

The effect of community health nurse home visit on self-care self-efficacy of the elderly living in selected Falavarjan villages in Iran in 2010

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ABSTRACT

Background: Perceived self-efficacy is a strong predictor for behavior. Considering the importance of health-promoting self-care behaviors in increasing quality of life in the elderly, this study was aimed at defining the effect of nurse home visits on self-care self-efficacy of the elderly in rural areas.

Materials and Methods: This is a pre and post quasi-experimental study conducted on 33 older adults randomly selected from five villages in Falavarjan province in Iran. Intervention program was in the direction of self-care self-efficacy in four domains including nutrition, health practice, physical activity, and well-being in the form of five home visit programs and one group session by a nurse during 6 weeks, and included two different sections of education and nursing interventions administered based on needs assessment and determination of the tasks for the clients and their families. Theoretical framework of this study was supported by Bandura's self-efficacy, Orem's self-care theory, and Pender's revised health promotion model. The data were collected by self-care self-efficacy and demographic information questionnaire before and after the intervention. Data were analyzed by descriptive statistics and paired *t*-test.

Results: The mean elderly score in the four aforementioned domains increased after the home visit program. A significant difference was seen in the mean total scores of self-care self-efficacy and its subscales by paired *t*-test before and after intervention ($P < 0.001$).

Conclusions: It was observed that home visit program, integrated with the theories, had a positive influence on improving self-care self-efficacy of the elderly, and was supported by Bandura's theory of self-efficacy suggesting four sources of performance accomplishment, vicarious experience, verbal persuasion, and emotional arousal. With regard to the importance of self-care behavior in health promotion of the elderly, multifaceted low-cost interventions with the highest effect seem essential.

Key words: Community health nursing, elderly, home visit, Iran, self-care, self-efficacy

INTRODUCTION

The second half of the 20th century faced a phenomenon called "gray population."^[1] World's population of the elderly will increase to 3.5-folds by the year of 2050, mostly in developing countries.^[2] Iranian population has been aging rapidly over the past two decades.^[3] The consequences of elderly population growth, influencing resources of health and medical treatment, are important in Iran and rest of the world.^[4] The most important challenge in providing medical care for older adults is their reduced functional capacity resulting in their dependence on their families and friends.^[1] Many individuals experience some degree of self-care problems^[5]

and need care and obedience of an effective care pattern to prevent accidents.^[6]

Self-care had been ignored in the profession of the caregivers, but has reemerged as a positive idea, derived from health, and competes with professional care.^[7] Self-care practices lead to self-esteem and a feeling of comfort and accomplishment among the elderly,^[8] and has desirable effects on their quality of life.^[9] The term self-care has been influenced by nursing approach to the concept of health promotion.^[7] Health promotion is not a new term,^[5] and with regard to people's longer life, health promotion behaviors become even more important, particularly in maintaining functional autonomy and improving the quality of life.^[9] Health promotion self-care activities include nutrition, physical activity, well-being, and accountability for health functions.^[10]

Adequate nutrition is an essential component to preserve independence of the elderly, but unfortunately, the prevalence of malnutrition among the elderly is

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considerable.^[11] Their quality of life increases by physical activities,^[12] but only one-fifth of the elderly have enough physical activity.^[13] Many elderly do not coordinate with their body messages and have little or no knowledge about their health status.^[14] Generally, health expectations have been known to be associated with chronological age, which means they do not seek health care.^[15]

According to Bandura's social cognitive theory, the adjustment of health promotion behavior depends on self-efficacy, i.e., individual's belief of being capable of performing a specific behavior appropriately. In other words, individuals with stronger self-efficacy are more likely to be engaged in healthy behaviors, to maintain them, and to recover after setbacks.^[16] Self-efficacy contains many health promotion theories.^[17] A significant association has been reported between perceived self-efficacy and health promotion lifestyle.^[18] In a study, the researcher investigated the association between elderly self-care self-efficacy (namely, the elderly's beliefs in their personal abilities to perform necessary self-care behaviors successfully in order to achieve health) and their basic background factors, and reported a significant association.^[10]

