

An Examination of the Relationship Between Nursing Students' Attitudes Toward Brain Drain and Their Levels of Psychological Well-Being

Hemşirelik Öğrencilerinin Beyin Göçüne Yönelik Tutumları ile Psikolojik İyi Oluş Düzeyleri Arasındaki İlişkinin İncelenmesi

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ÖZET

Amaç: Sağlık iş gücünün önemli ve büyük bir parçasını oluşturan, profesyonel hemşire olmaları amacıyla eğitim alan hemşirelik öğrencilerinin beyin göçü tutumlarının belirlenmesi, göçe yönelik önlemlerin alınmasına ve uygulanabilir/sürdürülebilir stratejilerin geliştirilmesine olanak sağlayacaktır. Bu çalışma, hemşirelik öğrencilerinin beyin göçüne yönelik tutumları ile psikolojik iyi oluş düzeyleri arasındaki ilişkiyi incelemeyi amaçlamaktadır.

Yöntem: Bu tanımlayıcı ve ilişki arayıcı (korelasyonel) çalışma, 423 hemşirelik öğrencisi ile yürütülmüştür. Veriler, Şubat–Nisan 2024 tarihleri arasında yüz yüze görüşme yöntemiyle; Kişisel Bilgi Formu, Beyin Göçüne Yönelik Tutum Ölçeği ve Psikolojik İyi Oluş Ölçeği kullanılarak toplanmıştır. Verilerin analizinde tanımlayıcı istatistikler, Kolmogorov–Smirnov testi, bağımsız örneklem t-testi, tek yönlü varyans analizi (ANOVA) ve Spearman sıra farkları korelasyon analizi kullanılmıştır.

Bulgular: Öğrencilerin yaş ortalaması $20,52 \pm 2,34$ olup, %8,6'sı kadındır. Öğrencilerin %74,9'u yurt dışında çalışmak istediğini belirtmiştir. Öğrencilerin Beyin Göçüne Yönelik Tutum Ölçeği puan ortalaması $41,46 \pm 10,31$, Psikolojik iyi oluş ölçeği puan ortalaması $41,03 \pm 9,56$ bulundu. Göç tutum puan ortalaması ile öğrencilerin sınıf düzeyi ve baba eğitim durumu arasında istatistiksel olarak anlamlı bir fark bulundu. Ölçek puan ortalamaları arasında ise anlamlı bir ilişki bulunmamıştır ($p > 0,05$).

Sonuç: Bulgular, psikolojik iyi oluşun hemşirelik öğrencilerinin beyin göçüne yönelik tutumlarıyla anlamlı bir ilişkisi olmadığını göstermektedir. Bu sonuçlar, göç etme niyetlerinin şekillenmesinde psikolojik iyi oluş dışındaki faktörlerin daha belirleyici bir rol oynayabileceğini düşündürmektedir.

Anahtar Kelimeler: Hemşirelik, Beyin Göçü, Psikolojik İyi Oluş, Öğrenci

ABSTRACT

Aim: Determining the emigration attitudes of nursing students, who make up a substantial and large part of the health workforce and who are trained to become professional nurses, would allow them to take measures against brain drain and to develop feasible/sustainable strategies. This study aims to examine the relationship between nursing students' attitudes toward brain drain and their levels of psychological well-being.

Methods: This descriptive and correlational study was conducted with 423 nursing students. Data were collected through face-to-face interviews between February and April 2024 using a Personal Information Form, the Attitude Scale for Brain Drain, and the Psychological Well-Being Scale. Descriptive statistics, the Kolmogorov–Smirnov test, independent samples t-test, one-way ANOVA, and Spearman's rank correlation analysis were used.

Results: The mean age of the students was 20.52 ± 2.34 years, and 81.6% were female. Overall, 74.9% reported an intention to work abroad. The mean score on the Attitude Scale for Brain Drain was 41.46 ± 10.31 , while the mean Psychological Well-Being Scale score was 41.03 ± 9.56 . Significant differences in brain drain attitudes were observed according to academic year and fathers' educational level. No significant correlation was found between attitudes toward brain drain and psychological well-being ($p > 0.05$).

