Predictors for elder mistreatment related to older adults and their primary caregivers

Preditores de maus-tratos ao idoso relacionados a idosos e a seus cuidadores primários
Predictores de malos tratos a personas mayores relacionados con las personas mayores y sus cuidadores principales

Esther Park[1] https://orcid.org/0000-0002-1594-7753
Kyeong Eun Lee[2] https://orcid.org/0000-0002-0312-0919
Da-In Park[3] https://orcid.org/0000-0002-4738-5046
Barbara Sinacori[4] https://orcid.org/0000-0002-8675-5345

Abstract

Objectives: To identify predictive factors for elder mistreatment (EM) related to older adults and their primary caregivers and the relationship between healthcare professional training and identification of EM.

Methods: This was a quantitative and analytic study. Potential risk factors for EM related to 40 older adults and their caregivers were collected through observation by 12 healthcare professionals and in a visiting nurses association. Training of healthcare professionals on EM identification was investigated. Descriptive statistics, Fisher's exact test, and multilevel regression analysis were used to investigate the relationships between the occurrence of EM and older adults and caregiver-related risk factors, and the predictive factors for EM.

Results: The older adults' dependency on caregivers and primary caregivers' chronic health conditions predicted EM. The risk factors the primary caregivers posed tended to affect EM more than the dependency older adults posed. The number of EM training the participants attended, their knowledge of who is responsible for reporting EM, the type of older adults' primary caregivers, and caregivers' chronic health condition were the correlating factors affecting EM.

Conclusion: Victims' and perpetrators' descriptions of EM are difficult to gauge; therefore, the broader screening of healthcare professionals' views is recommended. Future nursing research should explore indirect interventions, such as manipulating the risk factors primary caregivers pose, to decrease the occurrence of EM. A subsequent study testing Path prediction models within a bigger and more controlled sample are also warranted.

Resumo

Objetivos: Identificar fatores preditivos de maus-tratos ao idoso relacionados a idosos e seus principais cuidadores e a relação entre formação profissional de saúde e identificação de maus-tratos.

Métodos: Estudo quantitativo e analítico. Os potenciais fatores de risco para maus-tratos relacionados a 40 idosos e seus cuidadores foram coletados por meio da observação de 12 profissionais de saúde e em uma associação de enfermeiras visitantes. O treinamento de profissionais de saúde na identificação de maus-tratos foi investigado. Estatística descritiva, teste exato de Fisher e análise de regressão linear múltipla foram usados para investigar as relações entre a ocorrência de maus-tratos ao idoso e fatores de risco relacionados ao idoso e ao cuidador, e os fatores preditivos para maus-tratos ao idoso.

Resultados: A dependência dos idosos em relação aos cuidadores e as condições crônicas de saúde dos cuidadores principais foram preditores de maus-tratos ao idoso. Os fatores de risco apresentados pelos cuidadores primários tendiam a afetar mais os maus-tratos ao idoso do que a dependência dos idosos. O

[1]Shenandoah University, Winchester, VA, USA.
[2]Kyungpook National University, Daegu, South Korea.
[3]Hannam University, Daejeon, South Korea.
[4]State University of New Jersey, NJ, USA.
Conflicts to interest: none to declare.

número de treinamentos em maus-tratos ao idoso realizado pelos participantes, seu conhecimento sobre quem é responsável por notificar os maus-tratos ao idoso, o tipo de cuidador principal dos idosos e a condição crônica de saúde dos cuidadores foram os fatores correlacionados que afetaram os maus-tratos ao idoso.

Conclusão: As descrições de maus-tratos ao idoso das vítimas e perpetradores são difíceis de avaliar; portanto, recomenda-se a triagem mais ampla sob perspectiva dos profissionais de saúde. Futuras pesquisas de enfermagem devem explorar intervenções indiretas, como manipular os fatores de risco que os cuidadores primários representam, a fim de diminuir a ocorrência de maus-tratos ao idoso. Estudos futuros testando modelos de previsão de trajetória dentro de uma amostra maior e mais controlada devem ser conduzidos.

