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Original Article

The Effect of Teaching Fundamentals of Geriatric Life on Nurses' Knowledge and Attitudes toward Aging

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Introduction: Nurses are always involved with caring for elderly patients. They need to increase their knowledge and skills in the field of aging to provide effective care to elderly patients. Moreover, attitudes of nurses affect the quality of care for elderly people. Some interventions such as education are effective tools for improving nurses' knowledge and attitudes to better understand the problems of the elderly. The present study aims at determining the effect of teaching fundamentals of geriatric life on nurses' knowledge and attitudes toward aging.

Methods: This was a quasi-experimental, pretest-posttest with control group study. It was performed on 91 nurses working in Meybod (44 nurses) and Ardakan Hospitals (47 nurses). Training sessions on fundamentals of geriatric life were conducted for the experimental group. The training program consisted of five training sessions in the field of geriatrics . Data collection instruments included: Palmore's Facts on Aging Quiz, and Kogan's Attitude Toward Older People Scale, which were completed three times before, immediately after, and two months after the intervention for both groups.

Results: There was no significant difference in knowledge between the two groups before the intervention ($p = 0.792$). Yet, the knowledge score immediately and two months after the intervention showed a significant difference between the experimental and control groups ($p < 0.01$). The mean score of attitude before intervention was no significant difference between groups ($p = 0.069$). However, there was a significant difference in attitude score immediately and two months after the intervention between the experimental and control groups ($p < 0.01$).

Conclusion: Teaching fundamentals of geriatric nursing to nurses improved their knowledge and attitudes toward the problems and needs of the elderls. Using retraining courses in the field of aging is recommended for nurses.

Keywords: Education, Knowledge, Attitude, Patient, Aged, Nurses

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Introduction

Aging entails problems and consequences and its impact on various social and economic dimensions, including the resources of the health sector is of great importance (1, 2). This is because the needs of the elderly people for hospital services are higher than other age groups (3, 4). In many countries, the population growth of people over 60 is higher than other age groups; thus, it is important to pay attention to the needs of this group as the largest group receiving health services (5, 6).

Nurses are a group of healthcare providers who provide the most direct care for the elderly people and are in direct contact with this vulnerable group. They play a very important role in caring for and responding to the needs of the seniors, including provision of physical care and emotional support in hospital settings (5, 7, 8). McKinlay et al. believed that due to the increase of the elderly's population in the years to come, caring for the elderly will be an important part of nurses' duties. Hence, it is necessary to fully understand the characteristics of this age group and base their needs on nursing interventions (9). This is because care of older adults requires qualified and skilled people. Studies have demonstrated that the lack of training for nurses reduces the quality of care for the elderly people leading to problems such as decubitus ulcers and nosocomial infections. This increases the length of hospital stay. As a result, it will increase costs for the elderly and the health care system (5, 10).

Although caring for elderly patients is an important part of nursing, it is influenced by many factors, one of which can be the knowledge and attitude of nurses toward caring for the elderly (9).

Attitude is a psychological tendency expressed by evaluating a particular entity with some degree of favor or disfavor. In addition, attitude has been defined as a mental reference which prepares the individual to react to a physical, social, and psychological stimulus (11). Attitudes can indirectly affect provision of services to the elderly people in such a way that a negative attitude might demotivate caregivers in providing the necessary care for elderly people (12-14).

In contrast, in order to provide effective care of older adults, nurses need to improve their knowledge, attitudes and skills in the field of aging. Awareness of changes regarding old age helps greatly to accelerate the process of improving and increasing the quality of services provided to this age group. Examining nurses' knowledge and awareness about the aging process can be a step toward determining their educational needs and planning to train people who are able to understand the needs of elderly people. It is suitable for those who have the ability to provide high quality care to this vulnerable group (15). Some interventions such as educating healthcare personnel can be an effective tool for improving their knowledge and attitude to better understand the problems of elderls and acquire a more positive attitude toward aging (14, 16). Staff training in hospitals is often suggested as a way to raise standards and ensure motivation and sustainability of the workforce (17, 18). According to Almquist et al.'s study, continuing education is an effective method for increasing the knowledge and attitude of employees in long-term care institutions and the first step in caring for the elderly. Factors influencing staff training to make changes in giving care to the elderly are related to the quality of training provided, individual's motivation, acceptance of changes and innovation, acceptance of the care environment, and their organizational context (14).

