



Elder Abuse in the Orthopaedic Patient: An Updated Review of Prevalence, Identification, and Screening Tools for Orthopaedic Surgeons

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Sophia Scott, AB^{1,2} , Devon T. Brameier, BMBCh², Ida Tryggedsson, MD³ , Nishant Suneja, MD², Derek S. Stenquist, MD², Michael J. Weaver, MD², and Arvind von Keudell, MD MPH²

Abstract

Introduction: Elder abuse is a prevalent, though often overlooked and underreported, cause of musculoskeletal injury in the elderly population. The purpose of this review is to provide an updated overview of the prevalence of elder abuse, its association with musculoskeletal injuries, and the available resources to aid orthopaedic surgeons in early detection and intervention. **Significance:** Improved training on this topic is needed throughout the medical education of orthopaedic surgeons to effectively recognize and address elder abuse. Our findings reveal an urgent need for increased awareness, education, and collaboration among healthcare professionals to address this significant public health concern. As the aging population continues to grow, understanding the connection between elder abuse and musculoskeletal injuries is essential for providing comprehensive care to older adults. **Results:** This review offers practical recommendations for identifying individuals at risk of elder abuse and outlines strategies for intervention. Indicators of abuse range from obvious signs like dirty clothes, neglect, and unattended injuries from falls, to more subtle cues requiring careful observation and questioning, such as mental health symptoms and family histories of abuse. **Conclusion:** By shedding light on this often-overlooked issue, this review advocates for a proactive approach to identifying and addressing elder abuse to safeguard the well-being and quality of life of older individuals.

Keywords

elder abuse, orthopedics, physician's role, prevalence, risk factors, aged

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Introduction

Amidst the common causes of musculoskeletal injuries, such as vehicular accidents and falls, a lesser-known but equally insidious culprit exists: elder abuse. Recognizing the hidden link between elder abuse and musculoskeletal injuries is essential to safeguard the well-being of vulnerable older adults. Nearly a quarter of adults over the age of 65 have been victims of elder abuse in a community

¹Human Evolutionary Biology, Harvard University, Cambridge, MA, USA

²Orthopaedic Surgery, Brigham and Women's Hospital, Boston, MA, USA

³Orthopaedic Surgery, Bispebjerg Hospital, Copenhagen, DK

Corresponding Author:

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

Email: sophiascott@college.harvard.edu



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setting (Yon et al., 2019).¹ Elder abuse and neglect can have serious consequences for the health and well-being of older adults, including physical injury, emotional distress, and financial losses (Switzer & Michienzi, 2012).² Elderly individuals are often reluctant to report abuse by their families or caregivers due to fear of embarrassment, losing care support, and a lack of awareness of available resources. This leads to widespread under-recognition and under-reporting of elder abuse and family violence (Pang, 2000).³ Insufficient education on the prevalence and screening procedures for elder abuse has led to misconceptions among orthopaedic surgeons regarding the intersections of abuse and surgical practice (Chen & Koval, 2002).⁴ Elder abuse occurs across diverse ethnic, religious, and socioeconomic groups (Hernandez-Tejada et al, 2013). Orthopaedic surgeons have unique opportunities to improve care and outcomes for these victims, as they often treat individuals with musculoskeletal injuries stemming from abuse in their clinics or through emergency department referrals (Pereira & Fertleman, 2019).⁵ As such, orthopaedic surgeons bear a critical responsibility to recognize, document, and address safety concerns, and make appropriate referrals to law enforcement, long-term social support agencies, and local community resources.⁶

This review aims to provide an updated overview of the prevalence of elder physical abuse in the general and orthopaedic patient populations, the available tools for screening and identification, and the current state of education on these crucial topics in orthopaedics. By addressing the gaps in provider education, this review advocates for a more comprehensive approach to identifying and addressing elder abuse, ultimately improving the care and well-being of vulnerable elderly individuals within the orthopaedic setting.

