

Effect of aging simulation activities on gerontological nursing students empathy, attitudes and willingness to work with elders

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Abstract: Empathy and attitudes have been found to influence the quality of care provided by gerontological nurses to elders. In this respect, nurses need to be well prepared to meet the needs of the growing population of the elders, as they may not have personally experienced aging –related challenges, such as disability and disease. **Objective:** To determine the effect of aging simulation activities on gerontological nursing students' empathy, attitudes and willingness to work with elders. **Setting:** The study was conducted in the Gerontological Nursing Department, Faculty of Nursing, Matrouh University, Egypt. **Subjects:** all the fourth year nursing students at Faculty of Nursing – Matrouh University, who registered in the Gerontological nursing course at the eight semesters during the academic year 2018-2019. They comprised 29 students. **Tools:** Six tools were used for data collection: Nursing students' socio-demographic and emotional experience structured interview schedule, Jefferson Scale of Empathy-Health Professions Students (JSE-HPS), Kiersma- Chen Empathy Scale (KCES), Modified Willingness to care for the Elderly Scale, The older person questionnaire (OPQ), and Intent to work with the elderly scale. **Results:** statistically significant differences were observed between the mean score obtained by students before and after the program implementation as regard to empathy, attitudes of students and their willingness to work with elders. **Conclusion:** Incorporating aging simulation activities into the clinical gerontological nursing education is an advantageous educational strategy to develop empathy in nursing students, improve their attitudes and willingness to work with older adults. **Recommendations:** Integrating the aging simulation activities into the gerontological nursing curriculum will enhance students' understanding of the challenges that older adults face and improve future interaction and the quality of nursing care provided.

Keywords: Attitudes; aging simulation; empathy; elders; gerontological nursing students; willingness to work.

I. INTRODUCTION

The increased number of elders has changed healthcare demands and caring for them have become challenges for many countries^(1, 2). Nurses have been identified as a crucial health care provider in a better position to meet the increasing demands on the health care system through the aging society. Therefore, nursing students should be prepared to meet future challenges of their practices^(3,4).

Moreover, Prevalence of chronic disease is increasing among elders. Significantly, these chronic diseases require long-term care, and quality of nursing care is both essential and critical^(5, 6). To respond to the unparalleled concerns of elders and improve the care provided to them, an increase in the number of health professionals with expertise in gerontology will be required. In particular, nurses will be increasingly responsible for caring for elders. However, development of the nursing workforce specialized in the care of elders will be a challenge because there is already a shortage of skilled healthcare professionals worldwide⁽⁷⁾. Additionally, previous researches have recognized a lack of interest among nurses in working with elders^(8,9).

Unfortunately, many studies reported nursing students to hold negative attitudes toward elders and that a career in gerontology/ geriatric nursing is not an attractive choice for them⁽¹⁰⁾. Gerontological nurses` empathy and attitudes have been found to influence the quality of nursing care provided to elders. Moreover, empathy is a necessary constituent of the nurse-patient relationship. The skill to listen and provide empathetic communication effectively will lead to high quality care and increased elders satisfaction^(11, 12). In this respect, nurses need to be well prepared to meet the needs of the growing population of the elders. However, student nurses may have difficulties in empathizing with elders, as they may not have personally experienced aging –related problems as disability and disease⁽¹³⁾.

Nursing students' empathy and positive attitudes are critical in improving their willingness to care for elders. This in turn, will help nurses to understand and focus objectively on the problems experienced by elders, and avoid stereotyping associated with aging⁽⁶⁾. Studies found that attitude, experience, and knowledge provided during nursing education were significantly associated with the willingness to care for elders^(14, 15).

Increase the number of nurse graduates who have positive attitudes towards elders and intend to work with them is one of the objectives of gerontological leaders⁽³⁾. The American Association of Colleges of Nursing (AACN) highlights the significance of empathy and caring as an integral portion of the professional role and health care interactions⁽¹⁶⁾. Therefore, development of interactive educational activities to inform nursing students about age-related changes either sensory or functional decline that increase students' awareness of and empathy regarding daily challenges confront the elders and promote the adoption of caring attitudes should be integrated within the nursing curriculum to promote patient-centered care^(17, 18). This can be achieved using a simulation – based educational activity integrated into a clinical experience. It is an advantageous method for teaching concepts to students because it actively involves students in the learning process and allows them to experience and respond to situations in a safe learning environment without real consequences^(13, 19).

