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The Effect of Role-Playing and Aged Simulation Suit on Empathy and Positive Attitude towards the Older-People

Rol Oynama ve Yaşlı Simülasyon Kıyafetinin Yaşlılara Karşı Empati ve Olumlu Tutum Üzerindeki Etkisi

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Abstract

Aim: The aim of this study was to determine the effect of role playing alone and role playing and simulation with aged simulation suit together on empathizing with the older people, and positive attitudes towards them among nursing and medical students.

Methods: The study was carried out in the pre-test post-test experimental design, with e participation of 64 nursing and medical students. All students were given a course on empathizing with the older people; and students were asked to fill out the Jefferson Scale of Empathy and Kogan's Attitude Towards Older People Scale. Then the experimental group used an aged simulation suit (n: 34). After putting on the aged simulation suit the students fulfilled a set of tasks that were focused on three scenarios related to activities of daily life (nutrition, physical activity, going to the bathroom, etc.). After completing the tasks, the students were asked to fill out the Jefferson Scale of Empathy and Kogan's Attitude Towards Older People Scale again. Later, in-depth interviews were held with students through a semi-structured interview form. The quantitative data were analyzed with IBM SPSS Statistics 25.0 (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.) and SAS software (Version 9.3; PROC MIXED SAS Institute, Cary, NC, USA). Qualitative data analysis was performed with MAXQDA software (version 12). Themes and codes were specified for content analysis. The Shapiro-Wilks test was conducted to examine the normal distribution of variables, and descriptive statistics, independent sample t test or Mann-Whitney U Test were utilized for data analyses. Statistical significance was accepted at $p<0.05$.

Keywords:
Older People, Empathy, Attitudes, Simulation, Role Playing

Anahtar sözcükler:
Yaşlı Bireyler, Empati, Tutum, Simülasyon, Rol Oynama

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Results: The mean empathy scores of both of the nursing and medical students differed between the experimental and control groups. The post-intervention scores significantly increased in both of the experimental and control groups compared to pre-intervention scores. The changes in the mean older people attitude scores of the students varied regarding the school and the study groups. a In the interviews the students expressed that they could feel the physical incapability of the older people with the aged simulation suit and they experienced the emotional aspect of empathy further in role playing. Students stated that positive changes might occur in their behavior towards the older people by the end of the course.
Conclusions: The findings of the study suggest that role playing alone and role playing, and aged simulation suit together support each other in terms of showing positive attitudes and empathic approach to the older people.

Özet
Amaç: *Bu çalışmanın amacı, hemşirelik ve tıp öğrencilerinde tek başına rol oynama ve rol oynama ile yaşlı simülasyon kıyafeti ile birlikte kullanılmasının yaşlılarla empati kurma ve onlara karşı olumlu tutum geliştirme üzerindeki etkisini belirlemektir.*
Yöntem: *Araştırma, 64 hemşirelik ve tıp öğrencisinin katılımıyla ön test son test deneysel desende gerçekleştirilmiştir. Tüm öğrencilere yaşlılarla empati kurma eğitimi verildi, öğrencilerden Jefferson Empati Ölçeği ve Kogan'ın Yaşlılara Yönelik Tutum Ölçeği'ni doldurmaları istendi. Daha sonra deney grubuna yaşlı simülasyon kıyafeti giydirilmiştir (n: 34). Deney grubundaki öğrenciler yaşlı simülasyon giysisini giydikten sonra günlük yaşamdan aktivitelerle (beslenme, fiziksel aktivite, tuvalete gitme vb.) ilgili üç senaryoya odaklanan bir dizi görevi yerine getirmişlerdir. Görevleri tamamladıktan sonra öğrencilerle yarı yapılandırılmış görüşme formu aracılığıyla derinlemesine görüşmeler yapılmıştır. Çalışmanın son bölümünde hem deney hem de kontrol grubundaki öğrenciler tekrar Jefferson Empati Ölçeği ve Kogan'ın Yaşlı İnsanlara Karşı Tutum Ölçeği'ni doldurmuşlardır. Nicel veriler, IBM SPSS Statistics 25.0 (IBM SPSS Statistics for Windows, Sürüm 25.0. Armonk, NY: IBM Corp.) ve SAS yazılımı (Sürüm 9.3; PROC MIXED SAS Institute, Cary, NC, ABD) ile analiz edildi. Nitel veri analizi MAXQDA yazılımı (Versiyon 12) ile yapıldı. İçerik analizi için temalar ve kodlar belirlendi. Değişkenlerin normal dağılımını incelemek için Shapiro-Wilks testi, verilerin analizinde betimsel istatistikler, bağımsız örneklem t testi veya Mann-Whitney U Testi kullanılmıştır. İstatistiksel anlamlılık $p<0.05$'te kabul edilmiştir.*
Bulgular: *Hemşirelik ve tıp öğrencilerinin empati puan ortalamalarına bakıldığında her iki fakültede deney ve kontrol grupları arasında fark olduğu görülmektedir. Uygulama öncesi ve sonrası puanlar arasındaki değişim artış yönünde olup deney ve kontrol gruplarında anlamlıdır. Öğrencilerin yaşlılara yönelik tutum puan ortalamalarındaki değişimler fakültelere ve gruplara göre farklılık göstermektedir. Öğrenciler mülakatlarında yaşlı simülasyon giysisi ile yaşlıların fiziksel yetersizliklerini hissedebildiklerini ifade ederken, rol oynamada empatinin daha çok duygusal yönünü deneyimlediklerini belirtmişlerdir. Öğrenciler kursun sonunda yaşlılara karşı davranışlarında olumlu değişiklikler olabileceğini açıklamışlardır.*
Sonuç: *Tek başına rol oynama ve rol oynama ile yaşlı simülasyonunun birlikte uyumunun yaşlılara karşı olumlu tutum ve empatik yaklaşım gösterme açısından birbirini desteklediği düşünülebilir.*