Elder Abuse and Neglect

Definition

Elder abuse is a term used to describe physical, sexual, emotional, or financial mistreatment of a person aged 65 years or older, including physical, sexual, emotional, and financial abuse and elder neglect.⁷ Elder abuse can occur in many different settings, including the home, long-term care facilities, and hospitals. It is frequently committed by a family member, caregiver, or someone in a position of trust, like a health care provider.⁸

Risk Factors

Elder abuse and neglect have a variety of risk factors, including individual, relationship, community, and societal factors. Individual factors like having physical and mental health problems, cognitive impairment, and behavioral

problems, such as aggressiveness or impulsivity, may put elderly patients at greater risk for victimization. Relationship factors include dependence on the caregiver, caregiver stress or burnout, and caregiver history of substance abuse or mental illness. Community factors include social isolation, lack of social support, and limited access to resources, while societal factors include ageism and cultural attitudes that devalue and marginalize older adults. Other risk factors for elder abuse and neglect include financial dependence on the caregiver, previous history of abuse or violence, and the presence of domestic violence or substance abuse in the household. Additionally, lack of access to quality healthcare, poor living conditions, and inadequate financial resources may increase the risk of elder abuse and neglect.⁹ In a 2021 retrospective study conducted at an emergency department in northern-central Israel, 1000 patients aged 65 and older were investigated for fractures to identify potential associations with elder abuse. The study delved into participant characteristics, including sociodemographic and medical data, fracture specifics, and the presence of forensic markers of elder abuse. The findings revealed that advanced age, dementia, and fractures involving the hands and face were not only associated with the presence of forensic markers but also predictive of having at least one forensic factor.¹⁰ Although specific hazard ratios were not provided, these results underscore the importance of establishing targeted clinical guidelines for healthcare professionals to recognize elder abuse in cases of orthopedic trauma.

Injury Mechanisms and Patterns

Elder abuse and neglect can have significant physical consequences, many of which may present in orthopedic settings. Common injury patterns seen in orthopedic settings among elderly individuals who have been abused or neglected include fractures, dislocations, and soft tissue injuries.¹¹ Fractures are the most common type of injury observed in orthopedic settings among elderly individuals who have experienced abuse or neglect. These fractures are often found in the upper extremities, particularly the humerus and forearm bones. Fractures in the lower extremities, including the femur, tibia, and fibula, are also frequently seen. Since there is a lack of well-defined predictors for elder abuse in patients with fractures, utilizing data from the National Emergency Department Sample database spanning 2007 to 2017, Gardezi et al aimed to identify independent predictors of elder abuse in comparison to nonabuse fracture controls. Among elder physical abuse patients in the emergency department, 13% presented with fractures. Findings indicated that elder abuse patients with fractures tended to be younger, female, and associated with lower income quartiles. Additionally,

coexisting conditions such as volume depletion, mental disorders, dementia, and intellectual disability were prevalent in this group. The study also highlighted associations with other forms of elder abuse, such as psychological abuse, neglect, and sexual abuse, as well as multiple fractures. The multivariate regression analysis revealed that elder physical abuse was more likely with skull and rib fractures but less likely with femur and foot/ankle fractures. This research underscores the need for increased awareness of potential elder physical abuse, particularly in higher-risk patients aged 60 and above.¹¹

Common features of fractures associated with elder abuse include bilaterality, polytrauma, and varied stages of healing, indicating a pattern of repeated abuse.¹⁴ Dislocations are another common injury seen in orthopedic settings among elderly individuals who have experienced abuse or neglect. The shoulder joint is most commonly affected, followed by the hip and knee joints. Dislocations may occur due to direct trauma or from pulling and twisting of the affected limb.¹⁵ Soft tissue injuries, including contusions, abrasions, and lacerations, are also frequently seen in orthopedic settings among elderly individuals who have experienced abuse or neglect. These injuries may be located on the face, arms, legs, and trunk. In addition to these injuries, orthopedic clinicians may also encounter pressure ulcers, burns, and other injuries indicative of neglect.¹²

