

# Nursing Students' Attitudes Towards Brain Drain in Turkey: A Cross-Sectional Study

## Türkiye'deki Hemşirelik Öğrencilerinin Beyin Göçüne Yönelik Tutumları: Kesitsel Bir Çalışma

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**ABSTRACT Objective:** Brain drain is increasing in the field of health in the world. This study was conducted to determine the opinions and attitudes of nurses of the future on brain drain in Turkey. **Material and Methods:** The study was conducted descriptively with 617 nursing department students who agreed to participate in the study between April and June 2019. The data were collected using the questionnaire form including socio-demographic characteristics and the 16-item Attitude Scale for Brain Drain (ASBD). The analysis of the data was performed by using percentage, average, parametric and nonparametric tests in the computer environment. **Results:** It was observed that the mean ASBD total score of the students participating in the study was 53.88±11.03. A statistically significant difference was found between the mean ASBD total score and the variables of age, gender, class, income status, employment status, educational status of parents, previous abroad experience, abroad experience of relatives in the immediate vicinity, information about working conditions as a nurse abroad, and desire to work abroad after graduation ( $p<0.05$ ). **Conclusion:** The results of this study revealed that the students had positive attitudes and tendencies towards brain drain and their attitudes were affected by the age, gender, class, working status, income status, educational status of parents, previous abroad experience, abroad experience of relatives in the immediate vicinity, information about working conditions as a nurse abroad, and desire to work abroad after graduation.

**Keywords:** Attitude; brain drain; nurse; student

**ÖZET Amaç:** Dünyada sağlık alanında beyin göçü artmaktadır. Bu çalışma, Türkiye'deki geleceğin hemşirelerinin beyin göçü hakkındaki görüş ve tutumlarını belirlemek amacıyla yapıldı. **Gereç ve Yöntemler:** Çalışma, Nisan-Haziran 2019 tarihleri arasında çalışmaya katılmayı kabul eden 617 hemşirelik bölümü öğrencisiyle tanımlayıcı olarak yapıldı. Veriler, sosyodemografik özellikleri içeren soru formu ve 16 maddeden oluşan Beyin Göçüne Yönelik Tutum Ölçeği (BGYTÖ) kullanılarak toplandı. Verilerin analizi bilgisayar ortamında; yüzdelik, ortalama, parametrik ve nonparametrik testler kullanılarak yapıldı. **Bulgular:** Çalışmaya katılan öğrencilerin BGYTÖ toplam puan ortalaması 53,88±11,03 olduğu görüldü. Yaş, cinsiyet, öğrenim gördüğü sınıf, gelir durumu, çalışma durumu, anne ve baba eğitim durumu, daha önce yurt dışında bulunma, yakın çevresinde akrabalarının yurt dışında olma durumu, yurt dışında hemşire olarak çalışma koşulları hakkında bilgi durumu ve mezun olduktan sonra yurt dışında çalışmayı isteme değişkenleriyle BGYTÖ toplam puan ortalaması arasında istatistiksel olarak anlamlı fark olduğu tespit edildi ( $p<0,05$ ). **Sonuç:** Çalışmada, hemşirelik öğrencilerinin beyin göçüne ilişkin olumlu tutuma sahip oldukları ve beyin göçüne ilişkin eğilimlerinin arttığı ve tutumlarının yaş, cinsiyet, çalışma, gelir durumu, anne-baba eğitim düzeyi, daha önce yurt dışında bulunma, yurt dışında yakın akrabasının olması, yurt dışında hemşire olarak çalışma hakkında bilgisinin olması ve mezuniyetten sonra yurt dışında çalışma isteği değişkenlerinden etkilendiği görüldü.

**Anahtar Kelimeler:** Tutum; beyin göçü; hemşire; öğrenci

Migration, which started with the existence of humanity, is generally defined as displacement.<sup>1</sup> Nowadays, there are significant migrations especially from low-income countries and developing countries to Eu-

ropean countries.<sup>2,3</sup> There are many reasons for migrations.<sup>4</sup> Migrations also occur mostly due to economic opportunities, better lifestyle, and easier employment, in addition to compulsory reasons such as war.<sup>1-3,5,6</sup>

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Brain drain, which is defined as “*the movement of high-level professionals and scientists from their own countries to settle and work in another developed country*”, has an important place among the reasons for migration.<sup>7</sup> Brain drain, which is especially known as the migration of educated people, is considered as an important problem all over the world.<sup>1</sup> Most of the educated individuals who are experts in their fields leave their countries through brain drain which is common in underdeveloped and developing countries.<sup>1,3,8,9</sup>

