Psychometric Properties of Iranian Elder Abuse Questionnaire (Long form)

Abstract

Aim: Increasing elder population has led to Elder abuse as an extensively recognized complicated general health issues. This study was carried out to examine psychometric properties of Iranian Elder Abuse Questionnaire. **Methodology:** This study was performed within two steps using combined qualitative-quantitative method. At first step, authors interviewed psychologists and elderly people using phenomenology method to determine the concept of elder abuse. Then the questionnaire was developed to address elder abuse. At second step, validity of instrument and internal consistency of questionnaire were examined. Statistical population consisted of all elder persons living in Alborz Province in Iran; of them, 400 members were selected as sample members using convenient sampling method. **Results:** According to the results obtained from first step, questionnaire consists of 43 items. The results of explanatory factor analysis indicate 13 factors including emotional abuse, neglect, ignoring needs, compulsion, financial abuse, insulting, deprivation, imposition, secrecy, domination, psychological pressure, mistreatment, and sexual humiliation; these 13 factors could explain 71.06% of variance of the questionnaire. The obtained Cronbach's alpha coefficient (0.86) indicates suitable internal consistency of questionnaire. **Conclusion:** Considering the psychometric properties this questionnaire the Ghahar's Elder Abuse Questionnaire is a suitable instrument to evaluate different dimensions of elder abuse in Iranian community.

Introduction

Elder abuse has been extensively recognized as one of complicated general health issues [1]. Increasing elder population all around the world leads to increase in number of disable elder people with physical, mental, and financial vulnerability that may need more support. Such responsibility may leads increased stress and level of abuse and neglect among family members and society [2-4].World Health Organization (WHO) defines elder abuse 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". Elder abuse can be seen in various forms including physical, psychological or emotional, sexual, financial

abuse, intentional or unintentional neglect [5].; of that, emotional abuse has been reported as the most common one [5].According to the meta-analysis conducted by Yon et al (2017), there is a totally 15.7% rate of elder abuse and this phenomenon harms one elder per 6 elderly people all around the world [6]. Due to various cultural issues, elder abuse has not been considered in Iran seriously and there is no accurate statistics in this regard in this country [7].; nevertheless, conducting a study on 465 elderly people in Iran, Nasiri et al., indicated that 63.3% of them have experienced at least one of mentioned mistreatments[8].

Elder abuse leads to numerous negative consequences in general health such as premature mortality, depression, healthcare services deprivation, metabolic syndrome, musculoskeletal pain, suicide thoughts, anxiety, incontinence, gastrointestinal symptoms, and sleep problems [9]. Considering the prevalence rate and destructive consequences caused by elder abuse, a suitable instrument is required to identify and diagnose such phenomenon. Screening instruments play a vital role in identifying mistreatment toward elder people. However, the designed instruments for elder abuse assessment have low sufficiency to identify different kinds of abuse and lead to a high false negative rate. Inaccurate appraisals may lead to negative consequences for service providers, care givers, and patients [10].

The Hwalek-Sengstock Elder Abuse Screening Test (H-S/EAST) is one of instruments using in this scope (Neale, Hwalek, Scott, Sengstock, and Stahl, 1991) to examine physical, psychological, and financial abuse. This instrument has been designed for clinical scope but does not have discriminatory power for elder abuse screening. Elder Abuse Suspicion Index (EASI) is another instrument consisting of 6 items has been designed to be used in clinical scope in order to help physician identifying patients who have been abused [11]. Cohen (2011) designed 35-item Elder Assessment Instrument (EAI) as an instrument for abuse symptoms that is used to evaluate abuse, neglect, exploitation, and abandonment; However, EAI does not have scoring system and is interpreted based on clinical explanations[12]. The instrument designed by Dong, Chen, Fulmer, and Simon (2014) examined psychological mistreatment, exploitation, and neglect based on a good reliability, but the studied sample was limited to Chinese elder people living in USA [13].

