



Factors associated with abuse reporting and investigation in older adult trauma patients

Yasmin Arda, MD¹; Emanuele Lagazzi, MD¹; Netanel Krugliak²; Richard C Todd³; Tiemen ET Holtrop, BSc¹; May Abiad, MD¹; Wardah Rafaqat, MBBS¹; Michael P DeWane, MD¹; Charudutt N Paranjape, MBBS¹; George C Velmahos, MD, PhD¹; John O Hwabejire, MD, MPH^{1*}

¹Division of Trauma, Emergency Surgery, and Surgical Critical Care, Department of Surgery, Massachusetts General Hospital, Boston, MA 02114, USA.

²Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115, USA.

³Faculty of Medicine, Northern Kentucky University, Nunn Drive Highland Heights, KY 41099, USA.

*Corresponding author: John O Hwabejire

Division of Trauma, Emergency Surgery and Surgical Critical Care, Department of Surgery, Massachusetts General Hospital, 165 Cambridge St, Suite 810, Boston, MA 02114, USA.

Tel: 617-724-3188; Email: jhwabejire@mgb.org

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Abstract

Background: Older adult abuse remains prevalent yet underreported in an aging population. This study aimed to identify factors associated with abuse reporting and investigation within older adult trauma patients.

Methods: The ACS-TQIP (2017-2019) database was used to identify all trauma patients ≥ 65 years old. Logistic regression was used to identify predictors of physical abuse reporting and investigation.

Results: 1,126,796 patients were included in this study. 14,860 (1.32%) had a report of physical abuse, of which 13,045 (87.8%) underwent abuse investigation. Following multivariate analyses, independent predictors for abuse reporting were female sex, Black/Asian race, Hispanic ethnicity, penetrating injury, dementia, admission from nursing home, alcohol abuse, and neuropsychiatric disorders ($P < 0.001$). Among reported abuse cases, predictors of abuse investigation were penetrating injury, dementia, and admission from home ($P < 0.001$).

Conclusion: This study identified characteristics associated with older adult abuse reporting and investigation. Recognizing the significance of admission source, patient race, and behavioral determinants of health can aid in addressing disparities in the management of older adult abuse.

Keywords: Older adult abuse; Trauma patient; Abuse reporting; Abuse investigation.

Introduction

Life expectancy in developed countries, particularly the United States, has increased substantially over the past two centuries, largely due to advances in medical care [1]. The associated demographic shift brings an increased risk of older adult abuse, defined as an intentional act or lack of action that causes harm or risk of harm to an older adult. It consists of 5 subtypes, including financial abuse or exploitation, emotional or psychological abuse, physical abuse, sexual abuse, and neglect by others [2-4]. Recent reviews demonstrated a one-year older adult abuse prevalence rate of 15.7% globally and 9.5% in the US among community-dwelling older adults [5-7].

Older adult abuse is associated with serious health and psychosocial consequences, including premature mortality, poor physical and mental health, increased rates of emergency service use, hospitalization, and nursing home placement [8-11]. The social and financial impacts of older adult abuse are also substantial. Zhang et al. recently found that victims of abuse had considerably higher total costs over 12 months after reporting abuse, driven by an increase in acute, sub-acute, and post-acute costs [12]. Another study identified family members as the perpetrators in about 50% of older adult abuse reports, with financial abuse being the most commonly reported and physical abuse being the most likely to co-occur with other abuse types [13].

The development of effective prevention strategies relies on understanding factors contributing to increased risk of older adult abuse. In the absence of reliable screening tools, physicians are likely to under-detect older adults who are at risk of abuse [14]. In most cases, physical evidence of trauma, particularly to the face, neck, or dental regions, prompts reporting and investigation of abuse [15]. However, indicators of abuse range from obvious signs, such as neglect and unattended injuries, to more subtle cues requiring careful observation and questioning, including mental health symptoms and family history of abuse [16].

The aim of this study is to identify potential predictors associated with reporting and investigation of abuse in the older adult trauma population using a nationwide database, enhancing the ability of healthcare and social services to prevent and address abuse in this patient population more effectively.

Methods

Data source

We performed a retrospective analysis of the American College of Surgeons Trauma Quality Improvement Program (ACS-TQIP) from 2017 to 2019 [17]. All diagnoses and procedures were abstracted using the International Classification of Diseases, 10th revision (ICD-10) Clinical Modification (CM) and Procedure Coding System (PCS) codes (National Center for Health Statistics, 2015). This study was exempt from the Institutional Review Board approval due to the use of de-identified data.

