Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Factors Influencing Brain Drain Tendencies Among Midwives: Reality Shock and Perceived Individual Workload

Fatma Şule Bilgiç
Çanakkale Onsekiz Mart Üniversitesi
Remziye Gültepe
rgultepe@comu.edu.tr
Çanakkale Onsekiz Mart Üniversitesi

Research Article

Keywords: Midwife, midwifery, reality shock, individual workload, brain drain

Posted Date: November 23rd, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11279542/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License

Additional Declarations: No competing interests reported.

Abstract

Objective

This study aimed to examine midwives' attitudes towards brain drain, individual workload, and reality shock.

Methods

This cross-sectional, descriptive study was conducted online between June and December 2024 with 512 midwives who had not completed their first five years after graduation and were actively working. Data were collected using snowball sampling and a Data Collection Form, the Attitudes Towards Brain Drain Scale (BDAS), the Individual Workload Perception Scale (IWPS), and the Reality Shock Scale (RSS).

Results

According to the analysis results, a moderately positive correlation was found between midwives' attitudes towards brain drain and reality shock ($r = .452$; $p < .001$), and a significant negative correlation was found between their attitudes towards brain drain and individual workload perception ($r = -.283$; $p < .001$). Multiple linear regression analysis revealed that the model explained 22.8% of the variance in attitudes towards brain drain (Adj. $R2 = .228$; $p < .001$). Reality shock was the strongest predictor positively influencing attitudes towards brain drain (Beta = .404; $p < .001$), while a decrease in individual workload score (an increase in negative workload perception) significantly increased attitudes towards brain drain (Beta = − .172; $p < .001$). Furthermore, it was found that single midwives, those without children, working in private institutions, and working more than 50 hours per week had statistically significantly higher tendencies towards brain drain compared to other groups ($p < .05$).

Conclusion

This study showed that midwives' attitudes towards brain drain are significantly affected by reality shock and individual workload perception. As reality shock increases, the tendency towards brain drain increases, while a negative perception of workload also increases the tendency towards brain drain. High levels of reality shock and negative workload perceptions, particularly among newly qualified midwives, are significant factors reinforcing the brain drain trend.

Introduction

Today, advancements in information, transportation, and communication enable individuals to access employment, education, and career opportunities more quickly and easily. However, individuals are also turning to migration in search of better living conditions due to negative factors such as economic difficulties, unemployment, inequality, and political instability in their own countries (United Nations, 2017). In this context, brain drain is a multi-dimensional process that arises not only from economic reasons but also from the limited scientific and academic opportunities in the country of origin and the attractiveness of advanced scientific and technological opportunities offered in the target countries (Yılmaz, 2019; Kizito et al., 2015).

In recent years, brain drain has become a significant global problem, especially among healthcare professionals. According to World Health Organization data, the healthcare workforce shortage is increasing worldwide, and low- and middle-income countries are disproportionately affected by the loss of qualified human resources. The decrease in qualified healthcare workers in countries experiencing brain drain; This leads to increased workload, decreased service quality, and deepening inequalities in access to healthcare (WHO, 2006; Bimal and Kaur, 2016). Current studies show that the trend of international migration, especially among nurses and midwives, has increased even more in the post-COVID-19 period, and this threatens the sustainability of health systems (Buchan et al., 2022; OECD, 2023).

The migration decisions of healthcare workers are shaped by the interaction of push and pull factors. Push factors such as low wages, heavy workload, inadequate working conditions, and limited career opportunities, when combined with pull factors such as better working conditions, higher income, and professional development opportunities, increase the tendency to migrate (Goštautaitė et al., 2018; Tanrısevdi et al., 2019). Especially in recent years, research has shown that workload and burnout are among the strongest determinants of healthcare workers' intention to migrate (Shah et al., 2021; Dolea et al., 2023).

Workload is an important variable that directly affects the performance and psychological state of employees and plays a critical role in the healthcare sector (Korkmazer & Aksoy, 2018). Healthcare workers are exposed to high workloads due to reasons such as intensive patient care, the need for emotional labor, staff shortages, and irregular working hours. This situation negatively affects not only employee health but

also patient safety (Azizoğlu et al., 2021; Karacabay et al., 2020). Indeed, current literature reveals significant relationships between high workload and decreased job satisfaction, burnout, and intention to migrate (Labrague & de los Santos, 2021; Al Maqbali et al., 2021).

On the other hand, the "reality shock" experienced by healthcare professionals during the transition to the profession is a significant source of stress, especially for newly graduated midwives. The mismatch between theoretical education and clinical practice, professional role ambiguity, and inadequate support mechanisms lead to psychological distress in new graduates (Boztepe and Terzioğlu, 2013; Sabancıoğlu and Doğan, 2011). This process can lead to decreased job satisfaction, weakened professional commitment, and an increased tendency to leave the job or emigrate (Çiriş Yıldız & Ergün, 2021). Current studies also show that reality shock is strongly associated with burnout and intention to leave the job in newly graduated healthcare workers (Phillips et al., 2021; Hussein et al., 2022).

For the sustainability of healthcare services, the protection and strengthening of the midwifery workforce is of critical importance. The International Confederation of Midwives emphasizes the central role of midwives in the delivery of quality care and draws attention to the importance of workforce planning. However, the current literature shows a limited number of studies that address midwives' attitudes towards brain drain in conjunction with individual workload and reality shock. In this context, examining the relationship between midwives' attitudes towards brain drain and their perception of individual workload and reality shock will fill an important gap in terms of healthcare workforce planning, increasing employee engagement, and developing strategies to prevent migration.

The aim and questions of the study.

