

Research Paper:

The Prevalence of Various Abuse Types and Their Associated Factors in the Elderly



Ali Sadrollahi^{1*} , Zahra Khalili², Mohadeseh Ghorbani³, Mehdi Mahmoodi³

1. Instructor Geriatric Nursing, Department of Nursing Science, Golestan University of Medical Sciences, Gorgan, Iran.

2. Instructor Geriatric Nursing, Faculty Member Department of Nursing Science, Ardabil University of Medical Sciences, Ardabil, Iran.

3. Instructor, Faculty Member Department of Nursing, Bandargaz Science and Research Branch, Islamic Azad University, Bndargaz, Iran.



Citation Sadrollahi A, Khalili Z, Ghorbani M, Mahmoodi M. The Prevalence of Various Abuse Types and Their Associated Factors in the Elderly. Journal of Research & Health. 2020; 10(1):59-66. <http://dx.doi.org/10.32598/JRH.10.1.59>

 <http://dx.doi.org/10.32598/JRH.10.1.59>



Article info:

Received: 05 Apr 2019

Accepted: 09 Nov 2019

Publish: 01 Jan 2020

Keywords:

Abuse, Elderly, Aging, Negligence

ABSTRACT

Background: Elder abuse is a significant public health problem overlooked by communities. The current study investigated various abuse types prevalence and their associated factors among the elderly.

Methods: This cross-sectional descriptive study was conducted in 2014. Research palpation compromised elderly covered by health hygiene centers in Kashan City, Iran. The study sample included 500 elderly individuals. We applied quota sampling with randomization for sample selection. The quota sampling size differed according to the number and gender of the subjects. Demographic data questionnaire and Heravi-Karimooi Elderly Abuse Questionnaire. The obtained data were analyzed by SPSS. Descriptive statistics, Kolmogorov-Smirnov test, Chi-squared test, and Logistic Regression analysis were used for data analysis. The significance level was set at $P < 0.05$.

Results: The study participants' Mean \pm SD age was 72.07 \pm 9.03 years. The obtained prevalence rates were as follows: emotional neglect: 29.8%, neglect of care: 35.6%, financial neglect: 37.8%, authority: 41.2%, experienced psychological abuse: 45%, financial abuse: 45.6%, physical abuse: 22.2%, and rejection: 16.6%. There were significant correlations between abuse and age ($P=0.001$), the number of children ($P=0.001$), marital status ($P=0.01$), the living conditions ($P=0.001$), having diseases ($P=0.029$), and having the ability to walk ($P=0.001$).

Conclusion: The study findings are crucial in developing a national system for protecting the elderly. Furthermore, a continuing education plan is required for enforcing communication between caregivers and elders.

* Corresponding Author:

Ali Sadrollahi, MSc.

Address: Department of Nursing Science, Golestan University of Medical Sciences, Gorgan, Iran.

Phone: +98 (938) 2626127

E-mail: ali.sadrollahi@yahoo.com

Introduction

The world's population trend reflects the growing number of elderly, compared to the past decade. The same rate is expected to reach 3.1% in 2050, compared to the general population [1, 2]. This growth in the elderly's population is mainly occurring in developing countries and Iran is no exception [3]. As aging rises, the problems associated with it will also increase. Such matters include disability and biopsychological dependence [4].

Following the population aging, the need for help and support to conduct numerous activities enhances in the elderly; dependence for daily living activities results in enormous problems for the elderly and their caregivers. Such problems may lead to long-term care and its related costs that might lead to elder abuse [5]. Elder abuse is a common problem which has not been recognized in developing countries [6]. Elder abuse is a significant public health issue. Besides, prior studies have suggested that such abuse can cause significant adverse health outcomes, including physical harm, sexual harm, financial harm, psychological harm, negligence, the invasion of rights, denial of privacy, and denial of participation in decision making. Elder abuse occurs in various situations and places where the elderly live [7]. It is difficult to determine the accurate prevalence of elder abuse and neglect. This is because health professionals may face problems in identifying and reporting these cases due to denying the extent of the problem in society and ignoring to report abuse. Studies have reported that the occurrence and types of elder abuse may differ in different countries; however, the prevalence rate of it is about 3.2%-27.5% [8].