Brain drain is a global problem that causes significant losses of staff in the field of health, as well as in many other scientific fields, in the countries.<sup>3</sup> Brain drain in health, especially among nurses and doctors, started as a trend that developed in line with their desires to have better living conditions and to get high income.<sup>1,3,9</sup> It is observed that the migration rates of healthcare professionals, especially nurses and doctors, are gradually increasing in Europe.<sup>1</sup> According to the data of the World Health Organization, the rate of migration of nurses and physicians in the field of health to European countries has increased by 60% over the past decade.<sup>10</sup>

It is observed that brain drain is gradually increasing in the field of health and in other fields in Turkey as well as in the world.<sup>7</sup> According to the data in 2018, it was reported that there was an increase of 27.7% in migration compared to the previous year.<sup>11</sup> To provide quality care to patients is only possible with the presence of sufficient number of healthcare professionals, especially nurses who are the pioneers of care.<sup>12</sup> In brain drain which is gradually increasing in health, nurses' position may also affect the health policies of the countries. Although there has been studies on brain drain in different occupational groups in Turkey, there has not been observed much studies on the attitudes of future nurse candidates towards brain drain. Thus, the aim of this study was to determine the opinions and attitudes of nurses of the future on brain drain.

### Research Questions

1. What is the nursing students' attitudes and tendencies towards brain drain in Turkey?
2. What are the factors affecting the nurses' attitudes and tendencies towards brain drain?

## MATERIAL AND METHODS

### STUDY DESIGN

The study was carried out in a descriptive and cross-sectional design.

### SAMPLE

The study was conducted in a health sciences faculty. The population of the study consisted of all nursing students in the health sciences faculty (n=762). All students who were available (excluding 145), were not on leave or sick within the study period, and were accepted to participate (n=617) were included in the study plan between April-June 2019.

### DATA COLLECTION

The data were collected using a questionnaire containing socio-demographic features form and the Attitude Scale for Brain Drain (ASBD).

**Socio-demographic features form:** This form was prepared by the researchers.<sup>1,3,4,9</sup> It includes 14 questions on age, gender, graduated high school, class, working status, income status, where childhood spent, family structure, mother and father educational level, having been abroad before, close relatives living abroad around, information about working as a nurse abroad and the desire to do the profession abroad after graduation.

**Inclusion Criteria:** Being registered nursing degree program and nursing students, aged over 18 years, conscious and oriented to time and space, no visual, audial, or lingual disabilities, and no mental disorder, being a volunteer to participate in the study.

**Attitude Scale for Brain Drain:** The scale is a 5-point Likert type (1=certainly disagree, 2=disagree, 3=neither agree or disagree, 4=agree, 5=strongly agree) scale and includes 16-items. ASBD Turkish validity and reliability study of which was performed by Öncü et al.<sup>13</sup> Regarding the reliability of this data-collection instrument, Öncü et al. reports a Cronbach's alpha value of 0.91; in this study, the Cronbach's alpha value was calculated as being 0.89.<sup>13</sup> The highest and lowest scores to be obtained from the scale were 80 and 16, respectively, and a high score obtained from the scale indicates positive attitude towards migration and a low score indicates a tendency to migrate.

## ETHICAL CONSIDERATIONS

The purpose, risks, and benefits concerning the research were explained to potential participants, who were also informed that their responses would be confidential and anonymous, that participation was voluntary and that they could withdraw at any point. The Helsinki Declaration principles were followed. The Ethical Committee of Sakarya University (71522473/050.01.04/137), before data collection began, approved the study.

## STATISTICAL ANALYSIS

The evaluation of the data was made in the IBM Statistical Package for the Social Sciences (IBM SPSS Corp.; Armonk, NY, USA) version 23 package program. Descriptive statistics (mean, standard deviation, median, frequency, minimum, and maximum) related to the variables were calculated. Parametric tests were performed for data with normal distribution and non-parametric tests were used for data not showing normal distribution. Mann-Whitney U test was used in the two-group comparison and Kruskal-Wallis test was used in the comparison of three or more groups. Significance was evaluated at  $p < 0.01$  and  $p < 0.05$  levels.

## RESULTS

The average age of the students was  $20.78 \pm 1.91$  years. While 82.2% of the students were female, 71.8% graduated from Anatolian high school, 92.5% were unemployed, 70.8% had middle income, 50.4% spent their childhood in the province, and 82.0% had a nuclear family structure. It was determined that the educational levels of the students' mothers (50.6%) and fathers (37.4%) were primary education. It was determined that the majority of the students (84.9%) had not been abroad previously, 52.7% had no one from their immediate vicinity abroad, and 23.7% of those went abroad only for sightseeing purposes. It was determined that 66.3% of the students wanted to work as a nurse abroad, and the majority (65.6%) of them did not have any information about the working conditions as a nurse abroad (Table 1).