INTRODUCTION

Understanding the views and feelings of the older people may be difficult, particularly for the young ones who have not yet experienced aging (1). It has been reported that many healthcare professionals adopt negative or low positive attitudes towards the older people, they have poor empathetic skills, and both medical and nursing students do not prefer to care for older people (2,3).

In every profession, education is important to

develop suitable behavioral characteristics, and the education of healthcare providers has an influence on their positive or negative attitudes towards the older people (4). Thus, the educators of healthcare professionals should attempt to increase students' positive attitudes towards the older people during their undergraduate education (5), since healthcare profession students may feel more prepared and confident in their ability to work with older people if they are educated on geriatrics (4). Simulation may be an opportunity for active learning, and to provide students teaching care for the others (6). The aged simulation suit is one of the simulation strategies (7). Aged simulation suit is an increasingly used educational method to improve positive attitudes of healthcare profession students towards the older people, and to teach them empathy (1). Sari et al. (2020) reported that aged simulation suit was a proven and effective educational method, positively contributing nursing students to develop empathy, and making positive changes in their attitude towards the older people (8). Role playing is another simulation technique (9). Role playing may give students an opportunity to experience the functional challenges of the older people and may demonstrate concepts of empathy (10). Bas-Sarmiento et al. (2020) emphasized that role playing, feedback and simulations were more effective in empathy training (11).

The aim of this study was to determine the effect role playing alone, and role playing and aged simulation suit together, on the ability to empathize and develop positive attitudes towards the older people among the medical and nursing students.

METHODS

Design

A pre-test post-test experimental design was used. First, all students participated in a course on empathy with older people, using role playing. Then, aged simulation suit was applied to the students in the experimental group.

Participants and Setting

The target study population was 698 university students attending College of Nursing and Faculty of Medicine in Ege University during the 2018-2019 academic year. The student groups consisted of 302 first-year nursing students and 396 second-year medical students. Sixty-eight volunteer students were selected by simple random sampling as the study sample, and later they were stratified by gender. The selected students were assigned to either the experimental or the control groups, comprising of equal numbers of males and females. At the end, the study was completed with a total sample of 64 participants (Figure 1). Which year students fron nursing and medicine (I am asking just because I cannot see the figure 1)

Instruments

Information Form: Consisted of 12 questions about students' sociodemographic characteristics and opinions regarding the older people.