Danesh et al. (2015) argued that the prevalence of abuse is 2.2%-18.4% in California [9]. Dong reported the prevalence and types of abuse in the general population of China as 0.2%-64% [10]. However, Yan indicated the prevalence of elder abuse as 0.4%-36.1% in China [11]. Studies highlighted that a million older adults in the USA are abused each year, and more than 25% of them are physically abused [12]. Manouchehri et al. found that 84.8% of studied elders faced emotional abuse [13]. Karimi et al. indicated the prevalence rates of physical abuse and negligence among elders as 10.5% and 31.7%, respectively [14]. Heravi et al. suggested that among the elderly who have been members of the Jahandidegan Institute of Tehran, emotional and mental neglect had the highest prevalence, while rejection and physical abuse had the lowest prevalence in them [15]. Some critical factors related to elder abuse include age, gender, unemployment, insurance status, educational level, depres-

sion level, chronic diseases, and disability. These factors result in various elder abuse types [13]. Kishimoto indicated that elder abuse is higher in elders with cognitive problems [16]. Naughton reported that the most important factor associated with elder abuse was caregivers' unemployment and substance dependence in the family [17]. Li Wu observed no significant relationship between the rate of abuse and gender [18]. However, Naughton reported a higher abuse rate in women compared to men [17]. Karimi discussed the factors related to the elders' physical problems and dependency on others [14].

Lee found that older people with chronic diseases, with lower education, and those who live alone were more prone to mistreatment [18]. According to the World Health Organization (WHO), living with family increased elder abuse [19]. Studies revealed the impact of different factors on elder abuse. The type and rate of abuse, as well as the background factors causing abuse, can differ based on cultural characteristics and differences in living environments. There is a growing aging population in Iran.

Moreover, there is a lack of research in this field, and especially in Kashan City. Thus, we investigated the prevalence of elder abuse in Kashan City and determined the factors associated with elder abuse. We hope it will be a step towards identifying the elder abuse problems and solutions.

Methods

This descriptive analysis study was conducted in 2014. The study population consisted of 500 elders aged ≥ 60 years in Kashan city, Iran. The study participants had health records in the health databases of the city. The sampling was performed by a multistage cluster sampling method. According to previous studies and the rate of abuse estimation [20], at 95% confidence ($d=0.05$, $P=0.032$, $Z=1.69$), based on the Cochran formula ($N=Z^2 \times P(1-P)/d^2$), 334 individuals were selected. Using a random cluster sampling technique and considering coefficient at 1.5, the sample size was calculated as 500 individuals.

The inclusion criteria were the age of ≥ 60 years; living in Kashan City; having full consciousness at the time of the study; as well as being able to communicate and respond to the questions. The exclusion criteria were cognitive impairment, hearing impairment, or being unavailable for the interview. Cognitive impairment was not formally assessed; it was measured based on the interviewer's judgment of the person's ability to provide consistent answers.

Sampling was done after coordinating with the Health Department of the Medical University of Kashan and obtaining the relevant authorization. Initially, Kashan was divided into 5 regions based on the health map, and 2 health centers in each region were randomly selected for the study. In total, 10 health centers were selected. Then, the number of elders in every center was determined after coordinating with the selected health center, and a quota was allocated to every center based on gender and population. The quota was different according to gender and the population covered by each center.

In this stage, a file was randomly selected from the health records of each center. After coordinating with the centers' health connector, the elders without a known mental disorder (psychosis) were contacted via phone, based on the health centers' announcement and meeting inclusion criteria. Having explained the aims of the research, we invited the elders to participate in the study. Those who were willing to participate were visited to complete the questionnaire in their home or in the health center, based on their preference. Furthermore, those who were not willing to participate in the study were replaced by others.

On the appointed day, after providing the necessary information about the research and the use of information collected, the questionnaire was provided to the study elders. All questionnaires were separately filled by every person while observing privacy policies. The questionnaire was read for those who were not able to read and write, and the items were filled based on their choices and ideas.

The elderly with the ability to read and write were requested to complete the questionnaire. Concurrently, the questionnaires were collected by the questioner. Any questionnaires containing incomplete information were given back to the respondents for completion.

