Nursing Students' Knowledge Levels of Alzheimer's Disease and Related Factors

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Abstract

Background: The number of people with Alzheimer's disease has been increasing worldwide, particularly in developing countries including Turkey. For early diagnosis, prevention, and management of Alzheimer's disease, health professionals and particularly nurses need to have sufficient knowledge. This study was carried out to determine nursing students' knowledge levels of Alzheimer's disease and related factors.

Methods: The sample of this descriptive and cross-sectional study consisted of 266 nursing students from a state university. The data were collected using a personal information form and Alzheimer's Disease Knowledge Scale between April and May 2019. Independent samples t-test, Pearson correlation test, and one-way ANOVA test were used in the statistical analysis, and the results were presented as numbers, means, medians, and percentages.

Results: The mean age of the students was 20.91 ± 1.72 years, and 13.5% had a family member with Alzheimer's disease. The students' total Alzheimer's Disease Knowledge Scale score was 18.00 ± 2.70. It was determined that the students' grade ($F = 4.722$, $P = .003$) and having a family member with Alzheimer's disease ($t = 1.911$, $P = .051$) affected their knowledge level of Alzheimer's disease. We found that age ($r = 0.087$, $P = .155$) and sex ($t = 0.131$, $P = .896$) were not correlated with the nursing students' knowledge level of Alzheimer's disease.

Conclusion: It was determined that the nursing students had moderate knowledge levels of Alzheimer's disease. Alzheimer's disease should be included in the nursing curriculum more, and it must be aimed to increase the students' knowledge level about Alzheimer's disease.

Keywords: Nursing students, Alzheimer's disease, knowledge

Introduction

The aging rate of the world population has been increasing rapidly compared to previous years.[1] The phenomenon of aging, which is more evident in the developed countries, is now gaining importance in developing countries, and the elderly population is gradually increasing in our country.[2] According to the Turkish Statistical Institute's (TUIK) 2019 data, the ratio of the elderly population to the total population is 9.1%.[3] The incidence of dementia, one of the chronic disorders, has been increasing rapidly along with the increasing elderly population. According to the World Health Organization 2019 data, there are approximately 50 million individuals with dementia worldwide. About 60% of these live in low- and middle-income countries, with 10 million new cases added annually.[4] A worldwide prevalence study conducted between 1990 and 2016 reported that 754,169 individuals have dementia in Turkey, 35,355 individuals have died due to dementia, and 462,429 individuals were disabled due to dementia.[5] The most common type of dementia is Alzheimer's disease and it is responsible for 70-80% of dementia cases.[6] According to the 2015 data of the Turkish Ministry of Health, 18,158 people were newly diagnosed with Alzheimer's disease in 2014.[7] The cause of death was Alzheimer's disease in 3.9% of elderly people in our country in 2014, and this rate increased to 4.6% in 2018.[3] More recent data on the total number of patients could not be reached. It has been stated that the rates given for Alzheimer's disease are the tip of the iceberg, and the actual rates are much higher than has been known. The prevalence of Alzheimer's disease has been increasing and it becomes an important public health problem for both the families of the patients and the society.[4] For early diagnosis, prevention, and management of this disorder, health professionals should have sufficient knowledge about the disease as well as a positive attitude to the patients.[8]

Educating health professionals and students about dementia increases the level of knowledge about this disorder.[9,10] As the healthcare professionals' knowledge level increases, the quality of care also increases. Therefore, education about the disease is critical in improving the quality of care.[11] Current students of the healthcare programs will be important parts of the professional healthcare system in the future. Sufficient knowledge and attitude of students will be key factors for providing quality care to dementia patients in the future, particularly in the professional care of a disorder with high care needs such as Alzheimer's type dementia.[8]