This study was conducted to examine midwives' attitudes towards brain drain, as well as their individual workload and reality shock levels. To this end, the following questions were addressed:

- • What are midwives' attitudes towards brain drain, their perception of individual workload, and their levels of reality shock?
- • Do midwives' attitudes towards brain drain, their perception of individual workload, and their levels of reality shock differ in relation to their sociodemographic and professional characteristics (age, workplace, type of employment, income, choice of profession, etc.)?
- • Is there a significant relationship between midwives' attitudes towards brain drain and their perception of individual workload and reality shock?
- • Do their perception of individual workload and reality shock significantly predict midwives' attitudes towards brain drain?

Methods

This cross-sectional, descriptive study was conducted online between June and December 2024. Data were collected and reported in accordance with the CHERRIES (The Checklist for Reporting Results of Internet E-Surveys) guidelines, an international standard for reporting internet-based surveys.

Population

The sample size for the study was determined using statistical power analysis with G*Power (v3.1.9.7) software. Based on the multiple regression estimation applied in the analysis phase, the following parameters were used: moderate effect size (f2 = 0.15), 5% significance level (alpha = 0.05), and 95% power (1-beta = 0.95). As a result of the calculation, the minimum sample size required to maintain the statistical power of the study was determined to be 107. Considering possible data loss and outliers during the online data collection process, the sample size was increased by 20%, and the study was conducted with a target of over 130 participants. Data obtained using the snowball sampling method were collected from 512 midwives over a one-month period during which the link was open.

Inclusion criteria

- •Midwives who graduated within the first five years,
- •Who are actively working in the field as midwives,
- •Midwives who volunteered to participate in the research were included in the study.

Data Collection Tools

Data were obtained using the Data Collection Form, Attitudes Towards Brain Drain Scale (BDAS), Individual Workload Perception Scale (IWPS), and Reality Shock Scale (RSS). Data Collection Form: The form, created by the researchers through a literature review, consists of 12 questions regarding sociodemographic characteristics.

Attitudes Towards Brain Drain Scale (BDAS): Prepared by Öncü et al. in 2018 to determine nursing students' attitudes towards brain drain, this 16-item scale has a unidimensional, two-component structure. The items are grouped under two components: "ATTRACTIVE (1,2,3,4,5,6,8,10,12,14,15,16) and REPELLENT (7,9,11,13) factors". The reliability of the scale was evaluated using the Cronbach's Alpha coefficient and item-total score correlation. The Cronbach's Alpha reliability of the scale is 0.91 for the whole and 0.88 and 0.86 for its subcomponents. The developed scale has been reported to be reliable and valid. Each item in the scale is a 5-point rating scale: "strongly disagree (1 point)", "disagree", "neither agree nor disagree", "agree", and "strongly agree (5 points)". Items 3 and 15 are reverse-coded. The lowest and highest possible scores on the entire scale range from 16 to 80, with an increase in the score indicating an increased tendency to emigrate. In this study, the Cronbach's Alpha value was found to be 0.919.

The Individual Workload Perception Scale (IWPS), developed by Azizoğlu et al. (2021), consists of 31 items. The scale is structured using a 5-point Likert scale, with items scored between "1" and "5". An increase in scores obtained from the scale indicates a positive perception of workload in the work environment, while a decrease in scores indicates a negative perception of workload. In the study where the scale was developed, the total Cronbach's alpha coefficient was reported as 0.894. In this study, the internal consistency reliability of the scale was re-evaluated, and the Cronbach's alpha coefficient was found to be 0.887. In addition, Kaiser-Meyer-Olkin Test (KMO) and Bartlett's Test of Sphericity analyses were performed to evaluate the construct validity of the scale; the KMO value was 0.901, and the Bartlett test result was statistically significant ($p < 0.05$). As a result of the exploratory factor analysis, it was determined that the factor loadings of the scale ranged from 0.41 to 0.71, and the total explained variance was 55–60%. The findings show that the scale is a valid and reliable measurement tool in the midwife sample as well.

Reality Shock Scale (RSS): Developed by Çiriş Yıldız and Ergün (2021), the Reality Shock Scale consists of 47 items. The scale is structured using a 5-point Likert scale, with items scored as follows: “1 = Never”, “2 = Rarely”, “3 = Sometimes”, “4 = Frequently”, and “5 = Always”. There are no reverse-scored items in the scale. An increase in the scale score indicates an increase in the reality shock experienced by individuals. In the study where the scale was developed, the total Cronbach's alpha coefficient was reported as 0.95. In this study, the internal consistency reliability of the scale was re-evaluated, and the Cronbach's alpha coefficient was found to be 0.877. Furthermore, to evaluate the construct validity of the scale, Kaiser-Meyer-Olkin Test (KMO) and Bartlett's Test of Sphericity analyses were performed; the KMO value was 0.919, and the Bartlett test result was statistically significant ($p < 0.05$).

As a result of the exploratory factor analysis conducted to examine the factor structure, it was determined that the factor loadings of the scale ranged from 0.42 to 0.78 and the total explained variance was 55–65%. These findings indicate that the scale is a valid and reliable measurement tool in the midwife sample.

Data Collection Tools and Methodology

An internet-based survey technique, i.e., a type of electronic survey, was used for data collection. Data collection tools were created by one of the researchers (FŞB.) using "Google Forms". The first page of the forms included items, including sample selection criteria. Participants who did not meet the sample selection criteria could not proceed to the next page. The information was prepared based on the participants' statements. The prepared forms were sent digitally to women via links created by the researchers. At the beginning of the study, midwives who met the inclusion criteria were given information about the content and purpose of the study with a short text before the online survey. Voluntary consent forms were obtained online from those who voluntarily participated in the research. The forms remained active for 30 days. Midwives completed a five-part questionnaire: voluntary consent form, demographic characteristics, BDAS, IWPS, and RSS. Each questionnaire took an average of 10–12 minutes.

