Journal of Health Sciences Arel University, 9(1), 13-27
Arel Üniversitesi Sağlık Bilimleri Dergisi, 9(1), 13-27

JOURNAL OF HEALTH SCIENCES AREL UNIVERSITY

AREL ÜNİVERSİTESİ SAĞLIK BİLİMLERİ DERGİSİ

Homepage (Web sayfası): https://dergipark.org.tr/tr/pub/arsagbil

DOI: 10.71230/arsagbil.1569370 *Research Article*

Stigmatizing with Discourse: The Effect of Peer Education on Student Nurses' Beliefs about Mental Illness

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Abstract

Negative beliefs toward mental illness are prevalent among nursing students, posing various risks for the future care of individuals with mental illness. The objective of this study was to examine the impact of a peer education intervention on the reduction of negative beliefs held by nursing students regarding mental illness. The study was conducted in a quasi-experimental design with a single group pre-test, post-test and follow-up test. It was conducted with 87 nursing students between December 2022 and February 2023. Data were collected using the "Participant Information Form" and the "Beliefs Toward Mental Illness Scale" (BMI) at pre-training, the first week after the training, and the second month after. The participants were first-, second-, and third-year nursing students who had not previously received education about mental illness. 79.3% of the participants were female, 72.4% lived with their families, and 67.8% had an income equal to their expenses. Furthermore, 50.6% said they would seek help from a psychologist if a relative showed mental symptoms. A significant difference was found in the BMI total and subscale scores before training, in the first week, and in the second month after training ($p<0.05$). Peer education applied to nursing students is effective in reducing negative beliefs toward mental illness, and the intervention's effect continued to increase up to the second-month post-education.

Keywords: Education, Mental disorders, Nursing, Stigmatization, Student

Söylemle Damgalama: Öğrenci Hemşirelere Uygulanan Akran Eğitiminin Ruhsal Hastalığa Yönelik İnançlar Üzerine Etkisi

Özet

Ruhsal hastalıklara yönelik olumsuz inançlar hemşirelik öğrencileri arasında yaygındır ve ruhsal hastalığı olan bireylerin gelecekteki bakımı için çeşitli riskler oluşturmaktadır. Bu çalışmada, hemşirelik öğrencilerinin ruhsal hastalıklara yönelik olumsuz inançlarını azaltmada akran eğitimi müdahalesinin etkisini araştırmak amaçlanmıştır. Araştırma, tek grup ön test, son test ve izleme testi ile yarı deneysel bir tasarımda gerçekleştirilmiştir ve Aralık 2022 - Şubat 2023 tarihleri arasında 87 hemşirelik öğrencisi ile yürütülmüştür. Veriler "Katılımcı Bilgi Formu" ve "Ruhsal Hastalığa Yönelik İnanç Ölçeği" (RHİÖ)

Application: October 17, 2024 **Acceptance:** January 20, 2025
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The article was presented at the 7th International 11th National Psychiatric Nursing Congress, it was included as a summary in the congress book.

Journal E-mail: sbfdergisi@arel.edu.tr
Journal abbreviation: *J. H. Sci. Arel U.*

kullanılarak eğitim öncesi, eğitim sonrası birinci hafta ve eğitim sonrasıikinci ay zaman noktalarında toplanmıştır. Katılımcılar, daha önce ruhsal hastalıklarla ilgili eğitim almamış birinci, ikinci ve üçüncü sınıf hemşirelik öğrencileriydi. Katılımcıların %79,3'ü kadındı, %72,4'ü ailesiyle birlikte yaşıyordu ve %67,8'inin geliri giderine denkti. Ayrıca, %50,6'sı bir yakını ruhsal belirtiler gösterdiğinde bir psikologdan yardım isteyeceğini söylemiştir. RHİÖ toplam ve alt ölçek puanlarında eğitim öncesi, ilk hafta ve eğitim sonrası ikinci ayda anlamlı fark bulunmuştur ($p<0,05$). Hemşirelik öğrencilerine uygulanan akran eğitimi, ruhsal hastalıklara yönelik olumsuz inançları azaltmada etkilidir ve müdahalenin etkisi eğitim sonrası ikinci aya kadar artarak devam etmiştir.

