

The Impact of an Intensive Care Nursing Education Program on the Knowledge About Older Adults and Age Discrimination

Yoğun Bakım Hemşireliği Eğitim Programının Yaşlılara Yönelik Bilgi ve Yaş Ayrımcılığı Üzerine Etkisi

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ABSTRACT

Aim: Health and education systems can be strained by rapid changes in population distribution and have not kept pace with these changes. The aim of this study was to determine the impact of intensive care nursing education program (ICNEP) on nurses' age discrimination and knowledge about the older patients.

Materials and Methods: This study was conducted with 26 nurses participating in the ICNEP at a tertiary hospital. The Fraboni scale of ageism (FSA) and the Knowledge-about-Older-Patients-Quiz (KOP-Q) were applied before and after the ICNEP.

Results: The nurses' median age was 30 (23-43) years (53.8% female). After the training, it was found that the mean the FSA score decreased and the mean the KOP-Q score increased. The differences between them were not statistically significant.

Conclusion: Geriatric-specific training should be separate, rather than integrated with specialist training, such as intensive care, to raise awareness of age discrimination and geriatric medicine.

Keywords: Ageism, Education, Intensive Care Nursing, Knowledge, Older Adult

ÖZ

Amaç: Sağlık ve eğitim sistemleri, nüfus dağılımındaki hızlı değişimler nedeniyle zorlanabilmekte ve bu değişimlere ayak uyduramamaktadır. Bu çalışmanın amacı, yoğun bakım hemşireliği eğitim programının (ICNEP) hemşirelerin yaş ayrımcılığına ve yaşlı hastalara ilişkin bilgileri üzerindeki etkisini belirlemektir.

Gereç ve Yöntemler: Bu çalışma üçüncü basamak bir hastanede ICNEP'e katılan 26 hemşire ile yürütülmüştür. ICNEP öncesi ve sonrasında Fraboni Yaşlı Ayrımcılığı Ölçeği (FSA) ve Yaşlı Hastalar Hakkında Bilgi Testi (KOP-Q) uygulanmıştır.

Bulgular: Hemşirelerin ortalama yaşı 30 (23-43) yılı (%53,8'i kadın). Eğitimden sonra, FSA puan ortalamasının düştüğü ve KOP-Q puan ortalamasının arttığı bulunmuştur. Aralarındaki farklar istatistiksel olarak anlamlı değildi.

Sonuç: Yaş ayrımcılığı ve geriatrik tıp konusunda farkındalığı artırmak için geriatriye özgü eğitim, yoğun bakım gibi uzmanlık eğitimleriyle entegre edilmek yerine ayrı olmalıdır.

Anahtar Kelimeler: Yaş Ayrımcılığı, Eğitim, Yoğun Bakım Hemşireliği, Bilgi, Yaşlı Yetişkin



INTRODUCTION

Geriatric population in once-young Türkiye has increased by 24% in the past five years in consequence of both technological developments and healthcare improvements (1). The population aged 65 and over in Türkiye is projected to be 11% in 2025 and 22.6% in 2060 (2). Health and education systems can be strained by rapid changes in population distribution and have not kept pace with these changes. This demographic change also indicates that nurses will provide more care to older patients. Nurses need to improve gerontological nursing skills and develop knowledge and positive attitudes toward older patients in order to care for frail older patients with chronic conditions and age-related physiological and anatomical changes. Consequently, the need for nursing training programs is growing daily.

In a study, it was found that the nurses' knowledges about older patients in Türkiye are not related to age, weekly working hours, gender and education level (3). In addition, nurses in compared to nurses in the Netherlands, nurses in Türkiye were found to know less about older patients. One reason is the absence of adequate theoretical training and practice in gerontological care in nursing education program. Adıbelli and Kılıç (4) noted that lack of knowledge, practice and experience are the reasons why nurses face difficulties in caring for older people. Although Bakan et al. (3) showed that the nurses showed a positive attitude towards older patients, Harputlu et al. (5) found that the nurses showed low willingness to care to them, and 94% stated that they preferred to take care of middle-aged patients. It is important to include geriatric nursing training as part of the national nursing education curriculum in order to improve the attitudes towards ageing.