It was observed that the mean ASBD total score of the students participating in the study was  $53.88 \pm 11.03$  (Table 2).

It was determined that the graduated high school, family structure and the place of childhood did not affect the ASBD total score ( $p > 0.05$ ) (Table 1). A statistically significant difference was found between the mean ASBD total score and the variables of age, gender, class, working status, income status, educational status of parents, previous abroad experience, abroad experience of relatives in the immediate vicinity, information about working conditions as a nurse abroad, and desire to work abroad after graduation ( $p < 0.05$ ). Accordingly, students aged 25 and over, male students, employed students, students with poor income, final year nursing students, students whose parents were high school graduates, students with previous abroad experience, students with relatives abroad in their immediate vicinity, students with knowledge about working as a nurse abroad, and students who desired to work abroad after graduation had statistically significantly higher mean scores from the ASBD ( $p < 0.05$ ) (Table 1).

## DISCUSSION

The migrations occurring due to many reasons, such as better living conditions, education and career plans, increasingly continue today, as they used to be.<sup>3,13</sup> It is observed that the brain drain, which is defined as the displacement of especially qualified and well-educated people, has increased gradually since the end of the 1970s.<sup>14</sup> It is observed that healthcare professionals, especially nurses and physicians, are among the occupational groups in which significant migrations generally occur from underdeveloped or developing countries to European countries.<sup>3,9,10</sup> According to the studies conducted, it is observed that the brain drain observed in healthcare workers is towards especially developed European countries with high possibilities and opportunities.<sup>6,10,15</sup>

In a study conducted by Kadel and Bhandari with 99 nurses, it was determined that 55.6% of the nurses considered to migrate.<sup>16</sup> Similarly, in another study conducted with nurses, it was also observed that the great majority of nurses wanted to go abroad.<sup>17</sup>

In the study conducted by Nguyen et al. with 139 nursing students in Uganda, it was determined that 70% of the students wanted to work abroad and

**TABLE 1:** Demographic characteristics of the nursing students and comparison of the attitude scale for brain drain scores.

Characteristics		f	%	ASBD		Test
				Median	IQR	
Age	Between 18-21 years	101	28.9	49.00	15.25	$\chi^2=7.001$
	Between 22-24 years	113	32.3	49.00	15.00	<b>*p=0.030</b>
	25 years old and over	117	33.4	48.50	12.25	
Gender	Women	507	82.2	50.00	16.00	$z=-3.529$
	Men	110	17.8	51.00	14.00	<b>***p&lt;0.001</b>
Graduated high school	Standard high school	84	13.6	48.00	13.25	$\chi^2=4.658$
	Anatolian high school	443	71.8	50.00	15.00	$p=0.199$
	Health vocational high school	72	11.7	50.00	12.00	
	Science high school	18	2.9	45.00	17.50	
Class	1	155	25.1	49.00	15.25	$\chi^2=8.124$
	2	165	26.7	49.50	17.25	<b>*p=0.044</b>
	3	175	28.4	48.00	13.00	
	4	122	19.8	51.5	14.25	
Working status	Working	46	7.5	49.00	16.50	$z=-2.570$
	Not working	571	92.5	49.00	16.00	<b>*p=0.010</b>
Income status	Bad	19	3.1	58.50	17.75	$\chi^2=7.001$
	Middle	437	70.8	49.50	16.00	<b>*p=0.030</b>
	Good	161	26.1	48.00	15.25	
Where childhood spent	Village	103	16.7	52.50	14.25	$\chi^2=3.342$
	Town	203	32.9	48.00	15.00	$p=0.188$
Family structure	City	311	50.4	49.00	16.00	
	Core	506	82.0	49.00	16.00	$\chi^2=1.063$
	Large	98	15.9	51.00	13.00	$p=0.588$
	Broken	13	2.1	54.00	26.00	
Mother's educational status	Illiterate	45	7.3	51.00	12.50	$\chi^2=13.184$
	Literate	46	7.5	48.00	17.75	<b>*p=0.022</b>
	Primary school	312	50.6	49.00	16.00	
	Middle School	98	15.9	49.00	17.00	
	High school	91	14.7	52.00	15.00	
	Undergraduate and above	25	4.1	48.00	15.00	
Father's educational status	Illiterate	7	1.1	47.00	8.00	$\chi^2=11.679$
	Literate	40	6.5	52.00	16.00	<b>*p=0.039</b>
	Primary school	231	37.4	49.50	15.75	
	Middle school	124	20.1	49.50	16.75	
	High school	142	23.0	49.00	17.00	
	Undergraduate and above	73	11.8	51.50	13.75	
Having been abroad before	Yes	93	15.1	51.00	14.00	$z=-2.487$
	No	524	84.9	50.00	15.00	<b>**p=0.013</b>
Close relatives living abroad around	Yes	292	47.3	52.00	13.00	$z=-4.234$
	No	325	52.7	48.00	17.00	<b>***p&lt;0.001</b>
Information about working as a nurse abroad	Yes	212	34.4	50.00	14.25	$z=-4.208$
	No	405	65.6	48.00	16.00	<b>***p&lt;0.001</b>
The desire to do the profession abroad after graduation	Yes	409	66.3	52.00	10.75	$z=-12.673$
	No	208	33.7	48.00	16.00	<b>***p&lt;0.001</b>

