Abstract
Background: Elder abuse is a common global problem that is certainly preventable. The first step to tackling elder abuse is by researching its prevalence and acknowledging it as a prevailing problem. However, there is a lack of studies on elder abuse in Saudi Arabia. In this review, the socio-forensic problem of elder abuse in Saudi Arabia is addressed.
Methods: The PubMed database was systematically searched for articles on elder abuse in Saudi Arabia from inception to 1 July 2022. Search terms included “elder abuse”, “elderly abuse”, “geriatric abuse”, “aged abuse”, “senior abuse”, and “elder maltreatment”. In addition, to detect studies reported from Saudi Arabia, the following search terms were included: “Saudi Arabia”, “KSA”, and “Kingdom of Saudi Arabia”. The search results were screened for relevant articles. Studies from Saudi Arabia that addressed elder abuse were included in this review. Studies from other countries and studies that addressed abuse in other age groups were excluded.
Results: A very high percentage of the elderly in shelter homes were found to have experienced abuse, especially psychological, which resulted in an array of mental health implications such as anxiety, depression, and sleep disorders. A high level of awareness of elder abuse, in addition to a high sense of responsibility towards the elderly, was reported.
Conclusions: As the elderly represent a significant percentage of the population in Saudi Arabia, and with the community being heavily family-centered, it is recommended to increase dedicated efforts towards nationwide research on elder abuse and to formulate effective national programs to ensure its prevention in Saudi Arabia.

Keywords
older adults; abuse of older people; elder mistreatment; geriatrics; abuse; neglect; Saudi Arabia; systematic review
Introduction
Elder abuse is generally defined as “any direct action, inaction, or neglect against the elderly that causes harm or puts them in danger of harm, either by a person in a position of presumed trust or by any other person who targets the elderly because of their age or disability”. Older adults are at a high risk of being abused, which is a serious, but preventable socio-forensic problem. Elder abuse, like other forms of domestic or interpersonal violence, is a global phenomenon that crosses different cultural and socioeconomic backgrounds. Elder abuse is categorized into various types, mainly, psychological, physical, sexual, financial, and neglect, depending on the act by the abuser. A systematic review and meta-analysis that included 52 studies from 28 countries across the globe reported an estimated prevalence rate of 15.7% for overall elder abuse in the community setting. The prevalence estimates for psychological abuse, physical abuse, sexual abuse, financial abuse, and neglect were 11.6%, 2.6%, 0.9%, 6.8%, and 4.2%, respectively, in the elderly in the community setting. According to another global systematic review and meta-analysis, the prevalence estimates for psychological abuse, physical abuse, sexual abuse, financial abuse, and neglect were 33.4%, 14.1%, 1.9%, 13.8%, and 11.6%, respectively, in the elderly in the institutional setting.

The objective of this systematic review was to summarize the socio-forensic problem of elder abuse in Saudi Arabia based on a literature survey.

Methods
We followed the checklist of Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) (Supplementary file 1) in designing this systematic review (https://prisma-statement.org/). This systematic review was not pre-registered in the International Prospective Register of Systematic Reviews (PROSPERO).

Study search
The PubMed database was systematically searched for articles on elder abuse in Saudi Arabia from inception to 1 July 2022 (the date of literature search). The search terms included “elder abuse”, “elderly abuse”, “geriatric abuse”, “aged abuse”, “senior abuse”, and “elder maltreatment”. In addition, to detect studies reported from Saudi Arabia, the following search terms were included: “Saudi Arabia”, “KSA”, and “Kingdom of Saudi Arabia” (Table 1). The search results were screened for relevant articles. The steps followed in the PubMed search for relevant literature are depicted in Figure 1.

Other databases like Scopus and Web of Science, registers, websites, organizations, and reference lists were not searched to identify additional studies.

Study selection
We included cross-sectional and observational studies that addressed elder abuse in Saudi Arabia. Studies conducted in countries other than Saudi Arabia and those that addressed abuse in other age groups were excluded. Case reports, editorials, letters, and review articles were also excluded. There were no filters based on the publication date and language applied. Three reviewers (ASA, ALA, ZKA) independently screened the title and abstract to decide whether the articles would be included in our review.

Data collection
In a preliminary search of PubMed, 116 records were identified. The irrelevant articles were removed (n=108). Three records were excluded as they were conducted in other countries (n=3). Two records were excluded as they included another age group (n=2). The PRISMA flow chart (Figure 1) outlines the screening process. Three reviewers (ASA, ALA, ZKA) independently screened the title and abstract of the records identified in the first phase and subsequently screened the full text of the potentially eligible studies; disagreement, if any, was resolved in consultation with the other reviewers (KZA, NNZ, ARB, RGM). The records were screened manually, and no automation tool was used in this process. The authors or study investigators were not consulted to confirm the data or to obtain additional data.

Results and discussion
The search string “(elder abuse OR aged abuse OR elderly abuse OR senior abuse OR elder maltreatment OR geriatric abuse) AND (Saudi Arabia OR KSA OR Kingdom of Saudi Arabia)” identified 116 records at PubMed, of which 3 articles met the inclusion criteria (Table 2).

