

The Effect of Need-oriented Educational Intervention on the General Health of the Elderly

Abstract

Introduction: Improving the health of the elderly must be based on their special needs that can be achieved through self-needs assessments through education, which is one of the most important tools in the field of health improvement. The aim of the present study was to evaluate the effect of need-oriented educational interventions on the general health of the elderly living in nursing homes. **Materials and Methods:** The present study is a clinical trial conducted among the elderly living at the Sadeghieh nursing home of Isfahan, Iran. Seventy elderly people who satisfied the inclusion criteria were selected and divided into two groups of case and control. The case group went through 8 sessions of group therapy for educating participants who were previously investigated through needs assessment. The control group received the usual health care. The general health level of the participants was evaluated before and 1 week and 1 month after the intervention using Goldberg's general health questionnaire. Data were analyzed using Chi-square test, independent *t*-test, paired *t*-test, Mann-Whitney test, and variance analysis. **Results:** The score of general health had no significant difference between both the groups before the intervention, however, the difference in the score between both the groups 1 week and 1 month after the intervention was significant (1 week after the intervention, the scores were 15.6 and 30.3, and 1 month after the intervention, the scores were 16 and 32.2, respectively) ($P < 0.001$). **Conclusions:** Need-oriented educational intervention is an effective, safe, and inexpensive method for improving the general health of the elderly living in nursing homes.

Keywords: Education, elderly, general health, needs assessment

Introduction

In every society, elderly people are a significant part of the population.^[1] United Nations estimated that, in 2006, the number of elderly people in the world was 678,923,000, which is expected to increase to 1,968,153,000 by 2050.^[2] In Iran, the population is moving toward senility. According to the latest statistics of population census in 2011, individuals aged more than 60 years old constituted 8.2% of the general population.^[3]

Lifestyle modification and paying attention to quality of life could significantly increase functionality and independence of the elderly and help them control multiple complications of aging and their different treatments.^[4,5] On the other hand, moving to a nursing home is considered to be one of the most stressful events of an individual's life and is usually accompanied with depression, anxiety, insomnia, and attempted suicide.^[6]

According to Corbin and Strauss (1988), despite enhancement of living condition in the new residence, seniors who were forced to move to a nursing home would experience more cardiovascular diseases and strokes and would refer to hospitals more than those who did not move to a nursing home.^[7] Depression and anxiety are the most common mental problems among the elderly and mostly remain undiagnosed or untreated, affecting the elderly's quality of life and increasing their living expenses.^[8]

Different studies have mentioned that seniors living in nursing homes have poorer health condition than those living with their families. For example, in a study conducted by Momeni *et al.* to compare the general health of residents of nursing homes and nonresidence elderlies, 254 seniors were evaluated using general health questionnaire-28 (GHQ-28). Results showed that the residents of nursing

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How to cite this article: Zandiyeh Z, Zare E, Mehrabi T, Shiri M. The effect of need-oriented educational intervention on the general health of the elderly. *Iranian J Nursing Midwifery Res* 2017;22:51-6.

Received: March, 2015. **Accepted:** August, 2016.

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Access this article online

Website: www.ijnmrjournal.net

DOI: 10.4103/1735-9066.202072

Quick Response Code:



homes experienced more depression, physical, and social dysfunction symptoms than nonresidence seniors.^[9]

Health is a multidimensional matter in a way that individual's physical problems affect their mind and their mental problems affect their body and both of these would affect the society and social disorders would affect other aspects of health. Therefore, health improvement measures must consider all the aspects of personal (physical, mental, and spiritual) and general health of the society.^[10] Health education has a key role in most of health improvement interventions by focusing on training people to participate in self-care activities, which provides a background for prevention.^[11] One of the most important methods for compatibility with old age and having a healthy and successful life is general and professional training for the elderly and their families regarding the needs and problems of old age using different educational tools.^[12]

