Determining attention control levels of nursing students

Nida Kiyici*, Vocational School of Health Services, Yozgat Bozok University, 66900 Yozgat, Turkey.
https://orcid.org/0000-0001-8552-7554

Zeliha Koc, Health Science Faculty, Ondokuz Mayis University, 55200 Samsun, Turkey.
https://orcid.org/0000-0002-8702-5360

Abstract

This study was planned descriptively in order to determine the factors affecting the attention control levels of nursing students. This research was carried out with the participation of 401 nursing students who were studying at the Faculty of Health Sciences of a university between 22.04.2021 and 29.04.202. The data in the study were collected using a 19-question questionnaire that determines the sociodemographic characteristics of the nursing students and the Attention Control Scale. Kruskal Wallis, Mann Whitney U test and Cronbach's Alpha coefficient were used to evaluate the data. It was determined that the highest score of the students on the Attention Control Scale items was related with the statement "It is very difficult for me to concentrate on a difficult task when there are voices around (2.8 ± 0.9)", and the lowest score was related with the statement "It is easy for me to read or write at the same time while talking on the phone (2.0 ± 0.9)".

Keywords: Attention; attention control; nursing; nursing student; student

* ADDRESS FOR CORRESPONDENCE: **Nida Kiyici**, Vocational School of Health Services, Yozgat Bozok University, 66900 Yozgat, Turkey. *E-mail address*: nidakyc@hotmail.com

1. Introduction

Attention is defined as a function of the nervous system that ensures dealing only with the ones that are in line with current needs and purposes among the stimuli in the environment, and it is a prerequisite for learning and thinking [10], [11]. The most important feature of attention is its being versatile. Concentration, focus and consciousness underlie the attention, and it shows its effect in all cognitive areas such as learning, perception, remembering, problem-solving and interpersonal communication [3], [11], [18].

Attention is involved in many tasks related to learning and it shapes the development of cognitive functions [7]. Considering the educational environment, the learning levels of students with an effective attention level and those with limited attention levels or inattentive students are different. One of the most important reasons why students fail in their studies related to school and why their cognitive characteristics such as abilities and skills and indirectly their personality development are affected is their inability to pay attention and maintain attention [4].

The reason why this study was conducted with nursing students is that attention control level is a subject that is directly related to the nursing profession. Nursing is a profession that individuals with attention, consistency, work discipline, determination and good social communication skills can do. There are many factors affecting the attention control levels of nurses in the working environment. In line with this study, the attention control levels of the students studying in the nursing department and the factors affecting them will be determined, and suggestions will be developed to increase their professional and academic success; the quality of nursing care they provide will be increased by reducing the risks of medical malpractice after graduation. In addition, the professional satisfaction of nursing students who have a high level of attention will also increase [8].

When the literature on this subject is examined, it is seen that the number of studies determining the attention control levels of nursing students is quite limited. Therefore, this study was planned to determine the attention control levels of nursing students. It is thought that the results of this research will be useful in developing appropriate strategies in national and local action plans to increase the attention control levels of nursing students.

1.1. Aim of the study

This study was planned as a descriptive study in order to determine the factors affecting the attention control level of the students studying in the Nursing Department at the Faculty of Health Sciences of a university. In this study, answers to the following questions were sought:

• What is the level of attention control of the nursing students?
• What are the sociodemographic and educational characteristics of the nursing students that affect the attention control levels?

2. Material and methods

2.1. Place and time of the study

This descriptive study was conducted with nursing students studying at the Faculty of Health Sciences of a university between April 22 and April 29, 2021.

2.2. Place and time of the study

The study was carried out with the participation of 401 nursing students studying at the Faculty of Health Sciences of a university who were willing to participate in the research. Nursing students, either male or female, who were willing to participate in the study, were included in the study. The

dependent variable of the study is the attention control level of the nursing students. The independent variables of the study are the sociodemographic and educational characteristics of the nursing students.