Patient selection

We identified all trauma patients aged 65 years or older. Patients were classified into two main cohorts based on reporting of physical abuse during their hospital admission: no report of abuse and report of abuse. Sub-group analysis focused on patients who experienced interpersonal assault with or without a weapon as the primary mechanism of injury. We excluded patients with missing abuse reporting or investigation data.

Clinical variables

Patient characteristics, comorbidities, injury-specific variables, and social determinants of health were identified in our study sample. We compared patient demographics between both groups, such as age, sex, and comorbidities (Chronic Obstructive Pulmonary Disease [COPD], bleeding disorder, diabetes, hypertension, smoking, chronic kidney disease, functional status, and anticoagulant therapy). We also compared frailty between both groups using the modified 5-item frailty index (mFI-5) score (COPD, congestive heart failure [CHF], diabetes, hypertension, and functional status). Body Mass Index (BMI) was defined for patients as weight (kg)/height (m²). Race was categorized as White, Black, Asian, or Other Race, as reported by the National Trauma Data Standard (NTDS) data dictionary. Mechanism of injury was defined as blunt, penetrating, or mixed. Trauma-specific variables included the Injury Severity Score (ISS) and Glasgow Coma Scale (GCS). Insurance status was defined as Government, Self-Pay, and Other. Admission source was categorized as Home, Nursing Home/Residential Facility, and Other.

Outcomes

The primary outcome of this study was the rate of abuse reporting among hospitalized patients; the secondary outcome was the initiation of abuse investigation for those patients. As a secondary analysis, we described the cohort of patients who

experienced interpersonal assault with or without a weapon as the primary mechanism of injury.

Statistical analysis

Continuous variables were reported as median and interquartile range (IQR), whereas categorical variables were described as counts and proportions, n(%). Group comparisons were conducted using the Mann-Whitney U test for medians of non-normally distributed continuous variables, while Chi-square tests were employed for categorical variables. Univariate logistic regression was performed to identify significant differences between patient demographics. Multivariate mixed-effect logistic regression was conducted to identify predictive factors for abuse reporting and activation of abuse investigation, adjusting for patient frailty, mechanism of injury, socio-demographic characteristics, and admission source. Adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI) were reported. P<0.05 was set as the threshold for statistical significance. Statistical analyses were conducted using STATA, software version 18.0 (College Station, TX).

Results

Patient characteristics

We included 1,126,796 patients, of which 14,860 (1.32%) had a report of physical abuse. Among patients with report of abuse, 13,045 (87.8%) underwent abuse investigation. The median age was 75 years, and the median BMI was 24.2 kg/m². 44.1% of the reported abuse cohort were females, and the majority (76.7%) were of Hispanic ethnicity (Table 1).

In 91.2% of patients with report of abuse, the ISS ranged from 15 to 24, with blunt trauma being the most common (77%) mechanism of injury. Additionally, 79.4% of patients with report of abuse had a GCS of ≥ 13 . The prevalence of alcohol dependence and substance abuse or dependence was 0.6% and 0.3%, respectively. The prevalence of neuropsychiatric disorders (including depression, bipolar disorder, schizophrenia, and neurodevelopmental disorders) was 1.3%.

Using the mFI-5, 90% of patients in our sample were not frail, scoring 0. The majority (92.4%) of people reported as being the perpetrators of abuse were identified as either non-family members or unspecified. 70.7% of abuse reports involved patients admitted from home, and only 1.9% reports involved those admitted from nursing homes or residential facilities (P<0.001). Following medical treatment, 76.4% of patients with report of abuse were discharged home, and 70.6% covered their medical expenses through government healthcare insurance (Table 1).

Predictors of abuse reporting and investigation

Multilevel mixed-effects logistic regression analyses revealed that Black and Asian race were predictive factors for reporting of abuse (OR 2.38, CI 1.89-3.01; OR 1.92, CI 1.29-2.86, respectively), but not for downstream abuse investigation (Table 2). This was also true for female sex (OR 1.39, CI 1.20-1.63) and patients with Hispanic ethnicity (OR 1.96, CI 1.47-2.62). Admission from a nursing home or residential facility was not predictive of abuse investigation (P=0.18). Conversely, being admitted from home was independently associated with abuse investigation (OR 2.47, CI 1.31-4.66). Abuse reports involving penetrating trauma (OR 4.61, CI 1.37-15.46) and older adult patients with dementia (OR 2.07, CI 1.10-3.89) were independent predictors of abuse investigation.

