Educational Programs Development, Using Intervention Mapping Protocol and Kern Model in Primary Health Care Setting to Prevent Elders Abuse: A Randomized Controlled Trial Study.

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Abstract

Background: Several studies have focused on to find out the factors that may improve psychological, physical well-being, and quality of life among elders and prevent their abuse. Objectives: We investigated the impact of developing educational programs, using Intervention Mapping (IM) protocol and Kern Model in Primary Health Care Setting to prevent elder abuse. Methods: The integrated educational package was provided using both the IM protocol and Kern Model. The family members of the eighty elderly women were trained once a week for 4 sessions. The self-administrated Elder Abuse Questionnaire (EAQ) was completed before and after intervention by elderly women. The linear mixed model was used for the comparison of elder abuse frequency in two groups of control and trail. Results: The data of this study indicated that our intervention resulted in reduction in frequency of psychological and financial abuse ($F=127.12$, $p<0.005$; and $F= 16.53$, $p<0.07$ respectively) and neglect ($F=95.4$; $p<0.005$). None of the elders reported any physical abuse. Conclusion: This study showed that, the developed integrated educational package improves elder abuse and specifically it is tailored to the education of family members of the elderly women

Background

By the year 2050, the number of the elders is estimated to increase by 20% which will be around 2.5 billion of the world wide population (1, 2). These changes imply a need for more understanding the elderly quality of life (3-5). In this view, several studies have focused on to find out factors that may improve psychological, physical well-being, and quality of life in this group of population (6). Elderly mental health which is an important component of wellbeing, has been neglected and is largely ignored among families in the communities (7). Family members suffering from mental disorders such as anxiety, depression and feelings of burden (8-11) are a serious threat for abusing those aged 60 or above (12). The World Health Organization (WHO) states that " EA is 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 old person." Such abuses are generally included: physical, psychological, sexual, and financial abuse and also neglect (13, 14) resulting in shorten of life expectancy in the victims of elders (15). Many researchers investigated the prevalence of elder abuse and realized that there is a wide range of 0.1 - 10% elder abuse in most countries (7, 16, 17). The most common complaint was about the neglect abuse (18).

Attempts to apply behavioral theory to family conflicts dates back to 1960s (19) and the design of intervention programs began in the late 20th century (20). There is a strong evidence that social-learning-based educations as either: primary, secondary, or tertiary interventions (21) are effective by using multidisciplinary and collaborative approaches (22) with a wide range of family problems including socio-economic, ethnic backgrounds, and the cultural practice impact (23, 24).

There are several educational intervention programs. In primary or "universal educational programs" do not require that an individual be either at risk or showing any signs of disorder. An advantage of universal

programs is that no selection procedures are needed and thus stigmatization is unlikely to result (25-28). Although, universal interventions are strategies that target whole communities, it is very important to provide a family needs tailored and reusable educational package. For this purpose, we created new approaches to provide educational packages using learning theories, motivational learning, and process models for designing an educational program (29, 30). We introduced an integrated educational package, a proven six-step model to develop medical education (Kern model) and a stepwise process of theory and evidence-based health education program (IM protocol) in primary health care settings (31-33). This educational package includes several integrated tasks from the problem identification to problem-solving.

The Iranian elder populations are not exempted from EA (34, 35). A few researchers have declared that old women are the majority of victims (1). Elderly women often do not report these issues due to fear of their families (36), however, the other researchers indicate that gender is no risk factor for EA (7). Generally, it seems that the old women need more supportive program than men to promote their social well-being, specifically, in countries in which the traditional culture is dominant.

Although, elders in Iran, routinely are referred to health centers for medical check, but no educational program in terms of elder abuse concepts is provided for patients and their families in theses health centers. Thus, an adequate intervention program should be provided considering the social and cultural context of Iranian elderly women, their family and community (37). Therefore, the aim of this study was to investigate the role of integrated educational package (Kern model & IM protocol) in primary health care settings to engage and provide a preventive intervention to family members of the elderly women. We hypothesized that the integrate educational package would improve elders abuse concepts knowledge in primary health care setting and elders would report the reduction in EA frequency.