The geriatric population is increasingly using not only outpatient health services, but also other types of healthcare services such as intensive care unit. Intensive care nursing which already requires unique knowledge specific to intensive

care unit (ICU), has to become well equipped to cope with the rising proportion of older patients. The aim is to determine the impact of Intensive Care Nursing Education Program (ICNEP) on age discrimination and knowledge about the older patients.

MATERIALS and METHODS

The study has a pre-experimental design (the one group pretest-posttest design) and aimed at evaluating the impact of the ICNEP on age discrimination and the knowledge about the older adults. A total of 26 nurses who volunteered to participate in the study and attended the ICNEP between January and February 2023 at a tertiary hospital in the eastern Türkiye were included in this study. The sample size for this study was calculated by the G Power software, version 3.1. We determined our sample size assuming a type 1 error of 0.05, effect size 0.6, and a power of 90%. Total sample size calculated was 26.

Demographic data of the participants were captured through a structured questionnaire prior to ICNEP. The Fraboni scale of ageism (FSA) and the Knowledge-about-Older-Patients-Quiz (KOP-Q) were applied before and after the ICNEP.

The ICNEP is a standardised, certified training programme, which is a postgraduate training programme organised by the Ministry of Health for nurses. ICNEP, which consists of 120 hours of theoretical training and 120 hours of practical training, was conducted over 6 weeks. The ICNEP includes education about geriatric syndromes such as pressure ulcer, agitation, depression, delirium, falls and malnutrition for 20 hours (Supplementary Table I). In the title of "Special patient groups in intensive care", a geriatrician mentioned the topics for 3 hours; "Ensuring a safe ICU stay to older patients, the effect of aging physiology on critical care, frailty, medication safety for older adults, nutrition and artificial hydration, sleep disorder, pain management, cognitive impairments and delirium".

The FSA was designed to assess stereotypes, prejudice and discrimination against older adults (6). A four-point likert scale is used with a rating of 1 (strongly disagree) to 4 (strongly agree). Items 8, 14, 21, 22, 23, 24 are positive statements and are reversed items in likert scales. The total score ranges from 29 to 116, and a higher score indicates greater age discrimination. Its Turkish validity study was made by Kutlu et al. (7) The Cronbach's alpha was found to be 0.98 (7).

The Knowledge-about-Older-Patients-Quiz is a true-false test consisting of 30 items. KOP-Q evaluates knowledge about hospitalized older patients in six themes: "normal aging", "aging problems", "geriatric conditions", "interventions", "family interventions" and "older patients vs vulnerable patients" (8). A score is given for each correct answer (9). A high score means that nurses have correct information on the older patient. Turkish validity and reliability of the scale were performed by Harputlu et al. (3).

Statistical Analysis

SPSS 25.0 was used for data analysis. A p value of <0.05 was considered statistically significant. The chi-squared (χ^2) test and Fisher's exact test were used for the comparison of categorical variables, while an independent sample t-test and Mann-Whitney U test were used for the continuous variables. Data of the study sample were expressed as means $\pm$ standard deviations for normally distributed continuous variables or median (interquartile range) for skewed continuous data. The Spearman correlation test was used to analyze data. The McNemar test and the Wilcoxon matched pairs test were used to compare the scores of scales before and after ICNEP.

The research protocol was conducted in accordance with the Helsinki declaration and was approved by University of Health Sciences Türkiye Diyarbakır Gazi Yaşargil Training and Research Hospital Clinical Research Ethical Committee (date: 30.12.2022, no: 283).

RESULTS

The median age of the nurses was 30 (23-43) years (53.8% female). 84.6% were nurses with a bachelor's degree. 3.8% of participants had training in geriatric medicine, 30.8% lived with a relative aged 65 or over. We have shown the characteristics of nurses in Table I.