Sub-group analysis of patients who experienced interpersonal assault with or without a weapon showed that Black patients were more likely to experience assault without a weapon (27.8% vs. 22.6%, P<0.001). Frail patients with mFI-5 of 2 or greater were also more likely to experience assault without a

weapon (24.6% vs. 14%, P<0.001). Patients with ISS higher than 25 were more likely to be assaulted with a weapon (12.6% vs. 8.8%, P<0.001); this was also true in assault involving patients admitted from home (70.2% vs. 39%, P<0.001) (Table 3).

Table 1: Baseline patient demographics and characteristics.

Patient characteristics	No abuse report (n=1,126,796)	Report of abuse (n=14,860)	p-value
Median age (years)	77(71-83)	75(69-82)	<0.001
Sex (Female)	650,976(57.8%)	6,555(44.1%)	<0.001
Median BMI (kg/m²)	25.7(22.4-29.8)	24.2(20.5-28.3)	<0.001
Race			<0.001
White	977,600(86.8%)	8,848(59.5%)	
Black	61,776(5.5%)	3,333(22.4%)	
Asian	22,625(2.0%)	285(1.9%)	
Other race	50,985(4.5%)	1,868(12.6%)	
Ethnicity			<0.001
Not hispanic	60,432(5.4%)	2,724(18.3%)	
Hispanic	1,015,911(90.2%)	11,397(76.7%)	
Median ISS	9(4-10)	9(5-13)	<0.001
ISS Categories			<0.001
15-24	1,064,592(94.5%)	13,552(91.2%)	
>25	62,204(5.5%)	1,308(8.8%)	
Median GCS	15(15-15)	15(15-15)	<0.001
GCS Categories			<0.001
≥13	992,335(88.1%)	11,806(79.4%)	
9-12	21,968(1.9%)	406(2.7%)	
≤8	32,939(2.9%)	1,001(6.7%)	
mFI-5 Frailty Score			<0.001
0	258,685(23.0%)	13,341(89.8%)	
1	415,771(36.9%)	709(4.8%)	
≥2	437,367(38.8%)	697(4.7%)	
Mechanism of injury			
Penetrating	14,341(1.3%)	225(1.5%)	0.009
Blunt	1,095,237(97.2%)	11,435(77.0%)	<0.001
Mixed	846(0.1%)	26(0.2%)	<0.001
Alcohol abuse or dependence	31,378(2.8%)	90(0.6%)	<0.001
Substance abuse or dependence	16,074(1.4%)	52(0.3%)	<0.001
Neuropsychiatric disorder	74,990(6.7%)	191(1.3%)	<0.001
Hospital discharge			<0.001
Intermediate care	364,590(32.4%)	741(5.0%)	
Inpatient rehabilitation	166,171(14.7%)	352(2.4%)	
Hospice-long term care hospital	32,029(2.8%)	95(0.6%)	
Home	414,883(36.8%)	11,359(76.4%)	
Deceased	42,067(3.7%)	439(3.0%)	
Insurance status			<0.001
Private/commercial insurance	176,185(15.6%)	3,044(20.5%)	
Government	890,116(79.0%)	10,489(70.6%)	
Self-pay	14,741(1.3%)	456(3.1%)	
Abuse perpetrator			
Family member	N/A	1,130(7.6%)	<0.001
Non-family member or unspecified	N/A	13,732(92.4%)	<0.001
Admission source			
Home	638,171(56.6%)	10,512(70.7%)	<0.001
Nursing home or residential facility	134,080(11.9%)	283(1.9%)	<0.001
Other location	354,545(31.5%)	4,065(27.4%)	<0.001

Data are presented as median (IQR) for continuous measures and n(%) for categorical measures.

ISS: Injury Severity Score; mFI-5: Modified 5-item Frailty Index.

Table 2: Predictors of abuse reporting and investigation.