Methods

Design: This randomized controlled trial study was conducted in Qazvin province from August to December 2017. Convenience sampling by visiting health care centers was performed and based on the number of old people receiving medical services. The calculation of sample size was based on the study conducted by Alon, S. 2014 (38) in which $\alpha = 0.05$, $\beta = 0.2$, p1= 70 %(variable of psychological abuse before intervention), p2=50% (reduction in abuse after intervention). Then the calculated sample size was 80 elderly women. The inclusion criteria were: being an elderly woman of 60 or above; willingness to participate in the study; full consciousness of the time and place; and the ability to respond to the questions in the questionnaire. The exclusion criteria were: possibility of not being available during the period of the study in study area, and failing to participate in all consultation sessions. After advertisement and face to face information sessions 95 elderly women recruited for the study. Fifteen elders did not pass criteria of the study and by one of the health worker who was blind to the study, 80 subjects were randomly allocated into interventional and control groups using Balanced Block Randomization method (AABB, ABBA,..) with 20 blocks. Therefore; participants, data collectors, and the analyzer of data were blind to the study.

Participants: Eighty elderly women aged 60 years or above receiving health care services from health centers of Tehran, Iran, were invited for participation in our study. The study was approved by ethic committee of Qazvin University of Medical Sciences and researcher obtained a written consent from participant of the study.

Outcomes: The frequency of physical, psychological, and financial abuse, and also neglect were considered as main outcomes which have been measured by the EA questionnaire completed by elderly women in two phases. Firstly, elderly women completed the questionnaire, then the family members of the elderly women were invited to take part in the educational program. After two months, the post intervention EA questionnaire was completed by the elderly women.

Materials: The design of educational package was a first priority considering both the Intervention Mapping (IM) protocol and Kern Model. Six steps of the integrated IM model and Kern model are:) problems analysis by identifying what needs to be changed, General Needs Assessment, and Needs assessment for targeted learners (family member of the elderly women) using a short questionnaire aimed at identifying the family member's knowledge about EA concepts: a) key determinants of EA, and b) a definition of EA based on the information obtained from a literature review of EA, caregivers, primary health care workers, and elders' family members;) the definition of program objectives to identify which beliefs should be targeted by the intervention, the selection of Educational Strategies, adequate theories, and practical applications for the effectiveness of selected methods tailored to the specific needs of the family member of the elderly women. In addition, performance objectives were specified in terms of how many times elder abuse behavior of family members have been improved as the effects of our educational package;) the design of the intervention program to integrate the practical applications into an organized program by identifying program users and supporters. During the design of the intervention, the concepts of EA were formulated and the intervention protocols were completed;) the selection of the adequate Educational Strategies based on theories and methods to plan the intervention program (providing pamphlet, giving the lecture and consults). This Educational Strategy is likely to create the expected changes in the EA were identified;) the development of a plan for adoption and implementation; and) the development of an evaluation plan using the EA questionnaire to assess the effectiveness of the educational package considering the study design, study population, randomization procedure, outcome measures, and statistical analysis. (39-41). (Table 1)

Measures: The self-report elder abuse questionnaire used in this study examined the frequency of elder abuse and includes 17 questions scored on a Likert scale: (Never =1), (Once =2), (Twice =3), (Three times =4), (Four times =5), (Five times =6), (Six times =7), (Seven times and more=8). It measures the complaint of neglect, physical, psychological and financial abuse against the elderly. Its reliability and validity were examined in a study conducted in Qazvin, Iran, (34). The reliability of this questionnaire was 0.73 as measured by Cronbach's alpha. The first part of the questionnaire examined demographic information, e.g. age, marital status, primary caregiver, level of education, accompanying diseases, level of income, and the status of home ownership.

Intervention: Four consecutive sessions were performed once a week based on the educational package which consists of the following four stages (table1).

Statistical analysis: First, we calculated demographic variables by mean±SD and Number (percent). Then, normality tests were used to determine if main outcomes are well-modeled by a normal distribution by Kolmogorov-Smirnov Test. As our data were not normal, the Linear Mixed Model was used to compare quantitative variables, and the chi-squared test was used for comparing the qualitative variables. Level of significance was set at 0.05%.

Results

The loss to follow up was 6 from the experimental and 9 from the control group. (Fig 1)

The youngest participant in the control group aged 60, and the oldest aged 89 years by mean±SD (69.16 ± 7.43). In the intervention, the youngest and eldest participants respectively aged 60 and 95 by mean±SD (70.55± 8.56); (T-test=48.0, P-value=0.69)

Table 3 shows the distribution of frequency of level of education of the elderly. Based on this table, 82.4% in the interventional group and 77.4% in the control group had no formal education.

Table 4 shows the mean SD of the score of neglect behavior, financial abuse, psychological abuse based on the linear mixed model which were differed significantly. Finally, the meanSD of the score of physical abuse demonstrate no significant difference between the interventional and control groups (p-value=0.35).