Prevalence

Approximately one in six older adults have been victims of elder abuse in a community setting.¹ Elder abuse is a serious public health problem, with estimates suggesting as many as 10% of older adults experience some form of abuse or neglect across all settings.¹³ Yet still, elder abuse is highly under-reported and under-identified in medical settings and long-term care facilities — as the annual cost of elder financial abuse and fraud to older Americans is estimated to be between \$2.6 billion and \$36.5 billion — leading to extensive poor physical and mental health outcomes for aged populations.³

Screening Tools

Several screening tools have been developed to identify individuals who may be experiencing elder abuse or neglect. There are four commonly used screening tools: The Elder Abuse Suspicion Index (EASI), The Detection of Elder Mistreatment Through Emergency Care Technicians (DETECT), The Assessment Tool for Domestic Elder Abuse (ATDEA), and The Caregiver Psychological Elder Abuse Behavior (CPEAB). These well-tested tools have been designed to be used in a variety of settings, including healthcare facilities and emergency departments, and aim to help healthcare professionals recognize the signs and symptoms of elder abuse and neglect (Table 1).

The Elder Abuse Suspicion Index (EASI) is a brief tool that consists of six questions that assess for physical abuse, neglect, financial exploitation, and psychological abuse. The EASI has been validated in primary care settings and has demonstrated moderate sensitivity and specificity. 97.2% of physicians surveyed in a multicenter study reported that they thought EASI would have “some” or a “big” impact on their practice.¹⁴ The Detection of Elder Mistreatment Through Emergency Care Technicians (DETECT) is a tool developed to be used by emergency medical services (EMS) personnel. It consists of a series of questions that assess for physical, psychological, and financial abuse, as well as neglect. The DETECT has been validated in emergency departments and has demonstrated high sensitivity and specificity during a 36-month study observation period of approximately 59,400 community-dwelling older adults who placed 911 calls.¹⁵ The Assessment Tool for Domestic Elder Abuse (ATDEA) is a tool developed to assess for elder abuse and neglect in domestic settings. It consists of a series of questions that assess for physical, psychological, financial, and sexual abuse, as well as neglect. The ATDEA has been validated and has demonstrated high sensitivity and specificity.¹⁶ The Caregiver Psychological Elder Abuse Behavior (CPEAB) is a tool developed to assess for psychological abuse perpetrated by caregivers. It consists of a series of questions that assess for behaviors such as verbal abuse, threats, and isolation. The CPEAB has been validated and has demonstrated high sensitivity and specificity. The findings suggest that caregivers who are younger, less educated, and lack geriatric training experience a higher burden and are more likely to exhibit abusive behavior. Additionally, the study found that nurses exhibit more abusive behavior compared to care attendants.¹⁷

At present, these tools are not consistently used by orthopaedic surgeons to assess elderly patients for signs of abuse, but they could be readily incorporated into daily practice to improve provider sensitivity for identifying abuse victims.

This table provides a summary of four commonly used screening tools for identifying elder abuse and neglect: The Elder Abuse Suspicion Index (EASI), The Detection of Elder Mistreatment Through Emergency Care Technicians (DETECT), The Assessment Tool for Domestic Elder Abuse (ATDEA), and The Caregiver Psychological Elder Abuse Behavior (CPEAB). The table includes information about the number of items, target population, and validation studies for each tool.

Identifying Elder Abuse in Patients

Medical Education on Elder Abuse and the Current Landscape of Professional Awareness

In order to recognize, let alone appropriately respond to, elder abuse, healthcare providers must be educated on the

Table 1. Overview of Screening Tools for Elder Abuse and Neglect.