Table I. Demographic characteristics of participants

Variables	Participants (n=26)
Age, years (min-max)	28 (23-43)
Gender, male, n (%)	12 (46.2%)
Presence education of geriatric medicine, n (%)	1 (3.8%)
Living with older adults aged 65 or over, n (%)	8 (30.8%)
min: Minimum, max: Maximum	

The mean score of FSA of the nurses was 66.6 ± 7.8 before the training. After the training it decreased to 65.8 ± 6.9 . There is no statistically significant difference between their scores according to education ($p > 0.05$). It was found that score of the KOP-Q was 17.3 ± 2.5 pre-test and increased to 17.7 ± 2.4 post-test. There is no statistically significant difference between their scores according to education ($p > 0.05$). The comparisons of baseline and post-test performance of nurses are given at Table II.

Table II. Wilcoxon rank sum test results for comparisons of baseline and post-test performance

Fraboni	Median	IQR (25-75)
Baseline	66	63-72
Post-test	66	61.75-69.25
P-value: >0.05 Z: -0.649		
KOP-Q	Median	IQR (25-75)
Baseline	17	15.75-19.25
Post-test	17.5	16-19.25
P-value: >0.05 Z: -0.572		

IQR: Inter quantile range, KOP-Q: Knowledge-about-Older-Patients-Quiz

In the KOP-Q post-test, Q4, Q15, Q19 and Q23 were answered correctly by all nurses (Supplementary Table II). Question 4, question 15 were the items for which the correct answer was an increase in score. The significance results for the difference between the peer nurses' pre-test and post-test mean scores on the Fraboni subscales are presented at Table III. In terms of the content of items, topics mentioned by the

geriatrician were considered to have the highest change score of correct answers. The relationship between the KOP-Q score and the FSA score before and after education was examined separately. However, there is no significant correlation between KOP-Q and FSA before and after education ($p>0.05$, $r=-0.178$; $p>0.05$, $r=-0.141$ respectively). The result of the correlation was shown in Table IV.

Table III. Significance test results of the difference between peer nurses' pre-test and post-test Fraboni subscale mean scores

Fraboni	Pre-test			Post-test			Statistics
	Min	Max	x $\pm$ SD	Min	Max	x $\pm$ SD	
Q5. Many elderly people just live in the past	2	4	3 $\pm$ 0.5	2	3	2.6 $\pm$ 0.5	P<0.05 ^a Z=-2.111
Q21. The company of most elderly people is quite enjoyable	1	4	2.2 $\pm$ 0.7	1	4	2.1 $\pm$ 0.5	P<0.05 ^a Z=-2.000
Q23. Elderly people should be encouraged to speak out politically	1	4	2.3 $\pm$ 0.7	1	3	2 $\pm$ 0.6	P<0.05 ^a Z=-2.449

Min: Minimum, max: Maximum, x: Mean, SD: Standard deviation, p: Significance
^a Wilcoxon test

Table IV. Correlation matrix between The Fraboni scale of ageism and The Knowledge-about-Older-Patients-Quiz

		KOP-Q before
Fraboni before	r	-0.178
	P value	>0.05
		KOP-Q after
Fraboni after	r	-0.141
	P value	>0.05

KOP-Q: Knowledge-about-Older-Patients-Quiz

DISCUSSION

This study is the first study that demonstrates the impact of the ICNEP on age discrimination and the knowledge of caring for the older adults among Turkish nurses. So, this study provides valuable evidence to establish nurse specialty education programs and policies using the in-house training model.

In a study using the FSA, the mean overall score of nurses on the FSA scale was 69.5 $\pm$ 13.8, and this score was higher in ICU nurses than in other units (10). In contrast, we found that the FSA

score before training was lower (66.6 $\pm$ 7.8) compared to this study. There was also a decrease in the FSA score after training (65.8 $\pm$ 6.9). This suggests that education reduces age discrimination, although the difference is not statistically significant. Knowledge increases as nurses become better educated, and nurses have less negative attitudes and age discrimination towards older adults (10).

