Mortality among elder abuse victims in rural Malaysia: A two-year population-based descriptive study

Raudah Mohd Yunus MPH, Noran Naqiah Hairi PhD, Wan Yuen Choo PhD, Farizah Mohd Hairi PhD, Rajini Sooryanarayana MPH, Sharifah Nor Ahmad MD, Inayah Abdul Razak MD, Devi Peramalah BSc, Suriyati Abdul Aziz MPH, Zaiton Lal Mohammad MPH, Rosmala Mohamad MD, Zainudin Mohd Ali MPH & Awang Bulgiba PhD


To link to this article: http://dx.doi.org/10.1080/08946566.2016.1260083

Accepted author version posted online: 14 Nov 2016.
Published online: 14 Nov 2016.

Submit your article to this journal

Article views: 79

View related articles

View Crossmark data
Mortality among elder abuse victims in rural Malaysia: A two-year population-based descriptive study

Raudah Mohd Yunus, MPH\textsuperscript{a}, Noran Naqiah Hairi, PhD\textsuperscript{a}, Wan Yuen Choo, PhD\textsuperscript{a}, Farizah Mohd Hairi, PhD\textsuperscript{a}, Rajini Sooryanarayana, MPH\textsuperscript{a}, Sharifah Nor Ahmad, MD\textsuperscript{b}, Inayah Abdul Razak, MD\textsuperscript{b}, Devi Peramalah, BSc\textsuperscript{a}, Suriyati Abdul Aziz, MPH\textsuperscript{b}, Zaiton Lal Mohammad, MPH\textsuperscript{b}, Rosmala Mohamad, MD\textsuperscript{b}, Zainudin Mohd Ali, MPH\textsuperscript{b}, and Awang Bulgiba, PhD\textsuperscript{a}

\textsuperscript{a}Julius Centre University of Malaya (JCUM), Department of Social and Preventive Medicine, University of Malaya, Kuala Lumpur, Malaysia; \textsuperscript{b}Negeri Sembilan State Health Department (JKNNS), Seremban, Malaysia

ABSTRACT

Our study aims at describing mortality among reported elder abuse experiences in rural Malaysia. This is a population-based cohort study with a multistage cluster sampling method. Older adults in Kuala Pilah (n = 1,927) were interviewed from November 2013 to May 2014. Mortality was traced after 2 years using the National Registration Department database. Overall, 139 (7.2%) respondents died. Fifteen (9.6%) abuse victims died compared to 124 (7.0%) not abused. Mortality was highest with financial abuse (13%), followed by psychological abuse (10.8%). There was a dose-response relationship between mortality and clustering of abuse: 7%, 7.7%, and 14.0% for no abuse, one type, and two types or more, respectively. Among abuse victims, 40% of deaths had ill-defined causes, 33% were respiratory-related, and 27% had cardiovascular and metabolic origin. Results suggest a link between abuse and mortality. Death proportions varied according to abuse subtypes and gender.

KEYWORDS

Abuse outcome; descriptive study; effects of elder abuse; elder mistreatment; exploratory; family violence; Malaysia; mortality

Introduction

Elder abuse and neglect (EAN) is becoming a global health concern with the ongoing rapid demographic transition worldwide, especially in developing countries. The Action on Elder Abuse in the United Kingdom has defined EAN as “a single or repeated act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust which causes harm or distress to an older person” (Dixon et al., 2010). Five categories of EAN—physical, psychological, financial, sexual, and neglect—have been widely recognized (Laumann, Leitsch, & Waite, 2008). The worldwide prevalence of EAN was reported to range from 3.2% to 27.5% (Cooper, Selwood,
& Livingston, 2008), while in Malaysia, it was estimated at 9.6% among the urban community (Sooryanarayana, Choo, Hairi, Chinna, & Bulgiba, 2015).

There is increasing evidence that abuse in late life results in premature mortality, as documented in a number of studies (Baker et al., 2009; Dong et al., 2009; Lachs, Williams, O’Brien, Pillemer, & Charlson, 1998; Schofield, Powers, & Loxton, 2013). Abused older adults under the New Haven Established Populations for Epidemiological Studies of the Elderly (EPESE) were three times more likely to die (Lachs et al., 1998), whereas abused respondents in the Chicago Aging and Health Project (CHAP) were twice as likely to die compared to their nonabused counterparts (Dong et al., 2009). This was further corroborated by Baker et al., who found that those physically and verbally abused were at higher risks of mortality (Baker et al., 2009). Similarly, EAN was shown to predict mortality among older Australians (Schofield et al., 2013).