2.3. Data collection tools

In the study, data were collected by using a questionnaire form introducing nursing students and the Attention Control Scale. The questionnaire form consists of a total of 19 questions introducing the sociodemographic characteristics of nursing students (age, class, gender, marital status, high school from which they graduated, mother's education level, mother's occupation, father's education level, father's occupation, family structure, accommodation unit, social security status, family income status, the state of voluntarily choosing the profession, the state of loving the profession, the state of considering changing the profession, the state of being a member of professional associations, the state of following a professional publication and who they live with at the moment).

2.3.1. Attention Control Scale

The Attention Control Scale was developed by Derryberry and Reed [7] and adapted into Turkish by Akin et al. [2]; it is a one-dimensional scale consisting of 20 items. In this scale, individuals are expected to mark their answers with a 4-point scale (1 = Almost never, 2 = Sometimes, 3 = Often and 4 = Always) regarding the frequency of the behaviour or situation specified in the items. There is no reverse scored item in the scale. The scores that can be obtained from the scale vary between 20 and 80. A high total score from the scale indicates a high level of attention control.

2.4. Data collection

The questionnaire form and the scale were tested with preliminary application on a group of 10 students; incomprehensible or incomplete questions were determined and corrected; and the draft was given its final form after the pilot study. The ethical standards of the Declaration of Helsinki were complied with in this study. The data were collected by the researchers. The students who agreed to participate in the study were included in the study. There was no time limit for filling out the questionnaires. It was stated to the students that the decision about whether or not to participate in the research was entirely their own call, that their names would not be written on the questionnaire and the data collected from this study would only be used within the scope of the research. Data collection was completed in approximately 8–10 minutes.

2.5. Evaluation of the data

Statistical analysis of the data regarding the nursing students included in the study was analysed using the Statistical Package for the Social Sciences 23.0 package programme in the computer environment. Percentage calculation, Kruskal–Wallis test, Mann–Whitney *U* Test and Cronbach's alpha coefficient were used to evaluate the data. The results were presented as frequency, percentage, mean and standard deviation. The significance level was taken as $p < 0.05$.

3. Result

A total of 401 nursing students participated in this study. It was determined that 69.1% of the students participating in the study were female; 30.9% were male; the education level of the mothers of 43.6% was primary school; and the education level of the fathers of 29.4% was primary school; the mothers of 90.8% were housewives; the fathers of 24.7% were self-employed; 71.8% had a nuclear family structure; the accommodation unit of 48.1% was the city centre for the longest time; 70.3% were currently living in dormitories; 72.3% had incomes equal to their expenses; 86.3% had social security; 65.1% preferred nursing voluntarily; 76.6% loved their profession; 35.2% were considering

changing their profession; 98.3% were not members of professional associations; 77.6% did not follow professional publications; and their average age was 20.9 ± 1.8 (Table 1).

Table 1. Distribution of sociodemographic characteristics of nursing students (*N* = 401)

Features		*n*	%
Age average	20.9 ± 1.8		
Age groups	18–20 years of age	178	44.4
	21–23 years of age	194	48.4
	≥24 years of age	29	7.2
Class	First grade	102	25.4
	Second grade	97	24.2
	Third grade	97	24.2
	Fourth grade	105	26.2
Gender	Female	277	69.1
	Male	124	30.9
Marital status	Married	6	1.5
	Single	395	98.5
Graduated high school	Health vocational high school	33	8.2
	Anatolian high school	246	61.3
	Teacher high school	10	2.5
	Flat high school	97	24.2
	Industrial Vocational school	15	3.7
Mother's education level	Illiterate	76	19.0
	Literate	36	9.0
	Primary school	175	43.6
	Middle school	65	16.2
	High school	37	9.2
	University	12	3.0
Mother's profession	Housewife	364	90.8
	Officer	5	1.2
	Retired	10	2.5
	Worker	17	4.2
	Farmer	2	0.5
	Deceased	3	0.7
Father's education level	Illiterate	12	3.0
	Literate	36	9.0
	Primary school	118	29.4
	Middle school	102	25.4
	High school	92	22.9
	University	41	10.2
Father's profession	Officer	58	14.5
	Retired	96	23.9