Jefferson Scale of Empathy (JSE): The JSPE was developed by Hojat et al. (2001), and adapted for nursing students by Ward et al (2009) (12,13). These scales were used for measuring the emotional component of empathy as well as every individual student's potential to feel empathy in their daily lives. The possible lowest and highest scores on these scales were 20 and 140 respectively, the higher scores indicating an increased empathetic adjustment (14,15).

Kogan's Attitude Towards Older People Scale (KAOPS): The KAOPS was developed by Kogan. The KAOPS consists of 34 items regarding older people, 17 of them consists of negatively worded statements while the remaining items are positively worded statements. Total possible scores for the KAOPS ranges between 34 and 238, the higher total scores representing a more positive attitude (16).

Semi-structured Interview Form: The questionnaire was developed by the researchers, and consisted of 5 open-ended questions seeking for information about the participants' opinions and feelings regarding role playing and aged simulation suit.

Procedures

All students participated in a course on developing empathy with older people using role playing. The course was held over two separate 4-hour sessions for both medical and nursing student groups.

At the beginning of the course, all participants completed the information forms and the scales. Afterwards, the students watched a short movie about the older people, followed by a brainstorming and discussion about their perceptions of the older people. The discussion content was related to the physiological, psychological, and social states of the older people. During the role playing, the students acted as an older people living in a nursing home and did group work. After the role-playing was over, verbal feedback was obtained from the students, regarding their experiences.

At the end of the course, a semi-structured interview form was used.

After being informed about the tasks, the students in the experimental group were asked to wear an aged simulation suit (Sakamato Model M176) to mimic many of the physical challenges older people face every day.

After putting on the aged simulation suit, the students fulfilled a set of tasks that focused on three scenarios related to activities of the daily life (nutrition, physical activity, going to the bathroom, etc.). All of the students completed the aged simulation suit tasks under the supervision of the researcher. A safe location was prepared for the students while performing these activities and tasks. After completing the tasks from Box 1, the students were asked to fill out the JSE and KAOPS again. Later, the students were interviewed by using a semi-structured interview form. The interviews were conducted to gather information if any change occurred on awareness, feelings, and opinions of the students related to their experiences with aged simulation suit tasks. Finally, the students' verbal expressions were recorded and archived electronically after their approval.

Box 1: Activities/Tasks Completed by Students

- Task 1 (Motor skills): Take and eat a dish of food left on a counter top next to you,
- Task 2 (Motor skills): Go one floor up climbing/walking up a set of stairs (22 steps),
- Walk through a hallway (10 meters in length),
- Go to the bathroom,
- Go to the cafeteria at the end of the hallway and get tea,
- Drink your tea while walking around the hallway,
- Go one floor down climbing/walking down the stairs (22 steps),
- Task 3 (Motor and sensory skills): Read and sign the informed consent form for a biopsy.

Statistical Analysis

The quantitative data were analyzed with SPSS Statistics 25.0 and SAS software (Version 9.3). Shapiro Wilk test, independent sample t test or Mann-Whitney U test were used. The statistical significance was set at 0.05 in the study.

The changes in the mean pre-intervention JSE and KAOPS scores and the interactions among college (nursing and medicine), group (experimental and control) and time (pre- and post-intervention) were analyzed with a linear mixed model (LMM). The level of significance for interactions were accepted as $p<0.1$.

Qualitative data analysis was performed with MAXQDA software (version 12). Themes and codes were specified for content analysis.

Ethical Considerations

Prior to the initiation of the data collection, approval was obtained from Scientific Research and Publication Ethics Committees of Ege University (No:14/02/2019, 02/10-144). In addition, a written permission was obtained from the college administrations. No invasive procedures were planned and/or carried out with the students during the study period. Furthermore, written consents of the students were obtained after informing them about the content of the study.

RESULTS

Quantitative Findings

The mean age of the students participating in the study was 20.2±1.3 years in the experimental group, and 20.2±0.8 in the control group. Fifty percent (n= 17) of the students in the experimental group were nursing students, and 50% (n= 17) of them were medical students. In the control group, 53.3% (n= 16) of the students were nursing students and 46.7% (n= 14) were medical students. It was found that the mean pre-intervention empathy and older people attitude scores of the students did not differ in relation with their descriptive characteristics (p>0.05) (Table 1).