Alraddadi conducted a cross-sectional study that included 446 elderly participants from 43 sheltered homes in Makkah and Jeddah. The study found that 81% of the participants had experienced at least one type of abuse in the last 12 months, and the most common type of abuse was psychological abuse (71%) and the least was sexual abuse (0.01%). In addition, other types of abuse were recorded such as neglect (67%), financial abuse (54%), and physical abuse (13%). The common risk factors associated with elder abuse were being female and having a chronic disease. Another report by Alraddadi on the same number of participants at the same sites provided details on the assessment of the impact of abuse on psychological and physical health among older adults living in the institutional setting. The study found that 83% of
older adults who suffered from any type of abuse had symptoms of depression, 62% had anxiety disorders, and 59% had problems with sleep. However, only 4% of older adults who suffered from any type of abuse had suicidal ideation in the last 12 months. The study also found that 46% of older adults who suffered from any type of abuse reported poor physical health and 48% reported increased utilization of healthcare. Poor physical health was significantly associated with psychological abuse, physical abuse, financial abuse, and neglect. However, increased utilization of healthcare was not significantly associated with psychological abuse. Almakkhi et al. conducted a cross-sectional study on 430 participants at various primary healthcare centers in Qatif in the Eastern Province of Saudi Arabia. The aim of the study was to identify the knowledge of elder abuse and attitudes towards it among the adult attendees of the aforementioned primary healthcare centers. The study found that nearly all the participants considered it to be their responsibility to report witnessed elder abuse and over 90% of the participants considered elder abuse to be a criminal act.

Many studies have investigated the prevalence of elderly abuse in multiple countries. For instance, a study conducted in Nepal reported a 54.5% prevalence of overall elder abuse. Neglect (23.1%), psychological abuse (20.6%), physical abuse (6.5%), financial abuse (2.4%), and sexual abuse (1.9%), were the types of abuse among the elderly. In Saudi Arabia, these figures were much higher, except for sexual abuse. Physical abuse and psychological abuse were more common among elderly females in Nepal. A study in Egypt reported that 43.7% of the elderly were abused. The most common form of elder abuse was neglect (42%), followed by physical abuse (6%), psychological abuse (5%), and financial abuse (4%), with females reporting greater abuse than males. Similarly, the female gender was found to be a common risk factor for elder abuse in Saudi Arabia. A systematic review and meta-analysis on the prevalence of elder abuse in Iran reported an estimated 48.3% prevalence of overall elder abuse which is much less than the 81% reported in the single study conducted in Saudi Arabia.
We acknowledge the limitation of including only a single database in the review process. Other prominent databases such as the Scopus and Web of Science were not included in the search strategy. The use of self-report questionnaires or interviews adopted in the methodology related to data collection in the three studies that were included in the present review was a major limitation in terms of the evidence.

Table 2. Characteristics and salient findings of studies that addressed elder abuse in Saudi Arabia.

<table>
<thead>
<tr>
<th>Journal name (year of publication)</th>
<th>Objectives addressed</th>
<th>Study design, participants, and setting</th>
<th>Salient findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal of Interpersonal Violence (2022)</td>
<td>- Prevalence, risk factors, and types of elder abuse in sheltered homes - Socio-demographics of the abused older adults</td>
<td>- Cross-sectional study - Self-reporting interview with structured questionnaire - 446 participants (≥60 years) in 43 sheltered homes in Makkah and Jeddah</td>
<td>- 81% experienced at least one type of abuse in the previous 1 year - Most common type of elder abuse: psychological (71%) - Other common types of abuse: neglect (67%), financial mistreatment (54%) - 13% experienced physical abuse - Sexual abuse: rarely reported - Most common risk factors: female gender, chronic disease</td>
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</table>
Conclusions and recommendations

Elder abuse is a topic that is understudied in Saudi Arabia. Nevertheless, limited studies did prove the occurrence and severity of elder abuse in the institutional setting in the country. Elder abuse was common in sheltered homes. In the institutional setting, the female gender and those suffering from chronic illnesses were the two most common elderly cohorts vulnerable to abuse. Anxiety, depression, and sleep disorders were common in those abused older adults in the institutional setting in Saudi Arabia.

There is a lack of research on the prevalence and risk factors of elder abuse in the community setting in Saudi Arabia. More studies, particularly nationwide, are required to more accurately document the prevalence, risk factors, types, characteristics of elder abuse, and its impact on the psychological and physical well-being of the elderly population in both institutional and community settings in the country. Research should also be conducted to study anatomic locations of physical elder abuse. It is important to recognize the burden of elder abuse to formulate adequate and effective strategies to ameliorate elderly care in Saudi Arabia.

Data availability
Underlying data
All data underlying the results are available as part of the article and no additional source data are required.

Extended data

This project contains the following extended data:

- PRISMA flowchart

Reporting guidelines

- PRISMA Checklist Elder Abuse.docx

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).
References


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