Resumen

Objetivos: Identificar factores predictivos de malos tratos a personas mayores relacionados con las personas mayores y sus cuidadores principales y la relación entre la formación profesional en salud y la identificación de malos tratos.

Métodos: Estudio cuantitativo y analítico. Los factores potenciales de riesgo de malos tratos relacionados con 40 personas mayores y sus cuidadores fueron recopilados mediante la observación de 12 profesionales de la salud y en una asociación de enfermeras visitantes. Se investigó la capacitación de profesionales de la salud en la identificación de malos tratos. Se utilizó la estadística descriptiva, la prueba exacta de Fisher y el análisis de regresión lineal múltiple para investigar las relaciones entre los casos de malos tratos a personas mayores y los factores de riesgo relacionados con personas mayores y su cuidador, y los factores predictivos de malos tratos a personas mayores.

Resultados: La dependencia de personas mayores con relación a los cuidadores y las condiciones crónicas de salud de los cuidadores principales fueron predictores de malos tratos a personas mayores. Los factores de riesgo presentados por los cuidadores principales tendían a afectar más los malos tratos a personas mayores que la dependencia de las personas mayores. El número de capacitaciones en malos tratos a personas mayores realizado por quienes participaron, sus conocimientos sobre quién es responsable de notificar los malos tratos a personas mayores, el tipo de cuidador principal de personas mayores y la condición crónica de salud de los cuidadores fueron los factores correlacionados que afectaron los malos tratos a personas mayores.

Conclusión: Las descripciones de malos tratos a personas mayores por parte de las víctimas y perpetradores son difíciles de evaluar; por lo tanto, se recomienda un triaje más amplio bajo la perspectiva de profesionales de la salud. Futuros estudios de enfermería deben investigar intervenciones indirectas, como manipular los factores de riesgo que los cuidadores principales representan, a fin de reducir los casos de malos tratos a personas mayores. Deben realizarse estudios futuros probando modelos de previsión de trayectoria dentro de una muestra más grande y más controlada.

Introduction

The undetected mistreatment of older adults is associated with increased social burden and costs to the healthcare system.[1-3] Attention has been given only to the older adult-related risk factors for elder mistreatment (EM). In contrast, caregiver-related risk factors have not been equally considered. Furthermore, the fact that the differences in EM are observer-dependent (e.g., the observer's experience as a healthcare professional, prior experience with EM training, etc.) should be considered.

There are several factors related to EM. First, an older adults' health status, such as having a chronic disease or cognitive impairment, affects the primary caregivers' burden and the incidence of EM.[4-6] Also, female older adults tend to experience EM more than male older adults.[6,7] In terms of perpetrators, informal primary caregivers who provide a wide range of care activities without getting paid[8] are likelier to commit EM than paid caregivers.[9,10] Among the informal primary care-givers, adult children, specifically daughters, are the most common perpetrators.[11]

There is also an increasing concern for under-reporting EM.[6] The common reason for under-reporting by healthcare professionals is a lack of training on EM, including how to assess it, and a lack of familiarity with mandatory reporting laws by state.[12] The degree of health professionals' knowledge about EM affects its detection and its actual rate.[13] Also, the quality of the premorbid relationship between older adults and informal caregivers is correlated.[6,10,14] There is a gap in knowledge about whether EM is primarily posed by the older adult-related risk factors or their primary caregivers' related factors.