Many elderly have self-care ability which should result in self-care practices to maintain and promote health and well-being.^[19] Community health nurses play a key role in promotion of elderly self-care and health in the community setting,^[10] and taking care of the elderly in the community is one of the challenging tasks.^[9] The goal of elderly nursing is to maintain their maximum independence and personality.^[20] The elderly prefer to live independently in their own homes,^[11] but there are lots of problems in the family with elderly.^[21] This group is in real need for long-term nursing care, which indicates home health care services.^[22]

Nurses are the largest group of professional health care service providers in the home setting, with various home visit programs for the elderly.^[23] In the home setting, clients' convenience, better implementation of nursing process,^[24] and a holistic image of the entire factors influencing health are present.^[25] Goals and the viewpoints of both sides are achieved based on reciprocal cooperation of community health nurses, families, and the elderly.^[26] Community health nurses should share in provision of a safe health care which includes cost-effective care in a home setting for the elderly^[23] as they have the best function in a familiar setting.^[20]

Concept of self-efficacy is a predictor for healthy behaviors, so nurses can implement the interventions improving self-efficacy.^[18] The elderly can be helped through concentration on four sources of self-efficacy consisting of performance accomplishments, vicarious learning, verbal

encouragement, and physiological and affective states.^[13] The elderly of low social class, such as rural older adults, should be addressed by community-based programs since they lack basic background factors like adequate income, appropriate insurance, or education influencing the self-care self-efficacy, and the nurses should focus on other factors enhancing self-efficacy.^[10] Rural population of the elderly is more compared to the urban area in Iran, while the life expectancy is less.^[3] Therefore, the researcher, as a nurse, decided to implement a home visit program, designed based on sources influencing self-efficacy to establish an interaction among nurses, the elderly, and their families, and ultimately investigate the effects of this intervention on elderly self-care self-efficacy as a strong predictor for self-care behaviors.

MATERIALS AND METHODS

This is a pre and post quasi-experimental study conducted to determine the effect of home visit on self-care self-efficacy of the elderly residing in selected villages of Falavarjan in the four domains of responsible health practices, nutrition, physical activity, and well-being. In other words, this study investigated the self-efficacy or belief in elderly's ability to successfully perform self-care in four subscales and was designed based on the hypothesis that score of self-care self-efficacy differs before and after intervention.

Research setting comprised villages of Falavarjan in Iran, and the population of the study consisted of older adults aged 60-75 years. To calculate the sample size, sample size formula was adopted. Instead of mean differences, d was considered as the least mean difference of self-efficacy self-care before and after intervention, showing a significant difference in the equation, and s was considered 0.5 as half of SD which yielded the sample size.

Power analysis based on $P = 0.80$ and $\alpha = 0.05$ was used to determine the appropriate sample size needed. The power analysis determined 32 subjects needed to decrease the risk of type II error. In the present study, the number of subjects was calculated to be 32, and with regard to estimation of 20% for subjects' drop, finally, 38 subjects were recruited for the study. As the most effective number of the subjects for a group work focused on health changes is 8-12 people, and one of the research sessions had to be established as a group meeting, about 7-8 subjects were recruited from each village. With regard to the sample size, firstly five villages with health centers were selected by cluster sampling from a total of 44 villages; then, seven or eight subjects were selected by systematic sampling from each of them. The research goals and method were explained to the participants through phone calls, and then, by referring to the subjects' houses. After obtaining subjects'

verbal consents to participate in the study, the first home visit was coordinated. Researcher referred to every village twice a week to determine a time (from morning to noon), according to the subjects' daily program, to conduct the home visit.

The research data collection tool was a questionnaire containing two sections of demographic data with 14 questions and a self-care self-efficacy questionnaire (a modified Self-Rated Abilities for Health Practice scale) with 28 five-point Likert scale questions to measure the four dimensions of health self-efficacy, including nutrition (seven items), health practices (seven items), psychological well-being (seven items), and exercise, which was modified in the present study as physical activity (seven items). With regard to scoring the questions, score zero was assigned to the first choice "never," and score 4 was assigned to the last choice "always." The range of scores for every item varied from 0 to 4, for every dimension from 0 to 28, and the total score ranged 0-112. High validity and reliability had been reported for this scale in the past studies. Callghan (2005) reported Cronbach's alpha for the scale and its subscales, ranging from 0.82 to 0.94.^[10] In the present study, the questionnaire was modified based on content validity confirmed through consultation with 10 experts and professors. The reliability of the questionnaire had been confirmed by test-retest in a pilot study before the study began. Pearson correlation coefficient for the scale was obtained as 0.88; for nutrition domain, 0.96; for well-being domain, 0.89; for physical activity domain, 0.75; and for health practices domain, it was 0.81. Cronbach's alpha was also calculated as 0.92. The questionnaire was completed by the researcher's interview with the subjects in their houses before and after intervention during 6 weeks.