	Worker	74	18.5
	Farmer	48	12.0
	Self-employment	99	24.7
	Not working	17	4.2
	Deceased	9	2.2
Family structure	Extended family	113	28.2
	Nuclear family	288	71.8
Accommodation unit	City	193	48.1
	Town	130	32.4
	Village	78	19.5
Social security status	Yes	346	86.3
	No	55	13.7
IIncome status	Income less than expense	72	18.0
	Income equals expense	290	72.3
	Income more than expense	39	9.7
The state of choosing the profession voluntarily	Yes	261	65.1
	No	140	34.9
The state of loving the profession	Yes	307	76.6
	No	94	23.4
The state of considering changing the profession	Yes	141	35.2
	No	260	64.8
The state of being a member of professional associations	Yes	7	1.7
	No	394	98.3
The state of following professional publications	Yes	90	22.4
	No	311	77.6
People they live with currently	Family	34	8.5
	Relative	5	1.2
	Friend	78	19.5
	Dorm	282	70.3
	Alone	2	0.5

Nursing students' mean and standard deviations of the Attention Control Scale items 'I find it very difficult to concentrate on a difficult task when there are noises around', 'I have difficulty in focusing my attention when I have to concentrate on a problem and solve it', 'The events around me distract me even when I am working hard on something', 'I can concentrate even when there is music in the room', 'When I concentrate on something, I can concentrate in a way that I am not aware of what is happening in the room', 'When I study or read something, I can easily be distracted by the conversations of the people in the room', 'I have difficulty in preventing distracting thoughts when trying to focus my attention on something', 'I find it very difficult to concentrate when I am excited', 'When I concentrate, I do not care about my hunger or thirst', 'I can switch from one task to another quickly', 'It takes some time to really focus on a new task', 'It is difficult for me to adjust my attention between listening and writing while taking notes during the lesson', 'I can deal with a new topic very quickly when necessary', 'It is easy for me to read or write at the same time while talking on the phone', 'I find it difficult to have two conversations at the same time', 'I find it difficult to come up

with new ideas quickly', 'When my attention is distracted or my work is interrupted, I can easily pay attention to the work I was doing before', 'When a distracting thought comes to my mind, I can easily block it out', 'It is easy for me to switch between two different tasks' and 'I find it difficult to put away a thought and look at it from another angle when thinking about something' are, respectively, 2.8 ± 0.9, 2.3 ± 0.8, 2.4 ± 0.9, 2.2 ± 1, 2.4 ± 1, 2.6 ± 1, 2.5 ± 0.9, 2.7 ± 0.9, 2.3 ± 1, 2.5 ± 0.9, 2.4 ± 0.8, 2.2 ± 0.9, 2.5 ± 0.8, 2.0 ± 0.9, 2.4 ± 1, 2.1 ± 0.8, 2.3 ± 0.8, 2.2 ± 0.8, 2.3 ± 0.8 and 2.1 ± 0.8 (Table 2).