Discussion

The present study was conducted to examine the effects of integrated educational package for family members of elderly women to prevent elder abuse. The results of this study showed that our intervention based on the integrated educational model package can improve family member's behavior towards elders who reported the reduction of frequency of neglect, financial and psychological abuse. Several studies supported our findings indicating that social workers have main role in reducing abuse by considering the family as a system, identifying the needs of the families, decreasing stress in families members, solving communication problems, and increasing the families potential function for taking care of the elders (27, 28, 42). Also, results of our study are consistent with the finding of Khanlary et al., who evaluated the effectiveness of social workers intervention in reducing elder abuse. They found that families' member in an intervention group demonstrated greater improvement in terms of psychological, and financial abuse compared to those in a non-intervention group. Their intervention included five sessions with a cognitive-behavioral approach for families. Yet, similar to our finding, they showed that the physical abuse index has not been changed after their intervention (35). Also another study reported that the healthcare workers demonstrated having responsibility for the identification of elderly women who are victims of physical and psychological abuse and can provide appropriate interventions for them

(43). However, healthcare workers showed that they need to receive specific training programs on EA because of a lack of awareness and perception regarding the reporting procedures (44). These interventions should be designed more compatible with cultural issues in order to strengthen social supports, ethical values, and family integrity (45) with considering various intervention. Results of three studies about the screen, prevention, and treatment of EA showed that it requires various interventions such as individual counseling, legal intervention, inter-professional disciplines, and provision of supportive services for victims of neglect as global violence interventions (38, 46, 47).

Among different type of elderly abuse, psychological abuse and its consequence is the most important. Heravi et al. reported that among cases that were suffered from psychological abuse related to family dysfunction, 43.3% of the intervention group had significant improvement compared to control group. This study was conducted on 30 old women and their families visiting the health centers. Their 6 sessions intervention were unstructured and the content of sessions were based on the interaction between families and their elders. Although our teaching material was different from theirs, this study has supported our results that family members need special support groups (48). Another study declared that family conflict was positively associated with increased psychological distress (49), therefore, we declare that our intervention may be effective because of improving family conflict. Our integrated educational package has focused to change the knowledge, attitudes, and belief of family members about concept and definitions of elder abuse because the public support a fairly broad definition of elder abuse and that this definition of elder abuse was fairly stable over time (50).

Conclusion:

Results of this study indicated that integrated educational package for the family member of elderly women may decrease psychological abuse and neglect. This decrease was significant compared to the control group, however, the elderly women did not mention any physical abuse before and after the intervention in this group. This educational package is re-useable program which is based on the Iranian culture and context. Therefore, we suggest that healthcare workers in Iran health centers provide this program for all families in order to promote family members' knowledge and attitude about EA. Moreover, our paper explained how to provide a standard educational package to aim at decreasing EA. among communities with a wide range of cultures by detecting needs, choosing a suitable educational strategy, and evaluating it.

Limitation and suggestion:

The aim of this study was to provide the reusable and cultural based educational package, therefore, a pilot randomized control trial was done to test our intervention without follow up for a long time and multiple questionnaires to detect valid responses. As a result, the size of the population studied did not have power to detect some changes, such as physical abuse. Also, it was not clear whether these

changes are sustained over time, and the use of only one instrument which was not separately validated on this population might be a problem. We suggest that the others complete some questionnaires for healthcare workers, family members, and the elderly as the EA instruments repeatedly with a larger sample size.

List Of Abbreviations

IM: Interventional Map

EA: Elder Abuse

WHO: World Health Organization

Declarations

Ethics approval and consent to participate: Medical Research Ethics Committee of the Qazvin University of Medical Science approved this study on 8 November 2016 and the number was: IR.QUMS.REC.1395.184. We received the written consent of participants to conduct our study. This study was registered at the Iranian Registry of Clinical Trials (IRCT2017061234496N1).

Consent for publication: Not applicable.

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author. Also, it is presented as additional supporting files.

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Authors' contributions: a) conception and design by SJ, FO, and SO; b) implementation of intervention and collection of Data by SJ. C) Analysis of data by SO; d) interpretation of data by FO and SO; e) drafting the article by FO and SO; f) revising it critically for important intellectual content by SO; g) final approval of the version to be published by SO. All authors have read and approved the manuscript.