Conclusions: The findings indicate that psychological well-being is not significantly associated with nursing students' attitudes toward brain drain. These results suggest that factors other than psychological well-being may play a more prominent role in shaping migration intentions.

Keywords: Nursing, Brain Drain, Psychological Well-Being, Student

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Atf: Yılmaz Kurt, F., Bayraktar, M. (2026). An Examination of the Relationship Between Nursing Students' Attitudes Toward Brain Drain and Their Levels of Psychological Well-Being. Güncel Hemşirelik Araştırmaları Dergisi, 6 (1), 48-59. DOI: 10.65673/jcnr.1780642

INTRODUCTION

Brain drain refers to the migration of trained, educated, and qualified people from one country to countries that offer higher opportunities in terms of working and living conditions (Özdemir & Sevinç, 2023). In recent years, there has been an upsurge in international labor exchange in the health sector and a serious tendency to go abroad “nurse emigration” has begun not only among physicians but also among nurses (Öncü et al., 2021; Tosunöz & Nazik, 2022). Brain drain in the health sector refers to the movement of health workers in the pursuit of a better standard of living and quality of life, higher salaries, access to advanced technologies, and improved working conditions in different parts of the world, and generally includes migration from less developed countries to developed countries (Okolo & Iruo, 2021). A report published by the International Labor Organization (ILO) in 2018 has indicated that the number of migrant nurses has increased by 60% in recent years (ILO, 2018). According to a report published in the USA in 2018, the USA has employed more than 2.6 million migrant healthcare workers, 1.5 million of whom are employed as physicians, licensed nurses, and pharmacists (Batalova, 2020). The literature indicates that problems such as long working hours, heavy workload, low wages, violence, and insufficient personal rights of nurses who work devotedly under challenging conditions have increased the tendency toward brain drain (Öncü et al., 2021). It has also been reported that the COVID-19 pandemic broke out in 2019 and affected the entire world and the changes in the nursing and health systems contributed to this tendency (Özdemir & Sevinç, 2023).

The number of nurses in health services in Türkiye is highly inadequate when compared to the world. While the mean number of nurses per 1000 people in OECD countries is 8.8, the number of nurses per 1000 people in Türkiye is 2.4. This rate places Türkiye in the second worst ranking among OECD countries in this field. The country having the highest rate of nurses per 1000 people is Norway (17.7), followed by

Switzerland (17.2), Iceland (14.5), Finland (14.3), and Germany (12.9). In 38 OECD countries, the mean rate of nurses per physician is 2.6. This rate goes up to 4.7 in Japan, 4.3 in the USA, 3.9 in Ireland, and 3.2 in Korea, and it is only 1.2 in Türkiye (OECD Health Statistics, 2021). According to the literature, the shortage of nurses may force nurses to work longer shift and watch hours, exceed the legal limits of working hours, and sometimes even cause nurses to work beyond their job descriptions (Hüsmenoğlu & Tuna, 2020). These poor working conditions in the health care setting in Türkiye suggest that the number of nurses who will move abroad in the near future in order to work under better conditions may increase even more. Accordingly, the loss of qualified workforce in the health system of sending countries limits access to quality health care, increases the workload of employees, negatively affects the outcomes of care, and may lead to inequalities in access to health care (Demiray et al., 2020; Hashish & Ashour, 2020). In the literature, numerous studies have investigated the causes of brain drain as well as related factors (Tosunöz & Nazik, 2022; THD, 2023; Sevinç & Özdemir, 2023). The study “Nurse Migration Tendency” conducted by the Turkish Nurses Association (TNA) in 2023 investigated the migration tendency of nurses in Türkiye. The study, in which a total of 8274 nurses participated, reported that 76.3% of the nurses wanted to practice nursing abroad. 55.7% of the nurses who participated in the study wanted to go abroad due to economic factors, 25.8% due to psychological and physical violence, and 48.9% due to problems related to the profession. 43% of the nurses who wanted to work abroad wanted to work in European countries, 21.6% in the USA and North American countries, and 15.8% in the UK (TNA, 2023). On the other hand, a study conducted by Sevinç and Özdemir (2023) with nursing students reported that 84.6% of the students wanted to work abroad, and high cultural competence in students positively affected their attitudes toward brain drain