Table 2. Distribution of the mean scores of the Attention Control Scale

	Scale items	AM ± SD
1	I find it very difficult to concentrate on a difficult task when there are noises around.	2.8 ± 0.9
2	I have difficulty in focusing my attention when I have to concentrate on a problem and solve it.	2.3 ± 0.8
3	The events around me distract me even when I'm working hard on something.	2.4 ± 0.9
4	I can concentrate even when there is music in the room.	2.2 ± 1.0
5	When I concentrate on something, I can concentrate in a way that I am not aware of what is happening in the room.	2.4 ± 1.0
6	When I study or read something, I can easily be distracted by the conversations of the people in the room.	2.6 ± 1.0
7	I have difficulty in preventing distracting thoughts when trying to focus my attention on something.	2.5 ± 0.9
8	I find it very difficult to concentrate when I'm excited.	2.7 ± 0.9
9	When I concentrate, I do not care about my hunger or thirst.	2.3 ± 1.0
10	I can switch from one task to another quickly.	2.5 ± 0.9
11	It takes some time to really focus on a new task.	2.4 ± 0.8
12	It is difficult for me to adjust my attention between listening and writing while taking notes during the lesson.	2.2 ± 0.9
13	I can deal with a new topic very quickly when necessary.	2.5 ± 0.8
14	It is easy for me to read or write at the same time while talking on the phone.	2.0 ± 0.9
15	I find it difficult to have two conversations at the same time.	2.4 ± 1.0
16	I find it difficult to come up with new ideas quickly.	2.1 ± 0.8
17	When my attention is distracted or my work is interrupted, I can easily pay attention to the work I was doing before.	2.3 ± 0.8
18	When a distracting thought comes to my mind, I can easily block it out.	2.2 ± 0.8
19	It's easy for me to switch between two different tasks.	2.3 ± 0.8
20	I find it difficult to put away a thought and look at it from another angle when thinking about something.	2.1 ± 0.8

AM: Arithmetic mean, SD: Standard deviation.

The median score of the Attention Control Scale of nursing students was 47 (20–80) and the Cronbach's alpha reliability coefficient was 0.630 (Table 3). When the sociodemographic characteristics of nursing students and the median score of the Attention Control Scale were compared, it was determined that there was a statistically significant difference in terms of characteristics such as the state of choosing the profession voluntarily (U = 15,085, p = 0.004), the state of loving the profession (U = 11,744, p = 0.006) and the state of considering changing the profession (U = 11,457, p = 0.009). In line with the findings, it was determined that the participants who did not choose their profession voluntarily, did not like it and were considering changing it got higher scores from the Attention Control Scale. There was no statistically significant difference between the attention control scores of nursing students' and their age groups (χ^2 = 1.439, p = 0.487), class (χ^2 = 1.415, p = 0.702), gender (U = 15,216, p = 0.067), marital status (U = 899.50, p = 0.310), the high school they graduated from (χ^2 = 3.647, p = 0.456), mother's education level (χ^2 = 6.045, p = 0.302), mother's occupation (χ^2 = 5.258, p = 0.385), father's education level (χ^2 = 2.862, p = 0.721), father's occupation (χ^2 = 4.573, p = 0.600), family structure (U = 16,268.50, p = 0.997), accommodation

unit (χ^2 = 1.443, *p* = 0.486), social security status (*U* = 8,998, *p* = 0.52), income status (χ^2 = 2.005, *p* = 0.367), the state of being a member of professional associations (*U* = 985.50, *p* = 0.195), the state of following professional publications (*U* = 13,696.50, *p* = 0.753) and people they live with currently (χ^2 = 4.073, *p* = 0.396) (Table 4).

Table 3. Median point value of Attention Control Scale and Cronbach's alpha reliability coefficient

	Med (Min–Max)	Cronbach's alpha value
Attention Control Scale	47 (20–80)	0.630

Table 4. Comparison of nursing students' sociodemographic characteristics and Attention Control Scale score

