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Risk Factors of Elder Abuse: A Predictive Model for Elderly Abuse based on Demographic, Social, and Economic Risk Factors

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Abstract

Introduction: Mistreatment of elderlies is a global concern in the field of public health and human rights. The primary objective of this study was to identify and analyze risk factors associated with elder abuse through the use of a regression model. The present cross-sectional study was conducted to determine the predictors of elder abuse in Tehran, the number of samples was calculated 425.

Methods: Demographic Information Questionnaire and the Elderly Abuse Questionnaire with 49 items were used for this purpose. The Cronbach's alpha was calculated 0.85 for the abuse in overall. Using univariate and multivariate linear regression models at a confidence interval of 0.95%.

Results: The mean ± SD age of the participants was 67.44±8.01 years. Approximately 68.7% of the participants were male, while 31.3% were female. The results indicate that emotional abuse had the highest frequency of occurrence among the elderly, whereas physical abuse had the lowest. Among the factors studied, the living companion of the elderly ($p< 0.001$), education level ($p< 0.001$), financial independence ($p< 0.001$), and health status ($p< 0.001$) were found to be predictors of elder abuse.

Conclusions: As demographic variables have been identified as risk factors for elder abuse, it is recommended that social welfare organizations, care systems, and policymakers implement measures to develop plans and programs aimed at reducing the risk of elder abuse, preventing it at the community level, and addressing barriers related to the improvement of demographic variables.

INTRODUCTION

The population growth rate has declined since the 1970s due to the change in the age structure in the world [1, 2] and the world population is aging rapidly [3, 4] The huge effects of this rate change on people's quality of life

(QOF) cannot be denied. In this respect, health systems of all countries consider such a rapid population aging a public health challenge [5]. According to the World Health Organization (WHO), the elderly population worldwide will increase from 11% in 2006 to 22% in 2050 [6]. The increasing elderly population leads to one of the most common problems in the world, i.e., elder abuse [7].

Mistreatment of elderlies is a global concern in the field of public health and human rights [3]. In this regard, the WHO defines elder abuse as: "a single or repeated action, not taking the suitable action, in any relationship in which trust is expected and thus lead to harm or distress in the elderly [1, 8]. It is also described as performing or not performing a behavior intentionally or unintentionally that leads to increased risk and harm or violation of individual and human rights for the elderly [1]. Accordingly, it can be mentioned that elder abuse is performing an act(s) constantly or not taking the proper action in a relationship where trust is expected and lead to harm, pain, distress, anxiety, and deprivation of comfort for the elderly. It occurs in physical, psychological, sexual and financial abuse, and neglect [2].

The WHO reported that one in six people over the age of 60 experiences some form of abuse in their community annually and reported its prevalence to be 1-15%. According to the same report, one out of every 10 elderly people was affected by abuse every month [9]. Epidemiological studies have estimated the prevalence of elder abuse 7.6 to 10% in high-income countries and 15.7% in low- and middle-income countries [10]. Statistics show that the rate of abuse of the elderly is increasing in Asian countries[11] . In 2012, about 11% of Asians over the age of 60 experienced elder abuse [12] and was predicted to increase to 24% by 2050 [13]. The overall prevalence of elder abuse in Iran is 56.4%, and the highest prevalence is reported in Tehran province (87.8%) [14].

In various studies, different types of elder abuse have been identified, including physical abuse, psychological/emotional abuse, financial abuse, sexual abuse, neglect (including self-neglect and caregiver neglect) [15], abandonment, abduction, exploitation, medical abuse, ignoring citizenship rights [16], and various forms of discriminatory behavior [17, 18]. Social, cultural, family, and individual factors have been identified as the sources and risk factors for elder abuse [19].

In health policies and research, mistreatment of the elderly is ignored and is not considered a phenomenon yet, while the problem may be more severe and tougher than predicted [20]. Since this issue is vitally important and impacts the elderlies' lives, social welfare organizations, care systems, and policy makers must pay. Therefore, the present study aimed at identifying the risk factors for elder abuse in Iranian society. It is expected that the results of the present study can be used in designing and planning the necessary measures to reduce and prevent elder abuse for both the elderly and Iranian families according to the cultural and religious conditions of Iranian society.