II. BODY OF ARTICLE

AIM OF THE STUDY

This study aimed to determine the effect of aging simulation activities on gerontological nursing students' empathy, attitudes and willingness to work with elders.

Research hypothesis

The current study research hypothesis was:

"The gerontological nursing students, who are engaged in aging simulation activities, exhibit more empathy, positive attitudes and willingness to work with elders".

MATERIALS AND METHOD

I- Materials

Research Design

Quasi-experimental research design (one group pretest posttest) was selected.

Setting

The study was conducted at the Faculty of Nursing – Matrouh University.

Subjects

The study subjects included all the fourth year nursing students at Faculty of Nursing – Matrouh University, who registered in the Gerontological nursing course at the eight semesters during the academic year 2018-2019. They comprised 29 students (23 females and 6 males).

Tools:-

Six tools were used to collect the necessary data:-

Tool I: Nursing students' socio-demographic and emotional experience structured interview schedule:

This tool was developed by the researchers and contains two parts.

Part I: Nursing students' socio-demographic characteristics; such as data related to nursing students' age, sex, marital status, living arrangement, financial status, religion, previous knowledge and working experience with elders...etc.

Part II: Nursing students' emotional experience; it involves a question to evaluate the most common emotions experienced by the study subjects throughout the aging simulation activities as impatience, frustration, tired, helplessness ...etc.

Tool (II): The Jefferson scale of empathy- health professional students (JSE- HPS):-

The **JSE- HPS** scale was modified by Fields et al (2011) ⁽²⁰⁾ from Jefferson scale of empathy developed by Hojat et al (2001)⁽²¹⁾ to be valid in measuring the empathic qualities and tendencies of health professional students, specifically nursing students. It composed of 20 items scored on a 7- point likert type where 1= strongly disagree, 7= strongly agree with 10 items negatively – worded were reverse coded when scored. The score ranged from 20-140, the higher score scale indicates more student empathy.

Tool (III): The kiersma – Chen Empathy Scale (KCES):-

This scale was developed by kiersma et al (2013) ⁽²²⁾ and validated for use with nursing students. The scale was developed to measure the cognitive qualities of empathy (understanding /viewing the world from other's perspectives) and affective qualities of empathy (The ability to connect to others' feelings /experiences). The subjects rate their level of agreement with 15 statements using a 7 point likert- type scale, where a score of (1) = strongly disagree and a score of (7) = strongly agree. The score ranged from 15-105, the higher score indicates more empathy.

Tool (IV): Modified Willingness to Care for the Elderly Scale:-

This scale is a modification of the "Elderly Patient Care Inventory that was developed by Aday and Campbell (1995) ⁽²³⁾. This scale was developed to measure the willingness of nursing students to care for the elders. It composed of 12 statements focusing on positive and negative aspects related to willingness to care for the elderly. Answers to these statements are rated on a five point Likert- type scale where; a score of one (1) indicates "strongly agree" and a score of Five (5) indicates "strongly disagree". Negative statements were coded in the reverse. The range of possible scores was 12 to 60. A higher mean score indicates more willingness to take care of the elderly.

Tool V: The Older Person Questionnaire (OPQ):-

It was developed by (Gillis, 1972) ⁽²⁴⁾. It was designed to elicit information on the attitudes of nursing personnel toward the aged. It was translated into Arabic and approved to be valid and reliable by Abd ElGaleel A (2006) ⁽²⁵⁾. The OPQ is an opinion questionnaire which contains 41 statements related to old age, rated on a 4- point likert scale of response "Strongly agree", "mildly agree", "mildly disagree", and "strongly disagree". The older person questionnaire is self-administered. Questions answered "strongly agree" were given 1 point. Questions answered "strongly disagree" were allowed 4 point. The higher the score, the more positive is the attitude. The score ranged from 41 to 164. The total score of less than 82 indicates having negative attitudes, from 82 to less than 123 neutral attitudes, and more than 123 positive attitudes.