(Sevinç & Özdemir, 2023). A study conducted to determine nursing students' perceptions of career future and their attitudes toward emigration indicated that students had above-average mean scores, and that those with higher perceptions of career future showed an increased tendency toward brain drain (Tosunöz & Nazik, 2022). Studies in the literature have examined the correlation of brain drain with socio-demographic characteristics, and the number of studies that have investigated the psychological factors that may lead to the tendency to emigrate is limited (Sancak et al., 2023; Güneş et al., 2024). However, no study that has investigated the relationship of psychological well-being on the attitudes of nursing students, who are educated to become professional nurses representing a significant and large part of the health workforce, toward brain drain has been found.

Psychological well-being is a micro-level construct and provides information about how a person assesses himself/herself and the quality of his/her life. According to the psychological well-being perspective, human well-being has been characterized as living well and doing good deeds rather than feeling good (Telef, 2013). Many factors can affect the psychological well-being levels of nursing students who work with many sacrifices and devotion. Accordingly, this study was designed to examine the correlation between nursing students' attitudes toward brain drain and their psychological well-being levels. Determining the correlation between brain drain tendencies and psychological well-being levels of nursing students during their vocational education is important for future health labor force planning.

Research Questions

- What are the attitude levels of nursing students toward brain drain?
- What are the psychological well-being levels of nursing students?
- Is there any correlation between nursing students' attitudes toward brain drain and their psychological well-being levels?

METHODS

Aim

The study aims to examine the correlation between nursing students' attitudes toward brain drain and their psychological well-being levels.

Design

This is a descriptive and correlational study that examines the current situation. The study was conducted with volunteer students who were continuing their education in the years 2023-2024 in the Nursing Department of the Faculty of Health Sciences of a state university located in western Türkiye.

Participants and sample size

The population of the study consisted of approximately 600 first, second, third, and fourth students (N=600) at the Faculty of Health Sciences, Department of Nursing of the specified university in the 2023-2024 academic year. Epi Info™ version 7.2.5.0 statistical software was used to calculate the sample size. In a cross-sectional study that investigated nursing students' attitudes toward brain drain in Türkiye, it was found that the expected frequency was 53% (Seven & Adadioğlu, 2022). Accordingly, considering the expected frequency in this study and based on the method of calculating the size of sample with finite population (N=600), it was determined to include minimum 234 individuals in the present study by random selection method at a margin of error of 5%, confidence level of 95%, and $p=0.50$. The sample size was increased to broaden the analytical scope, compensate for potential data loss, and enhance the statistical power of the analyses. This deliberate increase aimed to enhance the reliability and representativeness of the findings, minimize potential data loss, and allow for more robust statistical analyses. In the study, 446 students were reached, 23 students were excluded from the study since they could not fill out the questionnaire completely, and the study was completed with a total of 423 students. Of the participants, 27.7% (n=117) were first-year students, 27.7% (n=117) were second-year students, 20.1% (n=85) were third-year

students, and 24.6% (n=104) were fourth-year students.

The inclusion criteria were as follows: being registered in a nursing undergraduate program, being citizen of the Republic of Türkiye, and being voluntary to participate in the study. The exclusion criteria for the students were determined as follows: filling out incompletely questionnaires and having the desire of withdrawing from the study at any stage. None of the students wanted to withdraw from the study during the data collection stage.

Measures

A Personal Information Form, the Attitude Scale for Brain Drain, and the Psychological Well-Being Scale were used as data collection tools in the study.

Personal Information Form

Prepared by the researchers based on the literature review (Seven & Adadioğlu, 2022; Özdemir & Sevinç, 2023; Çetin & Savaş, 2023; Sancak et al., 2023), the form includes a total of 16 questions, including 11 questions on students' personal characteristics (age, gender, department, university year, marital status, family type, income level, etc.) and 5 questions to determine data on future plans and language proficiency.