In general, there are problems such as the increase in the elderly's population in hospitals and the increasing need of this group for nursing services, and the numerous problems and issues that the elderly, their families, and the treatment team are facing following the elderly hospitalization. Therefore, this study aims to determine the effect of teaching the fundamentals of geriatric life to nurses on their knowledge and attitudes with regard to aging.

Methods

Study design and participants

This quasi-experimental study used a pretest-posttest design with a control group. It was performed in 2020 in hospitals affiliated with Shahid Sadoughi University of Medical Sciences in Yazd including: Imam Ja'far Sadeq Hospital, in Meybod, and Ziaei Hospital in Ardakan. The study population consisted of 102 employed nurses dealing with elderly patients' care in Meybod and Ardakan hospitals. One hospital was randomly assigned as the experimental group and the other hospital as the control group. The participants were selected by simple random sampling in each hospital .Thus, 51 nurses from Meybod Hospital were assigned to the experimental group to participate in the geriatric education program and 51 nurses from Ardakan Hospital were assigned to the control group. Inclusion criteria were: employment in the related wards of the elderly (including internal medicine, cardiology, dialysis, ICU, ICU), having at least 6 months of work experience in the wards, informed and voluntary consent to participate in the study, and with the age of less than 60. Nurses who had not been working for more than one month were excluded from the study. Regarding subject attrition, due to absence in more than one training session and not completing or delivering the questionnaire after entering the study, the experimental group lost seven, and the control group lost four participants. Finally, a total of 91 nurses including 44 nurses in the experimental group and 47 nurses in the control group participated in the study.

Instruments

The instruments used in this study included the Demographic Information Questionnaire, Palmore's Facts on Aging Quiz , and Kogan's Attitude toward Older People Scale.

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Demographic information questionnaire included age, gender, education, place of work, work experience, having an senior at home and in the family, and family relations to the elderly.

Palmore's Facts on Aging Quiz (19) was developed in 1977 to assess the knowledge and awareness of individuals regarding physical, psychological, social and economic aspects of the elderly's life, and misconceptions about old age. It includes 25 items in three dimensions including: knowledge about misconceptions of aging (10 items), physical condition (5 items) and psychosocial status (10 items). Answers are recorded as two options of "True" and "False". To score the questionnaire, "True" receives 1 point and "False" and "I do not know" receives zero point. The range of scores varies between 0 to 25, where in a higher score indicates better status of knowledge and awareness (19, 20). Validity and reliability of the Persian version of this questionnaire was approved by Reje et al. in Iran in 2012 with an average content validity index of 0.92, Cronbach's alpha coefficient of 0.81, and correlation coefficient of 0.91 (21).

The Kogan's Attitudes Toward Older People Scale was first developed by Kogan in 1961 to measure nurses' attitudes toward aging (22). This tool has been widely used in different languages (23-25) and consists of 34 items, 17 of which reflect a negative attitude and 17 reflect a positive attitude toward the aging. The possible responses was a 6-point Likert-type scale (strongly disagree = 1 to strongly agree = 1). To obtain the total score, the authors reversed points of negative items. The minimum possible score on this scale is 34 and the maximum is 238. Higher scores indicate a more positive attitude towards old age (26). Reje et al. confirmed validity and reliability of the Persian version, of this scale in Iran in 2012. The average index of content validity of the questionnaire was 0.95, Cronbach's alpha varied between 0.83 to 0.86, and the test-retest reliability coefficient was 0.90 (8, 27).