Patient characteristics	Reporting of abuse			Abuse investigation		
	aOR	95% CI	p-value	aOR	95% CI	p-value
Median age (years)	0.95	0.94-0.96	<0.001	0.99	0.95-1.03	0.566
Sex (Female)	1.39	1.20-1.63	<0.001	1.42	0.86-2.35	0.169
Median BMI (kg/m ²)	0.95	0.94-0.97	<0.001	0.99	0.95-1.03	0.672
Race						
White	<i>Reference</i>			<i>Reference</i>		
Black	2.38	1.89-3.01	<0.001	1.06	0.51-2.18	0.882
Asian	1.92	1.29-2.86	0.001	2.74	0.59-12.71	0.198
Other race	1.13	0.80-1.59	0.497	2.3	0.76-6.94	0.14
Ethnicity						
Not hispanic	<i>Reference</i>			<i>Reference</i>		
Hispanic	1.96	1.47-2.62	<0.001	1.02	0.42-2.47	0.962
Insurance status						
Government	1.04	0.84-1.30	0.715	0.91	0.44-1.88	0.801
Self-pay	1.28	0.73-2.24	0.384	1.9	0.24-15.18	0.546
Other	1.33	0.83-2.12	0.231	0.68	0.15-3.08	0.612
Mechanism of injury						
Blunt	<i>Reference</i>			<i>Reference</i>		
Penetrating	6.45	4.86-8.56	<0.001	4.61	1.37-15.46	0.013
Mixed	11.76	5.70-24.26	<0.001	1.4	0.17-11.83	0.758
Dementia	2.45	2.03-2.96	<0.001	2.07	1.10-3.89	0.024
mFI-5 frailty score						
0	<i>Reference</i>			<i>Reference</i>		
1	1.01	0.83-1.23	0.911	0.96	0.51-1.82	0.904
≥2	1.09	0.89-1.32	0.403	0.92	0.47-1.78	0.796
Admission source						
Non-domestic, non-residential facility	<i>Reference</i>			<i>Reference</i>		
Home	2.54	2.08-3.10	<0.001	2.47	1.31-4.66	0.005
Nursing home or residential facility	1.96	1.45-2.65	<0.001	0.55	0.23-1.32	0.184
Alcohol abuse or dependence	1.48	1.09-2.01	0.013	1.14	0.42-3.07	0.801
Substance abuse or dependence	1.01	0.65-1.56	0.964	2.03	0.44-9.46	0.368
Neuropsychiatric disorder	1.35	1.11-1.65	0.003	1.21	0.64-2.27	0.555

aOR: Adjusted odds ratio; BMI: Body mass index; mFI-5: Modified 5-item frailty index.

aOR and p-values in bold are considered statistically significant.

Table 3: Patient characteristics among interpersonal assault patients.

Patient characteristics	Assault without weapon (n=8,714)	Assault with weapon (n=1,694)	p-value
Median age (years)	70(67-75)	72(68-78)	<0.001
Sex (Female)	2,006(23.0%)	780(46.0%)	<0.001
Median BMI (kg/m ²)	25.8(22.6-29.4)	25.4(22.2-29.8)	<0.001
Race			<0.001
White	4,970(57.0%)	1,070(63.2%)	
Black	2,423(27.8%)	383(22.6%)	
Asian	229(2.6%)	41(2.4%)	
Other race	853(9.8%)	158(9.3%)	
Ethnicity			0.055

Not hispanic	985(11.3%)	226(13.3%)	
Hispanic	7,341(84.2%)	1,397(82.5%)	
Median ISS	9(4-14)	9(5-16)	<0.001
ISS categories			<0.001
15-24	7,949(91.2%)	1,480(87.4%)	
>25	765(8.8%)	214(12.6%)	
Median GCS	15(14-15)	15(14-15)	<0.001
GCS categories			0.63
≥13	7,215(82.8%)	1,328(78.4%)	<0.001
9-12	251(2.9%)	47(2.8%)	
≤8	855(9.8%)	172(10.2%)	
mFI-5 frailty score			<0.001
0	3,604(41.4%)	1,125(66.4%)	
1	2,854(32.8%)	315(18.6%)	
≥2	2,141(24.6%)	238(14.0%)	
Alcohol abuse or dependence	764(8.8%)	48(2.8)	<0.001
Substance abuse or dependence	588(6.7%)	27(1.6%)	<0.001
Neuropsychiatric disorder	591(6.8%)	74(4.4)	<0.001
Hospital discharge disposition			<0.001
Intermediate care	1,198(13.7%)	195(11.5%)	
Inpatient rehabilitation	574(6.6%)	90(5.3%)	
Hospice-long term care hospital	173(2.0%)	20(1.2%)	
Home	4,347(49.9%)	1,062(62.7%)	
Deceased	363(4.2%)	70(4.1%)	
Insurance			<0.001
Private/commercial insurance	1,167(13.4%)	306(18.1%)	
Government	6,001(68.9%)	1,255(74.1%)	
Self-pay	778(8.9%)	58(3.4%)	
Abuse perpetrator			
Family member	110(1.3%)	198(11.7%)	<0.001
Non-family member or unspecified	22(0.3%)	223(13.2%)	<0.001
Admission source			
Home	3,402(39.0%)	1,189(70.2%)	<0.001
Nursing home or residential facility	610(7.0%)	55(3.2%)	<0.001
Other location	4,702(54.0%)	450(26.6%)	<0.001