Attitude Scale for Brain Drain (ASBD)

This scale was developed by Öncü et al., (2018), and its Turkish psychometric suitability was tested. The scale, consisting of 16 items that assess students' attitudes toward brain drain, has a 5-point structure that requires the selection of one of the following options for each item: Strongly Agree, Agree, Neither Agree Nor Disagree, Disagree, and Strongly Disagree. This unidimensional scale has two items that are scored reversely (items 3 and 15), and the scores assigned to the items are taken as the basis for calculating the scores. The highest score is 80, and the lowest score is 16. A high score indicates an elevated tendency toward brain drain. In its Turkish Validity and Reliability Study, it was found that Cronbach's alpha value of the scale was 0.91 (Öncü et al., 2018). The total internal consistency coefficient of this study was found to be 0.87.

Psychological Well-Being Scale (PWBS)

Diener et al., (2009) developed the scale to complement existing well-being measures and to assess psychological well-being. Telef (2013) conducted the validity and reliability study of the scale and adapted it to Turkish (Telef, 2013). The scale consists of 8 items and is responded on a range of 1-7 points, from strongly disagree (1) to strongly agree (7). Total score ranges from 8 to 56 points. High scores indicate that individuals have strong psychological resources and have the ability to use these resources effectively. The Cronbach's alpha internal consistency coefficient was found to be 0.80 in the reliability study of the scale (Diener et al., 2009). The total internal consistency coefficient of this study was found to be 0.93.

Data Collection

The study was conducted in a single phase as a descriptive cross-sectional study. The data were collected through face-to-face interviews conducted by the researcher in an appropriate classroom setting within the faculty building, outside of students' scheduled class hours. The data collection did not take place during or between classes; instead, it was carried out at times determined by the researcher that were convenient for the volunteer participants. After the students were informed about the purpose of the study, their consent was obtained. Students who agreed to participate in the study were asked to fill out the questionnaire. The students were asked to fill in the personal information form on the first page of the questionnaire, "ASBD" on the second page, and "PWBS" on the third page. The students were asked to read the items on the scale and mark the most appropriate option. It took approximately 5-7 minutes to fill out each form. The researchers collected the completed questionnaires.

Data Analysis

PWBS and ASBD levels of the student nurses were assessed using descriptive analyses (number, percentage, mean, standard deviation, minimum and maximum values) in SPSS version 27.0. The assumption of normal distribution was checked by Kolmogorov-

Smirnov, and the assumption of homogeneity of variance was checked by Levene's test. The independent samples T-test was run for comparison of two groups, and One-Way ANOVA was run for comparison of more than two groups. For the variables that showed significant differences in the analysis of variance (class level, mothers's educational status and father's educational status), Tukey HSD and Games-Howell post hoc tests were applied. Spearman R correlation was used to check the correlation.

Ethical Considerations

Before the study began, the Non-Clinical Trials Ethics Committee of a University Hospital approved the study (Decision No: 14/57 Dated: 23/11/2023). Afterwards, permission was obtained from the relevant faculty administration, where the data would be collected (Decision No: E-78179085-199-2300303927 Dated: 12/12/2023). Every stage of the study adhered to ethical principles. The voluntary students were included in the study. Before the study, the students were informed about the purpose of the study and their written

informed consent were obtained. The students were informed that they could withdraw from the study at any point. The study adhered to all the principles of the Declaration of Helsinki.

RESULTS

Table 1 shows the descriptive characteristics of the students. The mean age of the students was 20.52 ± 2.348 years (min.-max.=18-38 years). 81.6% of the students were female (n=345), 97.2% (n=411) were single, 27.7% (n=117) were first-year students, 27.7% (n=117) were second-year students, 20.1% (n=85) were third-year students, and 24.6% (n=104) were fourth-year students. Most of the students (80.9%, n=342) were staying in student dormitories. 88.2% (n=373) of the students had nuclear families. 87.0% (n=368) of the students reported their family income level as moderate. The maternal educational level of the students was mostly primary school (48.2%, n=201), and the paternal educational level was mostly high school (35.7%, n=151) and university (14.2%, n=60). While the mothers of 71.4% of the students were unemployed (n=302), the fathers of 81.1% were employed (n=343) (Table 1).