Anahtar kelimeler: Eğitim, Ruhsal bozukluklar, Hemşirelik, Damgalama, Öğrenci

1. INTRODUCTION

American Psychiatric Association defines mental illness as a health condition that involves changes in a person's emotions, thinking, or behavior and causes problems in functioning in family, work, and social activities [1]. Mental illnesses are widespread globally, with an estimated 970 million people suffering from some form of mental illness, 82% of whom are in low- and middle-income countries. In 2019, it was reported that 301 million people had anxiety disorders and 280 million had depressive disorders, and the COVID-19 pandemic significantly increased these numbers [2]. Mental illnesses can affect individuals regardless of age, gender, social status, ethnicity, or cultural identity [1]. Despite their prevalence, stigma toward mental illnesses persists today. Although mental illnesses can be prevented and effectively treated, many individuals with mental disorders face stigma, discrimination, and human rights violations [3].

Stigma arises from attributing negative characteristics such as dangerousness, responsibility, and lack of reliability to a person or group [4]. For many individuals with mental illness, stigma is a real barrier to leading a complete and satisfying life [5]. Stigma hinders access to material, social, and cultural resources [6]. Stigmatizing attitudes toward individuals with mental illness and psychiatry are prevalent among health professionals as well [7,8]. The stigmatization of individuals with mental disorders by health professionals is one of the most significant barriers to seeking help [9]. Stigma leads to health inequalities for these individuals and creates obstacles in accessing healthcare [10]. Individuals with mental disorders may experience different treatment compared to others [7]. Examples include isolation, exclusion, abuse, rejection, and being overshadowed in diagnosis [7,10].

Nurses, like other health professionals, can exhibit stigmatizing attitudes toward individuals with mental illness [7,11]. Although nurses accept mental health and psychiatric care as an integral part of holistic patient care, they have negative attitudes toward individuals with mental illness and psychiatry in general [10-12]. It has been reported that nurses view individuals with mental illness as dangerous and unpredictable; they have negative emotions such as fear and anxiety toward these individuals and possess accusatory and hostile attitudes [9,11,13].

Negative attitudes of nurses toward mental illnesses not only adversely affect patient care but also lead to mental health nursing becoming an unpopular career path. The role of nurse educators in developing educational strategies to alleviate students' concerns and increase interest in mental health nursing is emphasized in preventing this [8]. Addressing nursing students' negative attitudes and emotions toward individuals with mental disorders before their first patient contact is essential for enabling students to have more positive experiences and enhancing their interest and competence in mental health services [14]. Furthermore, it is emphasized that stigma should be addressed in the early years of professional education; as students' progress through university programs, their attitudes become more rigid and resistant to change [15]. Although there are studies in the literature aimed at reducing negative beliefs and increasing awareness toward mental illnesses among nursing students, no study has been found that examines the effect of peer education on the concept of psychiatric illness and stigma on nursing students' beliefs toward mental illness. Based on this, the purpose of this study was to examine the effect of a peer

education program aimed at reducing the stigma of mental illness on nursing students' beliefs about mental illness.

To this end, the research study was designed as a quasi-experimental, single-group pre-test, post-test, and follow-up test. The following hypotheses were formulated:

H0: Peer education is not effective in reducing nursing students' negative beliefs about mental illness.

H1: Peer education is effective in reducing nursing students' negative beliefs about 'hopelessness and deterioration in interpersonal relationships' toward mental illness.

H2: Peer education is effective in reducing nursing students' negative beliefs about the 'dangerousness' of mental illness.

H3: Peer education is effective in reducing nursing students' negative beliefs of 'shame' toward mental illness.