Health education is an important part of community health nursing. The trainer nurse, first, determines the special learning needs of the target population, and then prepares an appropriate philosophical view for providing those learning needs; considers educational principles that could increase learning; evaluates educational issues such as the target group's special concerns, obstacles to learning, and appropriate technological strategies to facilitate the learning process; designs and executes the educational program; and eventually assesses the effect of the educational program on learning and behaviors.^[10] In a study conducted by Badertscher *et al.* in 2012 in Switzerland to evaluate the approaches, barriers, and facilitators of elderly health improvement in general practitioners' opinion as a focused group study and through interviews results showed that two of the most important perceived barriers by this group concerning the elderly health improvement were lack of time and inadequate reimbursement for following preventive and health improvement recommendations. In their opinion, one of the interventions that could be performed to improve the health of the elderly is involving nurses in health improvement and consultation interventions, which was widely discussed by the case group.^[13] According to Imhof *et al.*, self-care programs and ability to manage the disease, that must be executed for patients with special diseases such as diabetes or cardiovascular diseases, have desirable results in the community and health care centers.^[14]

Nowadays, authorities have realized that to reach an active and healthy old age all the aspects of physical, mental, social, economic, and spiritual health must be considered, and since most of the diseases and problems of old age are due to unhealthy lifestyle, the basics of health in these aspects must be determined by using the right methods and improving the quality of life from the very first stages of life.^[15]

Considering all the abovementioned concerns, most of the studies in the field of elderly health have been

evaluations and less attention has been paid to educational interventions during old age based on the needs assessment of the trainees. Therefore, community health nursing, which is one of the most important pillars of the health team for community health improvement, must apply appropriate measures including educational interventions, which is one of the most important health improvement tools, to reach this goal. Lack of information regarding elderly health education based on their needs assessment that has been conducted through interviewing them and their caregivers, elderly's special educational needs about their health condition (which is the same as general health meaning physical, mental and social health of the elderly), and also the need for paying more attention to residents of nursing homes due to their undesirable living conditions compared to nonresidence elderly, led us to conduct a study to evaluate the effect of need-oriented education on the general health of seniors living at nursing homes.

Materials and Methods

This is a semi-experimental study that evaluated the effect of independent variable of need-oriented educational intervention on dependent variable of general health score in the case group. In both the case and control groups, the score of general health was evaluated at three stages. This study was conducted at the Sadeghieh nursing home of Isfahan, after obtaining permission from the ethics committee of Isfahan University of Medical Sciences and written informed consent form from the participants. It must be noted that this center was selected as the study environment due to its availability and large number of residents. The inclusion criteria were than 60-year-old individuals, being familiar with Farsi language, having the intellectual ability to understand the contents and physical ability to participate in sessions, having motivation for participating in educational sessions, and being able to at least read and write. The exclusion criteria were not participating in sessions for any reason, participant's death or sickness during the intervention, and missing more than 3 sessions.

In the beginning, a pilot study was conducted to assess the educational needs. For this pilot study, after interviewing the senior manager of the center, 2 personnel (care givers) and 10 elderly who satisfied the inclusion criteria, educational need assessment was conducted. Need assessment was conducted using agreement assessment technique, which is a standard method for need assessment that starts with an open answer question such as "if you were supposed to be educated about your health issues, what were the subjects you would like to learn?" After interviewing center's management, staff, and residents regarding health education for residents of the nursing home (educational needs that are rooted in behavioral factors of the elderly, that could be said are the same as their health problems) 5 educational needs that had the most repetition among problems and

proposed needs were selected. At the second stage, for prioritizing the selected needs, each of the participants were asked to give a score from 1 to 5 to each of the selected needs. Then, by summing up all the numbers, the needs were prioritized as follows: (1) Musculoskeletal pains and physical inactivity, (2) chronic diseases (high blood pressure, diabetes, and Alzheimer), (3) undesirable mental health, (4) poor nutrition, and (5) inappropriate personal health.

Considering the pilot study, the educational program was designed to educate the elderly about their health needs which was assessed at the need assessment stage. For reaching the abovementioned educational objectives, eight 1-hour sessions were conducted for teaching the educational content according to the developed educational needs of the elderly.

The syllabus of sessions

At each session, 15 minutes were allocated to physical exercises and 45 minutes were for lectures and discussions about the subject of the session. All the participants were obliged to do the physical exercise and take part in discussions. For better learning and more effectiveness of the training, the elderly were divided into four groups (two groups of women and two groups of men). Training were in the form of group discussions and questions and answers. Participants' duties were active participation in discussions and regular exercising.