Table 1. Socio-demographic characteristics of the students

Personal Characteristics		X ± SD	min-max
Age (Year)		20.52 ± 2.348	18-38
		n	%
Gender	Female	345	81.6
	Male	78	18.4
Marital Status	Married	12	2.8
	Single	411	97.2
University Year	1	117	27.7
	2	117	27.7
	3	85	20.1
	4	104	24.6
Place of Residence	With family at home	34	8.0
	With friends at home	47	11.1
	At student dormitory	342	80.9
Type of family	Nuclear	373	88.2
	Extended	50	11.8
Income status of family	Low	18	4.3
	Moderate	368	8.0
	High	37	8.7
Maternal educational level	Primary school	204	48.2
	Secondary school	93	22.0
	High school	88	20.8
	University and higher	37	8.7

Table 2(continued). Socio-demographic characteristics of the students

		n	%
Paternal educational level	Primary school	116	27.4
	Secondary school	95	22.5
	High school	151	35.7
	University and higher	60	14.2
Mother’s employment status	Yes	121	28.6
	No	302	71.4
Father’s employment status	Yes	343	81.1
	No	80	18.9

Table 2 presents data on students’ future plans and language proficiency. 85.1% of the students (n=360) wanted to work as nurses after graduation. 89.1% (n=377) of the students had never been abroad, and 74.9% (n=317) wanted to work abroad. 68.1% of the students (n=288) did not speak any foreign language at the level

of colloquial language. The students stated that they would like to work abroad mostly due to “better earnings” (28.6%). “Better working conditions” (20.6%) and ‘cultural interest’ (6.9%) were among the most frequently expressed reasons why students would like to do their profession abroad (Table 2)

Table 2. Data on the students’ future plans and language proficiency

Personal Characteristics		n	%
Willingness to Work as a Nurse	Yes	360	85.1
	No	63	14.9
Going to abroad before	Yes	46	10.9
	No	377	89.1
Willingness to Work Abroad	Yes	317	74.9
	No	106	25.1
Cause of Willingness to Work Abroad *	Greater earnings	121	28.6
	Improved working conditions	87	20.6
	Cultural interest	29	6.9
	Professional experience	24	5.7
	Poor living conditions	17	4.0
	Future anxiety	13	3.1
Speaking a Foreign Language at the Colloquial Level	Yes	135	31.9
	No	288	68.1

* 26 students did not answer this question

Table 3 shows the PWBS and ASBD mean scores of the students. The PWBS mean score of the students was 41.03±9.56 and above the

average. On the other hand, the ASBD mean scores of the students were 41.46±10.31, and they had low attitudes toward brain drain (Table 3).

Table 3. Mean values of the scales (n = 423)

	PWBS	ASBD
Mean	41.0307	41.4681
Min	8.00	22.00
Max	56.00	87.00
N	423	423
Std. Deviation	9.56601	10.31050

Table 4 shows the ASBD scores of the students according to some socio-demographic

variables. Accordingly, no significant difference was found between the ASBD mean

scores of students and gender, maternal educational level, income level, and family type ($p < 0.05$). On the other hand, when the students' university year was analyzed, a significant difference was found between the first- and third-year students ($F = 4.330$) ($p = 0.003$) and between the first- and fourth-year students ($p = 0.021$). Further analysis showed that first-

year students had lower brain drain attitude scores compared with third- and fourth-year students. Considering the paternal educational level, a significant difference was found between the ASBD mean scores of the students according to their educational attainment in secondary school, university, and higher education ($p = 0.03$) (Table 4).