A number of studies on the knowledge level of undergraduate students about dementia and Alzheimer's disease emphasized that the education curricula were insufficient and should be improved.[12-18] In England, a study on the curricula of undergraduate nursing departments on dementia found that the contents of the curriculum varied widely and were insufficient. The subject of dementia is mostly included in the mental health nursing course and the interest of the instructors in the subject affects the level of knowledge of the students. Although it has been known that dementia patients need nursing care, this subject is not even included in the curriculum of some schools.[19] No national studies in our country have determined the amount of information on dementia or Alzheimer's disease in the undergraduate nursing curricula. A systematic review reported that studies on the level of dementia knowledge were mostly conducted on the undergraduate students in America and Europe, and there were no studies on the undergraduate students especially in Asia and Africa.[8] In this context, it is important to determine the level of knowledge about Alzheimer's disease in the nursing students, who will be professional care providers in the future, in our country. As a result of the increase in the elderly population, nurses have been caring for a higher number of individuals with Alzheimer's disease. This trend is expected to increase in the future. Therefore, revealing the level of knowledge about the disease in undergraduate education, counteracting against insufficient knowledge about the disease, and increasing awareness are important in undergraduate education.

Objective

This study was conducted to determine the knowledge levels of nursing students about Alzheimer's disease and related factors.

Research Questions

1. What is the knowledge level of nursing students about Alzheimer's disease?
2. Does the grade of nursing students affect their level of knowledge about Alzheimer's disease?
3. Does the presence of a family member with Alzheimer's disease affect the level of knowledge of nursing students about Alzheimer's disease?
4. Does the age of nursing students affect their level of knowledge about Alzheimer's disease?
5. Does the gender of nursing students affect their level of knowledge about Alzheimer's disease?

Method

Type of Study

This is a descriptive and cross-sectional study.

The Universe and the Sample of the Study

The universe of the study consisted of first-, second-, third-, and fourth-grade students of the nursing department of a state university, in the spring semester of the 2018-2019 academic year (n=437). We tried to reach the whole universe. No sample selection was made in the study, and students who agreed to fill in the data collection tools were included in the study. Since it was stated at the beginning of the study that participation was on a voluntary basis, some students did not want to fill in the data collection tools, or the data collection tools were filled in incorrectly or incompletely, and there were students who used their absentee rights, and the sample of the study consisted of 266 students (60.8%).

Data Collection Tools

Data were collected using a personal information form and Alzheimer's disease information scale.

Personal Information Form

It was prepared by the researchers in light of the literature in order to obtain the demographic data of the students and their information on Alzheimer's disease–related factors.[14,15] The personal information form consisted of 4 questions to determine the age, gender, grade, and the presence of a family member with Alzheimer's disease.

Alzheimer's Disease Knowledge Scale

It is a 30-item scale developed by Carpenter et al.[20] The scale has been designed to be used by students, healthcare professionals, and the community. Scale items are scored as 1 for a correct answer and 0 for a wrong answer. The total score is obtained by summing the correct answers (0-30). A high score indicates a high level of knowledge about Alzheimer's disease. The scale does not have sub-dimensions and contains seven areas where information about Alzheimer's disease is categorized. These are diagnosis and evaluation (questions 4, 10, 20, and 21), caregiving (questions 5, 6, 7, 15, and 16), course of the disease (questions 3, 8, 14, and 17), impact on life (questions 1 and 11). ,28), risk factors (questions 2, 13, 18, 25, 26, and 27), symptoms (questions 19,22,23,30), and treatment and management (questions 9, 12, 24, and 29). It takes 5-10 minutes to fill in the scale. When the psychometric properties of the scale are examined, it has been determined that it has sufficient reliability (test-retest correlation=0.81; Cronbach's alpha=0.71) and reliability.[20] The validity and reliability study in our country was conducted by Yılmaz and Yavuz Çolak,[21] the test-retest reliability correlation coefficient was determined as 0.81, the Kuder-Richardson 20 coefficient was determined as 0.74, and the correlation of the items with the total score was found to be above the standard value of 0.20.

Data Collection

The compulsory courses with the highest number of students were preferred when collecting data in each grade. The data were collected in the classroom by one of the researchers at the beginning of the course, with the permission of the lecturer in charge of the course. After the necessary explanations about the research were given to the students included in the research, data collection tools were applied to the students who volunteered to participate. Research data were collected in April-May 2019. It took about 10 minutes to fill in the forms.