METHODS

The present cross-sectional study was conducted to determine the predictors of elder abuse in Tehran (Iran's capital city), the number of samples was calculated 385, considering a 10% drop, 425 samples were considered. In this research, stratified sampling was conducted, in which the city of Tehran was divided into five strata based on socio-economic indicators: north (including areas 1, 2, 3, and 6), west (including areas 21, 22, and 5), east (including areas 4, 7, 8, and 13), south (including areas 14, 15, 16, 17, 18, 19, and 20), and central (including areas 12, 9, 10, 11, and 12). The sample size for each stratum was determined proportional to the population of the area. Half of the sample size from each stratum was selected from parks, and the other half was selected from mosques in that area. The selection of samples within each park and mosque was done randomly.

Inclusion criteria were willingness to participate in the study (main condition), ability to speak and use the Persian language for speaking. Elderlies with severe hearing and vision problems and confirmed mental illness and cognitive impairment (scored less than 6 on the Iranian version of the Abbreviated Mental Test Score) were excluded from the study. The required data were collected using the demographic information questionnaire and elderly abuse questionnaire.

Demographic questionnaire included age, sex, level of education, marital status, housing, the person they are living with, financial independence, history of chronic illness, being tested, insurance status, perceived health status, and source of information.

In the present study, the Heravi-Karimooi et al.[21] Questionnaire was used to examine and assess elder abuse. The questionnaire consists of 49 items in nine dimensions: Physical abuse (4 items), Psychological abuse (8 items), Financial abuse (6 items), Emotional Neglect (2 items), Financial Neglect (4 items), Neglect Caregiver (11 items), Authority deprivation (10 items), and Abandonment (4 items).

In the questionnaire designed for Iran [21], the dimension of sexual abuse (due to the cultural conditions of Iran) is not considered separately, and the questions related to sexual abuse are included in the dimension of caregiver neglect. The tool items are responded by "Yes", "No", or "Not applicable" options. Here, the "Not applicable" option refers to situations in which the phrase does not fit the living conditions of the elderly.

The Content Validity was used to determine the validity of the questionnaires. To confirm content validity, the Content Validity Index (CVI) and the Content Validity Ratio (CVR) were calculated. The opinions of 10 experts (4 community health nurses and 6 gerontology specialists) were used to calculate these ratios. Ultimately, all questionnaire items were approved. To assess the reliability of the questionnaires, the Cronbach's alpha coefficient was used as an internal consistency method. The values obtained for emotional neglect were 0.94, neglect of care was 0.87, financial neglect was 0.92, psychological abuse was 0.86, physical abuse was 0.79, financial abuse was 0.83, deprivation of rights was 0.74, eviction was 0.91, and the overall reliability was 0.85.

Data Analysis

The collected data were imported to SPSS software version 18. The normality of the data was tested by Kolmogorov-Smirnov KS. Descriptive and analytical statistics were used for data analysis.

Descriptive and analytical statistics, including frequency distribution tables, mean, standard deviation, and univariate and multivariate linear regression models, were used for data analysis.

Pearson correlation was used to determine the relationship between the quantitative variable and the dimensions of elder abuse. The T-test was used to determine the relationship between the variables of the two groups (such as gender) and various dimensions of elder abuse. The ANOVA test was run to determine the relationship between other variables in the two groups and the dimensions of elder abuse.

The present study is approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences (IR.SBMU.PHARMACY.REC.1398.019). The questionnaire is anonymous and it was explained to the participants that the purpose of the research is to obtain their responses and ensure that the information remains confidential and will only be used for research purposes. Before completing the questionnaire, written consent was obtained from the participants. In cases where the elderly individual was unable to complete the questionnaire themselves, with their request, the questionnaire was completed by a research team member.

RESULTS

The mean ± SD age of the elderly participating in the study was 67.44±7.01 years. Other demographic characteristics of the participants was shown in Table 1. The emotional neglect dimension has a higher average than other dimensions of elder abuse (43.9%), while the physical abuse dimension has the lowest average (4.74%) among the dimensions of elder abuse in Tehran. More information on the frequency of other aspects of elder abuse was shown in Table 2.

There was a significant relationship with the dimension of emotional neglect and gender, marriage, housing, the person the elderly is living with, education, financial independence, history of chronic illness, and health status ($P \leq 0.05$) (Table 3).