2. SAMPLE AND METHOD

2.1. Participants and Study Context

The population of this study consisted of 125 nursing students in the first-, second- and third-year of a university nursing undergraduate program. No sample selection method was used; all participants who met the inclusion criteria were tried to be reached. The sample included 89 nursing students, but the data of two students who did not participate in the follow-up test were excluded, and the study was completed with 87 students, reaching 69.6% of the population. All participants were informed about the study, and written voluntary consent was obtained.

2.1.1. Inclusion and exclusion criteria

The study's inclusion criteria were as follows: participants had to be over 18, registered students in the Department of Nursing, and not have previously participated in any program to combat stigma toward mental illnesses. The exclusion criteria were students from departments other than nursing and those who had previously participated in any program aimed at combating stigma toward mental illnesses.

2.2. Procedure

The intervention in this study was peer education conducted by the second researcher, a student. The peer education provider was a 4th-year nursing student who had completed the theoretical and clinical applications of the mental health and psychiatric nursing course.

2.2.1. Peer education program and implementation

Two sessions were planned to structure the content of the peer education conducted by the peer educator. During these sessions, a standard presentation and brochure to be used in peer education were created with the participation of both researchers, following the literature. The content of the brochure and presentation, as well as the methods to be used in the process, were standardized by the first researcher. The first researcher consulted the peer educator in creating the peer education presentation content and the informational hand brochure distributed to participants after the education. The peer education program content included topics such as the definition of mental illness, the concept of stigma, commonly stigmatized mental illnesses, the impact of stigma on individuals, and myths and facts about mental illnesses. The peer educator engaged first-, second-, and third-year nursing students by asking questions like what stigma is, why we stigmatize, what are your thoughts and approaches toward individuals with mental illness, and what patients and their families might experience due to stigma. The peer education program was conducted separately for each class (3 sessions). The first researcher planned the place, day, and time of the peer education sessions with the peer educator, according to the suitability of students' theoretical and practical classes, and the planned education program was announced to the nursing students in the population. The peer education program was conducted in suitable classrooms

within the faculty building. The education sessions lasted approximately 60-90 min. At the end of the peer education, the peer educator provided each participant with an informational hand brochure.

2.2.2. Data collection process

The research data were obtained between December 2022 and February 2023. Data were collected from participants at three different time points: before the education (pre-test), one week after the education (post-test), and in the second-month of the education (follow-up test) (Figure 1). Data collection tools were applied face-to-face during the pre-test and post-test stages and online during the follow-up test stage.

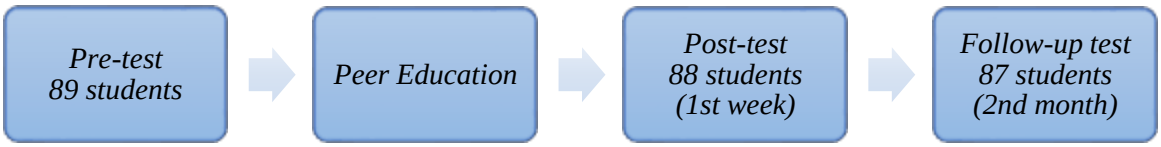

Figure 1. Data collection process

2.3. Data Collection Tools

The data for this single-group pre-test, post-test, and follow-up test quasi-experimental study were obtained using the Participant Information Form and the Beliefs Toward Mental Illness Scale (BMI).

2.3.1. Participant information form

The form, developed by the researchers considering the literature, consists of 15 questions to determine the participants' sociodemographic characteristics (such as age, gender, and class) and their thoughts on mental illness.

2.3.2. Beliefs toward mental illness scale (BMI)

The scale was developed by Hirai and Clum in 2000 [16]. The validity and reliability study in Turkey was conducted by Bilge and Cam in 2008 [17]. The BMI consists of 21 items and is a 6-point Likert scale scored between 0 and 5. The scale has three subscales: "Dangerousness," "Despair and Deterioration of Interpersonal Relationships (DDIR)," and "Shame." The scale is interpreted based on the total and subscale scores, with higher scores indicating more negative beliefs. In the validity and reliability study by Bilge and Cam (2008), the scale's total Cronbach's alpha coefficient was 0.82, with subscale coefficients of 0.80 for DDIR, 0.71 for Dangerousness, and 0.69 for Shame [17].