Tool VI: Intent to work with the elderly scale:-

The intent to work with the elderly scale is a rating scale designed by Ajzen& Fishbein (1980) ⁽²⁶⁾. It composed of 14 items that focuses on the intentions of student to work with the elderly. Statements were graded as the following "1 - strongly disagree" "2 - disagree" "3 -undecided or neutral", "4 - agree", and "5 -strongly agree". The negative statements were coded in reverse. The total score ranges from 14 to 70. The higher mean scores indicate the greater intent of students to work with the elderly.

II-Method:-

1- Before conducting the study, the researchers received the necessary permission from the Head of the Faculty of Nursing – Matrouh University, to carry out this study at the beginning of the training program of the Gerontological Nursing Course for students registered in the fourth year- level 8th during the academic year 2018- 2019.

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- 2- The researchers obtained the permission to carry out a series of events under the name of "the aging simulation days" for the fourth year students of the Faculty of Nursing Matrouh University at training center of woman health at Matrouh general hospital. This center is a closed area with a private entrance, internal stairs and consists of 3 rooms, long corridor, kitchen and bathroom.
- 3- Tool I (**Nursing students' socio-demographic and emotional experience structured interview schedule**) was developed by the researchers after a thorough review of relevant literature.
- 4- Tool II (**The Jefferson scale of empathy- health professional Students (JSE- HPS)**), tool III (**The kiersma – Chen Empathy Scale (KCES)**), tool IV (**Modified Willingness to Care for the Elderly scale**) and tool VI (**Intent to work with the elderly scale**) were translated into Arabic language by the researchers.
- 5- The study tools; I, II, III, IV and VI were tested for content validity by five (5) experts in the field of the study namely; Gerontological nursing, Nursing Education, Psychiatric and Mental Health Nursing.
- 6- The study tools; II, III, IV and VI were tested for reliability on ten (10) nursing students at the third year of the Faculty of Nursing - Matrouh University using Cronbach's coefficient alpha reliability method. The reliability result of tool (II) was **0.76**, for tool (III) was **0.75**, for tool (IV) was **0.74** and for tool (VI) was **0.73**.
- 7- A pilot study was conducted on ten (10) nursing students at the third year of the Faculty of Nursing - Matrouh University to ascertain the clarity and applicability of the study tools.
- 8- Implementation of the "aging simulation activities" was done through two phases as follows;

A- Phase one: - (Preparation phase)

- 1- The researchers prepared the required simulation equipments such as;
 - ❖ Well-padded gloves to experience the changes in touch in old age.
 - ❖ Bandages from all sizes to wrap elbow and knee to simulate joint stiffness and arthritic joints.
 - ❖ Based on Aging simulation suit Sakamoto model (Sakamoto Co., Japan)⁽²⁷⁾, the researchers made four Pairs of wrist weight cuffs (1, 5 kg) and ankle weight cuffs (2, 3 kg) to mimic the effect of muscle weakness and limit dexterity of the students to make daily household tasks difficult .
 - ❖ Based on Vision simulators (GERT, Germany)⁽²⁸⁾, three goggles were modified by the researchers to simulate the most common vision problems encountering the elders as; opacity of the eye lens , narrowing of the visual field, impairment in central vision.
 - ❖ Earplugs to simulate the elders hearing problems.
 - ❖ Cervical collars for head mobility restrictions.
 - ❖ Bandages to wrap chest to simulate spine mobility restrictions and decrease sense of balance
 - ❖ Dried peas to put it in the student's shoes to simulate diabetic neuropathy.
 - ❖ Face mask and straw to simulate the respiratory problems encountering the elders.
- 2- The researchers modified the environment of the center to be a similar home environment for an elderly with bedroom, living room, kitchen, bathroom, internal stairs and corridor. The third room at the center was used as a waiting area for student. The bedroom included a bed, chair, rugs, calendar, a wall clock, clothing with buttons & zippers, pill bottles to simulate elders's medications, and some assistive devices as; walker, cane, and eye glasses. The living room included a couch and two chairs, small table, carpet, rugs, newspaper, and telephone. In addition, the researchers equipped the kitchen with portable stove, cattle, cups, dishes, eating utensils, and some foods such as; fresh fruits and vegetables, eggs, and some canned food.
- 3- Twenty -nine students were divided by the researchers in 10 teams. Each team was made up of three students except the last team was made up of two students and the researcher. In each team, students I, II and III. Student (I) played the role of the elders using different simulation activities, student (II) played the role of the caregiver, and student (III)