To examine mistreatment toward elderly people in Iranian families, Heravi Karimooi et al (2010) designed a 49-item questionnaire including 8 factors of supportive neglect, psychological and physical abuse, financial abuse and neglect, deprivation, abandonment, and emotional neglect. Although this instrument has a suitable validity and reliability to examine elder abuse in Iranian families, it is not a comprehensive tool for all types of abuse since it

does not examine some cases such as sexual humiliation, and religious abuse[14].
Considering the necessity of holistic and reliable data collection, this study aimed to design a valid and holistic instrument for elder abuse assessment, identify its explanatory factor structure,and examine the psychometric properties of Iranian Elder Abuse Questionnaire (Long form).

Methods

A combined method was performed using phenomenology method at descriptive part and descriptive method and factor analysis at quantitative part. Statistical population of the study at qualitative part consisted of 6 psychologists, psychiatrists, and elderly people in Savojbolagh county Alborz Province in Iran. One of the main characteristics of Savojbolaghis the residence of many Iranian ethnicities in the county.To design this questionnaire, inquiries were first designed based on psychological and psychiatric literature, deep interview with 6 psychologists, psychiatrists, and focused interview with 16 female and male elderly people during 2016. In this regard, female and male elderly people were interviewed in groups; they became familiar with questions and shared their concepts about questions so that some questions were added and some other removed based on their suggestions. Psychiatrists and psychologists working on elderly people were interviewed deeply and added or removed some questions based on their recommendations. Deep interview was performed with 1 hour and focused interview was performed within 2 hours. The first researcher or designer of self-questionnaire conducted interviews by two questions. Face validity of questions was approved by psychiatry and psychology professors. Extracting components, quantitative part was examined so that factor analysis and Cronbach's alpha methods were used to examine validity and reliability of instrument, respectively. Statistical population of quantitative part consisted of all elderly people living in Alborz Province selecting through convenient sampling method412 members were selected considering the exclusion criteria including propensity to participate in study, being younger than 65, suffering from severe psychological diseases based on their health case, not suffering from Alzheimer, mental retardation, and some disease causing disability to respond questions such as stroke based on their health case report inclusive criteria was having literacy,age of 65 and more and tendency for participation in this study. 12 elder persons were removed from study because of their unwillingness to participate in study, not giving information about their gender and other demographic specifications. 400 elderly people responded questions. 144

members were men and 254 members were women. 2 members of participants did not respond questions related to gender. All samples were ensured about confidentiality making them free to participate in study or not.

Instrument

Iraninan Elder Abuse Questionnaire: this questionnaire was designed based on the 6 codes extracted from qualitative part; these 6 codes evaluated 6 dimensions of physical abuse, emotional abuse, sexual abuse, neglect, financial abuse, and religious abuse. This questionnaire consists of 43 items scoring based on Likert Scale (0: never, 1: sometimes, 2: often, 3: always).

Results

400 elderly people at age range of71/6± 7/33participated in study.

Results of Explanatory Factor Analysis

Data were analyzed by main elements and varimax rotation. Indexes of ability to being factor were good so that adequacy of KMO sampling obtained to 0.81. 12 factors had eigenvalue above the 1. Gravel chart also approved 12 factors. According to the results obtained from factor analysis and indexes, 13 factors were extracted from questions that explained 71.06% of total variance. First factor with eigenvalue could explain 10.29% of total variance and sixth factor with eigenvalue of 1.07 explained 2.56% of total variance of variables. Factor analysis showed 13 factors extracting main elements and varimax rotation. Eigenvalues of these 13 factors, explanation percent, and density percentage are presented in table 1.