Every subject was given five home visits in six straight weeks by a nurse. One group meeting was held for all the subjects of each village in the 5th week of intervention. Home visit intervention included two parts. The first part contained educational content about health promotion self-care behaviors in the four aforementioned domains. This part was the same for all subjects. In the second part, subjects' needs were assessed by the nurse, and then, the related nursing interventions were administrated based on subjects' needs. Home visits' schedule has been presented in Table 1. The average length of every home visit was about 45 min, and the visits were conducted in five steps.

At the first step of the first session which was different from the other sessions, the nurse's and the elderly's duties and the level of expectations were determined, and a verbal agreement on home visit was made between the nurse and the subjects. Then, a written consent was obtained and the questionnaire was filled.

Table 1: Schedule of home visits

Sitting	Intervention	Issue
One	Home visit	Responsible health practices
Tow	Home visit	Nutrition
Three	Home visit	Physical activity
Four	Home visit	Well-being
Five	Group meeting	Experiences expressed by the sample
Six	Home visit	Final phase of home visit

In the second step, a two-part educational content was presented. The first part explained the importance of behaviors and the second part discussed the appropriate behavior for each domain. The content was educated face to face with subjects' active participation, as well as illustrations and examples. The subjects expressed their concerns and reasons for their disobedience concerning some items.

In the third step, a researcher made needs assessment list including important behaviors of each domain and the outcomes due to not doing them, which was ticked by questioning the elderly and observation of their behavior.

In the fourth step, with regard to needs assessment of self-care domains, nurses' duty included education of diseases or drug complications, responding to patients' questions, monitoring fast blood sugar and 2 hpp (blood suger 2 heure after eating food), checking blood pressure, preparing essential information card for the subject, coordinating with the physician for subjects' future visits, coordinating with the family to help the client, and other issues were defined, recorded, and administered. The nurse or the researcher undertook various roles including patients' education, referral, coordination, family conference, counseling, follow-up, and offering primary health care based on the subjects' needs during the home visit.

In the fifth step, a duty concerning having and experiencing a specific behavior was assigned for the subjects based on the needs assessment. If the family members were available at the time of intervention or whenever the elderly needed them, some duties concerning health care were determined to help or protect the elderly by the researcher. For example, the subject had to accomplish annual examination or checkup. The subjects sometimes had to perform simple behaviors such as drinking a glass of water to cope with their constipation, increasing the amount of consumed fluids and recording that on a tally, and/or the family members were asked to modify the elderly life environment.

As mentioned before, the first step of the first session was different from the other sessions. In the second to the sixth sessions, the researcher checked the already determined

subjects' duties (in the fifth step of the first session and other sessions), and in case of subjects' positive response, gave them a positive feedback in the form of verbal encouragement, and in case of a negative response, the reason was investigated and modified and doing the duties was followed up.

Group meeting was held in the village health center or mosque in the 5th week and the subjects stated their positive experiences concerning health behaviors performed during this program or their past experiences. The nurse or the researcher directed the group meeting and played the role of a leader, starter, coordinator, and information presenter of the sessions.

In the sixth session of the first step like other sessions, the researcher assessed the subjects concerning doing their duties; then, the last step of home visit (evaluation) was administered. The success in achieving the goal of home visit which was involving the clients in self-care was evaluated based on reviewing the behaviors and the observed results in subjects' participation in the project which had been recorded at the bottom of needs assessment paper. During this review, the obtained results were interpreted and subjects' positive behaviors were encouraged by the researcher. Finally, self-care self-efficacy questionnaire was again filled.

All the interventions had been designed based on home visit process and to increase the induction styles of four sources of self-care self-efficacy as well as Bandura's self-efficacy, Orem's self-care theory, and Pender's revised health promotion model.