Studies report that all healthcare professionals must detect, manage, and mitigate the mistreatment of vulnerable older adults.[12,15-17,18] Although healthcare professionals have an ethical and legal responsibility, they frequently lack knowledge on how to identify and recognize EM.[12,19] On the other hand, trained/educated healthcare professionals tend to detect and report EM more often since they are equipped to suspect it.[20,21]

This study's conceptual framework was founded on existing literature and the first author's previous pilot study results on EM.[13] The current evidence reports commonly mentioned related variables, including but not limited to, personal factors of healthcare professionals (length of working experience in healthcare, training received for EM screening, the frequency of EM training), the individual components of older adults (gender, age, income, cohabitant, etc.),[6,13,16] risk factors present in older adults versus older adult's primary caregivers,[2,6,16,22,23] environmental factors such as a stressful situation,[16,21,24,25] and various types of EM (psychological/emotional, physical, financial, sexual abuse and neglect).[2,8,13,16] To our knowledge, few studies compare the risk factors of older adults with the risk factors that informal caregivers pose. The current study will add to the knowledge of whether older adults or their primary caregivers pose more of the risk factors of EM. This study can also guide future research to include which factors should be included in the prediction model.

The objectives of this study were to identify predictive factors for EM related to the older adults and their primary caregivers and the relationship between healthcare professional training and the identification of EM.

Methods

This is a quantitative and analytic study performed at a Visiting Nurses Association in Connecticut, the United States of America (USA).

Study participants were included if they were healthcare professionals (RNs, LPNs, physical therapists, occupational therapists, social workers, etc.), at least 20 years of age, who had visited the older adults more than four times when they completed the REAMI. The last visit took place within a week from the recalling memory point to avoid recall bias. During the four visits of the healthcare professionals to the older adult, the healthcare professionals had sufficient time to become acquainted with the older adults, the primary caregivers, and their environments.

The older adults new to the healthcare professionals and agencies were not screened for the risk factors of EM. The older adults, whom the healthcare professionals recalled, were at least 60 years old and registered for the regional home healthcare agencies.

The minimum sample size required for quantitative analyses is 38, calculated based on G*Power Analysis.[27] Each healthcare professional can recall more than one older adult. For the calculation, a priori type of power analysis was used with two-tailed, a medium effect size, an alpha level of 0.05, and a power of 0.8. The required sample size was 38, and the final sample size in this study was 40, which satisfies the required numbers for the sample size justification.

The REAMI includes three domains: "risk factors of the older adults and their environment," "risk factors of the primary caregiver (a key figure named by the original developer) and their environment," and "signals of actual EM ".[2] Each part (Part 1, Part 2, and Part 3) includes six, ten, and six items, respectively, scored on a four-point Likert Scale from A to D, indicating C and D as a higher risk factor. A total sum score of parts 1 through 3 of 1~3/10~11 indicates low risk of EM. A score of 4~6/12~106 shows a moderate risk of EM. A score of 1000 to 6106 indicates that older adults are being mistreated. Each subscale of the REAMI has acceptable reliabilities (Cronbach's Alpha of.74, .84, and .89, respectively).[2] The reliability of this measure in the current study, reported by Cronbach Alpha, was .95. It took about three to five minutes for healthcare professionals to fill out a REAMI.

The data were coded into the R statistical package[26] and analyzed using descriptive statistics, Fisher's exact test, and multilevel regression analysis. The descriptive statistical analyses and Fisher's exact test report a) personal factors that healthcare professionals and older adults pose, b) individual risk factors for EM of older adults and caregiver-related risk factors for EM of their pri-

mary caregivers, c) type of EM symptoms, and d) multilevel regression analysis on predictive factors for EM.

Institutional Review Board (IRB) approval was obtained from the first author's working institution in May 2020 (IRB ID #: 2019-11-06). Data were collected from June 1st, 2020, to August 31, 2020. The study project was presented in agencies' staff meetings, and a one-hour long education session on EM was provided to all staff. Also, explanation on how to fill out the Risk on Elder Abuse and Mistreatment Instrument (REAMI) was delivered in the staff meeting. As a result of the pandemic, the survey was done electronically.