Legal Permission and Ethics Committee Approval of the Study

Written permissions were obtained from the Ethics Committee of Cankiri Karatekin university (dated 27.03.2019 and numbered 2019/109) and the Dean of the Faculty of Health Sciences of the university where the research was conducted. The author's permission was obtained via e-mail to use the Alzheimer's disease information scale in the research. The students included in the research were informed about the research, and their written informed consents were obtained.

Analysis of Data

The data were analyzed by the researchers using the SPSS (Statistical Package for The Social Sciences) 22.00 package program (IBM SPSS Corp.; Armonk, NY, USA). Number, percentage, mean, median, and standard deviation were used to examine students' demographic characteristics and Alzheimer's disease knowledge scores. Kolmogorov-Smirnov test was used to determine the normality of the distribution of the data. Independent groups *t*-test, Pearson correlation test, and one-way ANOVA test were used to compare the students' demographic characteristics and mean scale scores. The findings were evaluated at the 95% confidence interval and at a significance level of 0.05.

Results

The mean age of the students in the study was 20.91 ± 1.72 years. It was determined that 29.7% of the students were in the first grade, 75.2% were women, and 13.5% had a family history of Alzheimer's disease (Table 1). The nursing students' mean total Alzheimer's disease knowledge scale score was 18.00 ± 2.70 (min:10.00, max:25.00). It was found that the students' grade (*P*=.003) and having a family member with Alzheimer's disease (*P*=.051) affected their level of knowledge about Alzheimer's disease. In order to determine the grade creating the difference in the knowledge level about Alzheimer's disease, the LSD independent group *t*-test was performed. The analysis results indicated a statistically significant difference among the mean scores of the grades. It was determined that the age (*P*=.155)

or gender (*P*=.896) of the students did not affect the mean score of knowledge about Alzheimer's disease (Table 2).

Discussion

The proportion of the elderly population has been increasing all over the world as well as the need for healthcare professionals who care for elderly individuals. The number of individuals with Alzheimer's disease, the disease of the aging world, is also increasing. Therefore, it is important to determine the knowledge levels of nursing students, who will be the nurses of the future, about this disease and related factors. In this study, it was determined that the knowledge of nursing students about Alzheimer's disease was at a moderate level. Studies conducted to determine the knowledge of nursing students about Alzheimer's disease found the students' mean knowledge level

Table 1. Descriptive Characteristics of Nursing Students (n=266)

Characteristics	n	%
Grade		
1	79	29.7
2	66	24.8
3	57	21.4
4	64	24.1
Gender		
Female	200	75.2
Male	66	24.8
Presence of a family member diagnosed with Alzheimer's disease		
Present	36	13.5
Absent	230	86.5
	X ± SD	Min-Max
Age*	20.91 ± 1.72	17-29
*Age (median:21).		

Table 2. Alzheimer's Disease Knowledge Scale Scores in Relation with the Demographic Characteristics of Nursing Students (n=266)

Characteristics	n (%)	Score
Grade		X ± SD
1	79 (29.7)	17.13 ± 2.61
2	66 (24.8)	18.66 ± 2.82
3	57 (21.4)	18.45 ± 2.39
4	64 (24.1)	18.00 ± 2.74
		F=4.722[a]
		P = .003*
Gender		
Female	200 (75.2)	18.02 ± 2.69
Male	66 (24.8)	17.96 ±2.76
		t=.131[b]
		P = .896
Presence of a family member diagnosed with Alzheimer's disease		
Present	36 (13.5)	18.80 ± 2.78
Absent	230 (86.5)	17.88 ± 2.60
		t=1.911[b]
		P = .051*
Age		
X ± SD	18.00 ± 2.70	r=.087[c]
min-max	10.00-25.00	P = .155
*P < .05, [a]one-way ANOVA test, [b]independent group *t*-test, [c]Pearson correlation test.		

scores between 15.45 ± 2.95 and 24.5 ± 2.30.[14,18,22-27] As the scope and duration of education on dementia increase, the level of knowledge also increases.[19] In addition, a positive relationship has been reported between the number of course hours and the level of knowledge about Alzheimer's disease.[12] It has been suggested that the reasons for the difference in the mean scores of the knowledge level about Alzheimer's disease may be the time allocated in the curriculum about Alzheimer's disease, the scope of education, and the characteristics of the educators and students.