Intervention

To implement the intervention, which occurred before the occurrence of Covid-19 pandemic, researchers invited the selected nurses in the experimental group to participate in training sessions through a call for participation. The training program consisted of five 1-hour sessions per week. In each session, Power Point along with a video clip presentation was used. Subsequently, there was discussion for 15 minutes in small groups of 8-10 nurses. The topic of the sessions was selected in consultation with professors familiar with the field of geriatrics and using authoritative sources in the field of geriatrics and gerontology. Then, it was presented by a senior geriatric nurse. Content of training sessions was as follows:

Session 1: Familiarity with the goals of education, the physiology of aging, and the needs and physical and psychological problems of old age;

Session 2: Ways of communicating with older adults, identification and prevention of ill-treatment on the elderly;

Session 3: Ensuring of the environment used for the elderly people and paying attention to the needs and primary care of elderly people;

Session 4: Honoring and preserving the dignity of the of elderly people, and principles of confidentiality and privacy of elderly people;

Session 5: Dealing with the dying elderly and paying attention to the needs of the elderly's family. Before the implementation of the educational program, authors delivered the study questionnaires in person to the selected units of the study who volunteered for participation according to the work shift. Immediately after, and two month after the end of the training sessions, questionnaires were distributed and collected again from both groups.

Data Analysis

Data were analyzed with SPSS 16 using descriptive and inferential statistical methods. Quantitative data were reported as mean and standard deviation and qualitative data as frequency (percentage). Kolmogorov-Smirnov test was used to evaluate the normality of data distribution. Mann-Whitney test was used to compare the mean knowledge score between the two groups before the intervention due to non-normal distribution of data. Given the normal distribution of data, researchers used independent t-test to compare the mean knowledge score between the intervention and control groups immediately after, and two months after the intervention. Besides, independent t-test was used to assess the mean attitude score in both experimental and control groups. Friedman test was used to compare the knowledge scores of before, immediately after, and two months after training. The repeated measures test was used to compare the attitude scores of before, immediately after, and two months after training in both groups.

Ethical considerations

This study was approved by Bioethics Committee of Shahid Sadoughi University of Medical Sciences in Yazd with Code no.: IR.SSU.REC.1397.092. Moreover, after explaining the objectives of the research, the authors obtained informed consent from the participants.

Results

The mean age of participants was 35.6 ± 6.1 in the experimental and 36.1 ± 6.2 in the control group. The mean of work experience was 11.11 ± 6.07 in experimental and 11.59 ± 6.62 in the control group. No significant difference was observed between the two groups in term of work experience ($p > 0.05$). In addition, the two groups were not significantly different in terms of gender, level of education, place of work, having an elderly person at home or in the family, and family relations with older adults. (Table 1)

The mean score of knowledge was 12.43 ± 2.62 in the experimental and 12.76 ± 3.33 in the control groups before the intervention; there was no significant difference between the two groups ($p = 0.792$). The

mean score of knowledge was 14.22 ± 2.23 in the experimental and 12.55 ± 2.8 in the control group immediately after intervention. The mean score of knowledge in the experimental group was significantly higher than the control group (p = 0.002). Additionally, the mean knowledge score was 14.81 ± 2.06 in the experimental and 12.68 ± 2.66 in the control group two months after the intervention with a statistically significant difference (p < 0.001). Nonetheless, the mean scores of knowledge at these three times were not significantly different in the control group (p > 0.05) (Table 2). Based on other findings, there was no significant difference between the mean knowledge score before the intervention between the experimental and control groups (p = 0.792); however, there was a significant difference in the mean knowledge score immediately after intervention (p = 0.002) and two months after the intervention between the experimental and control groups (p < 0.001). Comparison of the mean knowledge scores in the experimental group at the three times of before, immediately after, and two months after the intervention demonstrated a significant difference (p < 0.001). Nevertheless, in the control group, the mean scores of knowledge at these three times were not significantly different (Table 2).