The caregiver neglect dimension has a significant relationship with age, gender, marital status, housing, the person the elderly is living with, education, financial independence, and health status ($P \leq 0.05$) (Table 3).

Table 1. Distribution of demographic variables in the elderly participants in the study

Variables	N	%
Sex		
Male	133	31.3
Female	292	68.7
Marital status		
Single	6	1.4
Married	283	66.6
Divorced/separated	29	6.8
Widowed	107	25.2
Type of housing		
Private permanent	221	52
Rental	166	39.1
Others	38	8.9
Life status with the family		
With spouse	135	31.8
With spouse and children	143	33.6
With children	64	15.1
With siblings	3	0.7
Living with acquaintances and friends	4	0.9
Alone	65	15.3
Others	11	2.6
Educational level		
Illiterate	91	21.4
Elementary	93	21.9
Secondary	58	13.6
Diploma	102	24
Bachelor	72	16.9
Master's degree and higher	9	2.1
Financial adequacy		
Sufficient	196	46.1
Insufficient	229	53.9
Last test date		
Recent Week	39	9.2
One month ago	85	20
Three month ago	88	20.7
six month ago	118	27.8
One year ago	95	22.4
Health situation		
Poor	102	24
Intermediate	145	34.1
Good	178	41.9
Source of information		
Radio	50	11.8
Television	104	24.5
Satellite	11	2.6
Book/ Cyberspace	14	3.3
Doctor	220	51.8
Friends	26	6.1

Table 2. Mean and standard deviation of the dimensions of the elder abuse and the overall elder abuse

Dimensions	Mean	Standard Deviation (SD)	Existence of abuse, (%) Yes	Absence of abuse, (%) No
Emotional Neglect	8.72	0.85	43.9	56.1
Caregiver Neglect	16.6	2.93	17.37	82.63
Financial Neglect	6.80	1.26	16.66	83.34
Authority deprivation	11.77	1.90	12.94	87.06
Psychological abuse	18.35	2.34	23.08	76.92
Physical abuse	1.92	0.59	4.74	95.26
Financial abuse	9.44	1.49	15.37	84.63
Abandonment	1.75	0.54	5.20	94.8
Total elder abuse	73.93	10.23	16.38	83.62

Table 3. Relationship between contextual variables with different dimensions of elder abuse and neglect

Variable	The variable has the highest mean	Significant variables	p-value
	Emotional Neglect		
Sex	Female	0.025	Sex**
Marital status	Divorced/separated	0.000	Marital status ***
Type of housing	Rental	0.014	Type of housing***
Life status with the family	Living with acquaintances and friends	0.004	Life status with the family***
Educational level	Illiterate	0.007	Educational level ***
Financial adequacy	Insufficient income	0.000	Financial adequacy**
Health status	Poor	0.030	Perceived health status***
	Caregiver Neglect		
Age	direct relation (r=0.166)	0.001	Age *
sex	Female	0.000	sex **
Marital status	Divorced/separate	0.000	Marital status ***
Type of housing	Rental	0.005	Type of housing ***
Life status with the family	Others	0.000	Life status with the family***
Educational level	Elementary	0.000	Educational level ***
Financial adequacy	Insufficient income	0.000	Financial adequacy **
Health status	Poor	0.000	Perceived health status ***
	Financial Neglect		
Age	direct relation (r=0.207)	0.000	Age *
Sex	Female	0.041	Sex **
Marital status	Divorced/separated	0.000	Marital status ***
Type of housing	Rental	0.000	Type of housing ***
Life status with the family	Living with acquaintances and friends	0.000	Life status with the family***
Educational level	Elementary	0.000	Educational level ***
Financial adequacy	Insufficient income	0.000	Financial adequacy **
Health status	Poor	0.001	Perceived health status ***
	Psychological abuse with gender (meaningful to all)		
Sex	Female	0.001	Sex **
Marital status	Divorced/separated	0.000	Marital status ***
Type of housing	Rental	0.000	Type of housing ***
Life status with the family	Living with acquaintances and friends	0.000	Life status with the family***
Educational level	Illiterate	0.000	Educational level ***
Financial adequacy	Insufficient income	0.000	Financial adequacy **
Health status	Poor	0.000	Perceived health status ***
	Physical abuse		
Age	direct relation (r=0.126)	0.014	Age *
Sex	Female	0.015	Sex **
Marital status	Divorced/separated	0.000	Marital status ***
Type of housing	Rental	0.001	Type of housing ***
Life status with the family	With children	0.008	Life status with the family***
Educational level	Illiterate	0.000	Educational level ***
Health status	Poor	0.001	Perceived health status ***
	Financial abuse		
Marital status	Divorced/separated	0.000	Marital status ***
Type of housing	Rental	0.000	Type of housing ***
Life status with the family	Living with acquaintances and friends	0.000	Life status with the family***
Educational level	Elementary	0.000	Educational level ***
Financial adequacy	Insufficient income	0.000	Financial adequacy **
	Authority deprivation		
Health status	Poor	0.000	Perceived health status ***
Sex	Female	0.000	Sex **
Marital status	Divorced/separate	0.000	Marital status ***
Type of housing	Rental	0.003	Type of housing ***
Life status with the family	Others	0.000	Life status with the family***
Educational level	Illiterate	0.000	Educational level ***
Financial adequacy	Insufficient income	0.000	Financial adequacy **
Health status	Poor	0.000	Perceived health status ***
	Abandonment		
Age	direct relation (r=0.128)	0.0012	Age*
Marital status	Divorced/separated	0.000	Marital status ***
Type of housing	Rental	0.000	Type of housing ***
Life status with the family	Living with acquaintances and friends	0.000	Life status with the family***
Educational level	Elementary	0.000	Educational level ***
Health status	Poor	0.011	Perceived health status ***