Determination of subjects' duties was performed based on home visit process and Orem's self-care theory. According to this theory, in the present study, the nurse investigated universal self-care requisites, the health deviation self-care, and educational system and partly compensatory system which was self-care education, or in cases when the subjects were not able to practice self-care (checking blood pressure or blood sugar), the nurse conducted the self-care. The manner of implication of self-efficacy enhancement resources in home visit program has been briefly presented in Table 2. The actions through which information resources were operationalized to enhance the self-efficacy as an intervention in home visits steps have been briefly presented in table 2 briefly. Pender's revised health promotion model was utilized to enhance self-efficacy and other issues such as not imposing fear or threat in education.

RESULTS

Of the total 38 selected subjects, 5 subjects were excluded due to load of work, frequent visits to the dentist, and

Table 2: How information resources to enhance the self-efficacy have been operationalized as an intervention in the home visits steps

Intervention (Step number)	Resources to enhance self-efficacy
Teaching correct behavior (Step 2)	Performance accomplishments
Self-instructed (Step 2)	
Revising of needs assessment list (Step 3)	
Relegating duty to participant (Step 5)	Verbal encouragement
Stating importance of behaviors and interpreting them (Step 2)	
Verbal encouragement for duty preferment (step 1)	
Used family members as effective persons (step 5)	Vicarious learning
Referring to physician (step 3)	
Providing pictures and examples in instruction (Step 1)	
Stating positive experiment s in meeting group (sitting 2)	Physiological and affective states
Attending to participant's tendency for relegating duty (Step 5)	
Encouraging participant to state concern about performing cares (Step 2)	
Teaching behaviors to obtain well-being feeling	

a mental disease. The mean age of 33 subjects was 66.82 years (4.647).

The most prevalent demographic characteristics of the subjects were 78.8% females, 60.6% married, 75.8% housewives, and 63.6% illiterates. Social security for 54.5% of the subjects was medical insurance. About 97% of the subjects suffered from a chronic disease, of whom 66.7% suffered from more of one chronic disease. The mean years of suffering from the disease was 9.953 (8.185). About 45.5% of the elderly lived with their spouses and with no children. About 66.7% of the subjects had a permanent source of income. The mean, standard division, and minimum and maximum of subjects' self-efficacy scores as well as their total scores in the four domains before and after intervention have been presented in Table 3. As seen in the table, subjects' mean total self-efficacy score and its subscales increased after home visit program. Paired *t*-test showed a significant difference ($P < 0.001$).

DISCUSSION

Self-care in the elderly is of high importance and is essential for health promotion.^[26] In the present study, health promotion self-care behaviors such as nutrition, physical activity, well-being, and responsible health practices were investigated.^[10] Multiple factors influence utilization of

Table 3: Average elderly's scores in self-care self-efficacy before and after intervention

Variables	M		SD		Minimum scores		Maximum scores		df	t	P
	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention			
Physical activity	15.6	23.7	4.9	3.5	6	12	24	28	32	10.519	<0.001
Nutrition	14.9	23.9	4.3	3.1	5	13	23	27	32	11.940	<0.001
Physical activity	16.9	24.7	4.8	3	6	14	26	28	32	9.131	<0.001
Well-being	13.8	21.8	5.8	4.1	2	7	24	28	32	10.341	<0.001
Total	61.3	94.3	16.1	11.4	27	46	87	111	32	10.034	<0.001

health promotion behaviors in older adults.^[27] One of the factors that has a significant relationship with self-care and health promotion and is also a predictor to perform them is self-efficacy.^[17,27,28]

The present study showed that using resources of self-efficacy in a home visit program has positive effects on perceived self-efficacy of the elderly to practice health promotion self-care behaviors in the four dimensions of nutrition, physical activity, well-being, and responsible health practices. The total mean of elderly self-efficacy was 61.3 before the home visit program, which increased to 94.3, and the research hypothesis was accepted. Huang and Acton's study (2004) supports the findings of the present study. They investigated the effect of home visit on Taiwanese older adults' fall self-efficacy concerning their self-confidence to prevent falls and reported a significant improvement in the study group compared to controls ($P < 0.01$). Despite obtaining similar results in the aforementioned study and the present study, home visit process and the number of sessions were different.^[29]

In the present study, the researcher observed that many subjects, in the expression of their positive experiences and successful behavior, claimed to have done most of routine (simple) self-care during this project for the first time in their life.