Other findings indicated that the mean attitude score before the training course was not significantly different between the experimental and control groups (p = 0.069). However, a significant difference was found in the mean attitude score immediately after training (p < 0.001) and two months after training between the experimental and control groups (p = 0.020). Comparison of mean attitude scores in the experimental group at the three times of before, immediately after, and two months after the intervention revealed a significant difference (p < 0.05); yet, no significant difference was found in the mean attitude scores in the control group at these three times (p > 0.05) (Table 3).

Table 1. Comparing frequency distribution of demographic characteristics of participants in experimental and control groups

Groups	Variables	Experimental		Control		Chi-square test
		N	%	N	%	
Gender	Female	33	75	32	68	p > 0.05
	Male	11	25	15	32	
	Total	44	100	47	100	
Education level	BS	38	88.4	40	85	
	MSc	6	13.6	8	15	
	Total	44	100	47	100	
Employment ward	CCU	9	20.5	12	25.5	p > 0.05
	ICU	10	22.7	10	21.3	
	Dialysis	6	13.6	7	14.9	
	Heart	13	29.5	6	12.8	
	Internal	6	13.6	12	25.5	
	Total	44	100	47	100	
Having an elderly people at home or in the family	Yes	30	68.2	34	72.3	p > 0.05
	No	14	31.8	13	27.7	
	Total	44	100	47	100	
Family relations with elderly people	No relation	14	31.8	13	27.7	p > 0.05
	Father or mother	18	40.9	21	44.7	
	Grandfather or grandmother	11	25	10	21.3	
	Other relations	1	2.3	3	6.4	
	Total	44	100	47	100	

Table 2. Comparison of mean knowledge scores at three times of before, immediately after, and two months after intervention in the experimental and control groups

Groups	*Groups*				
	Experimental		Control		Independent Mann-Whitney test
	Mean	SD	Mean	SD	
Before intervention	12.93	4.82	12.76	3.33	p = 0.792
Immediately after intervention	14.22	2.23	12.55	2.80	p = 0.002
Two months after intervention	14.81	2.06	12.68	2.66	p < 0.001
Repeated measures test	p < 0.001		p = 0.06		

Table 3. Comparison of mean attitude scores at the three times of before, immediately after, and two months after the intervention in the experimental and control groups

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Time	*Groups*				
	Experimental		Control		Independent T-test
	Mean	SD	Mean	SD	
Before intervention	130.93	14.82	125.17	15	T = 1.84 p = 0.069
Immediately after intervention	135.56	10.5	123.65	16.34	T = 4.10 p < 0.001
Two months after intervention	132.27	18.29	123.68	16.26	T = 2.37 p = 0.020
Repeated measures test	p = 0.05		p = 0.312		