Features		Med (Max–Min)	*p* value Test value
Age groups	18–20 years of age	47 (64–20)	*p* = 0.487 χ^2 = 1.439
	21–23 years of age	47 (80–24)	
	≥24 years of age	45 (57–35)	
Class	First grade	47 (64–20)	*p* = 0.702 χ^2 = 1.415
	Second grade	47 (61–33)	
	Third grade	46 (63–24)	
	Fourth grade	47 (80–36)	
Gender	Female	47 (80–20)	*p* = 0.067 *U* = 15,216.0
	Male	48 (65–33)	
Marital status	Married	44 (52–42)	*p* = 0.310 *U* = 899.50
	Single	47 (80–20)	
Graduated high school	Health vocational high school	47 (60–37)	*p* = 0.456 χ^2 = 3.647
	Anatolian high school	47 (80–20)	
	Teacher high school	48 (55–40)	
	Flat high school	47 (64–24)	
	Industrial Vocational school	45 (51–39)	
Mother's education level	Illiterate	47 (64–33)	*p* = 0.302 χ^2 = 6.045
	Literate	47 (57–33)	
	Primary school	47 (65–34)	
	Middle school	48 (70–20)	
	High school	46 (60–24)	
	University	46 (80–39)	
Mother's profession	Housewife	47 (70–20)	*p* = 0.385 χ^2 = 5.258
	Officer	50 (53–45)	
	Retired	45.5 (80–38)	
	Worker	45 (53–36)	
	Farmer	47.5 (51–44)	
	Deceased	50 (53–44)	
Father's education level	Illiterate	46.5 (52–36)	*p* = 0.721 χ^2 = 2.862
	Literate	47.5 (64–34)	
	Primary school	47 (65–20)	
	Middle school	47.5 (69–34)	

Father's profession	High school	47 (70–33)	
	University	47 (80–24)	
	Officer	47 (65–24)	
	Retired	47 (80–20)	
	Worker	47 (63–35)	
	Farmer	47 (60–36)	*p* = 0.600
	Self-employment	47 (63–33)	χ^2 = 4.573
	Not working	50 (58–42)	
	Deceased	44 (69–35)	
Family structure	Extended family	47 (69–33)	*p* = 0.997
	Nuclear family	47 (80–20)	*U* = 16,268.50
Accommodation unit	City	47 (80–20)	*p* = 0.486
	Town	46.5 (63–24)	χ^2 =1.443
	Village	47 (64–36)	
Social security status	Yes	47 (80–20)	*p* = 0.52
	No	47 (58–33)	*U* = 8,998.0
Income status	Income less than expense	47 (69–36)	*p* = 0.367
	Income equals expense	47 (80–20)	χ^2 = 2.005
	Income more than expense	47 (65–36)	
The state of choosing the profession voluntarily	Yes	47 (80–24)	*p* = 0.004
	No	48 (65–20)	*U* = 15,085.0
The state of loving the profession	Yes	47 (80–20)	*p* = 0.006
	No	48 (69–33)	*U* = 11,744.0
The state of considering changing the profession	Yes	48 (70–35)	*p* = 0.009
	No	47 (80–20)	*U* = 11,457.0
The state of being a member of professional associations	Yes	47 (80–44)	*p* = 0.195
	No	47 (70–20)	*U* = 985.50
The state of following professional publications	Yes	47 (65–33)	*p* = 0.753
	No	47 (80–20)	*U* = 13,696.50
People they live with currently	Family	46(56–40)	
	Relative	49 (52–37)	
	Friend	46.5 (63–33)	*p* = 0.396
	Dorm	47 (80–20)	χ^2 = 4.073
	Alone	44 (49–39)	

χ^2: Kruskal–Wallis test statistics, *U*: Mann–Whitney *U* test statistics.

4. Discussion

In this study, which was conducted to determine the attention control levels in nursing students, it was seen that the majority of nursing students had above average Attention Control Scale scores. Nursing students had the highest score for 'I find it very difficult to concentrate on a difficult task when there are noises around (2.8 ± 0.9)' and 'I find it very difficult to concentrate when I am excited (2.7 ± 0.9)' items and the lowest score for 'It is easy for me to read or write at the same time while

talking on the phone (2.0 ± 0.9)', 'I find it difficult to come up with new ideas quickly (2.1 ± 0.8)' and 'I find it difficult to put away a thought and look at it from another angle when thinking about something (2.1 ± 0.8)' items of the Attention Control Scale. Consistent with the research findings, Sata [17] stated that the frequency of phone use was the variable with the highest effect on the attention control mechanism; Bayrak and Sevincer [6] and Ozsoy and Kulu [15] reported in their study that smartphone addiction statistically increased attention deficit; Ozmen and Demir [14] informed in their study that a quiet environment increased the attention process. It is thought that the use of telephone and a loud environment may negatively affect the academic success of students and reduce their attention control levels.

