Analysis of Medico-legal Death Investigation on Allegations of Elder Abuse in Seattle, Washington

Senathunga S*, Lubin M, Harruff RC.

Office of the King County Medical Examiner, Seattle, Washington, USA

Abstract

Introduction: Elder abuse is reported in one in six elderly people worldwide, thus, identifying its characteristics is very much crucial. Therefore, this study aimed to describe the characteristics of the decedents, and their complainants and alleged perpetrators in the elderly population in Seattle, Washington over ten years from 2010.

Methods: A total of 8,739 medico-legal death investigations in elderly people aged 65 years or older were perused retrospectively at the King County Medical Examiner's Office in Seattle, Washington. The records (n=161, 002%) contained allegations of elder abuse or neglect and were selected for analysis to describe the characteristics of the decedents, complainants and alleged perpetrators. The data were presented in frequency distributions. The complainants were categorized into five (families, hospice, care facilities, law enforcement and health providers) and alleged perpetrators were categorized into four (families, hospice, care facilities and health providers) and these categories were compared to each other. The presence of pressure ulcers and dementia were described according to the manner of death.

Results: Out of 161 cases, the majority (n=97, 60%) were females and the age ranges from 65 to 99 years with a mean of 80 years (standard deviation=6). Most of the deaths were certified as 'natural' (n=110, 63%), while, 22 cases (14%) were certified as 'undetermined'. Most of the complainants were health providers (n=69, 43%). Entities identified as alleged perpetrators were primarily long-term care facilities (n=77, 48%) or families (n=71, 44%). Further, families were less likely to be complainants (n=3, 12%) and more likely to be the alleged perpetrator (n=13, 52%) in deaths certified as 'undetermined' (n=25). Long-term care facilities were more likely to be identified as alleged perpetrators in deaths associated with dementia (n=24, 60%). The presence of pressure ulcers was more common (n=14, 56%) than dementia (n=6, 24%) in the 'undetermined' manner of death certification.

Conclusion: This study demonstrates the importance of a medico-legal death surveillance system. The long-term care facilities and families were identified as alleged perpetrators; therefore, further studies are needed to identify their associated factors. Dementia was under-represented as a potential impetus behind many allegations, thus, conducting prospective studies and neuropathological assessments are recommended. To identify the correlation of racial/socioeconomic disparity, legal consequences on allegations of elder abuse or neglect are required to better understand the context.

Keywords: Elder abuse and neglect, pressure ulcers, dementia, medico-legal death investigation

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Introduction

"Elderly" most commonly refers to chronological age and usually considers a person aged 65 years or older [1, 2]. Elder abuse is defined as "a deliberate action or failure to act by a care provider or another person in a connection involving an expectation of trust that causes or generates a risk of harm to an older adult"[3]. The classification of abuse ranges from bodily, sexual or emotional abuse to neglect and financial manipulation [4]. Dependency

increases vulnerability to abuse at older age mainly loss of income, immobility, housing, infirmity, health conditions, injuries, financial dependence, and reduced access to external resources [5]. However, abuse may or may not hasten death, therefore a death certificate is not a reliable tool for monitoring elder abuse [6]. All states and the federal government specified the importance of mandated reporting of suspected elder abuse, yet it varies in different countries.

King County Medical Examiner's Office (KCMEO) in Seattle, Washington provides a layer of surveillance for allegations of elder abuse by assuming jurisdiction in all cases in which there are reports of abuse or neglect from any source such as families, care providers, and institutions, first responders, and prosecuting or private attorneys. It conducts a complete medico-legal investigation which includes an autopsy, coordinating investigations with local police, the King County Prosecuting Attorney's Office, and relevant state agencies, such as Adult Protective Services (APS) and Residential Care Services (RCS). The present study aimed to describe the characteristics of the decedents, complainants, and alleged perpetrators, as well as medical conditions, specifically pressure ulcers and dementia in Seattle, Washington.