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Tables

Table 1: Questions in the Elder abuse instruments to detect 4 type of Elder Abuse

Items for measuring physical abuse were:
Have you been hit, kicked, punched, or otherwise by someone within the past two months? If yes, how many times.
Has anyone close to you tried to hurt you or harm you within the past two months? If yes, how many times.
Items for measuring neglect were:
Were you sad or lonely often? (within the past two months) If yes, how many times.
Have you been hungry within the past two months? If yes, how many times.
Have you been in conditions that you need help and ask for help but ignored by your family members? (within the past two months) If yes, how many times.
Have you been in a situation where you were scared at home? (within the past two months) If yes, how many times.
Have you had thoughts of taking your life, even if you would not really do it? (within the past two months) If yes, how many times.
Items for measuring financial abuse were:
Has anyone taken things that belong to you without your O.K.? (within the past two months) If yes, how many times
Have you been forced to get cash to your family members? (within the past two months) If yes, how many times.
. Have you been asked to sign papers you did not understand? (within the past two months) If yes, how many times.
Items for measuring psychological abuse were:
. Has anyone forced you to do things you didn't want to do within the past two months? If yes, how many times.
. Have you experienced living in fear because somebody systematically has threatened you? (within the past two months) If yes, how many times.
. Has anyone close to you ever completely refused to talk to you or ignored you for days at a time, even when you wanted to talk to them within the past two months? If yes, how many times.
. Have you been verbally threatened or insulted by others within the past two months? If yes, how many times.
. Has someone screamed or yelled at you within the past two months? If yes, how many times.
. Have you been afraid of your family members? (within the past two months) If yes, how many times.

Table 2. The intervention implemented based on the educational package

Duration of Session	Content of Sessions	Sessions
45 min	Introduction Giving information about this educational program Defining EA concepts, indicators, and consequences Setting the time of the next session	First Sessions
45 min	Giving information about the common problems associated with the process of Ageing Definition of different types of EA Question and answer about how to encourage them to re-evaluate their behavior Introspection, explaining the risks of the current behavior, reflection Define his/her goals Setting the time of the next session	Second Sessions
45 min	Teaching interpersonal skills for a healthy communication with the elderly Evaluating the advantages and disadvantages of their behavior and abilities confirming one's preparedness for changing, and enhancing one's confidence in his/her abilities Group discussion for resolving issues and answering questions	Third Sessions
40 min	Review of previous topics Giving pamphlets to present the other family members Well-practiced actions for achieving their goals How to maintain the new behavior Thanking the families	Fourth Sessions

Table 3. **Comparing the demographic variables of elderly women in two control and intervention groups by χ2 measure.**

Variables		Intervention group		Control group		Chi-square	P_value
		N	%	N	%	3.61	0.65
Elders' education	No years of education	28	82.35	24	77.4		
	High school and less	5	14.71	6	16.1		
	College and more	1	2.94	2	6.5		
	Total	34	%100	31	%100		
Elders' marital status	Married	22	64.7	21	67.7	79	0.06
	Single	12	35.3	10	32.3		
	Total	34	%100	31	%100		
Elders' diseases	Cardio-pulmonary disease	6	17.7	5	16.1	1.93	0.92
	Diabetes	10	29.4	11	35.5		
	High blood pressure	11	32.4	10	32.3		
	Miscellaneous	7	2.5	5	16.1		
	Total	34	%100	31	%100		
Primary caregiver	Husband	19	55.9	21	67.7	1.37	0.5
	Children	7	2.6	6	19.4		
	Nobody	8	23.5	4	12.9		
	Total	34	%100	31	%100		
Status of Home Ownership	Owned	34	100	30	96.8	1.11	0.29
	Rented	0	0	1	3.2		
	Total	34	%100	31	%100		
Level of income	Low	13	38.2	12	38.7	9.8	0.99
	Moderate & high	21	61.8	19	61.3		
	Total	34	%100	31	%100		

Table 4. Comparing the frequency of four types of the Elder Abuse (mean ± SD) among elderly women in two control and intervention groups using Linear Mixed Model measure.

