Research Article ISSN 2639-9474

Nursing & Primary Care

The Effect of An Experiential Learning Strategies on Nursing Students' Knowledge and Attitudes Toward Older People in Taiwan

I-Ju Pan, R.N., Ph.D*

Department of Nursing, I-Shou University, No8, E-Da Road, Jiau-Shu Tsuen, Yan-Chau Shiang, Kaohsiung County, 824 Taiwan

***Correspondence:**
I-Ju Pan, Department of Nursing, I-Shou University, Yan-Chau Shiang, Taiwan, R.O.C, Tel: 886-7-6151100#7702; Fax: 86-7-6155150.

Received: 14 June 2019; **Accepted:** 01 July 2019

Citation: I-Ju Pan, R.N, Ph.D. The Effect of An Experiential Learning Strategies on Nursing Students' Knowledge and Attitudes Toward Older People in Taiwan. Nur Primary Care. 2019; 3(4): 1-6.

ABSTRACT

The aim of the study was to evaluate the effect of an experiential learning strategy on nursing students' attitudes towards and knowledge about older people compared to lectured-based learning in Taiwan. The study was a quasi-experimental design using pre-post tests with an experiential learning group and traditional lecture group (n = 58). Data were collected across three time points (baseline, week 16, and week 20). The results indicate no significant difference between groups in attitudes or knowledge with both groups having greater knowledge following the completion of their respective gerontological nursing subject. The absence of significant improvements by the experiential learning group in comparison to the traditional lecture group suggests the need for further development of the experiential program and refinement of the research design. The results of the study do however provide important insights into culturally appropriate educational strategies for improving attitudes toward and knowledge about older people.

Keywords

Experiential learning, Nursing students, Attitudes, Knowledge.

Introduction

Currently, one of the most important areas of concern in nursing education is in the care of older people. Gerontological nursing courses are not predominant in the development of gerontological nursing in Taiwan. A search of nursing education curricula in universities found that over the last ten years, gerontological nursing courses have become part of curricula, but remain as elective subjects in the majority of cases. Lecture based learning is the major teaching methodology and there is a lack of clinical experience with healthy older people in the community [1]. Moreover, in Taiwan, nurses in geriatric wards are often considered to be lacking in caring ability, less competent than colleagues in acute hospital settings, or in preparing for their own retirement [2]. Other issues influencing the low level of emphasis on gerontological nursing courses in Taiwan, includes deficiencies in the quantity and quality of understanding about older people, with the major focus of concern being on caring for ill, rather than well, older people [2].

Background

A number of studies support the notion that nurses and nursing students have been influenced by pessimistic views and hold negative attitudes toward older people [3-9] and have little knowledge about them [8,10-12]. In order to address these issues, many universities and colleges have offered gerontological education programs to prepare students to work with older people [1,10,13]. Exposure to gerontological content has been shown to modify stereotypical attitudes toward older people, instil knowledge, and develop skills [14-16]. Gerontological courses can assist nursing students to gain knowledge about older people, to increase students' commitment to anticipating the needs of older people, and to use their knowledge in new situations [17-24].

Attitudes toward older people

A number of studies support the values of gerontological nursing programs in improving both attitudes toward and knowledge about older people. O'Hanlon and Brookover [15] investigated 55 students enrolled in a gerontology course. They found that by using many classroom activities such as lectures, discussions, demonstrations, simulations, case studies, and examinations as well as an interview assignment with active and community-dwelling older people,

students' positive attitudinal change was achieved from pretest to posttest. Similar research design, Dorfman, Murty et al. [16] collected data over five semesters and examined attitudinal change in five successive cohorts of intergenerational service-learning students (n=59) enrolled in an introductory gerontology course. Using open-end questions and a pre-post test, positive attitudinal change at posttest was found across cohorts. These pretest-posttest studies evaluating education programs about older people found significant improvement in nurses' attitudes. Although significant improvements were found at posttest in all of these studies caution is needed in interpreting the findings as there was no comparison with an alternative or usual education group. While O'Hanlon and Brookover [15] study provided information about the type of classroom activities limited information was provided about the content of these programs or regarding the reliability of the outcome measures. A study by Kao [22] recruited 280 nursing students from a technical college, of which 142 and 138 students were assigned to the experimental and control group. Using the experiential learning model to design the teaching methods such as simulation game and reflective discussion, the researcher found that the students from experimental group had improved attitudes than the students from control group.