Table 4. ASBD mean scores of the students according to some socio-demographic variables (n=423)

Variables		$\bar{x} \pm SD$	Test	p
Gender	Female	41.69±9.97	t= 0.863	0.390
	Male	40.46±11.70		
University year	1 st Year	38.71±8.15 ^a	F= 4.330	0.003 between a and b 0.021 between a and c
	2 nd Year	41.73±10.49		
	3 rd Year	43.24±9.74 ^b		
	4 th Year	42.80±12.08 ^c		
Maternal Educational level	Primary school	42.42±10.18	F= 2.278	0.790
	Secondary school	41.75±10.55		
	High school	39.02±9.12		
	University and higher	41.37±12.45		
Paternal Educational level	Primary school	41.92±9.61 ^a	F= 2.639	0.030
	Secondary school	42.87±12.18 ^a		
	High school	41.53±10.06 ^a		
	University and higher	38.25±8.46 ^b		
Income status	Low	36.33±2.35	F= 2.790	0.063
	Moderate	41.84±10.36		
	High	40.18±9.39		
Type of Family	Nuclear	41.47±10.02	t= 0.020	0.984
	Extended	41.44±12.35		

t= Independent-Samples t Test, F= One Way ANOVA – Games-Howell

Table 5 shows the correlation between the mean scores of the PWBS and ASBD. No significant

correlation was found between the PWBS and ASBD mean scores ($r = -0.073$, $p = 0.136$).

Table 5. Correlation between PWBS and ASBD mean scores

Variables		PWBS	ASBD
PWBS	Pearson Correlation	1	
	Sig. (2-tailed)		
	n	423	
ASBD	Pearson Correlation	0.073	1
	Sig. (2-tailed)	0.136	
	n	423	423

* $p > 0.05$, **PWBS**: Psychological Well-Being Scale, **ASBD**: Attitude Scale for Brain Drain

DISCUSSION

Brain drain is a global issue that has become ever more significant and has occupied the agenda of many countries. Brain drain, which can appear in many different occupational groups, has been dramatically on the rise in recent years, especially in physicians and nurses

among health professionals (OECD Health Statistics, 2021; THD, 2023). This study, which examined the relationship of psychological well-being on the attitudes of nursing students—the candidates to become professional nurses in the future—toward brain drain, indicated that students' attitudes toward

brain drain were below average and they were less likely to intend to emigrate. Numerous national/international studies have shown that nursing students hold positive attitudes toward brain drain and are more likely to intend to emigrate (Poudel et al., 2018; Tosunöz & Nazik, 2022; Özdemir & Sevinç, 2023; Sancak et al., 2023; Laari et al., 2024). In parallel with the findings of this study, rare studies in the literature have shown that nursing students in Türkiye are less likely to intend to emigrate (Demiray et al., 2020; Özdemir et al., 2024). Although results of the present study showed that the students had low attitudes toward brain drain, the rate of students who wanted to work abroad was considerably high (74.9%). The students indicated that they would like to do their profession abroad mostly due to “economic problems” (28.6%). “Better working conditions” was also the second reason cited by the students. This suggests that if no measures are taken, nursing students who do not intend to emigrate may alter their thoughts toward emigration when they step into the profession. Similar national studies have also shown that better living conditions (Gençbaş et al., 2024), higher earnings (Seven & Adadioğlu, 2022; Ünlü & Daşlı, 2024), and good working conditions (Özdemir et al., 2024) are among the reasons for nursing students’ tendency to brain drain. International studies conducted in Nepal, Ghana, and India also showed that the reasons for the emigration of nursing students were similar to results of the present study (Ghimire et al., 2024; Laari et al., 2024; Jadhav & Roy, 2024). Although students’ overall migration attitude scores are low, their strong desire to work abroad can be explained by the discrepancy between attitude and behavioural intention. While the migration attitude scale primarily measures evaluations of the social, cultural, and societal consequences of migration, the intention to work abroad may be driven by personal and professional expectations such as higher income, better career opportunities, improved working conditions, and quality of life. This suggests that even if students hold negative or low

attitudes toward the societal effects of migration, they may still choose to work abroad in line with their individual interests. Therefore, it is necessary for nursing educators, administrators, and policymakers to cooperate with members of the profession for better working conditions and remuneration policy, to review the curriculum, and to design support systems that provide career opportunities for students.