Statistical Methods

Data were analyzed using the IBM SPSS Statistics (version 27, IBM Corp., Armonk, NY, USA) software package. The significance level was accepted as $p < 0.05$ in all statistical analyses. Descriptive statistics for continuous variables are presented as mean ± standard deviation, median (minimum–maximum), and 95% confidence intervals. Categorical variables were evaluated using frequency and percentage distributions. The normality of the data distribution was assessed using visual (histogram, Q-Q plot) and analytical methods (Kolmogorov-Smirnov/). Parametric tests were used when the assumptions of parametric tests were met; otherwise, appropriate alternative approaches were considered. Independent samples t-test and one-way analysis of variance (ANOVA) were used to compare BDAS (Attitudes Towards Brain Drain Scale), IWPS (Perceived Individual Workload Scale), and RSS (Reality Shock Scale) scores according to sociodemographic and occupational characteristics. In cases where significant differences were found in the ANOVA results, Bonferroni-corrected post-hoc analyses were applied to determine within-group differences. The direction and level of relationships between BDAS, IWPS, and RSS scores were evaluated using Pearson correlation analysis. Correlation coefficients were interpreted as low ($r = 0.10–0.29$), medium ($r = 0.30–0.49$), and high ($r \geq 0.50$). Multiple linear regression analysis (Enter method) was applied to determine the predictive effect of IWPS and RSS on BDAS

(dependent variable). Model fit was assessed using R^2, R^2, and adjusted R^2 values, and regression coefficients were reported using Beta (β), standard error, t, and p values. The assumption of multicollinearity in the model was checked using the Variance Inflation Factor (VIF) and tolerance values. Furthermore, to ensure the validity of the regression analyses, the assumptions of normality of residuals, linearity, homoscedasticity, and independence were examined using graphical and statistical methods (including the Durbin–Watson statistic). A 95% confidence interval was used for all analyses, and two-sided hypothesis tests were applied.

Ethical Considerations

This research adhered to scientific and universal ethical principles. Ethical approval was obtained from the Haliç University Non-Interventional Research Ethics Committee prior to data collection (Date: 09.05.2024, Approval No: 83). Permission was obtained from the authors responsible for the scales. During online data collection, information about the study was provided on the first page of the survey. Participants were required to indicate their voluntary agreement by selecting the statement “I agree to participate in the research” before proceeding. Participation was voluntary, and no fees were charged to or collected from participants.

Results

The average age of the participants was 26.74 ± 3.45, and their professional experience was 2.83 ± 1.25 years. 67.4% (n = 345) of the sample worked in private institutions, and 41.4% (n = 212) worked 50 hours or more per week. 35.1% (n = 180) of the midwives found their income insufficient, while 76.6% (n = 392) chose the profession willingly. When the mean scale scores were examined, BDAS was 53.50 ± 12.60, IWPS was 105.12 ± 16.36, and RSS was 120.42 ± 37.86 (Table 1).

Table 1
Distribution of sociodemographic and professional characteristics of midwives (N = 512)

Variable	Mean ± SD	Minimum-Maximum
Age	26.74 ± 3.45	21.00–28.00
Years of working	2.83 ± 1.25	1.00–5.00
Pull Factor	38.92 ± 8.68	15.00–60.00
Push Factor	14.57 ± 4.33	4.00–20.00
BDAS Total	53.50 ± 12.60	18.00–80.00
IWPS Total	105.12 ± 16.36	40.00-136.00
RSS Total	120.42 ± 37.86	48.00-235.00
Variable	**n**	**%**
Place of residence		
Province	357	69.7
District	135	26.4
Village	20	3.9
Marital status		
Married	181	35.4
Single	331	64.6
Having children		
Yes	86	16.8
No	426	83.2
Income status		
Low	75	14.6
Medium	391	76.4
High	46	9.0
Type of institution		
Private	345	67.4
Public	167	32.6
Workplace setting		
Hospital	379	74.0
Family health center/Private clinic	75	14.6
Freelance/Independent	58	11.4
Weekly working hours		
40 hours	176	34.4
50 hours	124	24.2
50 hours and over	212	41.4
Shift type		
Day shift	172	33.6
Night shift/On-call	150	29.3

BDAS: Brain Drain Attitude Scale, IWPS: Individual Workload Perception Scale, RSS: Reality Shock Scale

Variable	Mean ± SD	Minimum-Maximum
Rotational shift	190	37.1
Perceived salary adequacy		
Sufficient	71	13.9
Partially sufficient	261	51.0
Insufficient	180	35.1
Distance from home to institution		
Very far	44	8.6
Far	179	35.0
Close	223	43.5
Very close	66	12.9
Status of choosing the profession		
Willingly	392	76.6
Unwillingly	120	23.4
BDAS: Brain Drain Attitude Scale, IWPS: Individual Workload Perception Scale, RSS: Reality Shock Scale		

