common patient characteristics. These incidents of elder abuse occurred most often at home (n=30, 90.9%), and children (n=12, 36.4%) were the most common assailants.

Injuries Related to Elder Abuse

These patients sustained blunt injuries (n=32, 97.0%) instead of penetrating injury (n=1, 3.0%). For the injury pattern (Table 2), soft tissue contusion (n=23) was the most common injury sustained, while limbs (n=16) and head (n=14) were the most common body regions affected. Consequentially, the majority (n=32, 97.0%) of patients had minor to moderate injury as defined by an ISS of 0 to 8, and there were no deaths among the patients.

Table 1. Circumstance of elder abuse (n=33)

Variable	n (%)
Patient characteristics	
Impaired cognition	8 (24.2)
Psychiatric condition	6 (18.2)
Dependent on activities of daily living	2 (6.1)
Disability	1 (3.0)
Place of occurrence	
Own home	30 (90.9)
Nursing home	2 (6.1)
Destitute home	1 (3.0)
Assailant*	
Child	12 (36.4)
Spouse	8 (24.2)
Child-in-law	4 (12.1)
Sibling	2 (6.1)
Grandchild	1 (3.0)
Domestic helper	1 (3.0)
Nursing home staff	1 (3.0)

*There was unknown information about the assailant in three (9.1%) patients

Healthcare Resource Utilization

The majority (n=31, 93.9%) were transported to the ED by their own transport, and two (6.1%) were transported by SCDF ambulance. The length of stay in the ED was 197 min (IQR 126-757). Sixteen (48.5%) patients were discharged from the hospital, five (15.2%) were admitted to the observation unit of the ED, and 12 (36.4%) were admitted to the hospital. Non-required admission to the high dependency or intensive care units. All patients admitted to the observation unit of the ED were discharged within 24 hours. Except for one patient who was hospitalized for 50 days due to the development of ischemic stroke and waiting for placement at a nursing home, the other victims had a median length of stay of 3 days (IQR 1.8-7.5).

One (3.0%) patient required activation of the trauma team due to mechanism criteria of penetrating injury because she was slashed multiple times with a kitchen knife by her husband. She subsequently underwent wound exploration, debridement, and closure of multiple stab wounds. No other patients required surgery. One (3.0%) patient required platelet transfusion for subdural hematoma sustained from an assault by her son-in-law while she was taking aspirin for the primary prevention of cardiovascular events. No other patients required blood product transfusion.

Table 2. Pattern of injury (n=33)

Variable	n (%)
Injuries sustained*	
Soft tissue	
Contusion	23
Laceration	5
Abrasion	3
Bone	
Fracture	8
Intracranial hemorrhage	1
Body region affected*	
Limbs	16
Head	14
Face	8
Chest	4
Back	2
Perineum	1
Injury severity score (ISS)	
0-8 (minor to moderate)	32 (97.0)
9-15 (serious)	1 (3.0)
16-24 (severe)	0 (0)
≥25 (critical to not survivable)	0 (0)

*Patients had more than one body region affected, or more than one type of injuries
ISS: Injury severity score

Discussion

The problem of elder abuse is a growing public interest. In this study, we found that elder abuse was uncommon among patients aged 65 years or older with trauma-related presentations to our ED. Among these victims, most sustained blunt injuries to the limbs and head, which were of minor to moderate severity. The utilization of healthcare resources at the pre-hospital, as well as in the ED and inpatient units for their injuries were correspondingly low.

Although it is a worldwide issue, data regarding the prevalence of elder abuse vary widely across continents. Compared with a US study using a national database that estimated a prevalence of 0.013% among 29 million ED visits of adults aged 60 years and older, the prevalence in our study was much higher at 0.3% (13). The differences in prevalence across studies could be attributed to variations in methodology such as sample population, inclusion criteria, case definition, and study setting. Regardless, the trends observed in our study were like those of other studies - the victims were often women, soft tissue injuries were common, and injuries sustained were not severe (14,15).

Billions of dollars are estimated to be lost each year as victims require medical attention and healthcare resources for their presentations (16). Furthermore, even with treatment, patients are at increased risk of mortality and poorer outcomes (17). Although a systematic review identified victims presenting to the ED by ambulance, our study found that the majority of patients arrived at the ED by their own transport (10). This could be attributed to the health-seeking behavior of the local population who visit EDs as the initial point of call for medical ailments instead of primary care physicians. The median length of stay in the ED was approximately 3 hours, similar to another study in which victims stayed in the ED between one to six hours for assessment and treatment of their injuries (15). Regarding their injuries, given that most injuries were minor to moderate, utilization of high-level resources in the ED, such as trauma team activation, blood product transfusion, or surgery, was uncommon. However, more than half of the patients required admission to the inpatient unit or monitoring in the observation unit. These findings are consistent with existing literature where victims were more likely to be admitted to the hospital (18). The average length of stay of four days in our study was significantly shorter than another study that found an average length of stay of eight days among their cohort of elder abuse patients (13). This was attributable to the victims in our study only having to undergo treatment for their injuries and psychosocial evaluation, unlike patients in the other study who developed concurrent medical conditions such as pneumonia, sepsis, or cardiac dysrhythmia, which resulted in a longer stay. It is important to also remember that the utilization of healthcare resources by victims of elder abuse goes beyond the hospital. Resources such as elder day care services, case management services, institutional placement, and home nursing care were not captured by this study.