Before the survey was applied, the PI determined if each community healthcare agency had a policy of mandated reporting for suspected EM. For example, if community healthcare professionals were to find high scores from the Risk on Elder Abuse and Mistreatment Instrument (REAMI) survey, then the participants would be responsible for reporting suspected EM to their department or agency, which is also explained the details in the consent form. The research team would not have any access to identifying the suspected mistreated person since all of the older adults are deidentified, which was emphasized when the education session was held in their staff meeting.

Results

Twelve healthcare professionals reported their perception of the risk factors observed in the older adults they had visited: seven participants were female. Their mean age was 46 (34 to 65). Their mean professional experience in healthcare settings was 15 years (3 to 43 years). Similarly, their experience in community settings was 11 years (4 to 42 years). The majority of the professionals (92%) had participated in training on EM while they were in their nursing program, and 50% had participated in training before attending the training session while working as nurses. The mean number of training on EM they had

participated in was four times (0 to four) or three hours. Yet, 75% said they were not confident enough to recognize or identify EM.

Forty older adults were observed by the healthcare professionals. The older adults' mean age was 79 (60 to 95) and 75% (n=30) were female. The majority of the older adults' primary caregivers were their spouses, followed by their neighbors, adult children, and home care aids. The relationship-closeness level indicated that most older adults were somewhat close to their primary caregivers. Seventy-three percent of the older adults had either chronic health conditions or chronic health conditions requiring ambulatory help. In addition, 20% (N=8) of older adults had cognitive disorders, and 7.5% (N=3) had substance abuse disorders. Also, the majority of the older adults' primary caregivers had either chronic health conditions or chronic conditions requiring ambulatory support (Table 1). Table 1 shows the risk factors of older adults and their primary caregivers for EM. The risk of EM was significantly different according to the caregivers' health conditions (p-value = 0.001). Caregivers tended to mistreat when they had a chronic condition with an ambulatory condition (57.1%), followed by caregivers with a chronic condition not requiring help (52.9%). The Multilevel Regression analysis showed that the number of EM training sessions that the participants had attended, the participants' knowledge of who has the responsibility of reporting EM, the type of older adults' caregivers, and older adults' and caregivers' health conditions were all factors related to EM (Table 2). These variables explained the EM results with an adjusted R-squared of 0.8. Interestingly, when the participants attended the EM training sessions two or more times, that training significantly influenced EM (Table 2).

Discussion

This study showed that half of the primary caregivers are family members. The evidence reveals that

Table 1. Risk Factors of Older Adults and Their Primary Caregivers for Elder Mistreatment (EM)