2.4. Data Analysis

SPSS Statistics 24.0 software was used for data analysis. The analysis techniques were determined based on the skewness and kurtosis values of the variables to check for normal distribution, assuming normal distribution if the values were within ±1.5 [18]. Repeated measures of One-Way ANOVA were used to identify differences in the total and subscale scores of the BMI before the education, one week after, and in the second-month. For comparing the BMI and subscale scores with categorical variables, an independent samples t-test was used if the data showed normal distribution and the Mann-Whitney U test if they did not. For variables with more than two categories, One-Way ANOVA and post hoc tests such as Tukey HSD and LSD were used if the data showed normal distribution, and Kruskal-Wallis H test if they did not. Pearson correlation was used to evaluate the relationship between the BMI and its subscales with age if the data showed normal distribution and Spearman correlation analysis if they did not. The statistical significance level was accepted as $p<0.05$.

2.5. Ethics Considerations

The ethical appropriateness of the research was accepted by the decision of İstanbul Kültür University Ethics Committee dated 17.11.2022 and numbered 2022/151. Voluntary participation was fundamental in the study. After explaining the purpose of the research, written informed consent was obtained from the participants. The study was conducted under the principles of the Declaration of Helsinki.

3. RESULTS

The average age of the participants was 20.16±1.35 years. Among the participants, 79.3% were female, 82.8% came from nuclear families, 72.4% lived with their families, 67.8% had incomes equal to their expenses, and 93.1% were nursing students with no history of psychiatric illness. The sociodemographic characteristics of the participants are presented in Table 1.

Table 1. Sociodemographic characteristics of the participants[1]

		Mean±SD	Min-Max
Age		20.16±1.35	18-25
		n	%
Gender	Female	69	79.3
	Male	18	20.7
Marital status	Married	1	1.1
	Single	86	98.9
Family status	Small family	72	82.8
	Extended family	14	16.1
	Fragmented family	1	1.1
Numbers of siblings	No siblings	9	10.3
	1 Sibling	11	12.6
	2 Siblings	19	21.8
	3 Siblings	20	23.0
	4 Siblings and above	28	32.2
People living together	With family members	63	72.4
	Alone	4	4.6
	With friend	3	3.4
	Student dormitory	17	19.5
Income status	Income less than expenditure	17	19.5
	Income equal to expenditure	59	67.8
	Income more than expenditure	11	12.6
History of psychiatric illness	Yes	6	6.9
	No	81	93.1
Total		87	100.0

[1]*n: Number, %: Percentage, SD: Standard deviation, Min.: Minimum, Max.: Maximum.*

26.4% of the participants reported having a relative with a mental illness, 30.4% of those participants lived in the same house with their relative, and 85.7% spent 1-11 hours per day with their relative with a mental illness. When examining the participants' feelings and thoughts toward mental illnesses and individuals with mental illness, 35.6% of the participants reported that individuals with mental illness caused them the most distressing feelings. 50.6% stated that they would seek help from a psychologist first if a relative showed signs of mental illness. Additionally, 33.3% expressed that family conflicts were the main cause of mental illness (Table 2).

Table 2. Participants' views on mental illness and individuals with mental illness and descriptive information