Data collection instrument was a multi-part questionnaire. The first part of the questionnaire included demographic characteristics (e.g. age, gender, education, marital status, the number of children, living with families or not, chronic diseases, and the ability to walk). The second part of the questionnaire contained 49 items in 8 subscales, covering negligence, psychological, physical, and financial abuse, the deprivation of authorities, and ostracizing, as well as financial and emotional negligence.

This tool has yes, no, and never mind answers. The questionnaire's scores range from 0 to 100; the highest scores indicate the highest level of abuse. Therefore,

score 100 suggests the maximum level of abuse, and zero points to the lack of evidence regarding abuse.

The lowest score (zero) was devoted to no answers and the highest score (one) was devoted to yes answers. The option never mind received no score; therefore, this option was deleted in interviews. This tool was designed and validated for the Iranian elderly who suffered from abuse. The cultural characteristics of the Iranian community and its reliability, with satisfactory internal consistency (Cronbach $\alpha=0.97$) and test-retest reliability ($r=0.99$), were considered [21]. The study objectives along with the voluntary participation in the study were explained to all study participants. All study participants provided written informed consent forms to participate in the study. The study participants were assured about the confidentiality of their obtained data.

The collected data were analyzed using SPSS. A descriptive analysis was performed on all study variables, using Mean \pm SD values for quantitative variables and absolute and relative frequencies for qualitative variables. Differences between the mean scores of two groups were tested using the Student t-test. The Chi-squared test was used to measure the associations between each study variable and elder abuse. Each significantly associated variable (based on results of the Chi-squared test results) was included in a logistic regression model to examine its independent effect for reported elder abuse. Odds Ratios (ORs) and 95% Confidence Intervals (CIs) for each variable were obtained from the logistic regression model. Moreover, $P<0.05$ were considered as statistically significant.

Results

The study sample comprised 290 (58%) males and 210 (42%) females, with ages ranging from 60 to 97 years (Mean \pm SD age:72.07 \pm 9.03 years). Among the subjects, 61.2% were illiterate. Only 2.8% had completed college education. Most study participants were married (87.4%); 12.6% were widowed/single/separated. Most of the subjects lived with their spouse (45.4%). Furthermore, most of them had chronic diseases (73.8%). The majority of seniors could walk independently (67.6%).

Table 1 presents that the abuse score is higher in the older men, compared to the older women, and those aged ≥ 81 years. Concerning the number of children, the elders with ≥ 5 children obtained higher abuse scores than others. In terms of marital status, widowed, divorced, and single elders reported higher abuse scores than the married ones. Furthermore, the illiterate elderly and those

Table 1. Distribution of background variables in the elderly with and without exposure to abuse

Variable	Category	No. (%)		P
		Confirmed Elder Abuse	No Elder Abuse	
Age (y)	60-70	181 (75.7)	58 (24.3)	0.001
	71-80	133 (77.3)	39 (22.7)	
	>80	86 (96.6)	3 (3.4)	
Marital status	Married	342 (78.3)	95 (21.7)	0.01
	Widowed, single, separated	58 (92.1)	5 (7.9)	
Number of children	0	11 (68.8)	5 (31.2)	0.001
	1-4	152 (71.7)	60 (28.3)	
	>5	237 (87.1)	35 (12.9)	
Educational level	Illiterate	249 (81.4)	57 (18.6)	0.601
	Primary	119 (78.3)	33 (21.7)	
	Diploma and above	32 (76.2)	10 (23.8)	
Living arrangement	Living with a spouse	169 (74.4)	58 (25.6)	0.001
	Living with spouse & children	129 (79.1)	34 (20.9)	
	Living with children	69 (92)	6 (8)	
	Living alone	33 (94.3)	2 (5.7)	
Chronic disease	No	89 (67.9)	42 (32.1)	0.02b
	Yes	311 (84.3)	58 (15.7)	
Walking ability	Independent	255 (75.4)	83 (24.6)	0.001b
	Dependent	145 (89.5)	17 (10.5)	

JRHH

who were unable to walk reported higher scores of abuse. Chi-squared test results indicated a significant relationship between the rate of abuse and age ($P=0.001$), the number of children ($P=0.001$), marital status ($P=0.011$), living with the family members ($P=0.001$), chronic diseases ($P=0.029$), and the ability to walk ($P=0.001$).