Variables	Risk of Elder Mistreatment					p-value*
	No risk n(%)	Low risk n(%)	Moderate risk n(%)	High risk n(%)	Total n(%)	
Older adults' Race						0.998
White	2(9.1)	7(31.8)	5 (22.7)	8 (36.4)	22(55)	
African American	1(14.3)	2(28.6)	2 (28.6)	2 (28.6)	7(17.5)	
Asian	0	2(40)	2 (40)	1 (20)	5(12.5)	
Hispanic	0	2(40)	1 (20)	2 (40)	5(12.5)	
Other	0	0	0	1(100)	1(2.5)	
Type of Primary Caregiver						0.523
Spouse	0	3(23.1)	4(30.8)	6(46.2)	13(32.5)	
Adult Child	0	2(28.6)	2(28.6)	3(42.9)	7(17.5)	
Neighbor	1(11.1)	3(33.3)	2(22.2)	3(33.3)	9(22.5)	
Healthcare aid	2(50)	2(50)	0	0	4(10)	
Other	0	3(42.9)	2(28.6)	2(28.6)	7(17.5)	
Level of Relationship-Closeness						0.868
Very close	1(8.3)	3(25)	3(25)	5(41.7)	12 (30)	
Somewhat close	1(5.3)	7(36.8)	6(31.6)	5(26.3)	19(47.5)	
Somewhat distant	1(12.5)	2(25)	1(12.5)	4(50)	8(20)	
Very distant	0	1(100)	0	0	1(2.5)	
Older adults' Health Condition						0.824
Cognitive disorder	0	2(25)	2(25)	4(50)	8(20)	
Chronic Disease requiring help	2(13.3)	6(40)	3(20)	4(26.7)	15(37.5)	
Chronic Disease with ambulatory condition	1(7.1)	3(21.4)	4(28.6)	6(42.9)	14(35)	
Other	0	2(66.7)	1(33.3)	0	3(7.5)	
Caregiver's Health Condition						0.001
Chronic condition not requiring help	2(11.8)	2(11.8)	4(23.5)	9(52.9)	17(42.5)	
Chronic condition with ambulatory condition	0	1(14.3)	2(28.6)	4(57.1)	7(17.5)	
Substance abuse	0	0	0	1(100)	1(2.5)	
Psychiatric disease	1(6.7)	10(66.7)	4(26.7)	0	15(37.5)	
Other	0	0	0	0	0	
Older adults' Gender						0.868
Male	0	3 (30)	3(30)	4 (40)	10(25)	
Female	3(10)	10 (33.3)	7(23.3)	10(33.3)	30(75)	
Cohabitation						0.326
Living alone	1(9.1)	5(45.5)	3(27.3)	2(18.2)	11(27.5)	
Living with partner	0	5(35.7)	5(35.7)	4(28.6)	14(35)	
Living with children	1(9.1)	2(18.2)	1(9.1)	7(63.6)	11(27.5)	
Living with others	1(25)	1(25)	1(25)	1(25)	4(10)	

*Fisher's exact test

Table 2. Multilevel Regression analysis of factors affecting elder mistreatment

Coefficients	Estimate	SE	t value	P(>|t|)
Intercept	1540.3	751.0	2.051	0.05
Number of EMT-None vs. 1	-1067.8	731.5	-1.460	0.16
Number of EMT-2 vs. 1	2639.8	1289.3	2.047	0.05
Number of EMT-3 vs. 1	-1000.3	1068.0	-0.937	0.36
Number of EMT-4 vs. 1	2164.4	847.0	2.556	0.02
Responsibility of Report via Social Worker vs. all Healthcare Professionals	3731.4	986.9	3.781	0.001
Responsibility of Report via Case Manager vs. all Healthcare Professionals	989.0	1462.7	0.676	0.50
Elder's Caregiver Child vs. Spouse	-1094.1	701.6	-1.559	0.13
Elder's Caregiver - Neighbor vs. Spouse	557.8	582.2	0.958	0.35
Elder's Caregiver - assigned health aid vs. Spouse	-827.3	658.6	-1.256	0.22
Elder's Caregiver - others vs. Spouse	585.3	628.6	0.931	0.36
Caregiver's chronic condition requiring help in ADL/IADL vs. Caregiver's chronic condition not requiring help in ADL/IADL	-1507.0	640.3	-2.354	0.03
Caregiver's Psychiatric disease vs. chronic condition not requiring help in ADL/IADL	1276.8	1282.2	0.996	0.33
Psychiatric disease vs. chronic condition not requiring help in ADL/IADL	-860.6	546.7	-1.574	0.13
Model Summary	R-squared: 0.80 Adjusted-R-squared: 0.70 F-statistic: 7.9 on 13 & 26 DF Residual SE: 1074 on 26 DF			

SE: Standard Error; EMT: Elder Mistreatment Training/Education; ADL: Activities of Daily Living; IADL: Instrumental Activities of Daily Living; DF: Degree of Freedom

spousal caregivers tended to mistreat older adults more compared to non-spousal family caregivers,[14] while another study showed that adult-child caregivers abuse older adults more.[10] The current study results produced the same findings as the evidence that has been demonstrated previously. The study results imply that intervening in family dynamics could indirectly decrease the rate of EM in older adults. Also, future interventional studies are warranted to target informal primary caregivers who indicated relating factors such as their physical limitation/conditions, the quality of relationship with their older adults, and the type of primary caregivers.