It was found that midwives' attitudes towards brain drain differed statistically significantly according to their place of residence, marital status, having children, income level, institution/organization they work for, weekly working hours, perceived wages, distance from the institution, and preference for the profession ($p < .05$). Those living in the city center ($F = 10.184$; $p<.001$), those who are single ($t=-3.993$; $p<.001$), those who do not have children ($t=-2.767$; $p=.006$), and those who describe their income as low ($F = 16.010$; $p<.001$) had higher attitudes towards brain drain. In addition, it was determined that those working in private institutions ($t=-5.335$; $p<.001$), those working 50 hours or more per week ($F = 28.884$; $p<.001$), and those who find their wages insufficient ($F = 24.047$; $p<.001$) had significantly higher tendencies towards brain drain. Workload perception showed significant differences according to income level, institution of employment, weekly working hours, working style, perceived wage, and distance of the institution from home ($p < .05$). Those reporting low income ($F = 11.351$; $p<.001$), those working in primary health centers ($F = 23.601$; $p<.001$), those working 40 hours a week ($F = 5.935$; $p=.003$), and those working day shifts ($F = 61.089$; $p<.001$) were found to have higher workload scores (positive perception). Midwives who perceived their wages as insufficient had significantly more negative workload perceptions ($F = 11.608$; $p<.001$). The reality shock scores experienced by midwives showed significant differences according to place of residence, marital status, income level, institution of employment, working hours, wage situation, and choice of profession ($p< .05$). Midwives working in private institutions ($t=-6.233$; $p<.001$), those working 50 hours or more per week ($F = 9.542$; $p<.001$), and those who perceive their income as insufficient ($F = 34.197$; $p<.001$) had significantly higher reality shock scores. Similarly, midwives who chose the profession reluctantly experienced higher levels of reality shock compared to those who chose it willingly ($t=-2.391$; $p=.017$) (Table 2).

Table 2
Comparison of sociodemographic and professional characteristics of midwives with BDAS, IWPS and RSS total scores (N = 512)

Variable	BDAS	IWPS	RSS
Yaşanılan yer			
City a	54.92 ± 12.67	105.15 ± 16.71	124.45 ± 38.56
District b	51.07 ± 11.35	104.76 ± 14.45	111.51 ± 34.04
Village c	44.55 ± 14.00	107.10 ± 22.31	108.85 ± 38.97
F/p	F = 10.184, p < **0.001**	F = 0.179, p = 0.837	F = 6.841, p = **0.001**
Bonferroni	a > b, a > c	-	a > b
Marital status			
Married	50.53 ± 12.89	104.67 ± 17.28	115.77 ± 36.27
Single	55.12 ± 12.16	105.37 ± 15.86	122.97 ± 38.52
t/p	t = -3.993, p < **0.001**	t = -0.466, p = 0.641	t = -2.060, p = **0.040**
Having children			
Yes	50.09 ± 12.82	105.70 ± 17.38	113.64 ± 35.84
No	54.19 ± 12.47	105.01 ± 16.17	121.80 ± 38.15
t/p	t = -2.767, p = **0.006**	t = 0.355, p = 0.722	t = -1.826, p = 0.068
Income status			
Low a	59.53 ± 9.11	97.23 ± 14.84	129.77 ± 39.07
Middle b	51.81 ± 12.72	106.79 ± 16.44	120.31 ± 38.10
High c	58.07 ± 12.66	103.83 ± 14.38	106.20 ± 28.95
F/p	F = 16.010, p < **0.001**	F = 11.351, p < **0.001**	F = 5.636, p = **0.004**
Bonferroni	a > c, a > b	a > b	a > b, b > c, b > c,
Institution where you work			
Private	57.66 ± 11.51	106.90 ± 16.10	134.89 ± 40.63
Public	51.49 ± 12.64	104.26 ± 16.45	113.42 ± 34.38
t/p	t = -5.335, p < **0.001**	t = -1.715, p = 0.087	t = -6.233, p **< 0.001**
Organization where you work			
Hospital a	55.08 ± 11.93	103.54 ± 16.68	125.12 ± 36.96
Health center/health clinicb	44.92 ± 13.32	116.44 ± 11.21	96.08 ± 36.44
Free c	54.29 ± 11.67	100.84 ± 13.80	121.24 ± 33.84
F/p	F = 22.146, p < **0.001**	F = 23.601, p < **0.001**	F = 19.782, p < **0.001**
Bonferroni	a > c>b	b > c>a	a > c>b
Weekly working hours			
40 hours a	48.86 ± 13.26	108.53 ± 17.76	113.31 ± 38.09
50 hours b	52.37 ± 13.23	103.60 ± 16.53	116.05 ± 37.41
50 hours and up c	58.02 ± 9.89	103.19 ± 14.59	128.89 ± 36.43
F/p	F = 28.884, p < **0.001**	F = 5.935, p = **0.003**	F = 9.542, p < **0.001**
Bonferroni	c > b>a	c > b>a	c > b>a

BDAS: Brain Drain Attitude Scale, IWPS: Individual Workload Perception Scale, RSS: Reality Shock Scale, t: Independent t test, F: ANOVA