Among 500 participants, 400 (80%) reported experiencing at least one type of abuse (emotional abuse, caregiver abuse, financial neglect, deprivation of authority, psychological abuse, financial abuse, physical abuse, or ostracizing) in the past year (Table 2).

To control the confounding factors, a stepwise multiple logistic regression analysis was performed using elder abuse as the dependent variable. Furthermore, all variables that reached a $P<0.05$ in the Chi-squared test were examined

as the independent variables. The obtained data suggested that elder abuse was significantly associated with age and number of children. Being 80 or older, compared with being 60-70 years (OR: 6.819 and CI95%: 2.007-23.172-22.175) and having 5 children and more, compared with having no children (OR: 5.83 and CI95%: 1.533-22.175) were significantly related (Table 3).

Discussion

Elder abuse is internationally recognized as a severe public health problem. However, current scientific knowledge regarding this problem in Iran is lacking. We found that elder abuse was prevalent in the study subjects, with an estimated 12-month prevalence of 80%. Manouchehri et al. argued that 87.8% of their study population had experienced at least a type of abuse by their

Table 2. Prevalence of various types of elder abuse

Any Elder Abuse	No. (%)	
	Confirmed Elder Abuse	No Elder Abuse
Emotional abuse	149 (29.8)	351 (70.2)
Caregiver abuse	178 (35.6)	322 (64.4)
Financial neglect	189 (37.8)	311 (62.2)
Deprivation of authority	206 (41.2)	294 (58.8)
Psychological abuse	225 (45)	275 (55)
Financial abuse	228 (45.6)	272 (54.4)
Physical abuse	111 (22.2)	389 (77.8)
Ostracizing	83 (16.6)	417 (83.4)
Any abuse	400 (80)	100 (20)



family members [13]. The prevalence and incidence statistics from different self-report studies or official reports in Iran are difficult to compare; because of differences in applied study instruments and samples. Elder abuse is extremely complex, and various factors contribute to its occurrence. In our study, the old age, being married, living with a spouse, a higher number of children, inability to walk, and chronic diseases significantly increased the risk of elder abuse.

This study indicated that increased age is associated with higher odds of abuse; the risk in the age group of ≥ 80 years is 6.8 times more than that of the age group of 60-70 years. Ferreira et al. reported that with increased age, mistreatment reduced in elderly men and women [22]. With increased age, the prevalence of acute diseases is extremely reduced; however, the prevalence of

chronic biopsychological illnesses increases, leading to permanent disabilities, which in turn affects the ability to perform tasks. More chronic cases do not lead to disability; however, with increased age, the odds of inability to perform tasks increases. The weaker and more vulnerable the person, the more the odds of being ignored by others. Individuals consider the person as an object, and this attitude becomes more widespread day by day, to the extent that the frail dependent elderly is no longer regarded as a human, but as a source of stress and frustration. Due to the lack of multiple abilities resulted from aging, the elderly gradually feel that as a burden to others, which is a real sense. Some elders react to the feeling by surrender and obedience, which may result in further abuse by a non-observant unjust caregiver.

Table 3. Stepwise multivariate logistic regression analysis of ORs for elder abuse

Variabels	Characteristics	β	SE	Wald χ^2	P	OR (95%CI)
Age (y)	60-70			10.97	0.004	
	71-80	-0.178	0.254	0.491	0.483	0.8 (0.508-1.377)
	≥ 80	1.920	0.624	9.462	0.002	21.16 (2.007-23.172)
Number of children	0			12.295	0.002	
	1-4	1.046	0.677	2.387	0.122	9.96 (0.755-10.720)
	≥ 5	1.763	0.682	6.690	0.01	20.64 (1.533-22.175)



Only statistically significant values are reported; OR: Odds Ratio; CI: Confidence Interval; β : Parameter Estimate; SE: Standard Error.