Little is known about the consequences of EAN in other regions, especially middle and low-income countries and among non-Western populations. The majority of existing studies relating EAN to mortality, if not all, were conducted in high-income nations, predominantly the United States and Australia. It has been argued that manifestations of EAN may differ across cultures, and that this subject has not been adequately explored and understood (Pillemer, Burnes, Riffin, & Lachs, 2016). We therefore investigated EAN and mortality among a cohort of older Malaysians.

To the best of our knowledge, the Malaysian Elder Mistreatment Project (MAESTRO) is the first population-based, prospective study in Malaysia and the South-East Asian region exploring various aspects of EAN. Our study aims at describing mortality among EAN victims and would serve as a starting point for more advanced research and analysis of the relationship between abuse in late life and risks of death in middle- and low-income regions.

**Methods**

**Study design**

This was a population-based, 2-year prospective cohort, descriptive study, which was part of the Malaysian Elder Mistreatment Project (MAESTRO) (Choo et al., 2016) initiated in November 2013.

**Setting**

The district of Kuala Pilah in Negeri Sembilan, one of the states in Peninsular Malaysia, was chosen. Kuala Pilah is largely rural and located roughly 100 kilometers away from the capital city, Kuala Lumpur.
**Sampling strategy**

A multistage cluster sampling strategy was employed. First, Kuala Pilah was randomly selected from the seven districts in Negeri Sembilan. Of the 254 enumeration blocks (EB) in the district, 156 EBs were randomly chosen, followed by another random selection of 16 to 20 households from every EB based on a computer-generated list. Identification of selected participants was made in a house-to-house visit.

Inclusion criteria were: (a) those aged 60 and older; (b) Malaysian nationals; (c) community-dwelling individuals who have lived in Kuala Pilah in the past 12 months or longer; and (d) those able to communicate independently. Those excluded were: (a) residents of long-term care institutions; (b) those unable to communicate for reasons such as severe cognitive impairment, deafness or severe hearing impairment, and post-stroke complications; and (c) those with Mini Mental State Examination (MMSE, which is an instrument to screen for cognitive impairment) score of 4 or less.

Further details on the study methodology have been previously published (Choo et al., 2016).

**Data collection**

Baseline assessment was carried out from November 2013 to May 2014. Home-based interviews using a structured questionnaire were conducted by trained personnel. A total number of 2,118 older individuals agreed to participate and were successfully interviewed. Response rate was 84.9%. No significant difference was found between respondents and nonrespondents with regards to basic demographic characteristics. Screening of cognitive impairment using the Mini Mental State Examination (MMSE) excluded 191 individuals, yielding a final sample size of 1,927 for analysis.

**Measures**

**Elder abuse and neglect (EAN)**

Elder abuse and neglect (EAN) was measured using a questionnaire derived from the modified Conflict Tactic Scales and revised by Naughton and colleagues (Naughton et al., 2011). Each respondent was asked a series of questions in which they gave a binary response of “yes” or “no,” and whether abusive episodes occurred within the past 12 months or from the age of 60. This was followed by questions to determine the frequency of abusive episodes and how serious the event(s) was. Frequency and level of severity were gauged mainly for establishing psychological abuse and neglect. The description of questionnaire items is available in the study protocol (Choo et al., 2016).
**Mortality**
Two years following baseline assessment, mortality was tracked (in May 2016) first through direct phone calls to respondents or their closest family members, followed by cross-checking with the Malaysian National Registration Department (NRD). The NRD is the only institution in Malaysia that retains the latest and most complete information on national birth and death statistics. Tracing was done using the National Registration Identity Card Number (NRIC), a unique number assigned to each Malaysian citizen. Causes of death were also provided by the NRD database, and we categorized them into: (a) medically certified, and (b) nonmedically certified. Deaths certified by nonmedical personnel were mostly registered by police—identified by lack of clear medical diagnoses (e.g., death due to old age) and so were labeled “unclear,” while deaths certified at hospitals by medical personnel were further divided into: (a) cardiovascular-related; (b) respiratory-related; (c) cancer-related; (d) metabolic-related; (e) trauma/injury-related; and (f) urinary-related.

**Covariates**
Other variables measured were: (a) basic sociodemographic characteristics such as age, gender, ethnicity, education level, and household income; (b) health-related variables such as comorbidities (the number of chronic conditions and the presence of common diseases including hypertension, diabetes, cancer, coronary heart disease, stroke, congestive heart failure, high cholesterol, and arthritis), and self-rated health; (c) psychosocial variables such as depression using the Geriatric Depression Scale (GDS-15) and social support using Duke Social Support Index (DSSI); and (d) physical function represented by 2.4-metre walking speed.