Variable	BDAS	IWPS	RSS
Yaşanılan yer			
Working method			
Daytime a	52.49 ± 14.36	115.04 ± 13.27	121.41 ± 47.05
On-call b	54.16 ± 11.19	102.07 ± 14.33	116.32 ± 30.83
Shift work c	53.89 ± 11.96	98.56 ± 16.21	122.78 ± 33.23
F/p	F = 0.845, p = 0.430	F = 61.089, p < **0.001**	F = 1.308, p = 0.271
Bonferroni	-	a > c>b	-
Salary Status			
Sufficient a	51.38 ± 15.49	106.21 ± 15.17	100.62 ± 25.62
Sufficient b	50.62 ± 12.75	107.98 ± 15.56	114.39 ± 36.06
Insufficient c	58.52 ± 9.21	100.56 ± 17.02	136.99 ± 38.25
F/p	F = 24.047, p < **0.001**	F = 11.608, p < **0.001**	F = 34.197, p < **0.001**
Bonferroni	c > b=a	c > b=a	c > b>a
Distance of the institution from home			
Quite far a	57.30 ± 8.84	97.68 ± 17.06	125.89 ± 35.04
Far b	56.36 ± 11.53	102.52 ± 14.71	127.44 ± 37.54
Close c	51.80 ± 13.01	107.57 ± 16.00	115.17 ± 36.54
Quite close d	48.97 ± 13.86	108.91 ± 18.84	115.55 ± 42.01
F/p	F = 9.004, p < **0.001**	F = 7.662, p < **0.001**	F = 4.229, p = **0.006**
Bonferroni	a > b>c > d	c > a=b	a > b = c = d
Career choice			
Willingly	52.71 ± 12.69	105.41 ± 16.29	118.22 ± 36.68
Reluctantly	56.09 ± 12.02	104.19 ± 16.64	127.63 ± 40.85
t/p	t = -2.586, p = **0.010**	t = 0.714, p = 0.476	t = -2.391, p = **0.017**
BDAS: Brain Drain Attitude Scale, IWPS: Individual Workload Perception Scale, RSS: Reality Shock Scale, t: Independent t test, F: ANOVA			

According to the results of the Pearson correlation analysis conducted to determine the relationships between midwives' attitudes towards brain drain, individual workload, and reality shock; a positive and moderately significant relationship was found between attitudes towards brain drain and reality shock (r = .452; p < .001). In contrast, a negative and significant relationship was found between attitudes towards brain drain and perception of individual workload (r = − .283; p < .001). Furthermore, there is a significant negative correlation between midwives' perception of reality shock and their perception of individual workload (r = − .274; p < .001). When examined in terms of demographic variables, it is seen that brain drain attitudes decrease statistically significantly as age (r = − .159; p < .001) and years of professional experience (r = − .107; p = .015) increase (Table 3).

Table 3
Relationship between continuous variables (N = 512)

Variables	1	2	3	4
1. Age	—			
2.Professional Experience	r = .722p < .001	—		
3. BDAS	r = − .159p < .001	r = − .107p = .015	—	
4. IWPS	r = − .019p = .673	r = − .176p < .001	r = − .283p < .001	—
5. RRS	r = − .141p = .001	r = − .140p = .001	r = .452p < .001	r = − .274p < .001
BDAS: Brain Drain Attitude Scale, IWPS: Individual Workload Perception Scale, RSS: Reality Shock Scale				

The multiple linear regression model established to determine the factors predicting midwives' attitudes towards brain drain was found to be statistically significant (F = 76.657; p < .001). When the explanatory power of the model was examined, it was determined that the independent variables explained 22.8% of the total variance in brain drain attitudes (Adj. R2 = .228). The Durbin-Watson value (1.881), which shows that there is no autocorrelation between the error terms, is within acceptable limits. When the regression coefficients were examined; Reality shock is the strongest variable that positively and significantly predicts attitudes towards brain drain (Beta = .404; t = 10.008; p < .001). Accordingly, as the level of reality shock experienced by midwives increases, their attitudes towards brain drain also increase. On the other hand, individual workload is a negative and significant predictor of attitudes towards brain drain (Beta = − .172; t = -4.267; p < .001). This finding proves that as the perceived individual workload score decreases (as negative workload perception increases), the intention to brain drain shows a statistically significant increase (Table 4).

Table 4
Multiple Linear Regression Analysis Results Regarding Predictors of Midwives' Attitudes Toward Brain Drain

Variables	B	β	t	p	R2	Adj.R2	F (p)	Durbin-Watson
Constant	51.248	—	12.623	< .001	231	228	76.657 (< .001)	1.881
Individual Workload*	-133	-172	-4.267	< .001				
Reality Shock	135	404	10.008	< .001				
**As the scale score decreases, the perception of negative workload increases.*								

Discussion

This study makes a significant contribution to the literature on healthcare workforce migration by revealing that midwives' attitudes towards brain drain are significantly related to their perception of individual workload and reality shock. The findings show that the tendency towards brain drain cannot be explained solely by economic reasons; it is shaped by the interaction of multidimensional factors such as the process of adapting to working life, professional experiences, professional belonging, and organizational working conditions. Indeed, it is reported that the migration decisions of healthcare workers are influenced by individual, organizational, and systemic variables, and that this process has significant consequences for global health systems (WHO, 2006; Dolea et al., 2023; OECD, 2023). In this respect, the present study supports current approaches that consider healthcare workforce migration not only as human resource mobility but also as a strategic indicator reflecting the capacity of health systems to retain their employees. The most striking finding of the research is that reality shock is the strongest predictor of attitudes towards brain drain. In the regression analysis, it was determined that reality shock significantly and strongly predicted attitudes towards brain drain. Furthermore, a moderately positive correlation was found between reality shock and attitudes toward brain drain (r=.452, p<.001). This finding suggests that the expectation-reality mismatch experienced during the transition to the profession can affect not only job satisfaction but also the desire to remain within the healthcare system. The concept of reality shock was first defined by Kramer (1975), who stated that the difference between the idealized perception of the profession developed during education and the real conditions encountered in working life can lead to professional adjustment problems. Subsequent studies have shown that reality shock experienced by newly graduated healthcare professionals is associated with burnout, psychological stress, job dissatisfaction, and intention to leave the job (Duchscher, 2009; Phillips et al., 2021; Hussein et al., 2022). The findings of the current research reveal that this process is not limited only to the intention to leave the institution but can also affect the tendency towards international migration.