Name of Tool	Brief Description	Contents	Accuracy
The elder abuse suspicion index (EASI)	Asks individuals about their experiences with abuse, neglect, and exploitation	6 questions designed to detect elder abuse, usually taking less than 2 minutes to ask ¹⁴	Estimated sensitivity and specificity of 0.47 and 0.75. It usually took fewer than 2 minutes to ask the questions
The detection of elder mistreatment through emergency care technicians (DETECT)	Designed to help paramedics and emergency medical technicians (EMTs) evaluate patients and decide whether or not to report cases of potential elder mistreatment while in the field	26-Item screening tool geared towards community-dwelling older adults during an emergency response ¹⁸	Using the DETECT in routine EMT practices is linked to substantial increases in the frequency with which clinicians report potential elder mistreatment cases to adult protective Services ¹⁸
The assessment tool for domestic elder abuse (ATDEA)	Used to identify individuals who may be experiencing elder abuse and prevent further abuse	34-Item checklist with no scale and a focus on primary and secondary prevention ¹⁶	The overall scale-content validity score index of 0.90 ¹⁶
The caregiver psychological elder abuse behavior (CPEAB)	Designed to identify individuals who may be experiencing psychological abusive behavior by their caregiver(s)	20 items, each rated on a 4-point Likert-type scale ¹⁹	Expert content validity index of 0.95, with Cronbach's alpha for internal consistency equal to 0.85 ¹⁹

topic. Establishing standardized educational objectives and clinical exposures could help to enhance residents' preparedness to identify suspected cases of elder abuse during their training and later as attendings. Currently, education about elder abuse lacks uniformity and is often neglected as part of the curriculum within numerous primary care residency programs.²⁰ Consequently, forthcoming studies should emphasize the creation of validated and reliable elder abuse screening tools or protocols tailored to medical environments.

Furthermore, according to a cluster group analysis, family medicine residency programs tackle elder abuse in a more comprehensive manner compared to their counterparts in emergency medicine and internal medicine.²⁰ To enhance their approach, these residency programs might benefit from integrating supplementary curriculum components and increasing clinical exposure related to elder abuse.

In their systematic review of 32 articles meeting predetermined criteria, Cooper et al delved into the landscape of health and social care professionals' knowledge, detection, and reporting of elder abuse. Strikingly, a mere 25% of U.S. physicians were found to be aware of American Medical Association guidelines on elder abuse. The study also revealed that 33.7% of health care professionals had detected a case of elder abuse in the last year, a figure that increased to 39.9% when focusing on studies judged to be most representative, all of which surveyed physicians. Notably, only about half of the detected cases of abuse were reported. Further, professionals who recalled receiving training on abuse were not more likely to detect abuse compared to those without training.

However, they demonstrated a higher likelihood of reporting the abuse if detected. Interventions that involved face-to-face training were effective in increasing knowledge, while written information alone did not yield the same impact. Notably, no intervention studies have explored whether education can enhance the detection and reporting of abuse.²¹

These findings underscore the prevalent underestimation of elder abuse by professionals and highlight the need for interventions aimed at increasing detection and reporting. Such interventions should address concerns related to the impact of reporting on therapeutic relationships, victims, and the legal consequences for the reporter. The study strongly advocates for the development and testing of targeted interventions to equip professionals with the skills and confidence needed to inquire about elder abuse, ultimately contributing to the broader goal of addressing and mitigating this critical issue.

Current Surgeons' Obligations Regarding Elder Abuse

The American Academy of Orthopaedic Surgeons (AAOS) published a position statement on elder abuse that calls for increased awareness, education, and action by orthopedic surgeons to prevent and respond to elder abuse.²² Orthopaedic surgeons often serve as the first point of contact for patients that have undergone non-accidental trauma (NAT).²³ Thus, having familiarity with risk factors for abuse, telltale signs to look for during clinical examinations, and fracture patterns indicative of elder abuse

empowers providers to better identify and assist at-risk patients. Furthermore, an awareness of medical conditions mimicking NAT equips orthopaedic surgeons to address cases involving multiple or unexplained fractures holistically.²³