Then, 70 seniors who satisfied the inclusion criteria (with their written consent forms) were selected through simple sampling. For data collection, a two-part questionnaire including demographic characteristics of the participants (age, sex, marital status, educational level, duration of living at the nursing home, and underlying diseases) and GHQ-28 was used before and after the educational intervention. GHQ-28 was designed by Goldberg in 1979. This questionnaire has 28 questions and evaluates four subscales of somatic symptoms, anxiety, social impairment and depression, pathological symptoms, and positive moods and wellbeing for an individual from 1 month prior to the intervention up to the time of the intervention. Each choice has a score from 0 to 3, and in total the least score could be 0 and the highest score could be 48. This questionnaire evaluates four dimensions of physical health, anxiety, social functioning, and depression in the participants. According to the study of Noorbala *et al.*, the cut-off point for the total score of this questionnaire is 23, implying that the score of 23 and less indicates healthy individual and higher scores refer to possible disorders.^[16] GHQ-28 is a standard tool that has been used by different researchers in many different studies, and its reliability has been reported to be 78–95%.^[17]

Selected participants were assigned into two groups of case and control by random allocation. Each group contained

35 participants. The case group was educated based on the educational program that was previously designed. It must be noted that physical exercises were conducted by the researcher who was trained by a physical education expert and the moves were approved by a specialist. During the intervention, the control group received the usual care and a booklet containing the educational content that was discussed at the sessions for the case group. After all the sessions ended, GHQ28 was completed by both the groups 1 week and 1 month after the intervention, and the mean scores of general health before and 1 week and 1 month after the intervention were compared to each other between both groups and for each group separately. Regarding the 1-month interval between evaluations of general health, it must be noted that this interval was to evaluate the durability of the training. Other studies that have used the same questionnaire also had a time interval between evaluations; in some studies, the interval was 2 months, in some 1 month, and in some other 1.5 month.^[18-20] Because in the present study we were dealing with some sort of behavioral change, the participants must have had enough time to exercise the training, and if they would be applied correctly, they could increase the level of general health. Data was analyzed using the Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA) and through independent *t*-test, paired *t*-test, Chi-square test and Mann–Whitney test.

Ethical considerations

Ethical principles of this study have been approved by Isfahan university of medical sciences. All of the participants signed a written informed consent.

Results

For this study among 320 seniors living at the Sadeghieh nursing home, 70 who satisfied the inclusion criteria were selected through simple sampling and were randomly allocated to two groups of 35 participants in each group. Lost samples until the end of the study were one from the control group and two from the case group; hence finally, analysis was conducted among 33 participants of the case group and 34 participants of the control group. The mean age of the case and the control group was 74.2 and 76.2 years, respectively. In the case group, 16 were females (48.5%) and 17 were males (51.8%), and in the control group, 15 were females (44.1%) and 19 were males (55.9%). The mean duration of living at the nursing home was 2.2 years in the case group and 2.4 years in the control group. Regarding marital status, 6 were single, 17 were married, 40 were widowed, and 4 were divorced.

According to Table 1, independent *t*-test showed no significant difference between the mean of age and duration of living at the nursing home of both the groups. Chi-square test showed no significant difference between the frequency of sex and marital status in both groups. Chi-square test also

showed no significant difference between the frequency of underlying diseases in both the groups. Mann–Whitney test showed no significant difference between the educational level of both groups.

According to Table 2, variance analysis with repeated observations showed a significant difference between the mean score of general health at three different time intervals for the case group ($P < 0.001$), however, this difference was not significant for the control group. According to Table 3, independent *t*-test showed no significant difference between the mean score of general health of both groups before the intervention, however, 1 week and 1 month after the intervention, the difference between the mean score of general health of both groups showed a significant difference ($P < 0.001$). Variance analysis with repeated observations showed no significant difference between the mean score of general health at three time intervals in the control group, however, this difference was significant in the case group ($P < 0.001$).