There is no statistically significant level presented in the model testing (Table 2) for adding the type of primary caregivers. However, the model explains better which factors affect EM when a particular variable was added into the analysis. For example, when 'Number of EMT, Responsibility of Report, and Caregivers' chronic condition requiring help in ADL/IADL' variables were added into the model testing, the testing results showed significant results in the model. Due to sample size limitations, keeping homogeneity in numbers by types and primary caregivers' characters was strained. In future research, the genuine homogeneity of primary caregivers' types controlling the equity of numbers of each class would better explain the true nature of EM by the kind of primary caregivers.

The current state of evidence indicated that a good quality of the relationship ("closeness to the caregiver") between older adults and caregivers affects EM outcomes, as proved from the previous studies.[28,29] This study showed that one-fifth of older adults and caregivers had poor relationships, although most still showed a relatively close relationship. Interestingly, this study showed the opposite results to the previous studies: Older adults tend to get mistreated more when they have a close relationship with their spouses or adult children. In other words, when care is provided by intimate spouses or child caregivers, older adults are more prone to experiencing mistreatment. This is a new and differ-

ent result than the current evidence reported, and a repeat of future study in a bigger study sample size is warranted to see if the same results will be executed in that significant number of study participant. Furthermore, considering relationship quality's impact on outcomes of EM, future research is needed to examine how the degree of relationship quality affects the likelihood of EM. A repeat of this study in a bigger sample would be promising future research.

As the previous research studies reported,[6,21] this study also showed that older adults with cognitive impairment, such as dementia, tend to be at higher risk of getting mistreated. However, older adults with chronic diseases, requiring either ADL/IADL assistance, also tended to have a higher risk of getting mistreated, though there is no difference in the type of chronic disease the older adult experienced. Although the multilevel regression analysis showed that older adults' chronic condition does not explain their impact on EM, the current literature reported that older adults' chronic conditions requiring assistance of ADL/IADL affect EM significantly.[9] In other words, the older adults who have more physical limitations and need assistance in activities of daily life tend to get mistreated more in the previous evidence. Still, this study did not show the significant effect of this variable's impact on EM. This study showed that chronic disease of caregivers better explains the situation of EM rather than a chronic disease in older adults. When 'caregivers' chronic disease requiring assistance in ADL/IADL' was added to the model testing, the 'R-squared value became more powerful. However, careful interpretation is needed in a small sample, and a repeat of this study in a more satisfying sample size is strongly recommended.

In this study, we found that study variables such as the number of EM training sessions the healthcare professionals received in the past, their opinions on who should report the EM (either social workers, case managers, or nursing staff), the types of primary caregivers to the older adults (spousal caregivers, adult children caregivers, etc.),

and caregivers' chronic health conditions requiring help in ADL/IADLs are the related factors increasing older adults' chances of EM. Although there was a caution to generalizing the results, we found a meaningful relationship between the healthcare professionals' skills, confidence in screening EM, and the EM scores. This correlation was also found in recent evidence.[30] Interpreting the study results with caution was highly recommended due to the limited sample size. Repeating this study with a satisfied sample size with a controlled sampling method will reflect the true aspect of risk factors affecting EM.

We have identified some of the study limitations, along with the strengths. The small sample size was limited to successfully execute a statistical prediction model, and each result was difficult to generalize due to the small sample's size. Also, convenient sampling made the generalization of the study results difficult. Nevertheless, this pilot study enlightens the direction of future research, including a tailored interventional study targeting primary caregivers marked with a high score of risk factors of EM.