It has been found that the grade of the students affects their level of knowledge about Alzheimer's disease. In a study, it was stated that the level of knowledge increases as the age, the number of grades of the students, and the number of lessons they take about the disease increase.[14] In this study, it was determined that the level of knowledge about Alzheimer's disease was higher in the second-grade students. It was thought that this difference was due to the fact that the subjects of elderly health and Alzheimer's disease were mostly mentioned in the internal medicine nursing and geriatrics nursing courses in the second grade, and these subjects were not included in the following grades of the nursing education. Scerri and Scerri[24] found that the mean score of the students studying in the first and the fourth grades was lower than that of the second- and third-grade students. The number of compulsory courses taken by the students participating in this study was equal. We suppose that the absence of any courses covering information about the disease in the curriculum in the first grade, forgetting of unused information in the third and the fourth grades, the clinical experience of the students, or the different elective courses chosen by the students could be responsible for our results. In our study, we found a difference in relation to the grades of the students, but it was not at the desired level. The difference was approximately one point between the first-year students who have not yet received training on the subject and the second-, third-, and fourth-grade students who have received training and applied it in the clinics. The reason for this may be the time allocated to the subject in the curriculum (one course hour on average), the importance given to the subject by the instructor, the content of the course, the level of interest of the students, and encountering with these patients in the clinics. On the other hand, there is no national data or study that have determined the amount of information about dementia or Alzheimer's disease to be included in undergraduate nursing curricula. One of the topics of the Nursing National Core Education Program (HUÇEP) is the issue of elderly health and care.[28] However, it is not known how much the faculties give place to dementia under this heading. In our faculty, the subject of dementia and Alzheimer's disease is presented in approximately half an hour in the internal medicine nursing course in the fall semester of the second grade, and if students choose Geriatrics nursing as an elective course, it is presented in 2-course hours within the scope of that course. In the fourth grade, the subject is given very little place in the scope of mental health nursing. The probability of the students meeting an individual diagnosed with Alzheimer's disease in the clinic is low due to the facilities of the state hospital where the practice is made. In this study, it is thought that the reason why the mean score does not increase as the grade increases may be the insufficient educational environments and clinical practices intending to increase the knowledge level of the students in every grade.

It was found that the level of knowledge was higher in students who had a family member with Alzheimer's disease compared to those who did not. Similar to our study, it was found that students who had at least one family member with Alzheimer's disease had higher levels of knowledge about this disease.[14] It is thought that this situation is affected by the fact that family members seek more information and resources about the disease along with the diagnosis. In addition, it is thought that students with a family history of Alzheimer's disease were more willing to have information because they were more sensitive about this subject.

Conclusion and Recommendations

The results of this study reveal that the nursing department students have moderate knowledge levels about Alzheimer's disease. Educating the students, who will be nurses of the future, and helping them to gain practical experience about this disease needing care are important. It has been reported that specific dementia modules focusing on the theoretical and practical understanding of dementia are important in improving the students' knowledge of this disease and their attitudes toward these patients. As highlighted in previous research, modules should include topics that aim to improve knowledge gaps related to dementia. These topics should include modifiable and non-modifiable risk factors, causes, and treatment for Alzheimer's disease. It is recommended to include elderly healthcare issues more in nursing education programs and to draw attention to Alzheimer's disease. In addition, the findings of the study are also important in terms of encouraging educators to make curriculum changes in this regard. Therefore, future studies may focus on the effectiveness of dementia/Alzheimer's disease education. Increasing the knowledge of nursing students who will care for these patients in the future may enable individuals with Alzheimer's disease to get better care and may increase their quality of life.

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