Factor 1: emotional abuse: questions 1, 9, 10, 11, 12, 13, 22, 42

Factor 2: neglect: questions 24, 26, 27, 29

Factor 3: ignoring needs and demands: questions 14, 15, 185, 33

Factor 4: compulsion: questions 8, 34, 43

Factor 5: financial abuse: questions 30, 38, 39, 40

Factor 6: insulting: questions 5, 7, 16, 21

Factor 7: deprivation: questions 2, 17

Factor 8: imposition, questions 6, 19, 36, 37

Factor 9: secrecy, questions 28, 31

Factor 10: domination, questions 3, 32

Factor 11: psychological pressure, questions 4, 20

Factor 12: mistreatment, questions 23, 41

Factor 13: sexual humiliation, question 35

Table 1. Factor analysis extracting main elements and varimax rotation

	Initial eigenvalue			**Sum of extracted loads**			**Sum of rotated loads**		
Factors	Total	Variance explanation percent	Cumulative Variance explanation percent	Total	Variance explanation percent	Cumulative Variance explanation percent	Total	Variance explanation percent	**Cumulative Variance explanation percent**
1	10.29	23/94	23.94	10.29	23.94	23.94	4.89	11.38	**11.38**
2	3.22	7.49	31.44	7.49	31.44	31.44	3.44	8	**19.38**
3	2.87	6.68	38.12	2.87	6.68	38.12	3.30	7.69	**27.07**
4	2.34	5.45	43.57	2.34	5.45	43.57	3.03	7.04	**34.12**
5	1.83	4.27	47.85	1.83	4.27	47.85	2.99	6.97	**41.09**
6	1.71	3.99	51.85	1.71	3.99	51.85	2.55	5.92	**47.02**
7	1.56	3.62	55.47	1.56	3.62	55.47	1.73	4.03	**51.05**
8	1.44	3.34	58.82	1.44	3.34	58.82	1.71	3.98	**55.04**
9	1.22	2.85	61.68	1.22	2.85	61.68	1.70	3.95	**59**
10	1.16	2.71	64.40	1.68	2.71	64.40	1.63	3.80	**62.80**
11	1.11	2.59	66.99	1.11	2.59	66.99	1.54	3.58	**66.39**
12	1.07	2.50	69.49	1.07	2.50	69.49	1.29	3	**69.40**
13	1/01	2.37	71.86	1.01	2.37	71.86	1.05	2.46	**71.86**

Table 2. Extracted factors of Ghahari's Elder Abuse Questionnaire

Questions Factors								
Factor 1	Question 1 (0.67)	Question 9 (0.57)	Question 10 (0.77)	Question 11 (0.81)	Question 12 (0.42)	Question 13 (0.69)	Question 22 (0.74)	Question 42 (0.69)
Factor 2	Question 24 (0.67)	Question 26 (0.85)	Question 27 (0.77)	Question 29 (0.72)				
Factor 3	Question 14	Question 15 (0.58)	Question 18 (0.70)	Question 25 (0.67)	Question 33 (0.65)			

	(0.51)							
Factor 4	Question 8 (0.71)	Question 34 (0.73)	Question 43 (0.81)					
Factor 5	Question 30 (0.59)	Question 38 (0.90)	Question 39 (0.94)	Question 40 (0.89)				
Factor 6	Question 5 (0.57)	Question 7 (0.65)	Question 16 (0.62)	Question 21 (0.63)				
Factor 7	Question 2 (0.67)	Question 17 (0.50)						
Factor 8	Question 6 (0.39)	Question 19 (0.52)	Question 36 (0.79)	Question 37 (0.55)				
Factor 9	Question 28(0.78)	Question 31(0.75)						
Factor 10	Question 3(0.76)	Question 32(0.77)						
Factor 11	Question 4(0.71)	Question 20 (0.74)						
Factor 12	Question 23(0.44)	Question 41(0.76)						
Factor 13	Question 35(0.93)							

To determine reliability of questionnaire, internal consistency method and Cronbach's alpha were applied. To determine internal consistency, Cronbach's alpha coefficient was calculated for the whole of questionnaire and for each factor (table 3) in a sample consisting of 400 elderly people. Crponbach's alpha for the whole scale obtained to 0.86 and maximum Cronbach's alpha in case of item removal obtained to 0.87; hence, none of items was removed.