Because of difficulty in gauging EM when questioning to a victim or perpetrator, screening from healthcare professionals' view can reflect the actual status of EM. In addition, both the risk factors of older adults and the risk factors of their primary caregivers should be monitored closely, so the strategic intervention plan targeting the right risk factors can be placed to prevent the actual engagement of EM and the likelihood of getting EM could be proactively prevented. In future research, older adults and their primary caregivers' health conditions should be considered in planning interventions. Since older adults and their primary informal caregivers are individuals that have different experiences and needs, keeping both parties' health conditions in mind and reflecting on delivering intervention enables effective and the best outcomes. Also, the experience of EM training for healthcare professionals affects their perception of risk factors of EM and actual symptoms of EM. This

point emphasizes the importance of EM training put in place for all healthcare professionals so the risk factors could be captured in an earlier stage. A repeat of the current study with a larger sample under controlled sample collection is warranted, and this study's results justify research intervening with those with higher scores of risk factors of EM.

Conclusion

The level of older adults' dependency on their primary caregivers predicted EM, while the primary caregivers' chronic health condition was the factor on their caregiver side. The risk factors the primary caregivers posed tended to affect EM more than the ones older adults posed. The number of EM training the healthcare professionals attended, their knowledge of who is responsible for reporting EM, and caregivers' chronic health condition affected the risk of getting EM. Often, the abused older adults and their perpetrators' descriptions of EM are challenging to measure. Therefore, screening healthcare professionals' views on EM seems to be more accurate and is recommended. Future nursing research should explore indirect interventions to decrease the occurrence of EM, such as manipulating the risk factors that primary caregivers of older adults pose. Testing Path prediction models within a bigger and more controlled sample are also warranted for future research direction.

Acknowledgments

References

1. Naderi Z, Gholamzadeh S, Zarshenas L, Ebadi A. Hospitalized elder abuse in Iran: a qualitative study. BMC Geriatr. 2019;19(1):307.

2. De Donder L, De Witte N, Regenmortel S, Dury S, Dierckx E, Verte D. Risk on elder abuse and mistreatment-instrument: development, psychometric properties, and qualitative user-evaluation. Educ Gerontol. 2018;44(2-3):108-18.

3. De Donder L, De Wachter L, Ferreira-Alves J, Lang G, Penhale B, Tamutiene I, et al. Quality of life of abused older women: moderating influence of coping mechanisms. In: Bows H, editors. Violence Against Older Women. Vol II. Palgrave Macmillan Cham; 2019. pp.123-41.

4. Yu M, Gu L, Shi Y, Wang W. A systematic review of self-neglect and its risk factors among community-dwelling older adults. Aging Ment Health. 2021;25(12):2179-90.

5. Yang EZ, Kotwal AA, Lisha NE, Wong JS, Huang AJ. Formal and informal social participation and elder mistreatment in a national sample of older adults. J Am Geriatr Soc. 2021;69(9):2579-90.

6. Han D, Olsen, BJ, Mosqueda LA. Elder abuse identification and intervention. In: Ravdin LD, Katzen HL. Handbook on the Neuropsychology of Aging and Dementia. 2nd ed. Springer; 2019. pp. 197-203.

7. Jeon GS, Cho SI, Choi K, Jang KS. Gender differences in the prevalence and correlates of elder abuse in a community-dwelling older population in Korea. Int J Environ Res Public Health. 2019;16(1):100.

8. Family Caregiverr Alliance (FCA). Definitions. What Do We Mean By. San Francisco, CA: FCA; 2023 [cited 2022 Feb 14]. Available from: https://www.caregiver.org/resource/definitions-0/

9. Hernandez-Tejada MA, Frook G, Steedley M, Watkins J, Acierno R. Demographic-based risk of reporting psychopathology and poor health among mistreated older adults in the national elder mistreatment study wave II. Aging Ment Health. 2020;24(1):22-6.

10. Day A, Boni N, Evert H, Knight T. An assessment of interventions that target risk factors for elder abuse. Health Soc Care Community. 2017;25(5):1532-41. Review.

11. Chan AC, Stum MS. A family systems perspective of elder family financial exploitation: examining family context profiles. J Appl Gerontol. 2022;41(4):945-51.