Table 1. Comparison of Descriptive Characteristics of the Students with Mean Pre-Intervention Empathy and Older Attitude Scores

Descriptive Characteristics	Study Group (n=34)		Control Group (n=30)		Empathy Score	p*	Older Attitude Scores	p*
	n	%	n	%	(Mean±SD)		(Mean±SD)	
Gender								
Female	19	55.9	15	50.0	109.7±11.4	0.449	132.0±18.3	0.128
Male	15	44.1	15	50.0	107.1±15.3		125.2±16.6	
Family structure								
Nuclear family	26	76.5	28	93.3	109.3±13.2	0.220	128.8±18.2	0.826
Extended family	8	23.5	2	6.7	104.1± 13.7		128.8±15.4	
Any relatives over 65 years of age?								
Yes	31	91.2	28	93.3	108.7±13.5	0.511	129.1±18.2	0.559
No	3	8.8	2	6.7	105.8±11.3		126.0±11.6	
Living with a relative over the age of 65 years								
Yes	15	44.1	13	43.3	105.1±15.2	0.076	124.3±18.7	0.072
No	19	55.9	17	56.7	111.1±11.1		132.3±16.3	
Time spent with the older person								
1-10 years	7	53.8	11	84.6	105.3±14.1	0.724	126.7±14.8	0.285
11 years or longer	6	46.2	2	15.4	100.6±17.6		119.4±27.8	
Desire to live with the older person in the future								
Yes	20	58.8	13	43.3	108.4±11.7	0.956	132.0±17.2	0.144
No	14	41.2	17	56.7	108.6±15.0		125.5±17.9	
Desire to work in the aged care unit								
Yes	19	55.9	12	40.0	109.5±11.8	0.552	132.6±17.4	0.100
No	15	44.1	18	60.0	107.5±14.7		125.3±17.5	
Visiting a nursing home								
Yes	11	32.4	5	16.7	103.6±16.5	0.092	129.4±24.9	0.903
No	23	67.6	25	83.3	110.1±11.8		128.6±14.9	

** Independent sample t test or Mann Whitney U test*

The empathy scores showed a significant difference between the experimental and the control groups for both colleges (p=0.009). The post-intervention empathy scores were significantly higher compared to pre-intervetion in both the experimental and the control groups (p=0.008). There was no significant difference between colleges in terms of the mean empathy scores (p=0.979) (Table 2).

The interactions between group and college, and between college and time (pre-post intervention) were found to be statistically significant in the analysis of older people attitude score (p=0.038 for both). It means that pre-post intervention changes in mean scores differ according to colleges and the comparison of study groups differs in colleges. Therefore, group x time interaction (pre-post intervention) was evaluated separately in colleges. Also, pre-intervention scores and post-pre intervention difference scores were compared between colleges at each study group. In medical college, there was no significant difference between pre- and post-intervention mean scores for both groups (Time p=0.951), however the scores of the students in the experimental group were higher than the control group at each intervention time (Group p=0.021, Group x Time interaction p=0.441). On the other hand, in nursing college the significant increase was observed over intervention period without significant interaction and group effects (Time p=0.009, Group x Time interaction p=0.548 and Group p=0.475). There was no difference between the mean scores of colleges in the control group for pre-intervention and pre-post difference (p= 0.379 and p=0.429, respectively). In the experimental group, although there was a significant difference between colleges at pre-intervention scores, a higher increase was observed in the scores of nursing college students than those of medical college. (pre-intervention p= 0.008 and p=0.029, respectively).

Table 2. The Change Between Pre-and Post-Intervention Mean Empathy and Older Attitude Scores of the Students in Relation with Their Colleges

		Mean Empathy Score Mean±SD (Min-Max)		**Mean Aged Attitude Score Mean±SD (Min-Max)**	
		Pre-intervention	**Post-intervention**	**Pre-intervention**	**Post-intervention**
Medical College	**Study group**	111.8±12.7 (85-129)	112.6±9.6 (89-122)	137.1±15.3 (109-165)	135.4±16.0 (103-167)
	Control group	105.5±12.5 (87-126)	110.0±11.9 (90-133)	123.1±14.5 (91-146)	125.1±14.8 (106-156)
College of Nursing	**Study group**	113.1±7.8 (98-124)	117.6±7.1 (99-129)	124.2±10.9 (104-145)	133.7±12.3 (114-166)
	Control group	102.7±17.0 (65-129)	106.8±16. 4 (71-133)	129.9±24.9 (68-168)	136.0±21.3 (96-166)
Effect*	**Group**	**p= 0.009**		p= 0.289	
	College	p= 0.979		p= 0.834	
	Time	**p= 0.008**		p= 0.032	
	Group x College	p= 0.268		**p= 0.038**	
	Group x Time	p= 0.521		p= 0.981	
	College x Time	p= 0.529		**p= 0.038**	
	Grup x College x Time	p= 0.423		p= 0.335	