Table 3.Cronbach's alpha coefficient of Elder Abuse Questionnaire

	Items	**Factor 1**	**Factor 2**	**Factor 3**	**Factor 4**	**Factor 5**	**Factor 6**	**Factor 7**	**Factor 8**	**Factor 9**	**Factor 10**	**Factor 11**	**Factor 12**
Cronbach's alpha coefficient	0.86	0.78	0.80	0.82	0.64	0.86	0.63	0.71	0.38	0.65	0.26	0.35	0.02

Table 4. Correlation coefficient of each item

	questionnaire mean with question removal	**questionnaire variance with question**	**correlation between whole-component**	**Cronbach's alpha with question removal**

		removal		
A1	7.2473	74.225	0.547	0.861
A2	7.3125	76.319	0.420	0.864
A3	7.3424	78.204	0.165	0.867
A4	7.1630	74.736	0.370	0.864
A5	7.2717	75.168	0.479	0.862
A6	7.2554	75.542	0.421	0.863
A7	7.1875	74.164	0.338	0.864
A8	7.3179	77.057	0.372	0.865
A9	7.2908	76.583	0.319	0.865
A10	7.2962	75.119	0.534	0.862
A11	7.2283	73.877	0.579	0.860
A12	7.1304	72.904	0.528	0.860
A13	7.2283	73.414	0.615	0.859
A14	7.2527	73.416	0.662	0.859
A15	7.2962	74.618	0.642	0.861
A16	7.2772	75.013	0.540	0.862
A17	7.3424	76.776	0.496	0.864
A18	7.2147	74.213	0.516	0.861
A19	7.2255	75.788	0.408	0.863
A20	7.2799	77.270	0.193	0.866
A21	7.3478	78.184	0.172	0.867
A22	7.3071	75.925	0.482	0.863
A23	7.1332	73.832	0.452	0.862
A24	7.2880	75.672	0.454	0.863
A25	7.2636	74.560	0.521	0.861
A26	7.3288	76.690	0.385	0.864
A27	7.3125	76.630	0.374	0.864
A28	7.3179	77.580	0.206	0.866
A29	7.2391	74.973	0.406	0.863
A30	6.1196	69.582	0.328	0.873
A31	7.2826	77.261	0.231	0.866
A32	7.3641	78.548	0.139	0.867
A33	7.2663	75.030	0.511	0.862
A35	7.3451	77.949	0.275	0.866
A37	7.3587	78.612	0.016	0.868
A39	7.3614	78.471	0.156	0.867
A40	7.3451	78.526	0.038	0.868
A41	6.4565	67.704	0.448	0.866
A42	6.5109	67.362	0.479	0.865
A43	6.2799	66.818	0.471	0.866
A44	7.3125	77.774	0.131	0.867
A45	7.3451	77.480	0.369	0.865
A46	7.3614	78.362	0.239	0.867

Discussion

This study was conducted to design and identify the explanatory factor structure examining psychometric properties of elder abuse scale for an Iranian sample. To examine validity and

reliability of this scale, factor analysis method and Cronbach's alpha were used, respectively and obtained results were approved.

Elder abuse questionnaire was designed based on 4-pint Likert scale and its questions were extracted from psychiatric and psychological literature; this questionnaire was simply filled out with low education at least 8 grade because of its simplicity and clarity of questions. To design items of this questionnaire, qualitative method was used; at this step, 6 psychiatrists and psychologists, 16 female and 6 male elders were interviewed, then 43 items and 13 factors were determined including emotional abuse (8 items), neglect (4 items), ignoring needs and demands (4 items), compulsion (3 items), financial abuse (4 items), insulting (4 items), deprivation (2 items), imposition (4 items), secrecy (2 items), domination (2 items), mental pressure (2 items), mistreatment (2 items), and sexual humiliation (1 item). Approving face validity of questionnaire by Iranian psychologists and psychiatrists, validity of instrument was determined. In opinion of Pasha Sharifi and Sharifi (2012) in case of validity testing, there is no certain rule to determine significance rate of correlation coefficients. Validity of test is rarely above 0.60 in practice; therefor, validity coefficients between 0.30 and 0.40 are relatively high coefficients and since cut-off point of 0.3 was considered in this research as the minimum required factor load to keep items, factor analysis outcome approved ability of data to being factors extracting main components and varimax rotation [15].Hence, it can be stated that all factor loads have been acceptable and were significantly loaded on considered factors. Therefore, no item was removed and all factors were confirmed.The factors could explain 71.06% of total variance. Results obtained from KMO index measurement (0.81) confirmed factor analysis and its suitability.