Methodology

Electronic records of the KCMEO database for ten years from 2010 of all medico-legal death investigations on decedents 65 years or older were searched by the principal investigator for any mention of abuse or neglect in the narratives of medico-legal death investigator and reports from police, prosecutors, APS, RCS, and other sources related to the individual investigations. The case files, autopsy reports, and death certificates were perused for additional information. Records with drug or alcohol abuse or self-neglect without further concerns were excluded due to incompleteness of data including age, living environment, or medical history. The records which were selected for further evaluation were anonymized and then abstracts were reviewed in detail such as care facilities and providers, medical conditions, autopsy results, and death certificate information. The final analysis focused on the age, gender and race of the decedent, the entity originally reporting the abuse or neglect (complainant) and the entity suspected of being responsible for the abuse or neglect (alleged perpetrator). The complainants and alleged perpetrator were categorised as follows: families, including any family member(s) related to the decedent; care facilities, nursing homes, adult family homes, or any long-term care facilities or employed caregivers responsible for the essential needs of the decedent; health providers, any providers or agencies caring for decedent before death outside of long-term care, including hospital or medical centre staff; hospice, if the decedent died under hospice care, inside or outside of designated hospice facilities; and law enforcement, including local police, generally in coordination with the prosecuting attorney and APS. The hospice is described as the place where the services are provided by a team of healthcare professionals who maximize comfort for terminally ill patients by reducing pain and addressing physical, psychological, social, and spiritual needs.

The presence of pressure ulcers and dementia, and death certificate fields such as cause of death', 'manner of death' and 'How Injury Occurred' were evaluated. By policy of KCMEO over the study period, the manner of death, 'undetermined', was used to signify deaths in which there were serious concerns that caregiver actions or inactions had contributed materially to death. Special attention was given to the presence of pressure or other types of ulcers identified by autopsy or in the medical record. If there was evidence of preventing ulcer management, or if the extent of debilitation or cardiovascular disease was severe enough to make ulcers unavoidable, in the judgment of KCMEO pathologists, ulcers alone were not automatically regarded as a material contribution to death.

The categorical data presented with frequency distributions and continuous data including age presented with mean with its standard deviation (SD). Prevalence of abuse and/or neglect was calculated with its 95% confidence interval (CI). The five categories of complainants were compared with the categories of alleged perpetrators and presented with numbers and percentages. Sub-group analysis was carried out for deceased persons with dementia and the 'undermined' manner of death. All data were considered confidential and no personal data were published.

Results

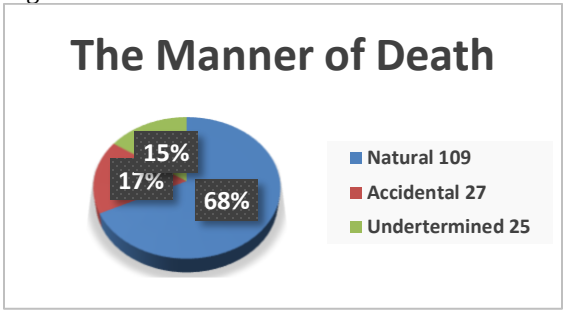
Out of all 8739 records, 161 cases had documented allegations of abuse and/or neglect and they were included in further evaluation. The prevalence of abuse and/or neglect was 2% (95% CI 01%-02%). The age of the decedents ranged from 65 to 99 years with a mean of 80 (SD=6 years) and a median of 80(IQR 72-86) years; 97 (60%) were females. The racial distribution shows an over-representation of African Americans, Native Americans, and Whites, and an under-representation of Asian/Pacific Islanders, compared to the general King County population of the study period (Table 1).

Table 1: The comparison of the study sample and King County general population

Race	Study sample N=161 n (%)	King County N=2.2 M* n (%)
White	118 (74)	1,430,000 (66)
African American	023 (14)	132,000 (06)
Asian/Pacific Islander	013 (08)	440,000 (20)
Native American	005 (03)	22,000 (01)
Other	002 (01)	176,000 (08)

*Average of 2010 and 2019 population estimates.

Figure1: The manner of death



Out of 161 deaths (Table 2) health providers registered the largest number of complaints (n=69, 43%), followed by families (n=52, 32%) and law enforcement (n=31, 19%). In this accounting, health providers filed complaints against 38 families (23%) and 29 care facilities (18%); law enforcement registered complaints against 22 families (14%) and 9 care facilities (06%); and families registered complaints against 35 care facilities (21%) and against other family members in 06 (04%) instances.