This study found no significant differences in students’ ASBD mean scores according to gender, maternal education level, income status, or family type. However, some studies in the literature have reported differences based on these variables. For example, Tosunöz and Nazik (2022) reported a significant difference according to gender, Gençbaş et al. (2024) according to income status, and Seven and Adadioğlu (2022) according to education level (Tosunöz & Nazik, 2022; Gençbaş et al., 2024; Seven & Adadioğlu, 2022). In accordance with the literature (Öncü et al., 2021; Seven & Adadioğlu, 2022), this study revealed that there was a significant difference in ASBD according to the university years of the students; the students with the lowest ASBD mean scores were first-year students, and the emigration tendencies of the third- and fourth-year students were above average. The higher mean scores on the tendency to emigrate as the grade level rises may be attributed to the higher intensity of practical courses in the third- and fourth-year students. This may be due to the longer stay of the students in the hospital, the opportunity to get to know the hospital environment better, their more clinical experience, and therefore more exposure to the difficulties of the profession. On the other hand, it could be argued that the first-year students were less likely to tend to emigrate due to the fact that they had not yet started practicing and had insufficient clinical experience. Despite the results of the present study, Tosunöz and Nazik (2022) and Demiray et al., (2020) reported that the emigration tendency attitudes of students diminished as the grade level rose; Gençbaş et al., (2024) and Özdemir & Sevinç (2023)

reported that the grade level had no relationship on the emigration tendency of students (Özdemir & Sevinç, 2023; Gençbaş et al., 2024). The inconsistency between the findings of this study and those reported in some studies in the literature may be attributed to two reasons. First, the curriculum of the university where the study was conducted, the intensity of practical courses, and the quality of clinical experiences may differ from those of other universities. Second, differences between the periods in which the studies were conducted—including economic changes before, during, and after the COVID period, increased workload, working conditions, and dissatisfaction with wages—may have contributed to these inconsistencies.

This study, one of the variables found to influence students' migration attitudes was the paternal educational level. Nursing students whose fathers had a university-level education or higher exhibited lower attitudes toward brain drain. This finding suggests that higher paternal education may be associated with a decreased tendency to migrate. When the literature was examined, it was observed that the relationship of paternal educational level on the tendency to emigrate varied (Seven & Adadioğlu, 2022; Özdemir & Sevinç, 2023; Ünlü & Daşlı, 2024). In their study, Seven and Adadioğlu (2022) found that students' tendency to emigrate intensified as the parental educational level elevated; whereas, the study by Özdemir and Sevinç (2023) found that parental educational level had no relationship on students' tendency to emigrate. The study conducted by Ünlü and Daşlı (2024) to determine the attitudes of students trained in the field of health toward brain drain reported that the mean parental educational level of the students was low and they were more likely to tend to emigrate. We believe that lower paternal educational attainment may be correlated with lower socioeconomic status. This suggests that the students would like to make use of the nursing profession as a way of passage to achieve the desired socioeconomic status, but the status that nursing has lost in recent years and the

economic downturn have resulted in an upward tendency for students to emigrate. The literature review includes studies that show a negative effect of a moderate or low-income level on the intention to brain drain (Öncü et al., 2021; Özdemir et al., 2024), as well as studies that have shown neither income level nor income perception affects students' tendency to brain drain (Tosunöz & Nazik, 2022; Özdemir & Sevinç, 2023).

Although many studies in the literature have examined the causes and related factors of brain drain, it appears that most of these studies have focused on socio-demographic characteristics (Demiray et al., 2020; Tosunöz & Nazik, 2022; Seven & Adadioğlu, 2022; Seven & Adadioğlu, 2022; Laari et al., 2024) and the number of studies that investigate the effect of psychological and social factors that may lead to the tendency to brain drain on brain drain tendency is more limited (Sancak et al., 2023; Özdemir & Sevinç, 2023). Limited number of studies have indicated that the tendency to brain drain has been affected by variables such as cultural competence level (Özdemir & Sevinç, 2023), career opportunities (Tosunöz & Nazik, 2022), life satisfaction level (Özdemir et al., 2024), clinical learning setting (Valencia et al., 2024), global events (COVID-19 pandemic) (Popescu et al., 2024), depression, and stress (Sancak et al., 2023). The related studies have indicated that the tendency to brain drain is not only affected by socio-demographic characteristics but also social and psychological factors are effective on this tendency. This study, examining the relationship between nursing students' attitudes toward brain drain and their psychological well-being levels, found that the psychological well-being levels of the students were above average and there was no correlation between the PWBS and ASBD mean scores. Although no significant correlation was found between the scales, it is considered that students' above-average psychological well-being levels may reduce their tendency to migrate. Although the correlation between the scores on the scales was not significant, this suggested that students'