12. Mohd Mydin FH, Othman S. Elder abuse and neglect intervention in the clinical setting: perceptions and barriers faced by primary care physicians in Malaysia. J Interpers Violence. 2020;35(23-24):6041-66.

13. Yi Q, Hohashi N. Comparison of perceptions of domestic elder abuse among healthcare workers based on the Knowledge-Attitude-Behavior (KAB) model. PLoS One. 2018;13(11):e0206640. Erratum in: PLoS One. 2019;14(1):e0210916.

14. Park EO. Most prevalent type of elder abuse and its correlation with elder depression. Acta Paul Enferm. 2019;32(1):95-100.

15. Myhre J, Saga S, Malmedal W, Ostaszkiewicz J, Nakrem S. Elder abuse and neglect: an overlooked patient safety issue. A focus group study of nursing home leaders' perceptions of elder abuse and neglect. BMC Health Serv Res. 2020;20(1):199.

16. Dauenhauer J, Heffernan K, Caccamise PL, Granata A, Calamia L, Siebert-Konopko T, et al. Preliminary Outcomes From a Community-Based Elder Abuse Risk and Evaluation Tool. J Appl Gerontol. 2019;38(10):1445-71.

17. Mydin FH, Yuen CW, Othman S. The effectiveness of educational intervention in improving primary health-care service providers' knowledge, identification, and management of elder abuse and neglect: a systematic review. Trauma Violence Abuse. 2021;22(4):944-60.

18. Collins M, Posenelli S, Cleak H, O'Brien M, Braddy L, Donley E, et al. Elder abuse identification by an Australian Health Service: a five-year, social-work audit. Aust Soc Work. 2020;73(4):462-76.

19. Wagenaar DB, Rosenbaum R, Herman S, Page C. Elder abuse education in primary care residency programs: a cluster group analysis. Fam Med. 2009;41(7):481-6.

20. Alshabasy S, Lesiak B, Berman A, Fulmer T. Connecting models of care to address elder mistreatment. Generations J. 2020;44(1):26-32.

21. Dong X. Elder self-neglect: research and practice. Clin Interv Aging. 2017;12:949-54.

22. Wang M, Sun H, Zhang J, Ruan J. Prevalence and associated factors of elder abuse in family caregivers of older people with dementia in central China cross-sectional study. Int J Geriatr Psychiatry. 2019;34(2):299-307.

23. Burnes D, Henderson CR Jr, Sheppard C, Zhao R, Pillemer K, Lachs MS. Prevalence of financial fraud and scams among older adults in the united states: a systematic review and meta-analysis. Am J Public Health. 2017;107(8):e13-e21. Review.

24. Cannell B, Gonzalez JM, Livingston M, Jetelina KK, Burnett J, Weitlauf JC. Pilot testing the detection of elder abuse through emergency care technicians (DETECT) screening tool: results from the DETECT pilot project. J Elder Abuse Negl. 2019;31(2):129-45.

25. Rivera-Navarro J, Contador I. Family caregivers' perceptions of maltreatment of older adults with dementia: findings from the northwest of Spain. J Elder Abuse Negl. 2019;31(1):77-95.

26. R Core Team. R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna: R Core Team; 2019 [cited 2022 Feb 14]. Available from: URL, https://www.R-project.org/

27. Kang H. Sample size determination and power analysis using the G*Power software. J Educ Eval Health Prof. 2021;18:17. Review.

28. Kong J, Jeon H. Functional decline and emotional elder abuse: a population-based study of older Korean adults. J Fam Violence. 2018;33(1):17-26.

29. Isham L, Hewison A, Bradbury-Jones C. When older people are violent or abusive toward their family caregiver: a review of mixed-methods research. Trauma Violence Abuse. 2019;20(5):626-37.

30. Blundell B, Warren A, Moir E. Elder abuse protocols: identifying key features and establishing evidence for their use and effectiveness. J Elder Abuse Negl. 2020;32(2):134-51. Review.