Table 2: The comparison of complainants and alleged perpetrators in the study sample (n=161)

Complainant	Alleged perpetrator				
	Families N=71 n (%)	Hospice N=03 n (%)	Care Facilities N=77 n (%)	Health providers N=10 n (%)	Total N=161 n (%)
Families	06 (04)	02 (01)	35 (21)	09 (06)	52 (32)
Hospice	05 (03)	00 (00)	00 (00)	00 (00)	05 (03)
Care facilities	00 (00)	00 (00)	04 (02)	00 (00)	04 (02)
Law enforcement	22 (14)	00 (00)	09 (06)	00 (00)	31 (19)
Health providers	38 (23)	01 (06)	29 (18)	01 (01)	69 (43)
Total	**71 (44)**	**03 (02)**	**77 (48)**	**10 (06)**	**161(100)**

Most (n=24, 60%) care facilities were alleged perpetrators, and a majority of the health care providers are complainants (n=19, 47%) in the dementia subset (Table 3).

Table 3: The comparison of complainants and alleged perpetrators in dementia subset (n=40)

Complainant	Alleged perpetrator				
	Families N=13 n (%)	Hospice N=00 n (%)	Care Facilities N=24 n (%)	Health Providers N=03 n (%)	Total N=40 n (%)
Families	00 (00)	00 (00)	11 (27)	03 (07)	14 (35)
Hospice	00 (00)	00 (00)	00 (00)	00 (00)	00 (00)
Care facilities	00 (00)	00 (00)	01 (02)	00 (00)	01 (25)
Law enforcement	03 (07)	00 (00)	03 (07)	00 (00)	06 (15)
Health providers	10 (02)	00 (00)	09 (22)	00 (00)	19 (47)
Total	**13 (32)**	**00 (00)**	**24 (60)**	**03 (07)**	**40 (100)**

Families were less often complainants (n=03, 12%) and more often perpetrators (n=16, 64%); care facilities were less often complainants (n=01, 04%) than perpetrators (n=08, 32%) and there were more instances of law enforcement registering complaints (n=07, 28%) in the undermined subset (Table 4).

Table 4: The comparison of complainants and alleged perpetrators in an 'undetermined' subset (n=25)

Complainant	Alleged perpetrator				
	Families N=16 n (%)	Hospice N=01 n (%)	Care Facilities N=08 n (%)	Health Providers N=00 n (%)	Total N=25 n (%)
Families	00 (00)	01 (04)	02 (25)	00 (00)	03 (12)
Hospice	01 (04)	00 (00)	00 (00)	00 (00)	01 (04)
Care facilities	00 (00)	00 (00)	01 (04)	00 (00)	01 (04)
Law enforcement	06 (24)	00 (00)	01 (04)	00 (00)	07 (28)
Health providers	09 (36)	00 (00)	04 (18)	00 (00)	13 (52)
Total	**16 (64)**	**01 (04)**	**08 (32)**	**00 (00)**	**25 (100)**

Table 5 relates the presence of pressure ulcers or dementia with the manner of death. The pressure ulcers were more common (n=14, 13%) in deaths certified as 'undetermined' (n=25).

Table 5: Pressure ulcers and dementia related to manner of death certification

Condition	Manner of death			
	Natural N=67 n (%)	Accidental N=17 n (%)	Undetermined N=25 n (%)	Total N=109 n (%)
Pressure ulcers	31 (28)	05 (05)	14 (13)	50 (46)
Dementia	24 (22)	10 (09)	06 (05)	40 (37)
Ulcers + dementia	12 (11)	02 (02)	05 (05)	19 (17)
Total	**67 (61)**	**17 (02)**	**25 (22)**	**109 (100)**