Knowledge about older people

Educational programs have also been found to improve knowledge about older people [20]. Such improvements demonstrate the effectiveness of a variety of teaching methods including traditional didactic lectures in combination with aspects of Kolb's experiential learning theory, a game on aging and workshops. Three of the studies used quasi-experimental design, while the absence of a control group in one pretest – posttest study limits the confidence in the findings. Two of the studies undertook longer term outcome measurement with one study demonstrating knowledge retention for at least 8 weeks (Bullard et al, 1996) and another indicating knowledge was not retained at 10 weeks (Moriello et al, 2005).

The experiential learning approach has been used in gerontological nursing courses to promote positive attitudes and increase nursing students' knowledge about older people. In this approach, the teacher interacts with students about a particular concept using a variety of activities which for gerontological courses might include exercises such as experience with older people, group discussion, journal writing, lecture, role play, simulation games, and skills practice in the laboratory [25]. While a few studies have documented evidence on the effectiveness of experiential learning approaches in improving attitudes toward and enhancing knowledge about older people [15,22,25] a few studies have been published on this approach in Taiwan. The purpose of this study was therefore to evaluate the effect of an experiential learning strategy on nursing students' attitudes towards and knowledge about older people compared to lectured-based learning in Taiwan.

Experiential learning Model

The Experiential Learning Cycle proposed by Kolb will be the conceptual framework for guiding the design of a gerontological nursing curriculum is. Kolb's [26] experiential learning model provides a conceptual framework for guiding the design of a gerontological nursing course and was used in the study reported in this thesis. Kolb's experiential learning model is a four-stage cycle. The stages are: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). The first stage in Kolb's model is concrete experience, which enables individuals to become immersed in actual situations [26]. By having contact with healthy older people, students can gain positive feedback and experience. Reflective observation of ideas and situations by carefully observing them from different perspectives, and impartially describing them, can facilitate students' understanding of their meaning [26]. Group discussion, journal writing, and debriefing could also be used to engage students at this stage. Abstract conceptualisation is used to develop explanations of what has been experienced; lecture and textbook readings might be used as teaching strategies at this stage. The last stage is active experimentation, active doing; simulation games, role play, and practice in the laboratory might be used as teaching strategies at this stage.

Method

Design

A quasi-experimental design using pre-post tests with an intervention and comparison group was selected for the study. The comparison group received traditional didactic teaching in the form of lectures. The experimental group had training with an experiential learning focus.

Research questions

Consistent with the aims of this study, the following primary research questions were asked:

- Does the use of an experiential learning approach in a selected gerontological nursing course improve students' attitudes toward older people when compared to the usual lecture-based approach?
- Does the use of an experiential learning approach in a selected gerontological nursing course improve students' knowledge about older people when compared to the usual lecture-based approach?

Sample

A total of 60 second year nursing students from a faculty of nursing in a private university located in Southern Taiwan agreed to participate in the study. All 60 students were randomly assigned into either the experiential-based learning or lecture-based learning groups. Two students participated only in the post-test in the control group. Thus, there were 58 students who had matched pre-and post-test results.

Instrument

Students' attitude toward older people were measured using Nolan et al.'s [27] instrument: Perceptions of Work with Older People (PWOP) which consists of 11 statements. The responses are on a 5-point Likert format that ranged from "strongly agree" to "strongly disagree". Cronbach's alpha coefficients were.73 for the total PWOP score, respectively.

Nolan's (2001) Knowledge of the Situation of Older People (KSOP) with the most up-to-date knowledge about the situation of older people in the Taiwan was used to measure students' knowledge about older people which contains 13 statements. The response format asked students to indicate whether a series of statistics about older people were "too high"," about right", or "too low". Cronbach's alpha coefficients were .63 for the total KSOP score, respectively. Two questionnaires were translated into Chinese.

Procedure

After obtaining university approval for this study, the principle investigator approached all eligible students and explained the purpose of the study and conditions for participation, and issued of anonymity and confidentiality. The consent forms were distributed and collected. Data were collected three times: the first class of the gerontological nursing course in week 1, the last class in week 16, and at the end of the students' clinical practice in week 20. Students were requested to complete the demographic information sheet and the PWOP and KSOP scales.