Data are presented as median (IQR) for continuous measures, and n(%) for categorical measures. ISS, injury severity score; mFI-5, modified 5-item frailty index.

Table 4: Predictors of abuse reporting and investigation among interpersonal assault patients.

Patient characteristics	Reporting of abuse			Abuse investigation		
	aOR	95% CI	p-value	aOR	95% CI	p-value
Median Age (years)	0.99	0.97-1.02	0.57	1.01	0.96-1.07	0.62
Sex (Female)	2.67	2.04-3.49	<0.001	1.39	0.7-2.8	0.35
Median BMI (kg/m²)	0.98	0.96-0.99	0.047	1	0.9-1.06	0.99
Race						
White	<i>Reference</i>					
Black	0.72	0.50-1.02	0.068	0.69	0.29-1.64	0.4
Asian	1	0.46-2.21	0.99	1.28	0.18-8.91	0.8
Other race	1.16	0.68-1.97	0.58	3.86	0.66-22.56	0.13

Ethnicity						
Not hispanic	<i>Reference</i>					
Hispanic	1.22	0.75-1.97	0.43	0.76	0.22-2.67	0.67
Insurance status						
Private	<i>Reference</i>					
Government	0.97	0.67-1.42	0.89	0.76	0.27-2.14	0.6
Self-pay	1.02	0.47-2.2	0.96	0.61	0.07-5.62	0.66
Mechanism of injury						
Blunt	<i>Reference</i>					
Penetrating	0.44	0.31-0.64	<0.01	3.45	0.98-12.11	0.05
Mixed	0.45	0.18-1.16	0.097	0.61	0.08-4.73	0.64
Dementia	1.38	0.85-2.25	0.19	0.98	0.35-2.76	0.35
mFI-5 frailty score						
0	<i>Reference</i>					
1	1.42	1.04- 1.95	0.03	0.58	0.25-1.35	0.2
≥2	1.46	1.04-2.05	0.031	0.79	0.31-2.00	0.62
Admission source						
Non-domestic, non-residential facility	<i>Reference</i>					
Home	4.9	3.56-6.74	<0.001	2.21	0.97-5.04	0.06
Nursing home or residential facility	1.35	0.71-2.55	0.36	0.2	0.05-0.78	0.02
Alcohol abuse or dependence	1.2	0.75-1.90	0.45	0.93	0.28-3.08	0.9
Substance abuse or dependence	0.4	0.19-0.81	0.01	1.09	0.16-7.66	0.9
Neuropsychiatric disorder	1.29	0.89-1.86	0.18	0.44	0.56-3.8	0.4

aOR and p-values in bold are considered statistically significant.

In our sub-group analysis, we identified increased abuse reporting in assault patients who were admitted from home (OR 1.46, CI 1.04-2.05), but there was no difference in abuse investigation. This was also true for female patients and those with increasing mFI-5. We also found that assault patients admitted from nursing homes or residential facilities had a lower likelihood of abuse investigation (OR 0.2, CI 0.05-0.78) (Table 4).

Discussion

This retrospective study highlights significant disparities in the reporting and investigation of older adult abuse across US trauma centers. We identified predictors associated with abuse reporting and investigation in the older adult trauma population. Within our sample, there were 14,860 (1.32%) reports of physical abuse, of which 87.8% underwent abuse investigation.

Following multivariate analysis (Table 2), the following independent predictors of abuse reporting were identified:

Female sex: A potential explanation for this finding is the increased physical vulnerability seen in female older adult patients, increasing their risk of abuse [18].

Black/Asian race and hispanic ethnicity: Although Black/Asian race and Hispanic ethnicity were associated with higher rates of reported abuse in our study, we observed no corresponding differences in the rates of abuse investigations. This discrepancy suggests potential racial and ethnic disparities in abuse reporting and investigation, which aligns with patterns previously described in the literature [19].