It was observed in this study that the median score of the Attention Control Scale differed according to some sociodemographic characteristics of the nursing students, and the students who did not choose their profession voluntarily, did not love their profession and did not consider changing their profession had a high Attention Control Scale score. The reason for this may result from their fear of making mistakes because they do not like the profession, they are not sure of themselves and, therefore, they are more attentive to be even more careful. It was determined that nursing students' age groups, classes, education levels and occupations of their parents, family structures, accommodation units they lived for the longest time, people they live with currently, income status, social security status, the state of being a member of professional associations and the state of following professional publications did not affect the Attention Control Scale scores.

Supporting the research findings, it was reported in the study of Karaduman [11] that gender and class level did not affect the level of attention control; in the study of Atli et al. [5], gender, age and class level did not affect the level of attention control; in the study of Kartal et al. [13], gender and age did not affect the level of attention control; in the study of Karakulakli and Gulbahce [12], grade levels did not affect the level of attention control; in the study of Yeniacun and Ozdogru [19] gender, age, education level and the profession of parents did not affect the level of attention control; in the study of Bayrak and Sevincer [6] gender, age group, people they live with and monthly income did not affect the level of attention control. Despite the research findings, it was determined in the study of Adsiz [1] that gender, income status and mother's education level affected the level of attention control; male students were 50% more attentive than female students; those with higher income status had higher attention control levels; children of high school graduate mothers had a higher level of attention control than the ones with primary school graduate mothers; and that the education of the father did not affect the level of attention control ($p > 0.05$).

On the other hand, Ozturk et al. [16] reported that gender, age and family structure did not affect the attention control level after the study in which they investigated the attention control levels of the students of Health Services Vocational School. In another study conducted by Grenwald-Mayes [9], it was reported that attention control was related to the education of the father; however, the profession of the mother and the father and the education of the mother did not affect the attention control. After the study conducted by Sata [17] to determine the variables that affect the attention control of high school students, it was determined that the attention control differed according to age, gender and the state of living with family; students aged 17 and 18 had lower attention control levels; male students were more careful than female students; those living with one of their parents had a higher level of attention control than students living with their parents; and their income did not affect the level of attention control. Although the factors affecting the level of attention control differ according to the studies, it is thought that this situation may be affected by the individual and cultural characteristics of the students and environmental factors.

It is thought that the high or low level of attention control of the students will affect their success in the academic process, social life and professional field. Considering the negative effect of phone use on attention control, it can be said that it would be beneficial to take measures to reduce the frequency of phone use [16], [17].

5. Conclusion

It was determined, in this study, that the majority of nursing students had moderate attention control scores and the scale scores differed according to some characteristics such as choosing the profession voluntarily, loving their profession, considering changing their profession, phone use and having voices around. In line with the findings, it can be said that students' love for their profession and their willingness to choose it affect their attention control levels. In this direction, it is recommended to consider the preferences of individuals while making career choices in university entrance exams, to pay attention to the quietness of the studying environment, to work on reducing the frequency of telephone use and to use educational methods that increase students' attention control levels while restructuring the nursing education curriculum. In addition, it is recommended to use both qualitative and quantitative research methods together and benefit from the focus group interview method in future research on this subject.

6. Limitations of the research

The inability to make long-term observations to evaluate the accuracy of the statements given by the students within the scope of the research to the data collection tools is a limitation of this research.

Acknowledgement

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