The teaching on gerontological nursing course was 32 hours over 16 weeks. The lecture-based learning (LBL) group engaged in a course composed of didactic lecture only. The experiential-based learning (EBL) group participated in a course composed variety of teaching methods included lectures, group discussions, visits to a Senior Apartment, journal writings, debriefings, a simulation game, and a role play. Utilising Kolb's experiential learning framework, the course design for EBL group was top reduce the didactic lecture time, increased the interaction between students and lecturer and introduced real life experiences with older people. Both groups covered the same study objectives and contents.

Data analysis

Data were analysed using SPSS 20.0 version at a significance level of 0.05. Each scale was identified using descriptive statistics. The t-test and chi-square were used to determine whether there were any significant differences between groups at baseline according to the level of measurement. Repeated measures analysis of variance was used to determine the effectiveness of the experiential learning approach and clinical practice on each of the dependent variables of attitudes and knowledge over time. Group (experiential-based learning versus lecture-based learning) was the between subject factor and time (pre-test, week 16, week 20) was the within subject factor.

Results

Sample

The mean age of the students in the experiential-based learning group was 19.83 (SD=.99) and ranged from 19-24 years. The mean age of students in the lecture-based learning group was 20.20 (SD=1.19) ranging from 19-23. Across both groups, the majority of nursing students were female (80%). The majority of students had graduated from general senior high school (73.3%). The majority of students (75%) acknowledged having contact with older people in their family. These students acknowledged having contact with older people at least occasionally (41.7%), and spent less than 30minutes (30%) with older people on each contact. The majority of students (65%) indicated that they had no older relative living with them and their family on a permanent basis. There was no difference between the LBL and EBL groups in these respects.

Attitudes towards older people

Table 1 shows the mean attitude scores for EBL group and LBL group at the three data points as measured by the PWOP scale. The repeated measures ANOVA revealed no interaction effect for time by group (F (2,112) = 2.66, p = .07). Similarly, there was no significant main effect for time (F (2,112) = .34, p = .71) or main effect for group (F (1,56) = 2.78, p = .10).

	Experiential-based learning (n=30)		Lecture-based learning (n=28)	
	Mean[a]	SD	Mean[a]	SD
Pre-test (Week 1)	38.67	4.02	38.75	3.92
Post-test (Week 16)	37.17	5.04	39.46	4.07
Post-test (Week 20)	37.23	4.30	39.43	3.77

Table 1: Mean PWOP scores for experiential-based learning group and lecture-based learning group.

[a] = Rang: 11-55

These results revealed that students' attitudes toward older people did not differ between the two groups of students. In addition, there was no change in attitudes following the completion of a gerontological nursing subject. Therefore, the hypothesis that students who received an experiential-based learning strategy would have more positive attitudes toward older people than students who received the usual lecture-based learning strategy was not supported.

Knowledge about older people

Table 2 shows the mean knowledge scores for the EBL group and LBL group at the three data points as measured by the Knowledge of Situation of Older People (KSOP) scale.

	Experiential-based learning (n=30)		Lecture-based learning (n=28)	
	Mean[a]	SD	Mean[a]	SD
Pre-test (Week 1)	7.30	2.82	7.64	2.11
Post-test (Week 16)	10.00	3.31	9.21	2.01
Post-test (Week 20)	10.40	3.39	10.29	2.98

Table 2: Mean KSOP scores over time for experiential-based learning group and lecture-based learning group.

[a] = Range: 0-13.

The repeated measures ANOVA revealed no interaction effect for time by group (F (2,112) = 1.02, p = .36). There was a significant main effect for time (F (2,112) = 28.09, p < .001). The data indicated that both groups improved their knowledge following the completion of the gerontological nursing subject. There was no main effect for group (F (1,56) = .10, p = .75).

The results from the study showed no statistically significant difference in scores for the KSOP for the EBL students when compared to the LBL group scores. Therefore, students in the EBL group would have a higher level of knowledge about older people than students in the usual LBL group. Contrary to expectations, both group of students improved their knowledge about older people.

Discussion

The results of this study are similar to some studies that also found that an experimental group did not have more positive attitudes or a higher level of knowledge after a gerontological nursing program [22,28-30]. However, the findings of the current study conflict with some other studies that did demonstrate more positive attitudes or a higher level of knowledge after a gerontological nursing program in an experimental group [14-16,31,32].