recorded the team member's observations and emotions experienced during the simulation. The students exchange their roles throughout the simulation.

B- Phase two (The application phase):-

The application of the ageing simulation program was done at the beginning of the clinical training plan of the Gerontological Nursing Course. The researchers distributed the ten teams throughout two clinical days per week (6 hours per day) for two consequent weeks (2-3 teams per day for two consequent weeks).The application of the program per team was done throughout three sessions as follows:-

Session I: During this session:

- ❖ Students completed the pre-test tools (tool I, II, III, IV, V and VI) in around 40 minutes.
- ❖ All instructions were explained for students before starting the ageing simulation activities such as; types of aging simulation equipment and its uses, the sequence of activities as in the aging simulation scenario, the role of students in each team (5-10 minutes).

Session II:

Throughout this session each team; student (I), wore aging simulation equipment's that were previously prepared by the researchers and performed household home daily activities (Table 1) at the pre-modified six areas of the center including bedroom, living room, bathroom, kitchen, corridors and stairs. Then they performed a particular activity outside the center which is going to grocery for shopping. Student (II) played the role of the caregiver and supervised Student (I) to ensure his safety in these settings. Student (III) observed and recorded student (I) emotions during the performed ageing-simulation activities. These activities took about two hours for each team. The activities of the aging simulation program were illustrated in table (I).

Table I: Aging simulation program's scenarios:

Level	Setting	Activities
Home	1- Bed room	Lying in bed, Making a bed, Dress, Putting on socks.
	2- Living room	Sitting on and standing from the chair, Taking medicine, Reading script with 3 different aging eye glasses on, Using telephone.
	3- Kitchen	Preparing salad, Preparing a cup of tea, Peeling an orange.
	4- Bath room	Sitting on and getting off toilet, Washing face, Brushing teeth, Ablution to pray, Laundry a small piece of cloth.
	5- Corridors	Picking up objects, Sweeping with broom, Wiping floor with cloth, Time walking using an assistive device as a cane or a walker.
	6- Stairs	Going up and down the stairs with or without a cane.
Community	7- Grocery	Grocery shopping,

Session III: Evaluation of the aging simulation activities

Students were asked to express their experienced emotions during the aging simulation activities using tool (I) part 2, and then they completed the post-test tools (tool II, III, IV, V and VI) (40 minutes).

Ethical considerations:-

An informed written consent was obtained from each student included in this study after appropriate explanation of the study purpose. Privacy and anonymity of the study subjects and confidentiality of the collected data were maintained.

Statistical analysis:-

After data collection, data were coded and transformed into specially designed forms as to be suitable for computer feeding and all entered data were verified for any errors. Statistical package of social science "SPSS" software version 20.0 was used for the analysis of the data. Descriptive statistics were done using numbers, percentages, arithmetic mean, and standard deviation. Analytical analysis were done using significance test (Paired t test). A p value of <0.01 was considered as statistically significant. Cronbach's alpha method is used to test the reliability.

III. RESULTS

Table (II) shows the socio-demographic characteristics of the study Gerontological nursing students. The age of the studied students ranged from 21 to 22 years with a mean of 21.79 ± 0.491 years. Females constituted 79.3% of the studied students. Regarding the marital status and familial economic status, it was found that 89.7 % of the studied students were single with intermediate economic status.