Discussion

This study reported several factors related to allegations of elder abuse or neglect, including characteristics of the decedents, complainants, and alleged perpetrators, as well as medical conditions, specifically pressure ulcers, and dementia, that may have been important in prompting the allegations. The average age of decedents was 80 (SD=06) years and most (n=97, 60%) were female. The previous studies supported that females were more prone to abuse compared with their male counterparts [7,8]. It could be because older women with lower socio-

economic status in the family tend to dependence on financially and emotionally from their children. However, another study counteracts the finding [9] and reported the females' support for domestic chores such as cooking or care of children, thus less prone to abuse or neglect. Further, the sample in a study conducted in China (mean; 68.8 years, SD=6.6) was younger then to our sample (mean; 80 years, SD=06). It could be due to sample variation in which the minimum age of our sample was 65 years, while in the study in China, it was 60 years.
The current study over-represented both African Americans and Native Americans compared to the general King County population. These results are similar to previous studies showing racial disparity. Contrary to other studies of elder abuse and neglect, the present study found that decedents classified as White were also over-represented, although to a relatively minor extent, and those classified Asian/Pacific Islander were under-represented [10-13]. This could be due to variations in the socioeconomic composition of King County, Washington.

Of the 8739 jurisdictional deaths investigated over the 10 years, 161 deaths (02%) had allegations of abuse or neglect in KCMEO. Further, several studies from developed countries reported the prevalence rate is between 02% and 10% [14]. A previous study conducted in the United States reported the prevalence of mistreatment as 11.4% (n=589) [15]. This may be at least partly described by differences between the definition of mistreatment and abuse or neglect in the current study. However, the reported prevalence could be underestimated which is alarming and warrants further study.

In the current study, following a full medico-legal investigation usually including autopsy, 109 (68%) of the deaths with allegations of abuse or neglect were certified as 'Natural'. Another 27 (17%) were certified as 'Accidents', usually due to falls with a fracture or head injury, or related to some other unintentional mishap, with no care concerns otherwise. A total of 25 cases (15%) were certified as 'Undetermined', which served to mark deaths in which KCMEO investigation was unable to exclude caregiver abuse or neglect as materially contributing to death. As there is no gold standard test for abuse or neglect it has relied on forensic markers, thus the manner of death is very crucial. The current firm policy of KCMEO is to perform a full medico-legal death investigation, including information obtained through other agencies responsible for protecting the quality of elder care, in any case in which there were allegations of abuse or neglect, regardless of the source of allegations. This is done even if an attending physician had certified the death as 'natural', under the concept that abuse or neglect contributing to death constitutes caregiver actions or inactions that may qualify as 'Homicide'. In any case the validity of such allegations needed resolution for accurate death certification and to protect the rights of the accused. Although none of the allegations examined in this study had clear evidence of abusive physical injuries or caregiver neglect sufficient to be certified as outright Homicide, others had serious concerns about neglect requiring a thorough review of the myriad array of health conditions of the decedent, quality of care, and economic, cultural, and social conditions of the families, when possible, in Elder Death Review or the prosecuting attorney's office. It was the practice of KCMEO to certify the manner, Undetermined, in deaths having the most serious concerns, with an additional statement of "Unable to determine if (or to what extent) caregiver neglect contributed to death" in the death certificate section, How Injury Occurred. This served to communicate to partner agencies the medico-legal concerns of KCMEO that further legal investigation and criminal charges may be necessary. Further considerations of subsequent criminal charges, civil lawsuits, instances of financial exploitation, or fraud remained outside the scope of this study.

In the present study, the health providers registered the most complaints (n=69, 43%), followed by families (n=52, 32%), and law enforcement (n=31, 19%). Further, care facilities were most likely accused (n=77, 48%) followed by families (n=71, 44%). Considering the complexities and economics of health care, especially elder care, it was not surprising that families and care facilities were frequently listed as either complainants or alleged perpetrators. This could have happened because the elderly who live in residential settings that offer long-term supportive services are at particular risk for abuse and neglect [15]. Compared to all allegations, there were fewer complaints registered by families (n=3, 14%) and more families cited as the alleged perpetrator (n=16, 64%) in deaths in which the manner of death was certified as 'undetermined' in our sample. This fact highlighted that abuse or neglect most commonly occurs in residential rather than institutional settings, and the most likely perpetrators are known by the victim [15]. Our findings showed that the care facilities were more likely to be named as alleged perpetrators in deaths associated with dementia (n=24, 60%) and less likely to be named as alleged perpetrators in deaths certified as 'undetermined' (n=8, 32%). It is observed that older adults with dementia may be at high risk for abuse, and a study done in the United States reported a 12.6% prevalence of elder abuse

among elderly people presented with cognitive problems [16]. Law enforcement was more likely to be listed as complainant in deaths certified as 'undetermined' (n=6, 27%) in the current study. Therefore, the findings of this research support most of the existing evidence, yet, stronger programs targeting the well-being of older adults are needed.