The study findings revealed that married elders and those who lived with their spouses were exposed to more abuse and negligence. This finding was consistent with that of previous studies [15, 23]. Li Wu indicated that elder people living alone were more likely to fall victim to abuse [18]. Some studies reported being widowed as a factor that increases the risk of abuse. Pillmer et al. reported that husbands are at higher risks than wives [24]. However, Fang focused on abused/abuser couples and found that the primary victims are more likely to be women. Among abusers, men are more likely to commit physical abuse [25]. Meanwhile, Mattos warned that if negligence, threat, and financial exploitation come with physical abuse, women are likely to commit abuse as equally as men. This grouping rejects the power hierarchy within family and gender differences in the use of power and violence [26].

González suggested that elderly who live with their spouse and children face a higher risk of abuse than those who live alone or only with their spouse or their child [27]. There are increased odds for contact; thus, conflict and tension might enhance in a co-residential living arrangement. Studies highlighted that older women were at higher risk of elder abuse, compared with their male counterparts [18, 27]. A possible reason for this finding may be that older women play a more explicit role in household responsibilities, including cooking and taking care of grandchildren; thus, they are more likely to be respected by children and in turn, less likely to be abused. In addition, traditional and cultural issues emphasize on supporting women, which may act as an impediment in this regard.

The achieved results also indicated that as the number of children increases, the rate of abuse enhances. In other words, the risk of abuse for the elderly with ≥ 5 children is 5.83 times more than that of those without children. This finding was consistent with that of Heravi and associates [15]. When there are more children, it is more likely that some of them avoid caring and helping their parents; the children who are forced to provide these services are more exposed to their spouse and children's complaints, which increases the odds of abuse to aging parents. The study findings indicated no significant relationship between abuse and education status. However, the abuse score for the elderly who were illiterate and unemployed was reported as high. However, in some studies, educational level [28, 29] and employment [30] were correlated with increased risk of abuse. The probable reason for this finding seems to be that most elderly who participated in this study had lower education; as a result, due to their lack of awareness of instances of abuse, they failed to perceive it as abuse.

Our study demonstrated that physical disability to walk and chronic diseases were independent variables for elder abuse. Other studies also indicated similar results [28, 29]. However, Murphy reported no direct relationship between the elders' physical dependence and elder abuse. Caring for elder parents with physical disabilities and chronic diseases requires substantial support and often personal sacrifice on the part of the caregivers and other family members [31].

This can impose undue stress on the caregiver's biopsychological and economic status. Caregivers with excessive stress might often fail to provide the necessary daily care to their elder parents. Besides, most probably, the stressed caregiver could be responsible for the abuse.

Moreover, this kind of dependence often brings about fear, indignity, shame, and condemnation. In countries with individualistic cultures, like the USA, needing others is not acceptable. This ethnic property is still dominant in this country, which says: "The most admirable people are those that can suffer without protest; those who can take care of themselves without the help of others". Traditional pluralist culture in Iran and Eastern countries, to some extent, decreases the anti-value connotation of this issue. Extreme individualism, regardless of the financial situation, is more valuable than dependence or independence. As time passes, elders' dependence, due to mental or physical problems, does not only decrease, but also increases. These problems are prone to aggravate over time because of the nature of chronic conditions. Elderly gradually become more dependent and therefore, more vulnerable in interaction with others.

Conclusion

Caregiver's adherence to moral values plays a more determining and inhibiting role in preventing abuse than that of regulatory approaches. Informing families and replacing violence and neglect that inevitably occurs in industrial society - by reverence and respect, can be highly effective in this regard.

Ethical Considerations

Compliance with ethical guidelines

The Research Council approved ethical considerations of the study of Medical University of Kashan (Code of ethics: 5003; Date: 24.02.2014).

Funding

The present paper was extracted from the MSc. thesis of the second author, Department of Nursing, Kashan University of Medical Sciences.

Authors' contributions

Study design: Ali Sadrollahi; Data collection and analysis: Ali Sadrollahi, Zahra Khalili; Manuscript preparation: Zahra Khalili, Ali Sadrollahi, Fardaneh Gholipoure.

Conflict of interest

The authors declared no conflicts of interest.