** Linear Mixed Model (LKM)*

Qualitative Findings

The results of the interviews with the students (n=64) after the course are presented in Table 3. During the role playing, the students experienced the feelings of restriction, neediness, gruffness, loneliness, weariness, fear, sadness, incapableness, unhappiness, uneasiness, boredom, incompetence, and helplessness, lack of self-confidence, fatigue, intolerance, dependence, touchiness, purposelessness, inability, unwillingness, nothingness, and nostalgia.

At the end of the role playing, the students defined their expectations regarding their experiences at their old age. They highlighted the following items, for example, they wanted to be treated in understanding, sensitive, caring, tolerant, polite, respectful, affectionate, helpful, attentive, friendly, empathetic, and equal ways. The students found the role playing as enjoyable, informative, and useful for improving empathy with the older people.

Table 3. The Themes and the Example Sentences Obtained from Interviews with the Students After the Role Playing

Themes	Examples of Sentences
positive changes in behavior	*"... I had never contemplated this issue much before. I can understand older better now. I tried to empathize today, now I have different opinions about the older and I will act more conscientiously." M.K.*
awareness of potential prejudices	*"It had a very different influence on me, I felt like an old person for a moment. I realized that people really have difficulty when they get old, but at the same time I'm pleased that there are people I can communicate with." A.Y.*
A better empathy	*".....I learnt to go beyond what the eyes can see in old patients and understand them." M.E.*
awareness of the changes brought about by aging	*"I felt weak and helpless while I was holding the stick in the role of an old patient. The biggest effect on me was when I noticed that even my body which I believe I own most, will one day leave me and will not obey me." M.E.*
thoughts of death	"*... I have thought about death for the first time*" A.N.D.
physical difficulties	*"It is not an easily acceptable feeling to be physically incapable and need a person or an object. I got annoyed at myself. Trying to do something but being unable made me upset and a little angry too."* M.A.A.
emotional troubles	-*"The feeling of neediness caused by not leaving my strength in the past. I had a feeling of hopelessness in the role of an old patient. I thought he was in need. I would not want to be pitied, I would expect them to understand me but not to make me feel it. I will try not to make old people think that I feel pity for them."* V.T.
enhenced insight	*"The role caused deep feelings in me. I remembered what I want to do in the upcoming years of my life. I looked back and thought how I would be, what life I did not want to lead. I felt like a library in the role of an old patient. A life lived to the fullest, experiences gained, but now suffering pain. I wanted to be loved and respected." M.E.*

Themes	Examples of Sentences
use in professional life	*"I will use it in my professional life because I will have a correct approach to each age group, as a part of my job. With this application, I have learnt how I can empathize and what I need to consider when empathizing. I will try to pay attention to this in my profession and in the rest of my life." I.H.G.*
learning with role playing	*"I believe the information transferred is more understandable and useful as you learn it by role playing. I had the opportunity to understand an age group I was totally unfamiliar with, thanks to this course."* B.A.

The students' (n=33) opinions that were obtained immediately following completion of the aged simulation suit tasks are provided in the Table 4.

Advantages of the Aged Simulation Suit and Role Playing

The students expressed that the use of the aged simulation suit let them experience physical disabilities of the older people. In addition, they stated that they experienced the emotional aspect of empathy further after they participated in the role playing. As a whole, they stated that a change in their lifestyle was necessary for them to enjoy a physically more comfortable life in their old ages. Moreover, they reported that their awareness increased by observing the interactions they experienced in the role playing.

Some students expressed that both the role playing, and aged simulation suit were effective to build empathy with the older people.