Students in both groups did increase their knowledge about older people. It appears that the content of the gerontological nursing program covered information that increased students' knowledge about older people in both the EBL and LBL groups. Although there was no statistical difference in attitudes toward older people between the two groups, in fact, students' attitudes in the EBL group became more negative with respect to their intention to work with older people. However, there are several possibilities related to the EBL program and research design that could explain why students' attitudes toward and knowledge did not change as expected.

Firstly, the examination culture in the study university may have influenced students' motivation to link their experience and theory. The exams take a certain form, and so students develop strategies they think are appropriate for dealing with them [33]. Studying hard, reading a required textbook, and listening to the lecture in the classroom are the common strategies to pass exams in Taiwan. Students in the EBL group did not see reading as the connection between their experience and understanding of meaning — because the examinations were only worth 20%. Without seeking the connection between experience and theoretical concepts, it is hard for students to achieve deep learning, which is associated with an interest in the learning task, searching for meaning in the task and integration of task aspects into a whole [34]. Therefore, as the students seemed to lack motivation to connect their experiences with theoretical concepts, it would be difficult for them to improve their attitudes toward older people.

Secondly, the previous studies demonstrated that experiential-based learning methods worked well in Western cultures and were well suited to overcoming the gap between classroom and real-world practice. Cultural values encourage students to learn by doing, participate in class, develop their own ideas, offer options in discussion, and even sometimes disagree with the teacher [35]. However, Akande [36] noted that learning is different across cultures. Cultural differences might explain limits to the use of experiential-based learning, since cultural issues may influence students' behaviour in the class. Students in the current study do not usually speak up and offer opinions in class; they are likely to feel shy or fear losing face in the class if their answer is wrong. Taiwan, as a Chinese culture, is a collectivist culture with a strong sense of belonging to a social group and a preference for working together in groups to solve problems [37]. Reticence and humility are highly valued, and Chinese culture is rooted in the Confucian tradition. The concept of face is important; students do not want to show off what they know nor do they want to lose face if their answers are not correct; also wasting other students' class time by expressing individual opinions is seen as selfish, issues attributed to the significance of face.

To the contrary, in experiential learning students should take responsibility for their own learning and should contribute to discussions and activities. However, in the traditional education system in the university of this study, learning in the subjects in the nursing faculty was more passive. From the teachers' perspective, they are responsible for telling students the right answers and providing them with the information and details that they think they need. Students expect the teacher to provide the information and correct answers to questions, as mentioned under the theme of learning preference. Students memorise any information, wherever it comes from, in order to pass every examination; they are not responsible for contributing to the development of an answer [35]; this is contrary to the concept of students being responsible for their own learning.

Thirdly, the activity of contact with older people has been shown to be beneficial by previous studies in western countries [14-16,31,32]. However, in Taiwan, the Asian values of Confucianism and filial piety have a positive influence on the intergenerational relations [38]. In the current study, the majority of students had contact with older people in their family. The students' contact with the older people, such as grandparents, was for a short time and therefore during this brief contact, the older people might dote on them. The students might not fully understand older people and what they think during such a short period of contact. That doting behaviour, on grandchildren by grandparents, could be the reason for the students' positive image of older people. Therefore, when students in EBL group had contact with older people in Senior Apartment for more than one hour in each visit to work with and complete an assignment, the negative aspects of these non-family older people may have become more salient to them. Thus, it is possible that this contact with non-family older people might have actually created the negative attitudes that the course had set out to combat.

Lastly, for the students in the LBL group, the lecture approach was the only teaching method used, mainly focused on students' conceptual understanding [39]. Although there were no other learning activities in the gerontological nursing content, didactic lecture-based learning may still have had a greater value in terms of gaining knowledge, especially as the Chinese culture regards the teacher as the provider of knowledge. Also, even for the students in the EBL group, the lecture approach was one of the range of teaching strategies used, so students could increase their

knowledge about older people through didactic lecture learning, which is consistent with past studies which found that formal didactic lectures were a effective way of transmitting knowledge about older people [40,41]. This could be why the students in LBL group increased their knowledge as well as those in the EBL group.

Limitation

Limitations about the generalizability of the findings need to be acknowledged. The research was conducted with a convenience sample in a private university located in southern Taiwan. It is only one of thirteen universities across Taiwan. The sample was comprised only of undergraduate nursing students, so vocational school, junior college, technological school, and graduate nursing students were not represented. Consequently, the results of the study can only be generalised to undergraduate nursing students, so the responses may not truly reflect all students studying nursing across Taiwan.