Pariser' study (2003) supports this result. In that study, the collected qualitative questions showed that his intervention had helped many of the subjects to begin an exercise program for the first time. He studied the effect of phone intervention on arthritis self-efficacy in older adults with arthritis. In this study, scores of self-efficacy increased significantly ($P < 0.01$) 6 weeks after the intervention, but this increase was not significant between groups. In this study, the researcher also used four information sources including performance accomplishments, vicarious learning, verbal encouragement, and physiological and affective states, to enhancement of self-efficacy through telephone calls.^[30]

Akhavan's research results do not support the present study results. This study also focused on sources of self-efficacy to increase self-efficacy and used dyadic intervention, accompanying older adults with those with similar experience after total joint replacement operation. Unlike the present study, Akhavan's results indicated that intervention had no significant effect on expectation self-efficacy ($P = 0.94$) and rehabilitation self-efficacy ($P = 0.95$).^[31] In the present study, vicarious learning was used in the sessions and through education with the help of examples and pictures about similar people with equivalent problems and their manner of dealing with the problem in them. However, in Akhavan's study, a difference was seen in vicarious learning between experimental and control groups. The subjects in experimental group always communicated with their counterparts through telephone or visits and acted as a friend. In this study, compared to the present study, vicarious learning was more used and highlighted, and was more observable.

Effects of other interventions on increase of self-efficacy in older adults have been investigated in other dimensions too. The effect of an educational video on falls self-efficacy was studied by Maxwell (2006) in three groups including two experimental and one control group. The only significant increase in the studied variables and in all groups was for self-efficacy score ($P < 0.02$), but in this study, like Pariser' study, there was no significant difference ($P < 0.72$) between experimental and control groups.^[32]

To the best knowledge of the researchers, no study comparing the effect of present study intervention with other interventions on self-care self-efficacy was found. Callaghan (2005) used the instrument of the present study to investigate the relationship between health promotion self-care behaviors, self-care self-efficacy, and self-care agency with basic background conditioning factors in older adults. This study showed that there was a significant relationship between basic background conditioning factors in older adults and health promotion self-care behaviors, self-care self-efficacy, and self-care agency ($P < 0.05$). Callaghan stated that her

two main results (the relationship between adequate income and sufficient insurance with health promotion behaviors, self-efficacy beliefs, and the ability for self-care) cannot be ignored. She believes that community health nurses have to develop the interventions, increasing self-efficacy and health promotion in older adults.^[10]

The main result of the present study is that home visit intervention, integrated with Bandura's self-efficacy and Orem's self-care theory and Pender's revised health promotion model, had a positive effect on elderly self-efficacy promotion leading to self-care behaviors in the direction of health promotion. The present study also supports Bandura's self-efficacy theory indicating the increase of self-efficacy based on four major sources of information: Performance accomplishments, vicarious learning, verbal encouragement, and physiological and affective states.

Morowati *et al.* (2006), with help of the same data collection instrument as the present study, showed a significant relationship between self-care self-efficacy and health promotion behaviors of Iranian older adults ($P < 0.01$), and suggested that self-efficacy score is a significant predictor for health promotion behaviors.^[28] According to their results and Bandura's theory, when the elderly self-efficacy increases in these domains, they are expected to practice health promotion self-care behaviors more, and consequently, promote their quality of life and well-being.

In all aforementioned clinical trial studies, there was a control group that the difference in self-efficacy between experimental and control groups was controversial as in some of these studies, this difference has not been reported to be significant between experimental and control groups. This was one of the limitations of the present study.

Conducting the intervention just in selected villages of Falavarjan, Iran, with a small sample size can be a limitation to generalize the results. The researcher suggests conducting a study with a greater sample size of the elderly living in urban areas and in other locations.

CONCLUSION

Preventive programs for the elderly, with low cost of efficacy, are not only important to preserve their dignity and respect but also to promote their quality of life in their families and the community. Therefore, with regard to the increase of older adult population in the Iranian community, multifaceted low-cost and effective interventions are essential to facilitate our achievement of this goal. After all, the obtained results of the present study showed that nursing interventions in the form of home visits and based

on nursing and learning theories seem to have a positive influence on self-efficacy of the older adults to perform health promotion self-care behaviors.

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