Discussion

This study investigated the effect of nurses' training on aging and related issues of aging regarding the knowledge and attitude of nurses in the two experimental and control groups before, immediately after, and two months after training. Participants in both groups were matched in terms of demographic variables of age, work experience, gender, level of education, place of work, having an elderly person at home and in the family, and the type of family relation with the elderly person. Based on the findings, the knowledge score of nurses in both groups was at a moderate or average level before the study. This indicates the need for training courses and the use of appropriate interventions in this field, especially since the hospitals under study were not teaching hospitals. Consistent with the findings of the present study, Ravanipour et al., (28), stated that the knowledge of the majority of nurses about the facts of old age was moderate in teaching hospitals in Bushehr. Nevertheless, inconsistent with the findings of the present study, Mohtashamy et al., (11), reported that the majority of nurses in selected hospitals of Tehran University of Medical Sciences had good knowledge of elderly care. In addition, Elebiary et al., (29) wrote that nurses in health centers in Saudi Arabia had a relatively good level of knowledge about the aging and geriatric care. Oyetunde et al., (30) stated that nurses had good knowledge about the aging process in Nigeria. Meanwhile, Frouzandeh et al., (27) reported that the level of awareness regarding the facts of old age was relatively low among caregivers in Tehran. Mellor et al., (31) showed that in Australia nurses lacked basic knowledge about aging process which could be due to the difference in the educational nature of the hospital, the questionnaire used, and the sample size. Other findings indicated that nurses' knowledge about aging increased immediately after participating in the training course on the fundamentals of aging. This increase continued two months after the intervention, and the differences were significant; however, no significant difference was found in the control group. Hence, the training course on the fundamentals of old age can be accompanied by increasing nurses' awareness about the aging and related issues, which is recommended for use regarding continuing education programs. Consistent with the findings of the current study, Almquist et al., (14) illustrated that in Florida, continuing education had been associated with increased knowledge of nursing staff and nursing assistants working in long-term care centers for elderly people (14). Richardson et al., (32) asserted that holding training courses improved knowledge and management of elderly's abuse in nurses, assistant nurses, and providers of social service for older adults. Nonetheless, Thomson et al., (33) wrote that knowledge of senility did not differ significantly before and after an educational program on the elderly's care in assistant nurses working in long-term care centers in Canada; this is not in line with the present study, which may be due to different levels of education in the study units and differences in the educational content.

According to other findings, attitude of nurses in the experimental and control groups was moderate or neutral before the intervention. This necessitates the use of appropriate interventions such as group discussion methods. Consistent with the results of the present study, Hamedanizadeh et al., demonstrated that nurses in inpatient wards of selected teaching hospitals of Tehran University of Medical Sciences had a neutral attitude toward providing physical care to the elderly patients (34). However, Özer et al., (16) in Turkey reported that nursing students had a positive attitude toward old age. Moreover, Artishedar et al., (13), in Zanjan wrote that most of the nurses in the surgical wards had a positive attitude toward the aging. This finding is not consistent with the results of the present study, which may be due to differences regarding the educational nature of the hospital, the questionnaire used, and the sample size.

Based on other findings, the attitude of the nurses in the experimental group improved immediately after intervention and two months after intervention, and the differences were significant. However, there was no difference in the control group, which indicates the positive effect of participating in the training course on the fundamentals of aging on the attitude of nurses participating in the study. Consistent with the findings of the present study, Goodridge et al., (35), in Canada claimed that curriculum had a positive effect on the attitude of nurses. Almquist et al., in Florida suggested that continuing education brought about desirable changes in the form of more positive attitudes of nursing staff and nursing assistants working in long-term nursing care centers (14). But Hajbagheri et al., (2), in Kashan stated that the implementation of a 10-day

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care program did not have any significant effect on nursing students' attitudes toward the aging, which is inconsistent with the findings of this research. This can be due to different levels of education and experiences of research units and the type of intervention used.

Conclusion

Nurses in healthcare have the most significant role in dealing with patients, especially elderly people. With the increase in the elderly's population, challenges and concerns about this age group as one of the largest groups receiving health care services has increased. According to the findings of this study, teaching the fundamentals of aging to nurses has raised their awareness of the problems and needs of elderly people and improved their attitudes about aging. Therefore, the use of retraining courses in the field of aging is recommended for nurses. It seems necessary to repeat this training program in order to maintain the impact of education on nurses' knowledge and attitudes. It is also necessary to use other training methods such as simulation and role-playing to achieve the highest level of knowledge and attitude.

Study limitations

Due to intensive workload of nurses participating in the training course, it was difficult to perform the study; therefore, this program was held in two courses. Meetings were scheduled between appointment times when nurses were less busy. In addition, the mental state of participants when completing the questionnaires was not under the control of the researcher.

Conflict of Interests

The authors declared no conflict of interest.

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Authors' contributions

In this study, except for Ms. A.D.T who participated only in the data analysis phase, other authors participated in the designing, implementation, analysis, and interpretation of the data and the compilation of the article. All authors read and approved the final version of the article.

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