References

- [1] Avelino-Silva TJ, Farfel JM, Curiati JA, Amaral JR, Campora F, Jacob-Filho W. Comprehensive geriatric assessment predicts mortality and adverse outcomes in hospitalized older adults. *BMC Geriatr*. 2014; 14(129):1-8. [DOI:10.1186/1471-2318-14-129] [PMID] [PMCID]
- [2] Goh VH. Aging in Asia: A cultural, socio-economical and historical perspective. *Aging Male*. 2005; 8(2):90-6. [DOI:10.1080/13685530500088472] [PMID]
- [3] Azizi-Zeinalhajlu A, Amini A, Tabrizi JS. [Consequences of population01 aging in iran with emphasis on its increasing challenges on the health system (literature review) (Persian)]. *Tasvir salamat*. 2015; 6(1):54-64.
- [4] Lowenstein A. Elder abuse and neglect "old phenomenon": New directions for research, legislation, and service developments. (2008 Rosalie S. Wolf memorial elder abuse prevention award international category lecture). *J Elder Abuse Negl*. 2009; 21(3): 278-87. [DOI:10.1080/08946560902997637] [PMID]
- [5] Heravi-Karimovi M, Rejeh N, Montazari A. [Health-related quality of life among abused and non-abused elderly people: A comparative study (Persian)]. *Payesh*. 2013; 12(5):479-88.
- [6] Sooryanarayana R, Choo WY, Hairi NN, Chinna K, Hairi F, Ali ZM, et al. The prevalence and correlates of elder abuse and neglect in a rural community of Negeri Sembilan state: Baseline findings from The Malaysian Elder Mistreatment Project (MAESTRO), a population-based survey. *BMJ Open*. 2017; 7(8):1-10. [DOI:10.1136/bmjopen-2017-017025] [PMID] [PMCID]
- [7] Yan E, Chan KL, Tiwari A. Tiwari, A systematic review of prevalence and risk factors for elder abuse in Asia. *Trauma Violence Abuse*. 2015; 16(2):199-219. [DOI:10.1177/1524838014555033] [PMID]
- [8] Mouton CP, Southerland JH. Elder Abuse in the African diaspora: A review. *J Natl Med Assoc*. 2017; 109(4):262-71. [DOI:10.1016/j.jnma.2017.08.006] [PMID]
- [9] Danesh MJ, Chang AL. The role of the dermatologist in detecting elder abuse and neglect. *J Am Acad Dermatol*. 2015; 73(2):285-93. [DOI:10.1016/j.jaad.2015.04.006] [PMID]
- [10] Dong X. Elder abuse in Chinese populations: A global review. *J Elder Abuse Negl*. 2015; 27(3):196-232. [DOI:10.1080/08946566.2015.1039154] [PMID]
- [11] Yan E, Chan KL. Prevalence and correlates of intimate partner violence among older Chinese couples in Hong Kong. *Int Psychogeriatr*. 2012; 24(9):1437-46. [DOI:10.1017/S1041610212000294] [PMID]
- [12] Switzer JA, Michienzi AE. Elder abuse: An update on prevalence, identification, and reporting for the orthopaedic surgeon. *J Am Acad Orthop Surg*. 2012; 20(12):788-94. [DOI:10.5435/JAAOS-20-12-788] [PMID]
- [13] Manoochehri H, Ghorbi B, Hosseini M, Nasiri-Oskuyee N, Karbakhsh M. [Degree and types of domestic abuse in the elderly referring to (Persian)]. *Adv Nurs Mid*. 2008; 18(63):43-50. [DOI:10.22037/anm.v18i63.1182]
- [14] Karimi M, Elahi N. [Elderly abuse in Ahwaz city and its relationship with individual and social characteristics (Persian)]. *Salmand*. 2008; 3(1):42-7.
- [15] Heravi-Karimooi M, Rejeh N, Foroughan M, Ebadi A. [Designing and determining psychometric properties of the elder neglect checklist (Persian)]. *Salmand*. 2013; 8(3):25-34.
- [16] Kishimoto Y, Terada S, Takeda N, Oshima E, Honda H, Yoshida H, et al. Abuse of people with cognitive impairment by family caregivers in Japan (a cross-sectional study). *Psychiatry Res*. 2013; 209(3):699-704. [DOI:10.1016/j.psychres.2013.01.025] [PMID]
- [17] Naughton C, Drennan J, Lyons I, et al. Elder abuse and neglect in Ireland: Results from a national prevalence survey. *Age Ageing*. 2012; 41(1):98-103. [DOI:10.1093/ageing/afr107] [PMID]
- [18] Wu L, Chen H, Hu Y, Xiang H, Yu X, Zhang T, et al. Prevalence and associated factors of elder mistreatment in a rural community in people's republic of china: A cross-sectional study. *PLoS ONE*. 2012; 7(3):1-8. [DOI:10.1371/journal.pone.0033857] [PMID] [PMCID]
- [19] Lachs MS, Pillemer KA. Elder abuse. *N Engl J Med*. 2015; 373(20):1947-56. [DOI:10.1056/NEJMr1404688] [PMID]
- [20] Molaei M, Etemad K, Taheri Tanjani P. [Prevalence of elder abuse in Iran: A systematic review and meta analysis (Persian)]. *Salmand*. 2017; 12(2):242-53. [DOI:10.21859/sja-1202242]
- [21] Heravi-Karimooi M, Anoosheh M, Foroughan Mahshid, Sheykhi MT, Hajizadeh E. [Designing and Determining Psychometric Properties of the Domestic Elder Abuse Questionnaire (Persian)]. *Salmand*. 2010; 5(1):7-21.
- [22] Ferreira PC, Tavares DM. Prevalence and factors associated with the rates of depression among elderly residents in rural areas. *Rev Esc Enferm USP*. 2013; 47(2):401-7.
- [23] Vandeweerd C, Paveza GJ, Walsh M, Corvin J. Physical mistreatment in persons with Alzheimer's disease. *J Aging Res*. 2013; 2013:1-11. [DOI:10.1155/2013/920324] [PMID] [PMCID]