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001; IQR: Inter-quartile range; z: Man-Whitney U testi,  $\chi^2$ : Kruskal-Wallis H testi; ASBD: Attitude Scale for Brain Drain.

only 8% of the students wanted to stay in their country.<sup>15</sup> Similar to the literature, in our study in which we examined the attitudes and opinions of nursing students on brain drain, it was determined that 66.3% of the students wanted to work as nurses abroad (Table 1). In a study conducted by Demiray et al. with 589 nursing students, ASBD average score was found to be  $42.98 \pm 9.91$  and they were determined that attitudes of nursing students towards brain drain were below average.<sup>18</sup> Unlike the result of our study, it was observed that the mean ASBD total score of the students participating in the study was  $53.88 \pm 11.03$  (Table 2). According to the scale result, it was observed that nursing students' tendencies to migrate increased and had positive attitudes towards migration.

Although there are many reasons for brain drain, better living conditions, higher salaries, education plans, faster promotion and better working opportunities are among the reasons of healthcare professionals.<sup>1-3,5,6</sup> In the study conducted by Kadel and Bhandari, it was determined that the majority of nurses were not satisfied with their salaries (96%) and the reasons for it were low career opportunities, low salaries and poor working environments.<sup>16</sup> In another study conducted in New Delhi, expectations for high income and higher quality life were determined as the main motivating factors for nurses' migration to another country.<sup>5</sup> In another study conducted by Prakash et al., it was observed that the factors such as low quality of education, difficulty in finding a job and low wages were the reasons for brain drain among nurses in Nepal.<sup>2</sup> In the study conducted by Krigia et al., it was determined that nurses migrated for doing master's and doctorate, good working conditions and better salaries.<sup>19</sup> In another study conducted by Nguyen et al., it was determined that nursing students considered to migrate especially from economic aspects.<sup>15</sup> In another study conducted with nursing students in the Philippines, it was determined that

students wanted to go abroad for education/career plans, living better and earning money.<sup>20</sup> In our study, in accordance with the literature, the tendency to brain drain of the nursing students with poor economic status increased in order to achieve better economic conditions (Table 1). We considered that the tendency to migrate of the students who were close to graduation and aged 25 and over, especially final year students, increased because they were close to start their career. Furthermore, in our study, it can be said that the brain drain tendency of those with relatives abroad, with previous abroad experience, with knowledge about working as a nurse abroad increased due to having knowledge about abroad and living conditions (Table 1).

## LIMITATIONS

This study has some limitations. Since limited to having nursing students studying at only one university and to be a cross-sectional study are among the limitations in this study. In future studies, it is recommended that more sample groups and students from different universities be included in the studies.

## CONCLUSION

In conclusion, brain drain is also increasing in the field of health in the world and in Turkey. According to the results of this study, it was observed that the students, who would be the nurses of the future, had positive attitudes and tendencies towards brain drain and age, gender, class, working status, income status, educational status of parents, previous abroad experience, abroad experience of relatives in the immediate vicinity, information about working conditions as a nurse abroad, and desire to work abroad after graduation.

In order to reduce brain drain in the field of health, especially in nursing, and to increase the services of nurses to their own countries in our country and around the world, it considered that taking measures such as;

- In the pre-graduation education process before starting the profession explaining the health policies of countries and the importance of service to the country,

**TABLE 2:** Students' overall scores of the attitude scale for brain drain.

Scale	Average±SD	Median	Minimum-Maximum point
ASBD	53.88±11.03	54.00	16-80

SD: Standard deviation; ASBD: Attitude Scale for Brain Drain.

- Making improvements for nurses' wage and personal rights in the existing health policies,
- Increasing the training to take the precautions that may cause brain drain in the field by taking peer opinions,
- Supporting career planning and postgraduate education will be useful for reducing brain drain in nursing in the country.

### Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct con-

nection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

### Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

### Authorship Contributions

All authors contributed equally while this study preparing.

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