In another study in Türkiye, nurses' average FSA score was 59.66 $\pm$ 9.40, and negative correlation was found between the FSA scores and the length of time spent living with the older person (7).

This study found a lower mean FSA score than our study. However, we found no statistically significant difference in FSA scores according to living with an older person, either before or after training. This may be a result of our small sample size and the fact that we did not ask about the length of time spent living with the older person. Adetunji et al. found that in terms of knowledge score, secondary nurses ranked lowest with an average of 49.0%, while physicians with postgraduate education ranked highest with an average of 63.91% correct responses using KOP-Q (11). Derks et al. (12) found that nurses who did not like caring for older patients and who found it more difficult to care for older patients tended to have lower levels of knowledge about older patients. Also, they found that cognitive problems, medication, the use of hearing aids, stress-incontinence, and the fall risk were the themes that had the most incorrect answers on the KOP-Q (12). The nurses identified the need for learning about how to manage the reactive behavior of older patients who have incontinence, cognitive impairment, chemical and physical restraints or immobility (13). A systematic review described the need for well-designed studies that examine nurses' attitudes and associated factors towards older patients in order to implement workforce strategies (14). We found no significant difference in KOP-Q scores between pre-test and post-test. In the literature we could not find a study similar to the one we conducted.

Also, differences in scores between centers may be due to factors such as the training of the nurses working in the centers, their age, gender and whether they care for older patients. Due to sample size, these effects could not be evaluated in our study.

Study Limitations

This study has several limitations. The design of the study as a single group pre-test post-test study is the main limitation of the study. Without a control group, it is harder to be sure about the impact of education on age discrimination and

knowledge about older adults. Another limitation is that the research was conducted in a single tertiary hospital and did not include nurses from other hospitals in Türkiye. Also, to take adjusted confounding factors such as age and living conditions into account, the number of study sample was low.

CONCLUSION

Geriatric-specific training should be separate, rather than integrated with specialist training, such as intensive care, to raise awareness of age discrimination and geriatric medicine. In addition, the standardized certified training programme must be prepared with composite, interrelated and consistent curriculum content. Inconsistencies between teachers may have an impact on the understanding of the subject matter. We particularly recommend that geriatric syndromes are explained by a person specializing in geriatric medicine.

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Conflict of Interest

No conflict of interest has been declared by the authors. All authors read and approved the final manuscript.

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Ethical Statement

The study was carried out in accordance with the ethical principles and the Helsinki Declaration. The study protocol was approved by University of Health Sciences Türkiye, Diyarbakır Gazi Yaşargil Training and Research Hospital Clinical

Research Ethical Committee (date: 30.12.2022, no: 283).

Author Contributions

Concept: FÖKK, SÖ, İS, AK; Design: FÖKK, SÖ, İS, AK; Supervision: FÖKK, AK; Data Collection and/or Processing: FÖKK, SÖ, İS; Analysis and/or Interpretation - FÖKK; Literature Search: FÖKK, SÖ, İS, AK; Writing Manuscript: FÖKK; Critical Review: FÖKK, SÖ, İS, AK

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Supplementary Table I. Topics of The Intensive Care Nursing Education Program

Theoretical issues	Hour
A) Basic issues in critical care nursing	20
1. Introduction of the intensive care nursing education program	3
Basic principles of intensive care	
2. Ethics in intensive care	3
Legal aspect of intensive care	
3. Psychosocial considerations for patients and their families in critical care	4
4. Concept of quality and safety in intensive care	4
5. Infection control and prevention in intensive care	6
B) Intensive care follow-up	14
C) Assessment and management of cardiovascular disease in intensive care unit	15
D) Basic and advanced life support	12
E) Pulmonary critical care	16
F) Neurological disorders in the intensive care unit	8
G) Disorders of the urinary system in the intensive care unit	4
H) Gastrointestinal diseases in the intensive care unit	7
I) Sepsis, shock and multiple organ dysfunction in intensive care	8
J) Special patient groups in intensive care	10
K) Transplantation	6