		n	%
Do you have a family member or relative with a mental illness?	Yes	23	26.4
	No	64	73.6
	Total	87	100.0
How close are you to the person you know who has a mental health problem?	Sibling	1	4.3
	Relative	18	78.3
	Friend	4	17.4
	Total	23	100.0
Do you live in the same house as your relative with a mental illness?	Yes	7	30.4
	No	16	69.6
	Total	23	100.0
If you live in the same house as your relative with a mental illness, how much time during the day do you spend with your relative with a mental illness?	1-11 hours per day	6	85.7
	12 hours or more per day	1	14.3
	Total	7	100.0
What is the most common emotion that a person with a mental illness makes you feel?	Fear	26	29.9
	Anger	5	5.7
	Distress	31	35.6
	Excitement	3	3.4
	Happiness	2	2.3
	Other feelings	20	23.0
If a relative of yours showed signs of mental illness, who would be the first person you would turn to for help?	Psychiatrist	36	41.4
	Psychologist	44	50.6
	Other	7	8.0
What do you think is the main cause of mental illness?	Traumatic events (such as earthquakes, floods...)	27	31.0
	Family conflicts	29	33.3
	Infectious diseases	2	2.3
	Religious problems	3	3.4
	Supernatural forces such as magic	2	2.3
	Genetic predisposition	14	16.1
	Other problems	10	11.5
Total		87	100.0

Table 3 presents the Cronbach's alpha values of the total and subscale scores obtained in this study. The comparison of the BMI total scores and subscale scores at pre-education, first-week post-education, and second-month post-education are presented in Table 4. According to this, there was a significant difference between the scores at pre-education, first-week post-education, and second-month post-education ($p<0.05$). The BMI total score and the scores of the DDIR, Dangerousness, and Shame subscales at pre-education were statistically higher than the scores at the first-week and second-month post-education ($p<0.05$). The BMI total score and the scores of the DDIR and Dangerousness subscales at first-week post-education were statistically higher than the scores at second-months post-education ($p<0.05$) (Table 4).

Table 3. Cronbach's alpha values of the BMI total score and the BMI subscale scores

	Pre-training	1st week	2nd month
BMI total score	0.90	0.89	0.84
Dangerousness	0.76	0.78	0.70
DDIR	0.86	0.85	0.75

Shame	0.85	0.63	0.53

The relationship between participants' sociodemographic characteristics and BMI total score, DDIR, Dangerousness, and Shame subscale scores is presented in Table 5. There was no significant difference between the pre-education BMI total score, DDIR, and Dangerousness subscale scores of female and male participants ($p>0.05$); however, there was a significant difference in the pre-education Shame subscale scores ($p<0.05$). The difference was higher in the male gender (Table 5).

There was no statistically significant relationship between the participants' feelings and thoughts toward mental illnesses and individuals with mental illness, and the BMI total score, DDIR, and Dangerousness subscale scores at pre-education, first-week post-education, and second-months post-education.

Table 4. Comparison of BMI and subscale scores pre-training, 1st week and 2nd month[1]

		Mean	SD	p	Difference
BMI total score	a. Pre-training	53.48	17.59	0.00*	a>b, c b>c
	b. 1st week	33.18	16.96		
	c. 2nd month	29.67	11.06		
Dangerousness	a. Pre-training	24.57	6.46	0.00*	a>b, c b>c
	b. 1st week	16.05	6.28		
	c. 2nd month	13.84	5.24		
DDIR	a. Pre-training	26.89	10.51	0.00*	a>b, c b>c
	b. 1st week	16.05	8.18		
	c. 2nd month	14.89	6.22		
Shame	a. Pre-training	2.02	2.78	0.00*	a>b, c
	b. 1st week	1.09	1.64		
	c. 2nd month	0.94	1.41		

*[1]p: Repeated measures ANOVA, *p<0.05: Significant at level, SD: Standard deviation*

Table 5. Comparison of BMI total and subscale scores with participants' socio-demographic characteristics[1]