Table 4. Predictive model of elder abuse (Linear Regression Model)

Variables	Univariate Analysis		Multivariate Analysis		Reference Group
	B	P-value	B	P-value	
Age	0.003	0.006	-0.001	0.222	-
Sex	-0.073	0.000	-0.035	0.058	Female
Marital status	0.05	0.000	0.058	0.300	Single
Type of housing	0.044	0.002	0.042	0.360	Private permanent
Life status with the family	0.031	0.000	0.026	0.000	With spouse
Educational Level	-0.042	0.000	-0.023	0.000	Illiterate
Financial adequacy	0.111	0.000	0.088	0.000	Sufficient
Health status	-0.050	0.000	-0.025	0.003	Poor
Source of information	0.013	0.025	0.480	0.256	Radio

Also, the dimension of financial neglect indicates a significant relationship with age, gender, marital status, housing, the person the elderly is living with, education, financial independence, and health status ($P \leq 0.05$) (Table 3). More information was illustrated in Table 3.

The predictors of elder abuse were determined by running a multivariate regression model, the results of which are shown in Table 4.

According to Table 4 a reference group for each qualitative variable have assigned. This means that the variable "elderly abuse" has been measured relative to that reference group. In terms of literacy level, illiteracy is the reference group and elderly abuse is measured based on the reference group of educational level (illiteracy). Considering the negative coefficient of illiteracy, it means that the lower the education level, the greater the elderly abuse. The same procedure applies to other variables. According to the results, the person the elderly is living with, education, financial independence, and health status are among the predictors of elder abuse in Tehran (Table 4).

DISCUSSION

The vast number of old people in Iran and consequent challenges such as elder abuse, the current research aimed at identifying the risk factors of elder abuse in Iran. However, in the other studies carried out in Iran and other countries, it was revealed that age, marriage, number of children, and income are factors related to elder abuse [19] . The education level of the elderly is also related to elder abuse, and the more educated elderly people have more skills that enable them to take care of themselves [7]. Living with people other than spouses and children also affects the elder abuse rate [15, 22]. The findings of the present study are consistent with similar studies conducted in Iran [16]. The findings also suggest that it can be said that the situation of elderly women is worse due to their greater economic dependence on caregivers, and they are more vulnerable to various forms.

The present study showed that the prevalence of mistreatment and neglect toward old women outweigh that of old men. The WHO surveys in 10 different countries indicated that 60 to 70% of abuse victims were women. This difference may be because women have lower social status in some cultures [3, 23] . In addition, women feel more suffered from physical and mental abuse [23] and are more exposed to violence than men [6]. In the study by Éric et al., the prevalence of female abuse was more common [1].