Results showed multi factorial aspect of questionnaire. Since the minimum factor load depends on coverage of each item by a factor in instrument and a specific eigen-value [16]. each of them were named based on variables of each factor After extracting factors then their consistency with elder abuse dimensions were examined. Sample adequacy test (KMO) and gravel chart for extracted factors confirmed 12 factors using factor analysis method.

On the other hand, it should be noted that since elder abuse is a complicated case and indirect predictor of death that is hardly evaluated [17].such instruments that measure complicated concepts should have several subscales. Therefore, researcher should make sure about internal consistency of items existing in subscales measuring similar properties. Accordingly, reliability of instrument should be determined as next step after approval of validity. Reliability is one of the most significant criteria that show quality of instrument as well as

accuracy of measurement power. Reliability is defined as consistency and stability in measuring properties or components in an instrument [18].To determine internal consistency of research factors, Cronbach's alpha coefficient was used. Cronbach's alpha indicates group fit of items in an instrument. Since Cronbach's alpha of 0.7-0.8 indicates a suitable internal consistency, the results obtained from this study (0.87) show high consistency of this instrument confirming reliability of elder abuse questionnaire. On the other hand, high correlation between each question and total score led to non-removal of items. Cohen et al. (2006) also used internal consistency to determine reliability of their instrument with different naming factors and numbers because of various definitions from elder abuse concept or mistreatment against elderly people, in particular lack of the factor of sexual humiliation as one of important elder abuse dimensions in mentioned studies; in other words, the existing instruments do not have distinguishing power of elder abuse screening [19-21].

Considering the apparent differences between elderly people and other populations, there has not been any comprehensive study in field of designing a questionnaire that covers all elder abuse dimensions. Hence, It was essential to design an instrument capable of measuring all elder abuse dimensions having required validity and reliability. In this research, qualitative and quantitative methods were used to design and validate elder abuse questionnaire consisting of 13 subscales.

Conclusion

Findings of this study implied that this questionnaire was a suitable instrument to assess elder abuse in Iranian community because of covering all elder abuse dimensions (13 factors), having proper validity and reliability, and its ability to be performed in different situations.

Limitation

This research also faced some limitation such as using convenient sample that may lead to reduced generalization of its results to the whole society. In addition, the content of some questions pointed to privacy and confidential information of persons so that participants may act cautiously leading to low validity questionnaire.

Suggestions

It is recommended using larger sample members and random sampling method in further studies.

SUGGESTIONS

We suggest this questionnaire for screening of elder abuse in Iran

CONSENT

As per international standard or university standard, patient's written consent has been

Collected and preserved by the authors

ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee

has been collected and preserved by the authors.

References

1-Du Mont J, Kosa D, Yang R, Solomon S, & Macdonald S. Determining the effectiveness of an Elder Abuse Nurse Examiner Curriculum: A pilot study. Nurse Educ Today.2017., 55, 71-76.

2-YonY, Mikton C, Gassoumis ZD, & Wilber K H .Research Protocol for Systematic Review and Meta-Analysis of Elder Abuse Prevalence Studies. Can J Aging .2017., 36(2): 256-265.

3- Ho CS, Wong SY, Chiu M M & Ho RC. Global Prevalence of Elder Abuse: A Meta-analysis and Meta-regression. East Asian Arch Psychiatry. 2017., 27(2): 43-55 .