Penetrating mechanism of injury: Physical older adult abuse resulting in penetrating injuries, including gunshot and stab

wounds, was independently associated with increased reporting rates. This may be due to the extreme nature of such injuries [20].

Dementia and neuropsychiatric disorders: Such conditions predispose older adult patients to abuse given their reduced cognitive abilities [6].

Home admission source: Most abuse reports observed in our study involved older adult patients who were admitted from home compared to nursing homes or other healthcare institutions. However, there is a possibility of abuse cases stemming from residents of nursing homes that might not have been reported, depending on the degree and standards of abuse reporting protocols at such institutions [21].

Alcohol abuse or dependence: Previous studies have also reported that older adults with alcohol dependence are at increased risk of being victims of abuse [22].

Among reported abuse cases, penetrating mechanism of injury, dementia, and home admission source were identified as predictors for abuse investigation. Notably, 12.2% of all abuse reports were not investigated. Despite female sex, Black/Asian race, and Hispanic ethnicity being more likely to have reports of abuse, none of these variables was a significant predictor of abuse investigation. A similar trend concerning the investigation of older adult abuse was established by El-Qawaqzeh et al. who described significant gender, ethnic, and socioeconomic disparities in the investigation of physical abuse [23]. Additionally, previous research has demonstrated that older adult abuse occurring within residential long-term care facilities is typically underreported, which was suggested by our findings [21].

Although reporting older adult abuse is mandatory in the US, only a small proportion of cases are successfully identified and reported [24]. When cases are reported, they often lead to investigations by Adult Protective Services or other relevant agencies. Following these investigations, medical, social, and legal interventions may be implemented if the individual is found to be a victim of abuse [25]. However, the effectiveness of these responses remains inconsistent due to the absence of a federally mandated framework that defines older adult abuse and specifies appropriate responses [26]. Consequently, states have independently developed their own procedures for addressing older adult abuse, leading to varied investigative practices across the country [25]. These discrepancies have significantly influenced the rates of reported and investigated abuse in this patient population.

The risk of older adult abuse is increasing substantially, and nearly half of cases is attributed to physical abuse [27,28]. In our study, only 1.32% of admitted older adult trauma patients had a report of physical abuse. Similarly, Friedman et al. found that abuse went unreported in two-thirds of older adult patients admitted to two level I trauma centers [29]. This suggests that physical abuse among older adults might be significantly underreported in trauma centers across the US. These findings contrast with research on child abuse using the ACS-TQIP database [30]. Unlike older adult abuse, pediatric trauma centers benefit from the presence of social workers and child protective services, which facilitate the investigation of any reported child abuse [31]. However, no specific verification requirements are currently in place for older adult abuse, highlighting the need for a comprehensive, multidisciplinary system of services to improve detection and ensure consistent care in this patient population.

Our findings indicate that individuals with dementia, neuropsychiatric disorders, and alcohol dependence are more likely to have reported abuse, which is consistent with existing literature [32,33]. These individuals may be viewed as more vulnerable and compliant [34]. Additionally, patients with intellectual disabilities may have difficulty accepting or refusing treatment and face challenges with follow-up care due to struggles with effective communication. Therefore, such patients who fall victims to abuse often require definitive legal interventions, such as a change in caregiver [26].

A significant number of older adult Hispanic and Black patients experience abuse [35,36]. In our study, both Hispanic and Black populations had significantly higher reporting of physical abuse compared to all older adult trauma patients. However, no racial or ethnic differences were found in the rates of abuse investigation. Hernandez-Tejada et al. found that the increased risk of older adult abuse among non-White individuals was not sustained when controlling for income, health status, and social support [37]. These findings point to correlated and modifiable factors of social support and poor health as targets for preventive interventions in such populations.

Our sub-group analysis of older adult interpersonal assault patients with or without a weapon can aid in better identifying and addressing potential disparities in the reporting and investigation of older adult abuse. Admission from home, female sex, and increasing frailty, were associated with increased abuse reporting rates. Additionally, our findings support the increasing realization that healthcare disparities may be related to socioeconomic status, particularly with increasing prevalence of weapons in groups of lower socioeconomic status [38,39].

While our study demonstrates that populations of color had higher reporting of physical abuse, we could not further explore such disparities due to limited data granularity. Further research is required to explore potential contributing factors, including the availability of social safety nets for minority and uninsured patients, language barriers, and race/ethnic neutrality of older adult abuse assessment tools [40].