Concerning students' direct contact with elders at home environment, table (III) shows that only 34.5% of the studied students were currently living with elders at the same home. For more than one half (60 %) of the studied students, it was the grandmother and grandfather. Regarding the interactions of the Gerontological nursing students with elders table (III) shows that; 72.4% of the studied students reported regular interaction with elders. Moreover, it was reported by about one quarter of the studied nursing students (27.6%) that they interacted with elders on a daily basis Also, table (III) shows that; 72.4% of the studied students felt comfortable when dealing with elders.

Table (IV) illustrates that 75.9% of the studied nursing students reported having knowledge related to the caring for elders and 59.1 % of them reported having these knowledge from their previous study at the Faculty of Nursing. The other sources of knowledge related to the care of elders as reported by the studied students were; their family and friend, and mass media (27.3%, and 13.6% respectively). Also, it appears from table (IV) that the majority of the studied nursing students (96.6%) reported no previous history of work in caring for elders.

Table (V) shows Comparison of pre /post total mean scores of the kiersma-chen empathy scale, jefferson scale of eymathy, intent to work with the elderly scale, modified willingness to care for the elderly scale, and attitudes of nursing students towards the. The table illustrates statistically significant differences between the mean score before and after the program implementation as regard to jefferson scale of eymathy, modified willingness to care for the elderly scale and attitudes of nursing students towards the elderly ($t=3.348$, $p=0.002$, $t=3.733$, $p=0.001$ and $t= 2.68$, $p=0.012$, respectively). On the other hand, the rest of parameters, the kiersma-chen empathy scale and measure of students' and intent to work with the elderly scale, the differences mean score before and after the program were statistically insignificant ($t=1.745$, $p=0.092$ and $t= 0.874$, $p=0.390$, respectively). Overall, regarding the grand total of all scales the differences mean score before and after the program were statistically significant. ($t= 3.244$, $p=0.0003$).

As regards the emotions experienced by the studied nursing students during the simulation, table (VI) shows that; approximately two third of the studied nursing students reported no embarrassment, anger, and confusion (72.4%, 69 %, and 69 % respectively). On the hand the majority of the studied nursing students experienced impatience, frustration, tired, helplessness, upset and sadness during the simulation (89.7%, 86.2 %, 79.3 %, 75.9 %, 75.9 %, and 69 % respectively).

IV. DISCUSSION

Many elders experience sensory and functional declines that can hinder their ability to interact effectively and safely with environment, communicate with others and complete simple household tasks and daily activities⁽¹⁸⁾. In this respect the preparation of future nurses to care for the increasing number of elders creates a challenge for nursing education leaders. Nurses are anticipated to display professional attitudes toward elders, but some of them may have problems in empathizing with elders, as they may not yet have experienced similar challenges personally^(29,30). This study accordingly aimed to evaluate the effectiveness of an aging simulation activities in improving student nurses 'attitudes, empathy and willingness to work with elders.

The current study revealed that, the implementation of aging simulation activities has a significant immediate improvement with respect to the empathy, attitudes toward elders and willingness to work with them (Table V). The differences in mean score before and after the program were statistically significant as regard to the jefferson scale of eymathy- health professional students, scale of students' willingness to care for the elderly and attitudes of nursing students towards the elderly ($t=3.348$, $p=0.002$, $t=3.733$, $p=0.001$ and $t= 2.68$, $p=0.012$, respectively). This finding may be interpreted as the nursing students may not be alert of elders` feelings and experiences before experiencing aging –related changes themselves and simulation activities can be a beneficial mechanism to permit students to walk in the shoes of elders. Moreover, the better understanding of how disabilities make daily tasks challenging may assist student nurses acquired more respect for elders and empathize with them.

These results support those reported by Chen A et al (2015)⁽¹³⁾ who found that, the students` attitude toward elders changed as a result of completing the geriatric medication game and agreed that they plan on providing assistance to elders in their future practice, also he displayed that the nursing students had high empathy toward elders at the pre- and post-test on the jefferson scale of empathy. Also, the present study finding is in the same line with what was reported by Schmall et al (2008)⁽³¹⁾ who found that incorporating the geriatric medication game into a nursing program resulted in significant improvement in student empathy toward elders and better understanding of their experiences. Moreover, study done by McKenna et al (2012)⁽³²⁾ reported that nursing students demonstrated more improvement in empathy toward elders after implementation of the geriatric medication activity than before.