4-Ghahari Sh, Yekefallah.M "Elder Abuse in Savojbolagh – Iran*Pharmacophore***.** ".2017., *8(6S), 01-08*

5-World Health Organization. The Toronto declaration on the global prevention of elder abuse. Geneva: World Health Organization.2002.

6- Keyvanara M, Karimi S, Mohamadi M, Bahrami S. Impact of cultural factors on the elderly utilization from healthcare services provided by Isfahan University of Medical Sciences' Hospitals - 2014. Int J Educ Psychol Res 2017;3:121-7.

7-Yun RM, Wazid SW, Hairi NN, Choo WY, Hairi FM, Sooryanarayana R, Awang Mahmud A B. Association between elder abuse and poor sleep: A cross-sectional study among rural older Malaysians. PLoS ONE.2017., 12(7):14-21.

8-Nassiri H, HeraviKarimooi M, Jouybari L, Sanagoo A, & Chehrehgosha M. The Prevalence of Elder Abuse in Gorgan and Aq-Qala Cities, Iran in 2013. Iranian Journal of Ageing.2016.,10(4):162-173.

9-Beach SR, Liu PJ, De Liema M, Iris M, Howe M J & Conrad KJ . Development of short-form measures to assess four types of elder mistreatment: Findings from an evidence-based study of APS elder abuse substantiation decisions. J Elder Abuse Negl.2017.,29(2):1-25.

10-Yaffe MJ, Wolfson C, Lithwick M, & Weiss D. Development and validation of a tool to improve physician identification of elder abuse: the Elder Abuse Suspicion Index (EASI). J Elder Abuse Negl.2008. 20(3), 276-300.

11-Neale A V, Hwalek MA, Scott RO, Sengstock MC, & Stahl C. Validation of the Hwalek-Sengstock Elder Abuse Screening Test. Journal of Applied Gerontology.1991., 10(4), 406-418

12-Cohen M. screening tools for the identification of elder abuse. Journal of Clinical Outcomes Management.2011. 18(6): 261-270.

13-Dong X, Chen R, Fulmer T, & Simon MA. Prevalence and Correlates of elder mistreatment in a community-dwelling population of U.S. Chinese older adults. J Aging Health.2014., 26(7): 1209-1224.

14- Heravi-Karimooi M, Anoosheh M, Foroughan M, Sheykhi MT, &Hajizadeh, E. Designing and Determining Psychometric Properties of the Domestic Elder Abuse Questionnaire. Iranian Journal of Ageing.2010., 5(1):15-22

15-Pasha Sharifi H, Sharifi N. Principles of psychometrics and psychosis.Tehran,Roshd Publisher.2012.

16-Knapp TR, Brown JK. (Ten measurement commandments that often broken.Research in Nursing & Health.1995., 18(5):465-9.

17-Strasser SM, Smith M, Weaver S, Zheng S, Cao Y. Screening for Elder Mistreatment among Older Adults Seeking Legal Assistance Services. West J Emerg Med.2013.,;14:309-415.

18-Dempsy PA, Dempsy AD. Using research: Process, critical evaluation and utilization. 5th ed. Philadelphia: Lippincott Williams & Wilkins.2002.

19-CohenM, Halevi-Levin S, Gagin R, Friedman G. Development of a Screening Tool for Identifying Elderly People at Risk of Abuse by Their Caregivers. Journal of Aging and Health.2006., 18: 660-285.

20-Hemmati Maslakpak M, Hashemlo L . Design and Psychometric Properties of a Self-Care Questionnaire for the Elderly.Journal of aging.2015., 10(3):24-29.

21-Yekefallah M, Imani S, Borji M, Sadighpour M, Gheitarani B, Kheradmand M, Ghahari Sh. Comparison of Depression and General Health among Victims of Domestic Violence among the elderly and their peers in Savojbolagh-Iran. Community Health. 2018; 5(2):132-40.