The presence of pressure ulcers significantly increases their risk of dying [17]. The findings of our study compared different manners of death associated with pressure ulcers or dementia and found that the 'Undetermined' manner was highly associated with ulcers but not with dementia. The presence of pressure ulcers is an obvious sign of potentially inadequate care.

Although care facilities were commonly reported as (n=24, 60%) alleged perpetrators in deaths associated with dementia, it was somewhat surprising that dementia was not associated with the 'undetermined' manner (n=06, 05%), considering the frequency of dementia complicating elder care. Likely, instances of dementia in the current study were seriously under-reported, and evidence accumulated by KCMEO outside of this study indicates that neuropathological studies directed at neurodegenerative disease would be necessary to assess the true incidence of dementia related to allegations of elder abuse or neglect.

The retrospective nature and under-representation of dementia are one of the major limitations in the present study, therefore, a prospective study with a neuropathological assessment of neurodegenerative disease is needed. Due to the high frequency of transfers of patients before death, there may be misclassification as alleged perpetrators, for example from private homes to hospitals, to long-term care, and then back again to the hospital, in many cases, it was difficult to determine where the abuse or neglect occurred. Related difficulties were in classifying long-term care with respect to care facilities, especially with adult family homes and paid caregivers, and in identifying hospice patients cared for inside or outside of designated facilities. To minimize these sources of error, a very generalized and simplistic scheme was chosen to classify complainants and alleged perpetrators. In some cases, the motivation of the complainant was suspect, whether to seek financial gain, to deflect blame, or because of dysfunctional family dynamics. In all cases, motivation was not questioned, and all allegations were taken at face value. A more comprehensive study would include an assessment of financial or other motivations and legal outcomes of the individual cases.

Despite the limitations and low statistical power due to the small sample size in sub-groups, the results of the study offer a few insights into allegations of elder abuse and neglect in King County, Washington. First, the KCMEO policy of thoroughly investigating all deaths with allegations of abuse or neglect reported by first responders, hospitals, care facilities, families, and law enforcement, provided a surveillance system for the community and a way of resolving most complaints. Averaging over ten years, the burden of 16 cases per year of the specialized investigation was not excessive for an office serving a population of over 2 million. Secondly, it was somewhat gratifying there were no instances of outright physical abuse causing or contributing to elder deaths in ten years of study. This may be a consequence of increased awareness of elder mistreatment, improved surveillance, and mandated reporting. The frequency of health providers registering complaints was evidence of the value of mandated reporting. Limited resources of families burdened with the expense of elder care, socioeconomic and racial disparities in healthcare, variable quality of long-term care, unreasonable and disparate expectations of family members, and miscommunication involving providers and among families may be at the heart of many allegations. Furthermore, financial exploitation or fraud may be bound up with an unknown number of allegations. Of all the factors underlying allegations of abuse or neglect, pressure ulcers stood out as the most important, meaning that careful anatomic and medico-legal evaluation of ulcers is essential.

Conclusions

African Americans were overrepresented in allegations of abuse and neglect, families were more likely alleged perpetrators and less likely complainants, and pressure ulcers were highly associated with serious concerns of abuse or neglect constituting evidence that families caring for debilitated elders are less able to provide adequate care at home. Racial and socioeconomic disparity were observed in elder care. The roles of healthcare disparity and dementia as factors encouraging allegations of abuse or neglect are deserving of further study.

Disclosure statement

Ethical Aspects: The authors have no conflicts of interest. The study sample was deceased persons; secondary data were used; all data used in the study were anonymous, and all data were considered confidential in this study.

Conflicts of Interest: The author(s) declared no potential conflicts of interest concerning the research, authorship, and publication of this article.
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