The prevalence of elder abuse at the ED is consistently lower than that in the community and this suggests an underrepresentation of the true prevalence of the problem (13). This could be attributed to the lack of consideration or difficulty in recognizing elder abuse at the ED. Possible reasons include inadequate training on the symptoms and signs of elder abuse, inability to differentiate between accidental or abuse injuries, and time and space constraints in a chaotic ED environment. According to a research study conducted among emergency physicians in the US, more than half did not believe that they could accurately identify elder abuse, and only a quarter recalled some form of training regarding elder abuse during residency (19).

Over the past decade, many screening tools have been developed to assist medical teams in uncovering victims of elder abuse (20). Despite the availability of resources, most emergency physicians are unaware of their existence and unsure of their application to clinical practice (19). Furthermore, the process by which victims of elder abuse are reported to authorities is also unknown. In view of the above, we recommend that all EDs have clearly written guidelines and standardized department protocols on elder abuse that are contextualized to their settings. These guidelines and protocols should include when to suspect elder abuse, how to screen for elder abuse, and ED management, such as reporting and onward referral to an interdisciplinary team consisting of emergency physicians, geriatricians, psychiatrists, nurses, and social workers to coordinate interventions needed for this vulnerable population. Training staff will increase their familiarity with and usage of the guidelines and protocols. EDs can then take a proactive approach to detecting elder abuse and managing victims beyond the reasons for their acute presentation.

Elder abuse is indeed a complex social and public health issue. Addressing elder abuse in the ED is not only about managing the victims. There may be opportunities for primary prevention upstream at the ED by addressing the needs of caregivers of elderly patients. Caregiver burden is a combination of caregivers' physical, psychological, and financial stress experienced by caregivers. Caregivers of patients with Alzheimer's disease frequently perceived higher levels of stress and depressive symptoms (21). Given that most elder abuse cases occurred at home, caregivers who experience stress at the ED should be referred onwards for interventions such as psychological education, counseling, family intervention programs, and

welfare assistance. These measures may help prevent elder abuse and thus reduce the prevalence of elder abuse. Beyond the ED, widespread public campaigns are needed to increase awareness and provide education about elder abuse. Efforts could be made to prevent and early detect elder abuse in society, even before these victims arrive at the ED. For example, training is provided to individuals who work with elderly persons, such as community hub workers, so they know how to recognize and respond to suspected cases. Community programs, such as home visits by nurses or volunteers for individuals at high risk of abuse, are also effective measures to prevent elder abuse.

Moving forward, we believe that this work would call to attention the need for collaborative efforts to target elder abuse at the national level. For a start, a prospective study with involvement of primary care services and all EDs could provide deeper insight into the issues reported in this work. With time, this information will impact policy making and legislation on elder abuse so that preventive measures can be put in place to protect vulnerable elderly individuals, thereby reducing the occurrence of elder abuse and associated morbidity and mortality.

Study Limitations

The experience of a single ED was the main limitation of this study. The scale of the elder abuse problem among patients with trauma-related presentations was likely higher than that reported, as these patients could have presented to other EDs and primary care services. Correspondingly, the utilization of healthcare resources and eventual cost would be higher even though we did not assess the latter. Next, incomplete information was found in the case records due to the retrospective nature of this work. Therefore, we had to work with available case records, leading to the inability to determine certain predictors and outcomes. For instance, we were unable to perform detailed analyses of patient, caregiver, and injury characteristics that could impact the utilization of healthcare resources.

Conclusion

In conclusion, there was a relatively low prevalence of elder abuse among those with trauma-related presentations at the ED; correspondingly, the utilization of healthcare resources was low. Regardless, healthcare teams should be cognizant of the injuries related to elder abuse and the healthcare resources that may be needed to care for these patients. In addition, the identification of potential victims of elder abuse remains a challenge in busy ED settings. It is crucial for healthcare teams to detect and manage elder abuse to provide assistance and support to patients and their caregivers.

Ethics

Ethics Committee Approval: This study was determined by the SingHealth Centralized Institutional Review Board (decision no: 2021/2417, date: 03.07.2021) to not require ethical deliberation because it involved de-identified data.

Informed Consent: This retrospective study.

Authorship Contributions

Surgical and Medical Practices: S.G., C.Y.E.C., S.-H.C.L., J.H.K., J.H.P., S.Y.L., Concept: J.H.P., Design: S.G., C.Y.E.C., J.H.P., S.Y.L., Data Collection or Processing: S.G., S.-H.C.L., J.H.K., Analysis or Interpretation: S.G., C.Y.E.C., S.-H.C.L., J.H.K., J.H.P., S.Y.L., Literature Search: S.G., J.H.P., Writing: S.G., C.Y.E.C., S.-H.C.L., J.H.K., J.H.P., S.Y.L.

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