Variables	*group*	*Time*	*Mean ±SD*	*min*	*max*	*p-value*	*F*
Neglect	Intervention	Before	2.9 77.2	0	10	P<0.005	95.4
		After	2.1 ±2.29	0	9		
	Control	Before	1.55 ± 2.16	0	7		
		After	2.14	0	7		
Financial abuse	Intervention	Before	0.57± 1.42	0	7	0.07	16.53
		After	0.49±1.15	0	7		
	Control	Before	0.23 76.0	0	5		
		After	0.23 76.0	0	5		
Psychological abuse	Intervention	Before	4.4±4.44	0	21	<0.005	127.12
		After	3.23±3.34	0	16		
	Control	Before	3.48±3.6	0	14		
		After	3.5±3.4	0	14		
Physical abuse	Intervention	Before	00	0	0	0.13	2.29
		After	00	0	0		
	Control	Before	0.17 0.03	0	1		
		After	0.17 0.03	0	1		

Figures

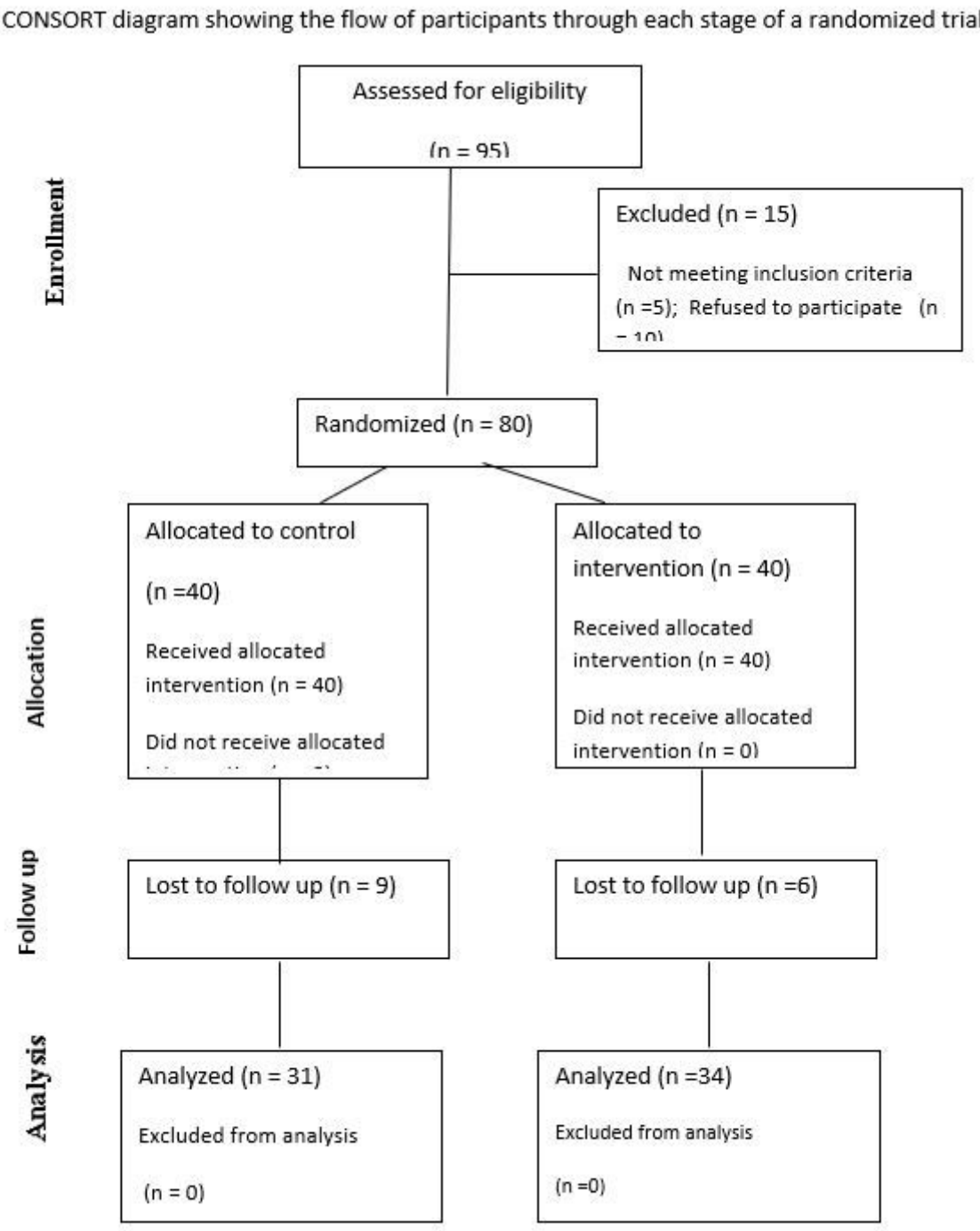

Figure 1

The CONSORT diagram showing the flow of participants through each stage of a randomized trial.

Supplementary Files

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