Disadvantages of the Aged Simulation Suit and Role Playing

Some students stated that there were some difficulties with the application as well. The other situation was the difficulty they experienced getting into the role as well as spontaneously developing the expected task scenario.

Some of the students stated that they had difficulty in playing the role, and that they could only imagined the role.

The students expressed that aged simulation suit and role playing caused them to feel being dependent on others, incompetence, dependency, helplessness, lack of self-confidence, distrust, loneliness, introversion, exclusion, feeling unloved, touchiness, worry, hopelessness, shame, grief, nostalgia, disappointment, fear and pain.

After the aged simulation suit application was completed, the students listed the behaviors they expected to have in their old age. The expectations that were expressed were the following: understanding, sensitive, caring, tolerant, polite, respectful, patient, affectionate, friendly, helpful, and empathetic; they also stated that they did not want to be alone.

Table 4. The Themes and the Example Sentences Obtained from Interviews with the Students After the Course with Aged Simulation Suit

Themes	Examples of Sentences
Advantages of the Aged Simulation Suit and Role Playing	
physical disabilities	-*"... weights, goggles, ear plugs, and the neck brace made us feel what the older experience. You think only about what you would feel emotionally in the role playing, but it becomes more effective in simulation when thoughts are brought together with movement limitation." D.E*

Themes	Examples of Sentences
Advantages of the Aged Simulation Suit and Role Playing	
emotional disabilities	*"… sometimes old people are very angry; they behave very aggressively. I have learnt the reason for this, because they are unable to do certain things and they are right to be angry, in my opinion." A.D.*
change in life style	*"I thought that I would be such an old person in the future and I decided to start doing sports. I really do not want to be like that, my movements to be restricted this much. Therefore, I thought I should take good care of myself now. I thought about my own old age for the first time". M.T.*
awareness	*"We had the chance to observe several people during role playing, we could see some problems that we could not think of..." B.D.*
Disadvantages of the Aged Simulation Suit and Role Play	
difficulties	*"… simulation is something a little more challenging, you need to find the necessary equipment." E.D.* *"… it was like we were only imitating in the role play, I could not feel exactly like an old person because I had no physical difficulty …" M.C.*
Effect of Aged Simulation Suit and Role Playing on Students' Feelings	
negative feelings	*"… you can't rely on the stick very much, too… I held both the stick and the hand rails; but I still felt unsafe, it felt as if I was going to fall any moment." E.B.* *"Yes, I remember very well, and I don't think I will ever forget about it, I feel worried on one side, afraid on the other, I feel angry at myself, being unable to read frustrates you. I was already unable to see anything, and I felt so sad because I could not see." B.Ö.*
expected behavior at old age	*"I would definitely want a person who is polite, voluntary to help but who would not make me feel dependent very much, and could listen to what I say. I would like a person that could understand me and tolerate the sudden ups and downs in my mood." H.K.*

DISCUSSION

In this study, it was aimed to determine the effects of "role playing alone" and "role playing and aged simulation suit together" on developing empathy and positive attitudes towards the older people in nursing and medical students.

It was observed that the mean pre-intervention empathy and older people attitude scores of the students did not differ in relation with their descriptive characteristics. Although the results of the studies are conflicting, it has been determined that the older people attitude scores were higher in women (17,18) who want to live with their relatives over 65 years old (17) and in the ones who want to work in the older people health unit in the future (3,18). In this study, although the empathy levels of the students differed between the colleges, it was determined that the empathy scores were at a moderate level. The mean empathy scores of both medical and nursing students were significantly different between the experimental and the control groups, the scores increased significantly after the intervention, and the post-intervention scores were significantly higher in both the experimental and the control groups. These results are in line with the literature data (19-21).