Although a rigorous research design was used to evaluate the intervention, the sample size was small. The PWOP and KSOP scales had been used only in cross-sectional research designs and the majority of previous studies on the effects of gerontological educational programs on attitudes and knowledge related to older people had used one-group, pre-test, post-test designs. Therefore, there were no similar previous studies to provide guidance for estimating sample size before conducting this study. Consequently, the power of the sample size could not be calculated before the study and the finite sample resulting may have been underpowered to detect the expected differences.

Conclusion

This was the first research of its kind to be done in a Taiwanese university; no published study has ever reported the introduction of experiential learning into an undergraduate nursing course. It therefore provides a contemporary description of student nurses' attitudes and knowledge about ageing, and highlights the need for gerontology to be a core subject in nursing curricula. Although the results were not expected, they can be explained from the perspectives of a stringent research design and the introduction of an innovative and progressive intervention. It was necessary to conduct this initial study to understand the students' reaction to it, and to explore how a student-centred learning approach could be integrated into nursing curricula. Based on the research findings, students showed that they quite enjoyed the experiential learning approach and found it helpful and practical. The study has provided many insights into how such a learning approach could be implemented into nursing education. Nursing academics are encouraged to learn more about experiential learning, as it is an appropriate approach to ensure that nurses of the future are well-prepared and interested in working with older people.

References

1. Wei LL. A study of knowledge about aging and attitudes toward the eldelry among nursing students. Nursing Research Taiwan. 1995; 3: 171-179.
2. Liou CA, Hsu XU. A study of the nurse's attitude toward the elderly and the related factors. Veterans Nursing. 1994; 11: 303-317.
3. Gellis ZD, Sherman S, Lawrance F. First year graduate social work students' knowledge of and attitude toward older adults. Educational Gerontology. 2003; 29: 1-16.
4. Paton RN, Bibhuti K. Sar, Beverly E. Holland, et al. Working with older persons student views and experiences. Educational Gerontology. 2001; 27: 169-183.
5. Demir G, Sevil Bicer, Betül Özen, et al. Attitudes of Nursing Students about Ageism and the Related Factors. International Journal of Caring Sciences. 2016; 9: 900-908.
6. Arani MM, Sanaz Aazami, Milad Azami, et al. Assessing attitudes toward elderly among nurses working in the city of Ilam. International Journal of Nursing Sciences. 2017; 311-313.
7. Abreu M, Caldevilla N. Attitudes toward aging in Portuguese nursing students Social and Behavioral Sciences. 2015; 171: 961-967.
8. Darling RM. Knowledge of Aging and Attitudes Toward Older People by Communication Sciences and Disorders Students. Contemporary Issues in Communication Science & Disorders. 2016; 43: 50-63.
9. Frost J, Ranse K, Grealish L. Assessing ageist behaviours in undergraduate nursing students using the Relating to Older People Evaluation ROPE survey. Australasian Journal on Ageing. 2016; 35: 58-61.
10. Fajemilehin BR. Attitudes of students in health professions toward caring for older people Need curricula revisions in Nigeria. Educational Gerontology. 2004; 30: 383-390.
11. Fitzgerald JT, Wray LA, Halter JB. et al. Relating medical students' knowledge, attitudes, and experience to an interest in geriatric medicine. The Gerontologist. 2003; 43: 849-855.
12. Faronbi JO, Olabisi Adebowale, Grace OluwatoyinFaronbi, et al. Perception knowledge and attitude of nursing students towards the care of older patients. International Journal of Africa Nursing Sciences. 2017; 7: 37-42.
13. Gorelik Y, Brooke Funderburk, David H. Solomon, et al. Undergraduate interest in aging is it affected by contact with older adults Educational Gerontology. 2000; 26: 626-638.
14. Wilkes L, LeMiere J. Caring for residents: The effects of education on staff attitude and knowledge in an aged care facility. Geriaction. 2001; 19: 15-21.
15. O'Hanlon AM, Brookover BC. Assessing changes in attitudes about aging personal reflections and a standardized measure. Educational Gerontology. 2002; 28: 711-725.
16. Dorfman LT, Susan A. Murty, Jerry G. Ingram, et al. Intergenerational service-learning in five cohorts of students Is attitude change robust. Educational Gerontology. 2004; 30: 39-55.
17. Alden J, Toth-Cohen S. Impact of an Educational Module on Occupational Therapists' Use of Elderspeak and Attitudes Toward Older Adults. Physical Occupational Therapy in Geriatrics. 2015; 33: 1-16.
18. Conti G, Bowers C, O'Connell MB, et al. Examining the effects of an experiential interprofessional education activity with older adults. Journal of Interprofessional Care. 2016; 30:

184-190.
19. Golden AG, Gammonley D, Hunt D, et al. The attitudes of graduate healthcare students toward older adults personal aging health care reform and interprofessional collaboration. Journal of Interprofessional Care. 2014; 28: 40-44.
20. Gray DL, Walker BA. The Effect of an Interprofessional Gerontology Course on Student Knowledge and Interest. Physical & Occupational Therapy in Geriatrics. 2015; 33: 103-117.
21. Halpin SN. Evaluating the Efficacy of a Short Aging Simulation Workshop for an Interdisciplinary Group of Health-care Employees at a Veterans Affairs Medical Center. Educational Gerontology. 2015; 41: 207-215.
22. Kao CC. Applications of the Kolb Experiential Learning Cycle to improve the attitude of nursing students toward older people. Macau Journal of Nursing. 2017; 16: 1-6.
23. Lau R, Willetts G, Hood K, et al. Development of self-efficacy of newly graduated registered nurses in an aged care program. Australasian Journal on Ageing. 2015; 34: 224-228.
24. Reicherter EA, McCombe Waller S. Professional Practice Opportunities Preparing Students to Care for an Aging Population. Journal of Physical Therapy Education. 2014; 28: 60-68.
25. Wood MD. Experiential learning for undergraduates A simulation about functional change and aging. Gerontology & Geriatrics Education. 2002; 23: 37-48.
26. Kolb DA. Experiential learning: experience as the source of learning and development. Englewood Cliffs NJ Prentice Hall. 1984.
27. Nolan M. AGEIN Project. School of Nursing and Midwifery Sheffield. 2011.
28. Moriello GR, Smey JW, Pescatello LS, et al. Influence of an educational intervention on pre-allied health students' attitudes toward older adults. Gerontology & Geriatrics Education. 2005. 25: 1-11.
29. Kline TJB, Kline DW. The association between education, experience, and performance on two knowledge of aging and elderly questionnaires. Educational Gerontology. 1991; 17: 355-361.
30. Bringle RG, Kremer JF. Evaluation of an intergenerational service-learning project for undergraduates. Educational Gerontology. 1993; 19: 407-415.
31. Bullard J. Geriatric nursing education: Using an innovative education approach. Journal of Nursing Staff Development. 1996; 12: 268-213.
32. Knapp JL, Stubblefield P. Assessing student's knowledge of the aging process. Education. 1998; 119: 135-141.
33. Kennedy P. Learning cultures and learning styles myth-understandings about adult Hong Kong Chinese students. International of Learning Education. 2002; 12: 430-445.
34. Nijhuis JFH, Segers MSR, Gijselaers WH. Influence of redesigning a learning environment on student perceptions and learning strategies. learning Environments Research. 2005; 8: 67-93.
35. Speece M. Experiential learning methods in Asian cultures A Singapore case study. Business Communication Quarterly. 2002; 65: 106-121.
36. Akande A. Towards the multicultural validation of a Western model of student approaches to learning. Education. 1998; 119: 37-47.
37. Gieve S, Clark R. The Chinese approach to learning Cultural trait or situated reponse. the case of a self-directed learning programme System. 2005; 33: 261-276.
38. Lin MC, Harwood J. Accommodation predictors of grandparent-grandchild relational solidarity in Taiwan. Journal of Social and Personal Relationships. 2003; 20: 537-563.
39. Ramsden P. Learning to teach in higher education. Teaching strategies for effective learning. New York RoutledgeFalmer. 2003.
40. Carmel S, Cwikel J, Galinsky D. Changes in knowledge, attitudes and work preference courses in gerontology among medical nursing and social work students. Educational Gerontology. 1992; 18: 329-342.
41. Angiullo L, Whitbourne SK, Powers C. The effects of intruction and experience on college students' attitudes toward the elderly. Educational Gerontology. 1996; 22: 483-495.