Orthopaedic surgeons have legal obligations and protections as mandated reporters. A 2022 study aimed to investigate orthopedists' familiarity with laws and guidelines related to detecting and reporting elder abuse, their attitudes toward these cases, their actual practices in identifying and reporting elder abuse, and potential correlations among these variables.²⁴ The study investigated the knowledge, attitudes, and practices of 145 orthopedists across various Israeli hospitals, including senior orthopedists, orthopedic residents, and orthopedic interns, regarding laws and directives related to the detection and reporting of elder abuse. Notably, the findings revealed a moderate level of knowledge among orthopedists, coupled with positive attitudes toward the detection and reporting of elder abuse. However, the actual detection and reporting of cases were observed to be relatively low.²⁴ Senior orthopedists exhibited the highest knowledge levels and the most positive attitudes, followed by orthopedic residents and interns. The reasons for unwillingness to report cases varied based on the level of training. Importantly, only a minority of orthopedists had received training on the detection and management of elder abuse.²⁴ The study highlighted that higher knowledge and more positive attitudes were associated with an increased number of detected and reported elder abuse cases. However, the overall low rates of detection and reporting underscore the crucial need for comprehensive training programs for orthopedists in the early stages of their careers. While this study focuses on Israeli orthopedists, there is a notable absence of information on US or European-based studies, emphasizing the necessity for further research in these regions to identify potential gaps in the understanding and education of orthopedic surgeons regarding elder abuse. These findings highlight the significance of early and comprehensive training for orthopedists in detecting and addressing elder abuse.

Resources Available to Orthopaedic Surgeons Caring for Victims of Elder Abuse

Orthopedic surgeons are in a unique position to screen for elder abuse. Patients who have experienced elder abuse often present with fractures, dislocations, and other musculoskeletal injuries that necessitate orthopedic care. Consequently, orthopedic surgeons are often among the first healthcare providers to interact with victims of abuse. Orthopaedic surgeons often struggle with these cases as they feel under-prepared to address the psychosocial needs

of these patients; however, there is a wealth of resources available to assist in identifying and managing cases of elder abuse. Beyond the screening tools previously listed, additional support tools are also available.

National and local support programs play a crucial role in combating elder abuse and providing assistance to both victims and healthcare professionals. The National Center on Elder Abuse (NCEA) serves as a comprehensive resource hub, offering valuable information, research insights, and support mechanisms to address elder abuse issues on a national scale. Simultaneously, the National Domestic Violence Hotline stands as a pivotal 24/7 service, providing immediate support, information, and resources for individuals experiencing domestic abuse, extending its reach and assistance to elder abuse cases. Additionally, the Elder Justice Initiative, a program initiated by the U.S. Department of Justice, contributes to the fight against elder abuse by providing resources and information to empower healthcare professionals, law enforcement, and the public in recognizing and addressing cases of elder abuse.¹³ These programs collectively contribute to the broader mission of raising awareness and combating elder abuse on both national and local levels.

Orthopedic surgeons have several resources at their disposal when identifying and managing cases of elder abuse.²⁵ Among these are local community-based organizations that offer vital support services to abuse victims, such as hotlines, law enforcement, and counseling services. Additionally, many states have enacted mandatory reporting laws for suspected elder abuse, placing an ethical obligation on healthcare providers to report their concerns to the appropriate authorities. By leveraging these resources, staying informed on best practices in elder abuse management, and adhering to reporting requirements, orthopedic surgeons can play a pivotal role in safeguarding the well-being and safety of elderly patients.

Practical Recommendations for Identifying and Assessing Elder Abuse

When assessing for elder abuse, it is clear that a multi-disciplinary approach is most effective. Since some of the aforementioned risk assessment tools may be lengthy or have limited reliability, a tailored approach using a combination of physical examination, patient and caregiver interviews, and observation can help identify at-risk individuals. Orthopaedic surgeons and healthcare providers must be trained to recognize these signs and understand when to refer patients to social workers or other support services for further intervention. This involves evaluating not only physical indicators but also considering the patient's social and family history, as well as the

psychological history of both the patient and their caregiver (Lachs & Pillemer, 2015).²⁶