Supplementary Table II. Items of the KOP-Q with a percentage of correct answered

Item no	Question of the Knowledge about Older Patient-Quiz	Pre-test	Post-test
		% correct	% correct
1	<i>Forgetfulness, concentration issues, and indecisiveness are parts of aging rather than indicators of depression</i>	80.8	88.5
2	<i>Unexpected urinary incontinence in an older person may indicate that the person is suffering from a urinary tract infection.</i>	73.1	80.8
3	<i>Patients with a cognitive disorder, such as dementia, are at greater risk for delirium.</i>	84.6	92.3
4	<i>Malnutrition can have negative effects on thinking and observation skills.</i>	88.5	100
5	<i>In general, older people are more sensitive to medication because their kidney and liver functions are declining.</i>	96.2	96.2

Supplementary Table II Continued. Items of the KOP-Q with a percentage of correct answered

6	<i>Meeting with families during patient assessment is required only for persons suffering from dementia.</i>	11.5	23.1
7	<i>For older people, bed rest is important to enhance recovery.</i>	96.2	88.5
8	<i>Patients rarely remember that they were anxious and/or restless during delirium.</i>	92.3	96.2
9	<i>Older people need less fluid because they exercise less.</i>	34.6	38.5
10	<i>Asking patients whether they have fallen in the past 6 months is a good way of assessing risk of falling.</i>	96.2	73.1
11	<i>Pressure that cuts off the blood supply to tissue for two hours may result in pressure ulcers.</i>	100	92.3
12	<i>Depression is recognized in older people less frequently than it is in younger people.</i>	76.9	84.6
13	<i>Lowering the frequency of a medication is an effective intervention to achieve (medication) adherence by patients</i>	73.1	80.8
14	<i>Incontinent patients must have their soiled clothing changed but do not need to be placed on the toilet afterwards.</i>	19.2	19.2
15	<i>It is good to have older people drink more often, because they have a reduced thirst sensation.</i>	92.3	100
16	<i>In the case of delirium, bright lighting should be used to illuminate all of the corners of the room.</i>	46.2	46.2
17	<i>Medication may cause geriatric problems such as memory deficits, incontinence, falling, and depression.</i>	80.8	80.8
18	<i>Overburdening of family caregivers may lead to abuse of the person for whom they are providing care.</i>	69.2	76.9
19	<i>It is good to provide extensive instruction about how to complete tasks to patients with apraxia.</i>	100	100
20	<i>When speaking to hearing-impaired older patients, it is best to speak at normal volume.</i>	19.2	34.6
21	<i>An older person with a BMI of > 25 cannot be undernourished.</i>	57.7	73.1
22	<i>In the case of difficulty swallowing, all medicines must be ground to ensure that patients ingest them.</i>	84.6	65.4
23	<i>In the case of depression, memory problems may occur.</i>	100	100
24	<i>Most family caregivers do not need additional support from homecare services</i>	7.7	38.5
25	<i>As a nurse, you have to speak clearly into the ear of hearing-impaired older patients</i>	100	92.3
26	<i>Pain medication should be administered to older people as little as possible, due to the possibility of addiction.</i>	84.6	80.8

Supplementary Table II Continued. Items of the KOP-Q with a percentage of correct answered

27	<i>We identify pressure ulcers only if blister formation or abrasions have occurred.</i>	19.2	11.5
28	<i>In the case of delirium, activities should be spread out evenly over the day.</i>	84.6	96.2
29	<i>The risk of falling is higher for people in the hospital setting than in those who are living at home.</i>	19.2	34.6
30	<i>Stress incontinence may occur in patients who are not capable of opening their own trousers.</i>	92.3	96.2