In this study, role playing was found helpful particularly for providing opportunity to experience the emotional aspect of empathy. The students felt that their peers understood them when they played the role of older people. Thus, we may say that, the students both increased their empathizing skills and had more awareness of the others' empathetic behaviors

after role playing. In addition, with role-playing, it was determined that the students empathized and became aware of the "older people's world" and they developed insight into their current lives in order to be a healthful elder in the future. Van Winkle et al. (2012), used role playing to enhance empathy, which included a student portraying the challenges of aging, followed by small-group discussions. The authors reported significant enhancement in empathy on the post-test, immediately after the workshop (22). In addition, in our study, we found that there was no difference between the colleges for the mean empathy scores. Studies have similarly emphasized that the methods such as role playing, drama, simulation, etc., increase the empathy levels of professionals working in the field of health or allied health students, regardless of their profession (11,23). However, it should not be overlooked that the role playing method has some disadvantages. In present study, some students mentioned about the difficulties they experienced through the role playing and spontaneously developing a given scenario as disadvantages. The fact that the time allocated for entering the role was not enough for some students, and the lack or only small experience of role-playing in nursing students might have negatively affected their participation in the role.

In the present study, the students in the experimental group reported that they noticed physical challenges due to old age for the first time, as well as the emotional problems that may accompany those physical issues. In addition, owing to the simulation activities, the students anticipated the idea of death in relation with old age. Moreover, they underlined the necessity for a change in their lifestyles to prepare themselves physically and emotionally to live more comfortably at their old ages. Similar studies performed using aging simulation suit highlighted an increase in empathy of students towards older people (1,8,24-27). However, our literature search revealed that no studies has investigated the effect of role playing and aged simulation methods together so far. In our study, pre- and post-intervention empathy scores of the experimental group students who experienced role playing and aged simulation methods together did not differ significantly. This result shows that only the role playing method is as effective as the aged simulation method in developing empathy for the older people. On the other hand, some students stated that the aged simulation suit could be used to develop empathy, while some other students stated that the aged simulation suit could be a costly method. Therefore, it can be concluded that use of the aged simulation suit, which is a costly method, may not be necessary in education. Similarly, Eymard et al. (2010) reported that the cost of equipment used in simulation applications poses a problem due to its cost (28). In this study, it was determined that nursing and medical students had positive attitudes to the older people. Various studies reported that both nursing (26,27,29,30) and medical students (31) had positive attitudes towards the older people, while some others reported negative attitudes (3,5,32).

In our study, although the change in the mean scores of the students for the older people attitudes differs in relation with the colleges, the difference between the experimental and control group students also changes. While no change was observed between pre- and post-intervention scores in either groups of the medical students, the mean pre- and post-intervention scores of the experimental group were higher than those of the control group among nursing students. Any study investigating the effect of role playing on developing positive attitudes towards the older people is not available in the literature. However, there are studies related to the effects of the age simulation suit on the older people attitude, and some studies reported that the aged simulation suit was effective in developing positive attitudes (7,26,27) particularly in students, while some others suggested that it has

a negative effect (18,33). Different interventions used in different studies may be reason for these diverse results. In our study, a minimum decrease was observed in the older people attitude scores of experimental group of medical students. Similarly, Lucchetti et al. (2017) found that the empathy levels of medical students increased after the aged simulation suit, but their attitudes towards the older people deteriorated. It has been supposed that students' experience of functional limitations related to aging and putting themselves into the shoes of the older people affect their empathy positively, however these limitations make them to think that they will not be able to manage their lives in the future, and their attitudes towards the older people are affected negatively. The results of the studies in the literature have indicated that facing only with the unhealthy aspect of aging may have reinforced their stereotypes about the older people and aging, and negatively affected the students' attitudes (33). These results show that education strategies may lead to both desired and undesirable results by affecting students' attitudes and empathy in different ways.

Limitations

Limitations of the study include a small sample size as well as lack of evaluation of the long-term effects of the training. Another limitation of the study is the evaluation of students' empathy and older people attitudes with one-time simulation and role playing activity.

CONCLUSIONS

The results of the present study indicate that only the role playing method is as effective as the aged simulation method in developing empathy. It is possible to suggest that the use of role playing, and aged simulation suit do have a supportive effect on one another since they establish an appropriate empathetic approach and a positive attitude towards the older people. We suppose that evaluations of the affective domain, i.e. empathy and attitude, should be carried out not only by using quantitative data, but also by using qualitative data to obtain most informative, salient, and objective results. In addition, it is recommended that future studies not only examine the immediate or short-term effects of role playing and aged simulation suit use on students' behavior changes towards older people, but also take time to carry out longitudinal studies regarding this topic, in order to better understand and address the long-term effects of this type of instructions and learning.

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