Table 1: Comparing the mean (standard deviation) of age, duration of living at nursing house, and the frequency (percent) of sex and marital status in the case and the control group

| Variable | Case group | Control group | Independent <i>t</i> test | |
|--|------------|---------------|---------------------------|----------|
| | | | <i>P</i> value | <i>t</i> |
| Age, Mean (SD) | 74.2 (7.7) | 72.6 (7.4) | 0.77 | 0.446 |
| Duration of living at nursing house, Mean (SD) | 2.2 (1.2) | 2.4 (1.3) | 0.74 | 0.46 |
| Sex, <i>n</i> (%) | | | <i>P</i> | χ^2 |
| Female | 16 (48.5) | 15 (44.1) | 0.621 | 0.244 |
| Male | 17 (51.5) | 19 (55.9) | | |
| Marital status, <i>n</i> (%) | | | | |
| Single | 3 (9.1) | 3 (8.8) | 0.33 | 3.43 |
| Married | 6 (18.2) | 11 (32.4) | | |
| Widowed | 23 (69.7) | 17 (50) | | |
| Divorced | 1 (3) | 3 (8.8) | | |
| Total | 33 (100) | 34 (100) | - | - |

In addition, independent *t*-test showed that the mean of changes in total score of general health of the case group 1 week and 1 month after the intervention compared to the score before the intervention was significantly more than the control group ($P < 0.001$).

Discussion

Results of this study confirmed the theory that need-oriented educational interventions have positive effects on general health of the elderly living at the Sadeghieh nursing home of Isfahan. In line with the results of the present study, Gharamani *et al.* in 2009, in their study titled “improving the quality of life of the elderly men living at Kahrizak nursing home based on educational intervention,” showed that educational intervention had a positive and significant effect on improvement of quality of life in elderly men ($P < 0.05$).^[21] With regard to the methods and results of this study, educational needs of the elderly were achieved by analyzing the quality of life questionnaire before the intervention, however, in the present study, need assessment was conducted by interviewing the participants, the managers and staff of the center; this method provides a more comprehensive view of educational needs as well as the problems of the residents of the nursing home. In addition, educational planning based on this type of assessment, because it is based on the needs of the target population and the subjects that they have declared they need, could have a more desirable effect on health improvement; however, in the study by Ghahramani *et al.* educational intervention had a positive and significant effect on the improvement of quality of life in the elderly men too. Also Ghahramani *et al.* only studied the elderly men but in the present study elderly women were included too and this could make the results more generalizable. However, in the present study, considering the differences between the needs of men and women, common needs that were confirmed by the elderly themselves were selected.

In the study of Mortazavi *et al.* in 2011 titled “the effect of regular physical exercise on mental health of the elderly

Table 2: Comparing the mean score of general health in different aspects between the case and the control group before and 1 week and 1 month after the intervention

| Time interval | Before the intervention | | 1 week after the intervention | | 1 month after the intervention | | Variance analysis with repeated observations | | | |
|--------------------|-------------------------|------------|-------------------------------|------------|--------------------------------|------------|--|----------------|----------|----------------|
| | Mean (SD) | | Mean (SD) | | Mean (SD) | | Case | | Control | |
| | Case | Control | Case | Control | Case | Control | <i>F</i> | <i>P</i> value | <i>F</i> | <i>P</i> value |
| Physical | 7.9 (2.6) | 7.2 (2.9) | 2.7 (1.8) | 7.7 (2.5) | 3.1 (1.6) | 8.1 (2.5) | 86.92 | <0.001 | 1.07 | 0.15 |
| Anxiety | 6.7 (2.5) | 5.7 (2.1) | 3.6 (1.08) | 6.05 (1.7) | 3.5 (1.1) | 6.5 (1.5) | 44.18 | <0.001 | 1.4 | 0.14 |
| Social functioning | 10.8 (1.9) | 10.5 (1.9) | 6.8 (1.1) | 10.7 (1.7) | 7.1 (1.04) | 11.3 (1.3) | 77.53 | <0.001 | 1.67 | 0.1 |
| Depression | 4.8 (2.7) | 5.7 (2.4) | 2.4 (1.9) | 5.8 (2.4) | 2.4 (1.8) | 6.3 (2.1) | 22.96 | <0.001 | 1.32 | 0.12 |
| General health | 30.2 (7.9) | 29 (6.7) | 15.6 (3.5) | 30.3 (5.8) | 16 (3.7) | 32.2 (5) | 106.12 | <0.001 | 2.48 | 0.09 |