above-average levels of psychological well-being reduced their attitudes toward migration tendency. A study supporting the results of this study examined the correlation between the tendency of medical students to emigrate and depression, anxiety, and stress factors and reported that elevated levels of depression and stress increased their tendency to emigrate (Sancak et al., 2023). In their study, Güneş et al., (2024) reported that nurses' fear of exposure to violence affected their tendency to emigrate, but high psychological well-being reduced that tendency (Güneş et al., 2024). Based on the results of the study, it may be argued that it is important to investigate psychological factors in the tendency to emigrate, which has been rising in the nursing profession in recent years.

Limitations

This study has a number of limitations. Firstly, the study was conducted with students enrolled in the department of nursing in a single-center, state university located in western Türkiye. Therefore, it is recommended that future studies be conducted with a larger population, including students from different schools, cultures, regions, and private universities. Another limitation is that the data is based on students' self-reports and the results are specific to this sample. The results shall not be generalized to all nursing students. Another limitation of the study is the participation of only volunteer nursing students in the study.

CONCLUSION

The present study revealed that the tendency of nursing students toward brain drain was below the average and their psychological well-being level was above the average; the fact that students' psychological well-being levels are above average can be interpreted as one of the possible factors that may influence the tendency to emigrate. The ASBD mean score was also influenced by some socio-demographic characteristics of the students. It was determined that the first-year students and students with paternal educational attainment at university were less likely to have a tendency to brain drain. Based on these results, it is

important that academicians who teach nursing in the best way to their students and contribute to their personal and professional development should assume an important mission in the protection or improvement of students' psychological well-being. Therefore, the psychological well-being levels, affecting factors and risk groups of the third- and fourth-year students, who are the closest group to become nurses and who were found to have a high brain drain tendency in the present study, should be determined in detail.

Yazarlık katkısı

Çalışma fikri: FYK, MB

Tasarım: FYK, MB

Veri toplama: FYK, MB

Sonuçların analizi ve yorumlanması: FYK, MB

Taslak çalışmayı hazırlama: FYK, MB

Eleştirel inceleme: FYK, MB

Tüm yazarlar (FYK, MB) sonuçları gözden geçirdi ve makalenin son halini onayladı.

Author contributions

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Design: FYK, MB

Data collection: FYK, MB

Analysis and interpretation of data: FYK, MB

Drafting the manuscript: FYK, MB

Critical review: FYK, MB

All authors (FYK, MB) reviewed the results and approved the final version of the article.

Teşekkür

Bu çalışmayı destekleyen tüm öğrencilerimize, okul yönetimine ve Türkiye Bilimsel ve Teknik Araştırma Kurumu'na (TÜBİTAK) teşekkür ederiz.

Acknowledgements

We would like to thank all our students, the school administration and the Scientific and Technical Research Council of Turkey (TUBITAK) for supporting the present study.

Çıkar çatışması beyanı

Yazarlar, beyan edecek herhangi bir çıkar çatışması olmadığını bildirirler.

Conflict of interest

The authors report there are no competing interests to declare

Finansman beyanı

Bu çalışma, TÜBİTAK 2209-A Üniversite Öğrencileri Araştırma Projeleri Destek Programı kapsamında desteklenmiştir ([hibe numarası: 1919B012201183]).

Funding sources

This study was supported within the scope of TUBITAK 2209-A Research Project Support Program for University Students ([grant numbers: 1919B012201183]).

Etik Kurul

Bu çalışma, bir Üniversite Hastanesinin Klinik Dışı Araştırma Etik Kurulu tarafından onaylanmıştır (karar tarihi 23.11.2023 ve numarası 14/57).

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Ethics Committee

This study was approved by the Non-Clinical Research Ethics Committee of a University Hospital (decision dated 23.11.2023 and numbered 14/57).

Lisans Bilgisi

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