- [24] Pillemer K, Burnes D, Riffin C, Lachs MS. Elder abuse: Global situation, risk factors, and prevention strategies. *Gerontologist*. 2016; 56(2):194-205. [DOI:10.1093/geront/gnw004] [PMID] [PMCID]
- [25] Fang B, Yan E. Abuse of older persons with dementia: A review of the literature. *Trauma Violence Abuse*. 2018; 19(2):127-47. [DOI:10.1177/1524838016650185] [PMID]
- [26] Mattos CT, Ruellas AC. Systematic review and meta-analysis: What are the implications in the clinical practice. *Dental Press J Orthod*. 2015; 20(1):17-9. [DOI:10.1590/2176-9451.20.1.017-019.ebo] [PMID] [PMCID]
- [27] Gonzalez-Guarda RM, Ferranti D, Halstead V, Ilias VM. Experiences with dating violence and help seeking among hispanic females in their late adolescence. *Issues Ment Health Nurs*. 2016; 37(4):229-38. [DOI:10.3109/01612840.2016.1141341] [PMID] [PMCID]
- [28] Ziloochi M H, Pourreza A, Akbari F, Rahimi-Foroshani A. Evaluating the hospitalization costs for elderly patients in teaching hospitals of Kashan university of medical sciences during 2009-10. *Feyz*. 2012; 16(1):86-94.
- [29] Oh J, Kim HS, Martins D, Kim H. A study of elder abuse in Korea. *Int J Nurs Stud*. 2006; 43(2):203-14. [DOI:10.1016/j.ijnurstu.2005.03.005] [PMID]
- [30] Sibley KM, Voth J, Munce SE, Straus SE, Jaglal SB. Chronic disease and falls in community-dwelling Canadians over 65 years old: A population-based study exploring associations with number and pattern of chronic conditions. *BMC Geriatr*. 2014; 14:1-22. [DOI:10.1186/1471-2318-14-22] [PMID] [PMCID]
- [31] Murphy K, Waa S, Jaffer H, Sauter A, Chan A. A literature review of findings in physical elder abuse. *Can Assoc Radiol J*. 2013; 64(1):10-4. [DOI:10.1016/j.carj.2012.12.001] [PMID]