When evaluated from the perspective of the midwifery profession, the impact of reality shock becomes even more significant. Midwives are trained based on women-centered care, professional autonomy, and evidence-based practices during their education. However, factors encountered in working life, such as staff shortages, heavy workloads, role confusion, and limited decision-making authority, can increase the gap between professional expectations and the practice environment. This situation can negatively affect professional identity development

and weaken professional commitment. Sabancıoğlu and Doğan (2011) emphasized that professional identity is one of the fundamental determinants of healthcare workers' commitment to the profession. Therefore, reality shock should be considered not only as an individual adjustment problem but also as an effective factor in shaping professional belonging and the desire to remain within the system. In the study, a significant negative relationship was found between individual workload perception and attitudes towards brain drain. Due to the structure of the scale, a decrease in scores indicates a negative perception of workload. In the regression analysis, it was determined that workload perception is one of the significant predictors of brain drain attitudes. This finding suggests that high workloads may increase the tendency of healthcare workers to seek alternative career options. Similarly, Korkmazer and Aksoy (2018) reported that excessive workload negatively affects quality of life and increases work-family conflict. Karacabay et al. (2020) showed that negative workload perception is associated with error tendency and occupational stress. International literature also emphasizes that high workload is a significant risk factor for burnout and intention to leave the job (Bakker & Demerouti, 2017; Al Maqbali et al., 2021).

One of the important findings of the study is the significant negative relationship between reality shock and workload perception. This result suggests that difficulties experienced during the adaptation process to working life may contribute to a more negative perception of workload. Similarly, it can be said that individuals working under heavy workloads may feel the difference between their professional expectations and the working conditions they encounter more intensely. This creates a mutually reinforcing cycle. Considering the relationships identified in the literature between burnout, intention to leave the job, and migration tendency (Labrague & de los Santos, 2021), it is thought that evaluating reality shock and workload perception together is an important approach in explaining healthcare workforce migration.

The findings regarding sociodemographic variables are also noteworthy. The study determined that attitude scores towards brain drain decreased as age and professional experience increased. This finding is consistent with the study by Goštautaitė et al. (2018), which reported that the tendency to migrate among healthcare workers is higher, especially among young professionals. This situation may be explained by the fact that individuals in the early stages of their careers are more open to professional and geographical mobility and have more limited family and social responsibilities. Conversely, as experience increases, institutional belonging, professional commitment, and the strengthening of established life structures can reduce the tendency to migrate. Economic factors also play an important role in the research findings. The fact that participants who evaluated their income status as insufficient had higher attitude scores towards brain drain shows that economic conditions play an important role in the migration decisions of healthcare workers. This result is consistent with studies examining brain drain in Turkey (Yılmaz, 2019; Tanrısevdi et al., 2019). International literature also reports that higher salaries, better working conditions, and career opportunities are strong attractive factors for healthcare professionals (Kizito et al., 2015; OECD, 2023). However, the results of the present study show that economic factors alone are not sufficient; professional experiences such as reality shock and workload are also decisive in migration tendencies. When the existing literature on brain drain of healthcare professionals is examined, it is seen that studies largely focus on economic reasons, salary satisfaction, career opportunities, working conditions, and international labor mobility (Yılmaz, 2019; Bilgiç et al., 2024; Dolea et al., 2023). However, research examining the impact of psychosocial experiences during the transition process of healthcare workers on their migration tendencies is quite limited. In particular, no study has been found that evaluates reality shock, individual workload perception, and brain drain attitudes within the same research model in the field of midwifery. This situation indicates that the present research fills an important gap in the literature. Because healthcare workers' migration decisions cannot be explained solely by economic rationality; individuals' professional expectations, professional identity, adaptation to the work environment, and organizational experiences also play a decisive role in shaping this decision. Therefore, this study points to the need to consider early career experiences in understanding healthcare workforce migration.

Another important contribution of the research is that it addresses the phenomenon of brain drain not only within the framework of classic push and pull factors, but also within the context of the professional socialization process. While traditional migration theories mostly focus on macro-level variables such as economic opportunities, living standards, and career prospects (United Nations, 2017; OECD, 2023), the current study shows that the experiences an individual has during the process of adapting to working life can also influence migration decisions. The theoretical approach proposed in line with the findings reveals an integrated relationship between reality shock theory, workload perception, and brain drain tendencies. Accordingly, reality shock can be considered the fundamental psychosocial mechanism representing the mismatch between an individual's expectations regarding working life and the conditions they encounter. Workload perception constitutes the organizational dimension of this process. The combined effect of both variables can be decisive in an individual's decision to remain within the healthcare system or to move out of it. In this respect, the study offers a multidimensional and holistic perspective on explaining healthcare workforce migration. The research findings are important not only for the sustainability of the midwifery workforce but also for the future of maternal and neonatal health services. The World Health Organization (WHO, 2006) and international midwifery reports emphasize that a qualified midwifery workforce plays a critical role in reducing maternal and infant mortality, expanding safe childbirth services, and improving women's health. Midwives are essential health professionals who provide continuous care to women from the pre-pregnancy period to the postpartum period. Therefore, the brain drain trend among midwives should not only be considered a loss of manpower; it should also be addressed as a strategic public health problem threatening the sustainability of maternal health services. The departure of young midwives, especially those in the early stages of their careers, can lead to a decrease in the number of experienced midwives in the long term, affecting the quality of care and weakening the service delivery capacity of the health system. Therefore, protecting

the midwifery workforce should be considered a crucial component not only of employment policies but also of national health strategies aimed at improving maternal and newborn health.