Education level was categorized into “low” (no formal education), “medium” (primary to secondary), and “high” (college and above), while monthly household income was grouped into “low” (below RM1000), “middle” (RM1000-RM2499) and “high” (RM2500 and above). The GDS scores were classified as “normal” (0–5), “probable depression” (6–9), and “depression” (10–15).

**Ethics**
This study was approved by the Medical Ethics Committee of the University of Malaya Medical Centre and Malaysian National Medical Research Register. Thorough explanation was given to each respondent and written consent was taken prior to baseline assessment.

**Analytic approach**
Data were analysed using the IBM Statistical Package for Social Science (SPSS) software version 20.0 for Windows. Descriptive statistics were mainly
employed to illustrate our data and explain the study findings. Mean and standard deviations (SD) were used to report continuous data, while categorical data were reported using percentages. Continuous variables were compared using the independent t-tests for two groups and ANOVA for multiple groups. The Pearson’s Chi-squared test was used to determine the associations between categorical variables, while Pearson’s Correlation Coefficient was used to determine associations between continuous variables. A p-value of < 0.05 was considered statistically significant.

Results

A total of 1,927 respondents with a mean age of 69.8 (±7.0) were interviewed. The overall lifetime prevalence of EAN (abusive episodes ever experienced from the age of 60) was 8.1%, with 4.8%, 3.4%, 1.2%, 0.3%, and 1.1% for financial abuse, psychological abuse, physical abuse, sexual abuse, and neglect, respectively. When strangers as perpetrators were included, the prevalence of financial abuse was 10.5%, pushing up the overall EAN prevalence to 13.6%, while other subtypes remained the same. The sociodemographic characteristics of our study cohort are shown in Table 1, and Table 2 demonstrates the lifetime prevalence of EAN with 95% confidence interval.

The majority of respondents were Malay and belonged to the younger age group (60–69), with no significant difference in age between those abused and not abused. Female participants comprised 60.8% of the study sample and 53.8% of abuse victims. Respondents who were classified as EAN victims from the assessment were more likely to have lower income (p = 0.007), poor social support (p = 0.02), and suffer from depression (p = 0.01). Though not statistically significant, females had a higher likelihood of being abused (p = 0.06). There was no significant difference in terms of number of comorbidities between the abused and nonabused group, indicating an approximately equal health status.

After a period of 2 years, 139 (7.2%) respondents died as confirmed by the NRD database. Among EAN victims, 15 (9.6%) died as compared to 124 (7.0%) among those not abused. Sixty-five (8.3%) males and 74 (6.3%) females died from the whole study cohort, but the trend was reversed among abuse victims, where more females (10.7%) (9 of 84) died compared to their male counterparts (8.3%) (6 of 72). Proportions of death recorded were highest among financial abuse victims (13%) (12 of 92), followed by psychological abuse (10.8%) (7 of 65), neglect (4.5%) (1 of 22), and physical abuse (4.2%) (1 of 24). Among sexual abuse victims, 20% died, but the number of respondents reporting abuse was very small (n = 5). Inclusion of strangers into the definition of financial abuse yielded a death percentage of 9.9% (20 of 203), lower than that of financial exploitation perpetrated solely by those in relationships of trust.
Gender comparison revealed that across all subtypes of abuse, with the exception of neglect, deaths were higher among females. There was a dose-response relationship between the number of abuse subtypes (clustering of abuse) and
The graded relationship was more prominent among female victims.

Figure 1 displays mortality according to subtypes of abuse, and Figure 2 shows the graded relationship between clustering of abuse and mortality by gender.

Causes of death were categorized into medically certified and nonmedically certified. Deaths that were not medically certified were labeled unclear; their documentation and verification were usually performed by police or local authorities. Overall, almost half (48.9%) (68 of 139) of deaths that

Table 2. Prevalence of elder abuse and neglect among rural older Malaysians (N = 1,927).

<table>
<thead>
<tr>
<th>Subtype of abuse</th>
<th>Prevalence</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>95% CI</td>
</tr>
<tr>
<td>Financial</td>
<td>92 (4.8)</td>
<td>3.9–5.8</td>
</tr>
<tr>
<td>Psychological</td>
<td>65 (3.4)</td>
<td>2.6–4.2</td>
</tr>
<tr>
<td>Physical</td>
<td>24 (1.2)</td>
<td>0.7–1.7</td>
</tr>
<tr>
<td>Sexual</td>
<td>5 (0.3)</td>
<td>0.1–0.5</td>
</tr>
<tr>
<td>Neglect</td>
<td>22 (1.1)</td>
<td>0.6–1.6</td>
</tr>
<tr>
<td>Overall EAN</td>
<td>156 (8.1)</td>
<td>6.9–9.3</td>
</tr>
</tbody>
</table>

CI, confidence interval; EAN, elder abuse and neglect.