Similar to the finding of other studies on aging simulation done by Lee CY (2016)⁽³³⁾, and Hughes NJ (2008)⁽³⁴⁾ the finding of the present study confirm that the nursing students willingness toward elder care increased after the simulation intervention program. Mohamed N et al (2018)⁽³⁵⁾ found nearly the same result of the present study and concluded that after the implementation of the simulation game the positive attitude increased among the simulation group, compared to the lecture group. A study done by Jeong HS et al (2017)⁽³⁶⁾ reported that, the attitudes toward seniors increased significantly after the implementation of the simulation program. Additionally, Myles JC (2018)⁽²⁹⁾ demonstrated that students` attitudes toward elders significantly improved ($P < .002$) after the role-play simulation experience. Moreover, Hong Sy et al (2017)⁽³⁷⁾ when assess the college students attitude toward elderly persons after aging simulation experience reported a statistically significant improvement in attitude in the experimental group towards the elderly.

Contrary Alfarah Z et al (2010)⁽³⁸⁾ reported that simulation games are not effective strategy for geriatric education. The result of previous researches done by Iee C et al (2016)⁽³³⁾, Akl EA (2010)⁽³⁹⁾, and Jeong HS et al (2010)⁽⁴⁰⁾ disagreed with the finding of the current study and reported that the attitudes toward the elders did not significantly improve after the aging simulation intervention. Another study done by Galetz EA (2018)⁽⁷⁾ showed that role-playing simulation scenarios had no impact on improving attitudes and empathy towards elders.

Concerning the emotions experienced by the studied nursing students during the simulation, the current study reported that approximately two third of the studied nursing students reported no embarrassment, anger, and confusion. On the other hand the majority of them experienced impatience, frustration, tired, helplessness, upset and sadness during the simulation (Table VI). This may be because they lost ability, were incapable to complete a task easily, or when they had to wait in line. In agreement with the present study a research done by Chen A et al (2015)⁽¹³⁾ reported that At least 75% of students experienced frustration, and impatience while completing the geriatric medication game. Similarly, Jeong HS et al (2017)⁽³⁶⁾ found nearly the same result of the proposed study and concluded that the nursing students experienced emotional changes through the senior simulation program, and such changes became an opportunity to change their negative feelings toward seniors into positive ones.

Regarding the nursing students` knowledge and previous work related to the care of elders (Table IV). Three quarter of the students reported having knowledge related to the care of elders. The sources of knowledge related to the care of elders as reported by the studied students were; their previous study at the technical institute of nursing, faculty of nursing, family, friend, and mass media. Also, it appears that the majority of the studied nursing students reported no previous history of work in caring for elders. These findings are in accordance with the finding of a study done by Mohamed N et al (2018)⁽³⁵⁾ which reported that the 90.2% of students in the simulation group and 82.9% in the lecture group stated that they have knowledge about caring for elders. The main source of knowledge was the family. The finding of the present study also supported by a study done by Jeong (2017)⁽³⁶⁾ which found that 35.7% of the studied subjects reported gaining information related to the care of elders from family, neighbor or relative.

In sum aging simulation activities as a curricular strategy can give assistance to the future generations of gerontological nurses through improving their attitudes and empathy toward elders. In addition to the improvement in their willingness toward elder care, resulting in improvements in the quality of nursing care provided.

V. CONCLUSION

Based on findings of the current study, it can be concluded that the aging simulation activities resulted in increasing the willingness of nursing students toward elder care, provide an opportunity to develop empathy in nursing students and improved attitudes toward elders. Therefore, Incorporating aging simulation activities into the clinical gerontological

nursing education can be a valuable educational strategy and can encourage learning in a safe environment. Moreover, simulation experiences may provide valuable opportunities for students to gain empathy or dispel negative attitudes prior to meeting elders in the clinical environment.