Table 3: Comparing the mean score of general health between the case and the control group before and 1 week and 1 month after the intervention

| Time interval | Mean (SD) | | | | Independent <i>t</i> test | |
|--------------------------------|------------|-----|---------------|-----|---------------------------|----------------|
| | Case group | | Control group | | <i>t</i> | <i>P</i> value |
| Before the intervention | 30.2 | 7.9 | 29 | 6.7 | 0.64 | 0.52 |
| 1 week after the intervention | 15.6 | 3.5 | 30.3 | 5.8 | 12.4 | <0.001 |
| 1 month after the intervention | 16 | 3.7 | 32.2 | 5 | 14.9 | <0.001 |

of Shahrekord” results showed a significant reduction in the score of general health after the intervention in the case group compared to their score before the intervention. On the other hand, Mortazavi *et al.* in their study showed that, although physical exercise had a positive effect on the mental health, it was not effective on anxiety, depression, and stress.^[22] The present study was specifically conducted on the residents of the nursing home, and the educational intervention included both physical exercises and lectures and discussions regarding their pre-determined needs and health problems, and results showed that need-oriented educational intervention could affect all the aspects of general health toward improvement. As it was mentioned before, a trainer nurse, by evaluating the educational needs of the target population in different aspects of health including physical, mental, and social would prepare a special educational protocol for individuals considering their facilities and conditions, and therefore, it could be said that the odds of reaching desirable results are higher. Moreover, it could be said that, in the present study, conducting physical exercises in groups and providing a place and time for the elderly to have more social interaction with each other could have been effective on their mental health.

In the study by Yumin *et al.* in 2011 titled “the effect of functional mobility and balance on the health-related quality of life in the elderly living at home and living at nursing homes in Turkey,” results showed that balanced training in elderly care and rehabilitation programs could improve functional independence and increase health-related quality of life.^[23] According to the results of this study, it could also be said that regular physical exercise has a positive effect on enhancement of physical functioning, and consequently improvement health level in every aspect, i.e., physical, mental, and social. As shown in the present study, educational intervention, of which physical exercise was an important part of it, could have improved the level of general health in the elderly in its all the four fields. On the other hand, these physical exercises were simple and practicable moves for the elderly that were chosen from the physical exercises recommended by ministry of health and mentioned in guidebooks for improving healthy lifestyle in old age, as well as by the instructions of a physical education specialist. Furthermore, practicing physical

exercises in groups, due to their entertaining atmosphere, would give the elderly more motivation for taking part in physical activities.

Clark *et al.*, in 2011, conducted a clinical trial in America titled “the effect of lifestyle interventions on the health improvement of seniors living independently.” The results revealed that the case group showed more desirable changes than the control group regarding their scores of pain, vital signs, social functioning, mental health, satisfaction with life, and depression symptoms. Therefore, it could be concluded from the results that, since this program is cost-effective and applicable on a large population, by performing such programs physical and mental health of the elderly could be improved.^[24] Results of the present study showed that group interventions could have improved health level and quality of life in the elderly.

As mentioned before, moving to a nursing home is considered as one of the most stressful events of an individual’s life.^[6] Many studies have shown that living environment of the elderly is an important and effective factor in their health and longevity. Many studies have revealed higher levels of mental health among the elderly living with their families compared to those living in nursing homes.^[25] Momeni in their study reported that the mean score of general health of the elderly residents of nursing homes in all the 4 subscales was higher than those who were living among the community.^[9] In addition, Ghasemi in their study revealed that the mean score of quality of life in the elderly living with their families was higher than those living at nursing homes.^[15]

Conclusion

According to the results of the present study, it could be said that training based on need assessment from the target population, because it evaluated all the health aspects including physical, mental and social, and educational program has been designed based on that could have more effect than usual training. Therefore, need-oriented education, which is one of the most important roles of community health nursing, could be one of the effective, safe, and inexpensive methods for improving the general health and preventing the complications of senescence and diseases of the old age among the residents of nursing homes.

Acknowledgement

This article was derived from a master thesis of *Elaheh Zare* with project number: 393159, Isfahan university of medical sciences, Isfahan, Iran. The researcher would like to thank all the employees and elderlies of Sadeghiyeh nursing home of Isfahan.

Financial support and sponsorship

Isfahan University of Medical Sciences, Isfahan, Iran.

Conflicts of interest

There are no conflicts of interest

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