*“Strangers” refers to perpetrators unknown to older individuals.

Figure 1. Mortality percentage, % (n) among elder abuse and neglect victims according to subtype of abuse.

*Financial exploitation by anyone—strangers and those in relationships of trust.

Figure 2. Graded relationship between clustering of abuse and mortality (%) by gender.
occurred were not certified by medical personnel. Deaths caused by cardiovascular (18.7%) (26 of 139) and respiratory (18.7%) (26 of 139) diseases were highest, followed by metabolic/sepsis (6.5%) (9 of 139), cancer (4.3%) (6 of 139), urinary (2.2%) (3 of 139) and trauma/injury (0.7%) (1 of 139). The percentage of ill-defined causes of death among abuse victims was 40% (6 of 15), while the biggest proportion of death with clear diagnoses were respiratory-related (33%) (5 of 15).

Figure 3 compares causes of death between abused and nonabused respondents.

Discussion

The prevalence of EAN reported in this study (8.1%) is in line with findings of a systematic review by Cooper et al., which suggested that the worldwide prevalence of EAN ranged from 3.2% to 27.5% (Cooper et al., 2008). Another study conducted among urban older Malaysians revealed that 9.6% of respondents are reported to have been abused (Sooryanarayana et al., 2015)—similar to our findings. Sociodemographic characteristics found to be significantly associated with EAN were low income and poor social support. Even though these associations were established based on unadjusted analyses, they corroborate earlier results of a systematic review that reported low income and poor social support to be among the risk factors of elder abuse (Johannesen & LoGiudice, 2013).

It is interesting to note that only the prevalence of financial abuse was inflated when strangers as perpetrators were taken into account, while other subtypes remain unaffected. This could imply that not only is financial exploitation a frequent phenomenon among older adults, but this group may be a common and easy target of criminals and scams. A study by Finberg reported that senior citizens in America were particular targets of
various types of financial manipulation, such as mail and telemarketing fraud, lottery scams, predatory lending, identity theft, living trust and annuities sales, and funeral and burial plots (Finberg, 2002). While differences may exist across cultures and countries, it is important that more in-depth studies are undertaken in low- and middle-income regions to understand how older individuals can fall victim to financial crimes by strangers. This is crucial for designing preventive measures, interventions, and policies.

Premature mortality as an outcome of EAN has been consistently demonstrated across studies (Baker et al., 2009; Dong et al., 2009; Lachs et al., 1998). Even though this article aims at describing mortality among EAN victims rather than establishing a longitudinal relationship, some of our results and their trends indicate a possibility of connection between the two. This can be seen in the higher proportion of deaths among those abused, and the dose-response relationship between percentage of death and number of abuse subtypes. The striking contrast between the trends of death among male vs. female EAN victims with increasing numbers of abuse subtypes (Figure 2) deserves further exploration. While the rise in death percentage among males was small and steady, it increased by almost three times among females. Gender differences in coping styles when facing stress could be a factor contributing to this phenomenon. Females have been found to have more somatic symptoms and psychological distress, and employ a more emotion-focused coping style compared to men (Matud, 2004). In addition, a study on loneliness among older adults demonstrated that women had higher stress-related inflammatory and neuroendocrine responses than men (Hackett, Hamer, Endrighi, Brydon, & Steptoe, 2012). Chronic stress has been associated with premature mortality through various pathways (Epel et al., 2004).

Recorded deaths were highest in financial (13%) and psychological abuse (10.8%) compared to other subtypes. Psychological abuse—defined in our study as 10 or more occurrences of any of the listed specific incidents (Choo et al., 2016)—represents a form of chronic stressor, with its well-known sequelae including mortality, through the pathways mentioned above. The higher death percentage in financial abuse could be explained by the following: (a) older adults who are financially exploited simultaneously suffer from psychological abuse, in a more subtle way; and (b) financial deprivation limits older adults’ mobility, access to health care, and purchasing power, which is essential for a decent livelihood. These could have contributed to social isolation, deterioration of living condition, and worsening of existing illnesses, with an eventual outcome of death. On the other hand, the lower percentage of mortality (9.9%) in financial abuse with inclusion of strangers as perpetrators could be due to a milder psychological impact when compared to mistreatment by trusted ones. In the latter circumstance, the victim experiences a double burden—financial loss and emotional distress from betrayal of trust. Financial abuse perpetrated by family members or close
friends is more likely to recur for a long period of time due to the close proximity to victims and continuous access to information, while manipulation by strangers may represent one-off, opportunistic crimes.