The research findings offer important implications for health policies. Firstly, structured transition programs should be developed to mitigate the reality shock experienced by newly qualified midwives. The literature reports that mentoring, clinical guidance, and support programs facilitate the adaptation of newly graduated healthcare professionals and reduce their intention to leave the job (Hussein et al., 2022; Phillips et al., 2021). In addition, strengthening personnel planning to balance workloads in work environments is crucial. Reducing workload will not only increase employee satisfaction but also contribute to improved patient safety and quality of care (Karacabay et al., 2020). Furthermore, expanding practices that support midwives' professional autonomy, increasing career development opportunities, and strengthening professional visibility are also important interventions that can increase the tendency to remain within the system. While economic improvements are clearly necessary, the research findings indicate that economic incentives alone are insufficient; psychosocial and organizational factors must also be considered. The research has some limitations. Firstly, the cross-sectional design of the study limits the ability to definitively establish causal relationships between variables. Therefore, longitudinal studies are needed to assess how reality shock and workload perception affect brain drain tendencies over time. Secondly, since the data were collected using the self-report method, social desirability bias and recall bias may occur. Thirdly, the use of snowball sampling limits the generalization of the results to the entire midwife population. Furthermore, while the study assessed attitudes towards brain drain, the actual migration behaviors of the participants were not monitored. Future studies comparing midwives working in different regions, conducting in-depth qualitative research on migration decision-making processes, and utilizing longitudinal designs will significantly contribute to the literature.

In conclusion, this study revealed that midwives' attitudes towards brain drain are significantly related to their perception of individual workload and reality shock. Specifically, reality shock being the strongest predictor of brain drain attitudes indicates that experiences during the transition to the profession play a critical role in healthcare professionals' decisions to remain within the system. Furthermore, the fact that negative workload perceptions increase the tendency to migrate highlights the importance of improving working conditions in healthcare systems. The findings show that healthcare workforce migration cannot be explained solely by economic factors; professional adjustment, organizational support, and work environment experiences are also decisive. Therefore, policies aimed at protecting the midwifery workforce should include holistic approaches that support professional adjustment processes, reduce workload, and encourage professional development, in addition to economic regulations. Such an approach will contribute not only to the sustainability of the midwifery workforce but also to the strengthening of maternal and neonatal health services.

Conclusion

The research results show that young midwives, especially those living in the city center, who are single and have no childcare responsibilities, are more prone to brain drain. It was found that midwives who described their income as "low" and found their salaries inadequate had significantly more positive attitudes towards migration compared to their colleagues with higher incomes. This confirms that economic dissatisfaction is a key catalyst pushing midwives towards external migration alternatives. Furthermore, the fact that midwives working in private institutions and professionals whose weekly working hours exceed legal limits (50 hours and above) have a much higher tendency to brain drain compared to public institutions proves that structural problems in the work environment are decisive in migration decisions. One of the study's findings is the relationship between perceived workload and brain drain. The increase in brain drain attitudes with decreasing workload scores (increased negative workload perception) indicates that midwives experience dissatisfaction not only from physical fatigue but also from the uncertainty of their clinical roles or their inability to fully utilize their professional potential. Post-hoc analyses; The study revealed that midwives working in primary health centers and on day shifts perceived their workload more positively, while those working long hours in hospital settings received lower scores. Regarding reality shock, midwives who reluctantly chose the profession and are in their early years experience a much deeper adjustment crisis. Factors such as the high workload in private institutions and the distance between the institution and home deepen reality shock, strengthening this group's intention to leave the system. The fact that midwives who perceive their salaries as insufficient have both the highest reality shock and the highest intention to leave the workforce indicates that economic and psychological factors create a combined risk. In conclusion, low salary perception, excessive working hours, and clinical reality shock encountered in the early years of the profession are the strongest factors triggering midwives' intention to leave the workforce. The decrease in migration attitudes as professional experience and age increase proves that institutions need mentoring programs to mitigate reality shock and managerial arrangements to rationalize workloads, especially for retaining "newly graduated" and "young" midwives.

Abbreviations

BDAS
Brain Drain Attitude Scale
IWPS
Individual Workload Perception Scale

RSS
Reality Shock Scale
CHERRIES
Checklist for Reporting Results of Internet E-Surveys
SPSS
Statistical Package for the Social Sciences
ANOVA
Analysis of Variance
KMO
Kaiser–Meyer–Olkin
VIF
Variance Inflation Factor
WHO
World Health Organization
OECD
Organisation for Economic Co-operation and Development

Declarations

Ethical approval and permission to participate

Ethical approval for this study was obtained from the Haliç University Non-Interventional Research Ethics Committee (Date: 09 May 2024; Approval No: 83). The study was conducted in accordance with relevant ethical principles and applicable institutional guidelines.

Informed consent to participate was obtained electronically from all participants prior to data collection. Before accessing the online questionnaire, participants were provided with information about the purpose and procedures of the study and were required to indicate their voluntary agreement to participate.

Publication permission

Not applicable.

Accessibility of data and materials

The datasets generated and analyzed during the current study are not publicly available to protect participant confidentiality but are available from the corresponding author upon reasonable request, subject to applicable ethical and data protection requirements.

Conflicts of interest

The authors declare that they have no conflicts of interest related to the research, authorship, and publication of this article.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Authors' contributions

FŞB and RG contributed to the conception and design of the study. FŞB was responsible for data collection, data curation, and statistical analysis. RG contributed to the study methodology, interpretation of the findings, and critical revision of the manuscript. Both authors contributed to manuscript preparation, reviewed the manuscript for important intellectual content, and read and approved the final manuscript.

Acknowledgements

The authors would like to express their sincere gratitude to all midwives who voluntarily participated in this study and generously contributed their time and experiences.