		Beliefs Toward Mental Illness Scale (BMI)											
		Pre-training				**1st week**				**2nd month**			
		Danger ousness	DDIR	Shame	Total	Danger ousness	DDIR	Shame	Total	Danger ousness	DDIR	Shame	Total
Age	r	0.01	0.02	0.00	0.02	-0.23	-0.17	-0.21	-0.17	-0.14	-0.09	0.00	-0.12
	n	Mean±SD				Mean±SD				Mean±SD			
Gender													
Female	69	24.35 ± 6.20	26.49 ± 9.62	1.65 ± 2.42	52.49 ± 15.98	16.52 ± 6.15	15.97 ± 8.27	1.07 ± 1.62	33.01 ± 17.08	13.96 ± 5.20	14.83 ± 6.16	0.87 ± 1.33	29.65 ± 10.92
Man	18	25.44 ± 7.51	28.39 ± 13.63	3.44 ± 3.60	57.28 ± 22.89	14.22 ± 6.58	16.33 ± 8.03	1.17 ± 1.76	33.83 ± 16.94	13.39 ± 5.51	15.11 ± 6.62	1.22 ± 1.70	29.72 ± 11.89
TS; p		T: -0.639 p: 0.52	T: -0.680 p: 0.50	Z:-2.118 p:0.03*	T: -1.028; p: 0.31	T: 1.392 p: 0.17	T: -0.167 p: 0.87	Z: -0.092 p: 0.93	T: -0.181 p: 0.86	T: 0.408 p: 0.69	T: -0.172 p: 0.86	Z: -0.555 p: 0.58	T: -0.024 p: 0.98
Income status													
Income less than expenditure	17	26.00± 7.02	26.06± 11.97	1.88± 2.62	53.94± 20.14	16.94± 6.49	14.71± 7.86	0.59± 1.06	30.00± 16.08	13.82± 4.56	13.47± 6.15	0.41± 1.23	27.71± 9.55
Income equal to expenditure	59	24.46± 6.63	27.76± 10.47	2.17± 3.04	54.39± 17.85	15.88± 6.43	16.58± 8.57	1.27± 1.82	34.42± 17.81	13.80± 5.53	15.25± 6.31	1.07± 1.48	30.12± 11.53
Income more than expenditure	11	23.00± 4.34	23.45± 8.12	1.45± 1.29	47.91± 11.21	15.55± 5.43	15.27± 6.67	0.91± 1.22	31.45± 13.85	14.09± 5.03	15.09± 6.06	1.09± 1.14	30.27± 11.24
TS; p		F: 0.746 p: 0.48	F: 0.841 p: 0.44	χ^2: 0.101 p: 0.95	F: 0.631 p: 0.54	F: 0.224 p: 0.80	F: 0.396 p: 0.67	χ^2: 2.075 p: 0.35	F: 0.509 p: 0.60	F: 0.014 p: 0.99	F: 0.544 p: 0.58	χ^2: 5.334 p: 0.07	F: 0.328 p: 0.72
Family status													
Small family	72	24.61 ± 6.41	27.32 ± 9.88	1.94 ± 2.69	53.88 ± 16.76	16.25 ± 6.54	16.03 ± 8.12	1.11 ± 1.63	33.17 ± 16.77	13.82 ± 5.37	15.13 ± 6.15	.90 ± 1.38	29.85 ± 11.15
Extended family/ Fragmented family	15	24.40 ± 6.91	24.80 ± 13.33	2.40 ± 3.27	51.60 ± 21.71	15.07 ± 4.86	16.13 ± 8.75	1.00 ± 1.73	33.27± 18.46	13.93 ± 4.70	13.73 ± 6.63	1.13 ± 1.60	28.80 ± 10.93