Conversely, physical abuse showed the lowest death percentage, not because of its triviality of impacts, but possibly due to how it was defined. In our study, physical abuse was considered to have occurred with a single event of any of the listed acts as described in the protocol. Those who experienced even one event of being physically assaulted or threatened, regardless of its level of severity, were regarded as victims of physical abuse. Obviously, one or two episodes of physical abuse of mild degree may not have a significant impact on health or mortality. While multiple and severe episodes can be directly injurious and fatal, the prevalence of physical abuse was small, and we did not document its frequency and severity. Another possible reason why discrepancies in mortality exist between abuse subtypes is that different forms of abuse were said to affect health differently (Katz & Arias, 1999).

Cause-of-death certification in Malaysia has great limitations owing to the underdeveloped system and procedures of death registration. A large number of deaths still occur at home and get registered and certified by nonmedical personnel such as police and local authorities (Adnan et al., 2012; Chin & Pengal, 2009). Often when deaths occur beyond the settings of health facilities, verbal autopsy is performed, where police question the family members about how the death happened and document causes of death based on the interview. This has led to possible inaccuracies, where such deaths are registered with ill-defined causes. A study to validate verbal autopsy methods in Thailand found that important causes of death such as diabetes, liver cancer, and tuberculosis were over-diagnosed, while HIV, liver diseases, and genitourinary and digestive system disorders were under-diagnosed (Polprasert et al., 2010). However, from 1995 to 2010, the trend of death certification in Malaysia was reported to have improved, with the percentage of deaths certified by medical personnel increasing from 45% to 57% (Adnan et al., 2012).

Our study revealed that overall, 51.1% of deaths were medically certified—lower than the supposed percentage according to the 2010 figure as reported above. Nevertheless, among EAN victims, 60% of deaths were medically certified—consistent with the reported trend (Adnan et al., 2012). The prominent difference between abused and nonabused respondents with regard to respiratory-related deaths (33.3% vs. 16.9%) warrants further investigations on how chronic stress or abuse can possibly contribute to respiratory diseases. A lower percentage of deaths due to cardiovascular diseases among abuse victims was contrary to prior findings, which supported the relationships between chronic stress and cardiovascular illnesses (Steptoe & Kivimäki, 2013; Vitaliano et al., 2002). However, it is important to highlight that 40% of deaths among abuse victims had ill-defined causes (nonmedically certified), and that the total number of deaths among EAN
victims was small (n = 15). In addition, the descriptive nature of our study inhibits further, definitive conclusions. Our results therefore need to be interpreted in the light of all these constraints.

This study has several limitations. First, causality cannot be determined (between EAN and mortality) due to our analytic approach and the nature of this study. Second, the number of deaths among abuse victims was rather small (n = 15), making it difficult for more detailed analyses to be conducted, as results can be misleading. A 2-year follow-up period, which can be considered relatively short, could be responsible for this. A repeat assessment and analysis is therefore crucial in the future to complement this drawback, and to enable comparison and trend analysis. Among those excluded at baseline assessment were older adults with severe cognitive impairment and inability to communicate independently due to causes such as deafness or post-stroke complications. These exclusion criteria may have resulted in the underestimation of EAN prevalence, as older individuals who are physically and mentally impaired are known to be more vulnerable to mistreatment (Johannesen & LoGiudice, 2013; Lachs, Williams, O’Brien, Hurst, & Horwitz, 1997). Finally, the ill-defined causes of death comprise a significant proportion, thus limiting our ability to form a comprehensive understanding of the causes of death among abuse victims.

Conclusion

Results of this study suggest a possible link between EAN and mortality among rural older Malaysians. There were differences in death proportions according to abuse subtypes, along with gender differences. A stark contrast between male and female abuse victims was observable when the trends of death with clustering of mistreatment were compared. These call for more advanced and rigorous explorations into how each abuse subtype influences mortality, and how EAN may interact with gender to affect outcomes. The deficiency of information regarding causes of death, which reflects the limitations in death registration and certification processes, is concerning. An improved and a more efficient system will enable a more holistic understanding of mortality among abuse victims, which is crucial for intervention and policy formulations.

Funding

This study is funded by the University of Malaya Grand Challenge Programme: Preventing Elder Abuse and negleCt initiativE (PEACE; GC 001A–14HTM) and the University of Malaya Population Studies Unit (PSU).

ORCID

Wan Yuen Choo http://orcid.org/0000-0002-2644-6073
References