Our results should be interpreted within the context of several limitations. First, this was a retrospective analysis of a national database with little or no ability to assess information in real time and the possibility of missing data. Second, there was no information available on hospital protocols for the management of abuse or any access to state or local legislation on this matter, and information on the nature and level of abuse investigation was not available. Additionally, our data was limited to patients presenting to participating trauma centers, and we could not provide population-based estimates. Furthermore, the ACS-TQIP database does not specify whether abuse reports were initiated by the patient or provider.

Conclusion

Our study identifies predictive variables for the reporting and investigation of older adult abuse. After conducting an extensive analysis of several demographic, socioeconomic, and health-related factors, we report several noteworthy predictors that influence the probability of abuse reporting and investigation. Our findings describe the significance of the admission source, patient race, and behavioral determinants of health on abuse reporting and investigation rates, which can aid in addressing disparities in the management of older adult abuse. This research adds to the expanding literature on abuse and offers insightful guidance to policymakers, medical professionals, and social service providers in creating focused interventions to protect the welfare of older adults and foster an environment of safety and equity among aging populations.

Declarations

Conflicts of interest and source of funding: The authors have no conflicts of interest to declare. There was no funding available for this study.

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References

1. Christensen K, Doblhammer G, Rau R, Vaupel JW. Ageing populations: the challenges ahead. *Lancet*. 2009; 374: 1196–1208.
2. McAlpine CH. Elder abuse and neglect. *Age Ageing*. 2008; 37: 132–133.
3. Nelson D. Violence against elderly people: a neglected problem. *Lancet*. 2002; 360: 1094.
4. Burnes D, Hancock DW, Eckenrode J, Lachs MS, Pillemer K. Estimated incidence and factors associated with risk of elder mistreatment in New York State. *JAMA Netw Open*. 2021; 4: e2117758.
5. Patel K, Bunachita S, Chiu H, Suresh P, Patel UK. Elder abuse: a comprehensive overview and physician-associated challenges. *Cureus*. 2021; 13: e14375.
6. Pillemer K, Burnes D, Riffin C, Lachs MS. Elder abuse: global situation, risk factors, and prevention strategies. *Gerontologist*.