References

1. Bilgiç FŞ, Azizoğlu F, Karaahmet AY. Brain drain in health professionals: a bibliometric study. Adıyaman Üniversitesi Sağlık Bilimleri Dergisi. 2024;10(3):276–88.

2. Azizoğlu F, Hayran O, Terzi B. Bireysel İş Yükü Algısı Ölçeği'nin Huzurevi ve Yaşlı Bakım Rehabilitasyon Merkezleri Sağlık Çalışanlarında Türkçe Geçerlik Ve Güvenirliğinin İncelenmesi. Anadolu Hemşirelik ve Sağlık. Bilimleri Dergisi. 2021;24(3):298–303.
3. Bakker AB, Demerouti E. Job demands-resources theory: Taking stock and looking forward. J Occup Health Psychol. 2017;22(3):273–85. https://doi.org/10.1037/ocp0000056.
4. Boztepe H, Terzioğlu F. Hemşirelik eğitiminde beceri değerlendirme. Anadolu Hemşirelik ve Sağlık. Bilimleri Dergisi. 2013;16:1.
5. Çiftçioğlu G, Tunç G, Güneş A, Değer V, Çiftçi S. Hastanelerde Görevli Sağlık Çalışanlarının Bireysel İş Yükü Algıları. Hastanelerde Görevli Sağlık Çalışanlarının Bireysel İş Yükü Algıları. Sağlık ve Hemşirelik. Yönetim Dergisi. 2018;5(1):1–8.
6. Çiriş Yildiz C, Ergün Y. Development and psychometric testing of the Reality Shock Scale for newly graduated nurses. J Adv Nurs. 2021;77(12):4950–62.
7. Goštautaitė B, Bučiūnienė I, Milašauskienė Ž, Bareikis K, Bertašiūtė E ve, Mikelionienė G. (2018). Migration intentions of Lithuanian physicians, nurses, residents and medical students. Health Policy, 122(10), 1126–1131.
8. Karacabay K, Savcı A, Çömez S. Çelı k N. Cerrahi Hemşirelerinin İş Yükü Algıları ile Tıbbi Hata Eğilimleri Arasındaki İlişkinin Belirlenmesi. Mersin Üniversitesi Sağlık Bilimleri Dergisi. 2020;13(3):404–17.
9. Kizito S, Mukunya D, Nakitende J, Nambasa S, Nampogo A, ve Kalyesubula R. Career intentions of final year medical students in Uganda after graduating: The burden of brain drain career choice, professional education and development. BMC Med Educ. 2015;15:1–7.
10. Korkmazer F, Aksoy A. Sağlık Çalışanlarının İş Yükü Fazlalığı Algısının Yaşam Kalitesı ve İş- Aile Çatışması ile İlişkisı. Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi. 2018;5(12):607–19.
11. Kramer M. Reality shock: Why nurses leave nursing. Volume 75. LWW; 1975. p. 891. 5.
12. Öncü E, Selvi H, Vayısoğlu K, Ceyhan S. Hemşirelik öğrencilerinde Beyin Göçüne Yönelik Tutum Ölçeği geliştirilmesi: güvenirlik ve geçerlik çalışması. Cukurova Med J. 2018 ;43:207–15.
13. Sabancıoğlu S, Doğan S. Profesyonel kimliğin dışa yansıyan boyutu: profesyonel imaj ve hemşirelik. Hemşirelikte Eğitim ve Araştırma Dergisi. 2011; 8 (2): 29–37.
14. Tanrısevdi F, Durdu İ, Tanrısevdi A. (2019). Beyin Göçü mü? Beyin Gücü mü? J Travel Tourism Res, (14), 133–58.
15. United Nations. (2017), International Migration Report 2017: Highlights, Department of Economic and Social Affairs: Population Division, https://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/MigrationReport2017_Highlights.pdf, Erişim Tarihi.
16. WHO. (2006). World Health Organization. The World Health Report 2006: Working together for health.; http://www.who.int/whr/2006/whr06_en.pdf
17. Yılmaz E. Uluslararası beyin göçü hareketleri bağlamında Türkiye'deki beyin göçünün durumu. LAÜ Sosyal Bilimler Dergisi. 2019;10(2):220–32.
18. Al Maqbali M, Sinani A, M., Al-Lenjawi B. Prevalence of burnout among nurses during COVID-19 pandemic: A systematic review and meta-analysis. Int J Nurs Stud. 2021;114:103810.
19. Buchan J, Catton H, Shaffer F. Sustain and retain in 2022 and beyond: The global nursing workforce and the COVID-19 pandemic. International Centre on Nurse Migration; 2022.
20. Dolea C, Stormont L, Shaw D. Health workforce mobility and migration: Global trends and policy responses. Hum Resour Health. 2023;21(1):1–10.
21. Duchscher JE. Transition shock: the initial stage of role adaptation for newly graduated registered nurses. J Adv Nurs. 2009;65(5):1103–13. https://doi.org/10.1111/j.1365-2648.2008.04898.x.
22. Hussein R, Everett B, Ramjan LM, Hu W, Salamonson Y. New graduate nurses' experiences of workplace stress and support: A systematic review. Nurse Educ Today. 2022;110:105264.
23. Labrague LJ, de los Santos JAA. Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. J Nurs Adm Manag. 2021;29(3):395–403.
24. OECD. Health at a Glance 2023: OECD Indicators. Paris: OECD Publishing; 2023.
25. Phillips C, Esterman A, Kenny A. The theory of reality shock in nursing: A systematic review. Nurse Educ Today. 2021;102:104927.
26. Shah M, et al. Factors influencing healthcare workers' migration: A global review. Hum Resour Health. 2021;19(1):1–12.