Also, the present study showed that the prevalence of abuse and neglect is higher in single (divorced) elderly. A study by Carmona-Torres et al. in Spain and Bolivia reported that widows were more likely to suffer. In this regard, abuse is also associated with older married women who are more suspicious of being abused in Portugal. Therefore, there is a disagreement between marital status and the risk of abuse [23]. Also, in the study by Koga et al., being widowed or not married was associated with a lower risk of abuse [8].

Examining the housing ownership showed that the prevalence of abuse and neglect is higher in the elderly living in rented houses. The study by Kulakçı Altıntas et al. also showed that emotional abuse and neglect are important problems for the elderly population, especially those with rented houses, and lack of owning a house is associated with financial abuse [2]. Elderly people who do not own a house, especially those living with their children, relatives, and friends, may be exposed to all kinds of physical, verbal, or neglect abuse due to dependence and lack of independence.

Illiterate men and women were more likely to be abused than educated participants [6], and abuse has a statistically significant relationship with a low level of education [1, 3]. Carmona-Torres also found that the average elderly abuse rate was higher in those with primary education. This difference may be because older people with higher education are more aware of their rights and have easier access to social resources [10, 23].

Examining the income status variable showed that the prevalence of abuse and neglect is higher in the elderly with insufficient income. In this context, Kulakçı Altıntas and Korkmaz Aslan reported the lack of personal income as one of the risk factors for physical and emotional abuse [2]. Two other studies also showed low income as a risk factor for abuse [3, 8]. Low income and subsequent financial dependence can lead to elderly abuse. Elderlies with low income, regarding their dependence on others, prefer not to report abuse when financial supporters mistreat them. The reason is that they think that they may experience later financial

troubles after they complain. Therefore, considering government grants from the government for the elderly is very helpful in this regard. Despite the strong emphasis on respect for the elderly and sick people in our culture, this group is exposed to all kinds of abuse. The results of other studies also confirm a high association between abuse and physical and economic dependence of the elderly, especially when the financial burden on caregivers increases.

Examining the variable of the person the elderly live revealed that the prevalence of abuse and neglect is higher in the elderly who live with acquaintances and friends. Similarly, another study showed that psychological abuse and neglect are the most common types of elder abuse, mostly received from first-degree relatives such as a partner or children [23]. In the study by Alexa & et al., older people who live with several family members are at risk of domestic abuse [3]. Also, in the Kulakçı Altıntas's study, older people who do not have a private home and live with their children or other relatives may be exposed to abuse (mostly physical) [2]. Another study showed that one of the factors associated with increasing the likelihood of experiencing abuse is being a woman and living with family members [8].

CONCLUSION

Elder abuse is one of the indicators of life expectancy and health status and is also the indirect predictor of death. Since the consequences of elder abuse on the elderlies' quality of life are devastating and it further affects the health status of families and people in society, it is necessary to proceed with the strategy of identifying the risk factors and reducing them. The findings of this study showed that demographic variables, as the risk factors of elder abuse, have predictive power. Therefore social welfare organizations, care systems, and policymakers are recommended to refer to these results when they intend to design plans and programs to reduce the risk of elder abuse and prevent it at the community level. They are also advised to remove barriers and promote demographic variables to reduce the risk factors of elder abuse in the community.

One of the strengths of the current study is the use of an elder abuse questionnaire that is appropriate for the cultural conditions of Iran. Additionally, this study was conducted in the capital city of Iran, which includes a diverse combination of elderly individuals with different cultural, social, and economic backgrounds. One limitation of the study is that it did not consider the dimension of elder sexual abuse (due to cultural limitations) in the questionnaire used as an independent variable. It is recommended that future studies pay attention to this issue and use tools and questionnaires that independently assess all dimensions of elder abuse. Moreover, only elderly people who had the ability to move and participate in social activities were included in the study.

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ETHICAL CONSIDERATION

The present study is approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences (IR.SBMU.PHARMACY.REC.1398.019). The questionnaire is anonymous and it was explained to the participants that the purpose of the research is to obtain their responses and ensure that the information remains confidential and will only be used for research purposes. Before completing the questionnaire, written consent was obtained from the participants.

AUTHOR CONTRIBUTION

Authors had equal contribution to designing study, collecting data, revising the initial draft, and approving the final draft.

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CONFLICT OF INTEREST

There is no conflict of interest.

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