VI. RECOMMENDATIONS

Based on the results of the current study the following recommendations are suggested:

- Integrating the aging simulation activities into the gerontological nursing curriculum will enable students understanding of the challenges that elders face and improve future interaction and the quality of nursing care provided.
- In order to foster geriatric patient centered care, it is significant to integrate aging simulation based educational activity into the gerontological clinical course this will in turn reinforce empathy and professional attitudes across the curriculum and improve the overall quality of elderly care.
- Students need to be prepared for the psychological shock experienced from their sudden exposure to aging during the simulation program. This can be accomplished through beforehand education of the students to acquire basic knowledge about age related changes.
- Further research should evaluate the relationship between students' self-perceptions of empathy and geriatric patients perceptions of empathy showed in practice settings.

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Table (II): Distribution of the Gerontological nursing students according to their demographic characteristics

Socio-demographic characteristics	Total (n=29)	
	No	%
Age in years		
• 21-	7	24.2
• 22	22	75.8
Mean± SD	21.79±0.491	
Gender		
• Males	6	20.7
• Females	23	79.3
Marital status		
• Married	3	10.3
• Single	26	89.7
Family economic status		
• High income	0	0
• Limited income	3	10.3
• Intermediate income	26	89.7

Table (III): Distribution of the studied nursing students according to their interaction and personal experience with elders

Item	Total (n=29)	
	No	%
Living with elders at home		
• Yes	10	34.5
• No	19	65.5

Relationship with elders present at home	(n=10)#	
• Uncle	1	10
• Father	2	20
• Mother in law	2	20
• Grandmother & grandfather	6	60
Students' regular interaction with elders	(n=29)	
• No	8	27.6
• Yes	21	72.4
Pattern of interaction with elders	(n=21)	
• Daily	8	27.6
• Twice per week	1	3.4
• Once per week	5	17.2
• Once per month	7	24.1
Feeling comfortable when dealing with elders	(n=29)	
• No	8	27.6
• Yes	21	72.4

More than one answer

Table (IV): Distribution of the Gerontological nursing students according to their knowledge and previous work related to the care of elders.

Items	Total (n=29)	
	N	%
Student knowledge about the caring for elders		
• No	7	24.1
• Yes	22	75.9
Source of student knowledge about the care of elders	(n= 22)	
• Media	3	13.6
• Family and friend	6	27.3
• Faculty of Nursing	13	59.1
Previous work in caring for elders	(n=29)	
• Yes	1	3.4
• No	28	96.6

Table (V): Comparison of pre /post total mean scores of the sympathy scales, , Intent to work with the elderly scale, Modified Willingness to Care for the Elderly Scale, , and Attitudes of nursing students towards the elders

Scale	Total Mean pre-intervention	Total Mean post-intervention	Paired t test
The kiersma – Chen Empathy Scale.	82.79±7.168	85±5.726	t=1.745 p=0.092
The Jefferson scale of empathy- health professional students.	83.45±6.225	87.69±6.314	t=3.348 p=0.002*
Intent to work with the elderly scale.	33.97±6.333	35.21±5.281	t= 0.874 p=0.390
Modified Willingness to Care for the Elderly Scale.	38.31±8.565	45.48±8.025	t=3.733 p=0.001*
Attitudes of nursing students towards the elderly	94.66±10.614	98.72±11.476	t= 2.68 p=0.012*
Grand total all scale	426.48±25.947	441.41±23.834	t= 3.244 p=0.0003*

*Significant at p ≤ 0.01

Table (VI): Distribution of the studied nursing students according to their emotions experienced during the simulation.

Items	Total (n- 29)			
	Yes		No	
Emotions experienced during the simulation	no	%	no	%
• Impatience	26	89.7	3	10.3
• Frustration	25	86.2	4	13.8
• Tired	23	79.3	6	20.7
• Helplessness	22	75.9	7	24.1
• Upset	22	75.9	7	24.1
• Sadness	20	69	9	31
• Embarrassment	8	27.6	21	72.4
• Anger	9	31	20	69
• Confusion	9	31	20	69

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