Physical Indicators

Physical indicators include bruises and contusions, fractures, and dislocations. Unexplained bruises, particularly those in various stages of healing, may indicate repeated abuse. Certain fractures are more indicative of abuse, such as bilateral fractures, polytrauma, and fractures at different stages of healing. Skull and rib fractures are particularly associated with physical abuse, whereas femur and foot/ankle fractures are less likely. Dislocations are commonly seen in the shoulder, hip, and knee joints. These injuries can result from direct trauma or from pulling and twisting actions. Soft tissue injuries including contusions, abrasions, and lacerations, especially on the face, arms, legs, and trunk are also common in elder abuse patients. Pressure ulcers and burns can be indicative of neglect and improper care (Lee et al., 2023).²⁷

Coexisting Conditions

Those with mental disorders and dementia are at higher risk of abuse due to cognitive impairments that can make it difficult for them to report mistreatment. Additionally, individuals with intellectual disabilities are particularly vulnerable because of their increased dependence on caregivers (Nemati-Vakilabad et al., 2023).²⁸

Psychological and Social Indicators

Changes in mood, depression, anxiety, or fearfulness in the presence of the caregiver can be indicative of abuse. Social history factors, such as isolation from friends and family or sudden changes in financial situations, are also important indicators of potential elder abuse (Hellwig, 2023).²⁹ A family history of violence or strained relationships with caregivers can further increase an individual's risk of abuse. Other forms of abuse to consider include psychological abuse, characterized by anxiety, depression, withdrawal, and fearfulness; neglect, evidenced by poor hygiene, malnutrition, and untreated medical conditions; and sexual abuse, which may present as genital injuries, sexually transmitted infections, or discomfort during physical exams (Burnett et al., 2014).³⁰

By maintaining a high index of suspicion and using a comprehensive, multidisciplinary approach rather than one sole screening tool, orthopedic healthcare providers can more effectively identify and therefore intervene in cases of elder abuse. This proactive stance is crucial for safeguarding the well-being and quality of life of older adults, ensuring they receive the protection and care needed to mitigate the impact of abuse (Pickering et al., 2016).³¹

Conclusion

Elder abuse presents a pressing and often overlooked challenge in orthopedic surgery, requiring heightened attention from healthcare professionals. This review emphasizes the crucial role of orthopedic surgeons in recognizing, addressing, and preventing elder abuse among elderly patients.

In examining the relationship between elder abuse and fractures, the study found that insufficient provider education contributes to misconceptions and hesitancy among orthopedic surgeons when dealing with such cases. Urgent initiatives for targeted education and training are needed to provide orthopedic surgeons with the necessary knowledge and tools for early detection and intervention. By equipping them to manage elder abuse effectively, the orthopedic community can foster an environment where early intervention becomes the norm.

This review contributes to the literature by emphasizing the need to empower orthopedic surgeons with knowledge and tools to combat elder abuse. Through enhanced education, increased awareness, and proactive measures, the orthopedic surgical field can play a pivotal role in safeguarding the well-being and dignity of vulnerable elderly patients.

Areas for future research should focus on assessing the efficacy of abuse screening training and provider education on orthopedic surgeons' practices. Additionally, understanding the perspectives of medical students and residents on elder abuse is crucial for tailoring impactful educational programs to their needs. By identifying the most effective training methods, healthcare providers can gain the confidence and skills required for proactive addressing of elder abuse. This preparedness will pave the way for improved patient care and outcomes.

In conclusion, orthopedic surgeons and residents have a crucial responsibility in identifying and addressing cases of elder abuse and neglect, particularly as older adults are more likely to present with physical injuries. Future research, including understanding faculty surgeons' perspectives and developing innovative programs, is essential for bridging the gap between clinical knowledge and its implementation in medical practice. Prioritizing education and training within the orthopedic community to use screening tools effectively will contribute to patient safety and well-being, actively preventing and intervening in elder abuse and neglect cases and fostering a safer and more supportive environment for elderly patients.

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Ethical Statement

Ethical Approval

This is a literature review only using data published in other journals, so ethics approval was not obtained and not applicable.

Informed Consent

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ORCID iDs

Sophia Scott  <https://orcid.org/0009-0009-1219-9997>

Ida Tryggedsson  <https://orcid.org/0000-0002-0335-4344>

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