- 2016; 56: S194–205.
7. Yon Y, Mikton CR, Gassoumis ZD, Wilber KH. Elder abuse prevalence in community settings: a systematic review and meta-analysis. *Lancet Glob Health*. 2017; 5: e147–e156.
 8. Yunus RM, Hairi NN, Choo WY. Consequences of elder abuse and neglect: a systematic review of observational studies. *Trauma Violence Abuse*. 2019; 20: 197–213.
 9. Dong XQ. Elder abuse: systematic review and implications for practice. *J Am Geriatr Soc*. 2015; 63: 1214–1238.
 10. Lachs MS, Williams CS, O'Brien S, Pillemer KA, Charlson ME. The mortality of elder mistreatment. *JAMA*. 1998; 280: 428–432.
 11. Cooper C, Livingston G. Mental health/psychiatric issues in elder abuse and neglect. *Clin Geriatr Med*. 2014; 30: 839–850.
 12. Zhang H, Bao Y, Baek D, et al. Healthcare costs for legally adjudicated elder mistreatment victims in comparison to non-mistreated older adults. *J Am Geriatr Soc*. 2024; 72: 236–245.
 13. Weissberger GH, Goodman MC, Mosqueda L, et al. Elder abuse characteristics based on calls to the National Center on Elder Abuse (NCEA) resource line. *J Appl Gerontol*. 2020; 39: 1078–1087.
 14. Beach SR, Carpenter CR, Rosen T, Sharps P, Gelles R. Screening and detection of elder abuse: research opportunities and lessons learned from emergency geriatric care, intimate partner violence, and child abuse. *J Elder Abuse Negl*. 2016; 28: 185–216.
 15. Rosen T, LoFaso VM, Bloemen EM, et al. Identifying injury patterns associated with physical elder abuse: analysis of legally adjudicated cases. *Ann Emerg Med*. 2020; 76: 266–276.
 16. Scott S, Brameier DT, Tryggedsson I, et al. Elder abuse in the orthopaedic patient: an updated review of prevalence, identification, and screening tools for orthopaedic surgeons. *Geriatr Orthop Surg Rehabil*. 2024; 15: 21514593241266486.
 17. Trauma Quality Programs Participant Use File. ACS. 2025.
 18. Cannell MB, Weitlauf JC, Garcia L, Andresen EM, Margolis KL, Manini TM. Cross-sectional and longitudinal risk of physical impairment in a cohort of postmenopausal women who experience physical and verbal abuse. *BMC Womens Health*. 2015; 15: 98.
 19. Teresi JA, Burnes D, Skowron EA, et al. State of the science on prevention of elder abuse and lessons learned from child abuse and domestic violence prevention: toward a conceptual framework for research. *J Elder Abuse Negl*. 2016; 28: 263–300.
 20. Rosen T, Clark S, Bloemen EM, et al. Geriatric assault victims treated at U.S. trauma centers: five-year analysis of the national trauma data bank. *Injury*. 2016; 47: 2671–2678.
 21. Hawes C. Elder abuse in residential long-term care settings: what is known and what information is needed? In: *Elder Mistreatment: Abuse, Neglect, and Exploitation in an Aging America*. National Academies Press (US); 2003. 2025.
 22. Wolde A. Alcohol use disorder and associated factors among elderly in Ethiopia. *Subst Abuse Res Treat*. 2023; 17: 11782218231158031.
 23. El-Qawaqzeh K, Hosseinpour H, Gries L, et al. Dealing with the elder abuse epidemic: disparities in interventions against elder abuse in trauma centers. *J Am Geriatr Soc*. 2023; 71: 1735–1748.
 24. Acierno R, Hernandez MA, Amstadter AB, et al. Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: the National Elder Mistreatment Study. *Am J Public Health*. 2010; 100: 292–297.
 25. Jogerst GJ, Dawson JD, Hartz AJ, Ely JW, Schweitzer LA. Community characteristics associated with elder abuse. *J Am Geriatr Soc*. 2000; 48: 513–518.
 26. Lachs MS, Pillemer KA. Elder abuse. *N Engl J Med*. 2015; 373: 1947–1956.
 27. Rosen T, Clark S, Gassoumis Z, et al. Trends in geriatric physical assault injuries treated in U.S. emergency departments, 2006–2015. *Innov Aging*. 2019; 3: S479.
 28. Smith E. Violent crime against the elderly reported by law enforcement in Michigan, 2005–2009.
 29. Friedman LS, Avila S, Shah M, Tanouye K, Joseph K. A description of cases of severe physical abuse in the elderly and 1-year mortality. *J Elder Abuse Negl*. 2014; 26: 1–11.
 30. Joseph B, Sakran JV, Obaid O, et al. Nationwide management of trauma in child abuse: exploring the racial, ethnic, and socioeconomic disparities. *Ann Surg*. 2022; 276: 500–510.
 31. Resources for Optimal Care of the Injured Patient. ACS. 2025. <https://www.facs.org/quality-programs/trauma/quality/verification-review-and-consultation-program/standards/>
 32. Friedman LS, Avila S, Tanouye K, Joseph K. A case-control study of severe physical abuse of older adults. *J Am Geriatr Soc*. 2011; 59: 417–422.
 33. Laumann EO, Leitsch SA, Waite LJ. Elder mistreatment in the United States: prevalence estimates from a nationally representative study. *J Gerontol B Psychol Sci Soc Sci*. 2008; 63: S248–S254.
 34. Dong XQ. Elder abuse: systematic review and implications for practice. *J Am Geriatr Soc*. 2015; 63: 1214–1238.
 35. DeLiema M, Gassoumis ZD, Homeier DC, Wilber KH. Determining prevalence and correlates of elder abuse using promotores: low-income immigrant Latinos report high rates of abuse and neglect. *J Am Geriatr Soc*. 2012; 60: 1333–1339.
 36. Dong X, Simon MA, Evans DA. Prevalence of self-neglect across gender, race, and socioeconomic status: findings from the Chicago Health and Aging Project. *Gerontology*. 2012; 58: 258–268.
 37. Hernandez-Tejada MA, Amstadter A, Muzzy W, Acierno R. The National Elder Mistreatment Study: race and ethnicity findings. *J Elder Abuse Negl*. 2013; 25: 281–293.
 38. Kim D. Social determinants of health in relation to firearm-related homicides in the United States: a nationwide multilevel cross-sectional study. *PLOS Med*. 2019; 16: e1002978.
 39. Burgess DJ, Fu SS, van Ryn M. Why do providers contribute to disparities and what can be done about it? *J Gen Intern Med*. 2004; 19: 1154–1159.
 40. Perspectives on Elderly Crime and Victimization. SpringerLink. 2025.