TS; p		T: 0.114 p: 0.91	T: 0.843 p: 0.40	Z: -0.492 p: 0.62	T: 0.454 p: 0.65	T: 0.662 p: 0.51	T: -0.045 p: 0.96	Z: -0.186 p: 0.85	T: -0.021 p: 0.98	T: -0.076 p: 0.94	T: 0.787 p: 0.43	Z: -0.489 p: 0.63	T: 0.332 p: 0.74
People living together													
With family members	63	24.86 ± 6.31	26.35 ± 10.33	2.00 ± 2.79	53.21 ± 17.35	16.10 ± 6.53	16.08 ± 8.16	0.95 ± 1.50	33.11 ± 17.05	14.06 ± 5.49	15.19 ± 6.32	0.84 ± 1.37	30.10 ± 11.45
Alone/With friend/Student dormitory	24	23.83 ± 6.92	28.29 ± 11.08	2.08 ± 2.81	54.21 ± 18.57	15.92 ± 5.68	15.96 ± 8.38	1.46 ± 1.96	33.38 ± 17.09	13.25 ± 4.56	14.08 ± 5.99	1.21 ± 1.50	28.54 ± 10.10
TS; p		T: 0.658 p: 0.51	T: -0.769 p: 0.44	Z: -0.296 p: 0.77	T: -0.236 p: 0.81	T: 0.118 p: 0.91	T: 0.061 p: 0.95	Z:-1.213 p: 0.23	T: -0.064 P: 0.95	T: 0.645 p: 0.52	T: 0.740 P: 0.46	Z:-1.314 p: 0.19	T: 0.584 p: 0.56
Do you have a family member or relative with a mental illness?													
Yes	23	22.83± 6.42	26.09± 10.64	1.83± 2.87	50.74± 18.17	16.09± 6.18	16.57± 7.99	1.04± 2.03	34.17± 15.87	13.96± 5.61	15.26± 6.23	.61± 1.08	29.83± 11.19
No	64	25.20± 6.41	27.17± 10.53	2.09± 2.77	54.47± 17.42	16.03± 6.36	15.86± 8.30	1.11± 1.49	32.83± 17.44	13.80± 5.14	14.75± 6.26	1.06± 1.50	29.61± 11.10
TS; p		T: -1.525 p: 0.13	T: -0.423 p: 0.67	Z: -0.645 p: 0.52	T: -0.871 p: 0.39	T: 0.036 p: 0.97	T: 0.353 p: 0.73	Z:-1.166 p: 0.24	T: 0.325 p: 0.75	T: 0.125 p: 0.90	T: 0.336 p: 0.74	Z:-1.332 p: 0.18	T: 0.080 p: 0.94
If a relative of yours showed signs of mental illness, who would be the first person you would turn to for help?													
Psychiatrist	36	25.67± 6.48	28.58± 10.70	2.64± 3.24	56.89± 18.30	16.19± 7.18	16.50± 8.68	0.92± 1.44	33.92± 17.94	14.25± 5.58	15.44± 6.39	0.97± 1.48	30.67± 11.63
Psychologist	44	23.34± 6.06	25.05± 9.43	1.25± 1.82	49.64± 14.86	15.52± 5.67	15.09± 7.84	1.00± 1.60	31.18± 16.01	13.57± 4.83	14.41± 6.09	0.80± 1.25	28.77± 10.33
Other**	7	26.71± 8.16	29.71± 15.05	3.71± 4.03	60.14± 25.87	18.57± 4.93	19.71± 7.41	2.57± 2.30	42.00± 16.92	13.43± 6.50	15.00± 6.86	1.71± 1.89	30.14± 13.66
TS; p		F: 1.729 p: 0.18	F: 1.411 p: 0.25	χ^2: 5.461 p: 0.07	F: 2.296 p: 0.11	F: 0.725 p: 0.49	F: 1.062 p: 0.35	χ^2: 4.483 p: 0.11	F: 1.295 p: 0.28	F: 0.188 p: 0.83	F: 0.271 p: 0.76	χ^2: 1.709 p: 0.43	F: 0.293 p: 0.75

		What do you think is the main cause of mental illness?											
Traumatic events (such as earthquakes, floods...)	27	24.44± 6.54	27.19± 11.05	2.67± 3.29	54.30± 18.94	17.11± 6.51	16.04± 8.05	1.33± 1.66	33.41± 17.21	14.93± 4.39	15.11± 6.31	1.37± 1.69	31.41± 10.05
Family conflicts	29	25.24± 6.79	25.62± 10.89	1.62± 2.56	52.48± 17.98	15.97± 6.16	15.41± 8.72	0.86± 1.16	31.69± 17.84	13.66± 5.54	14.69± 6.87	0.55± 0.87	28.90± 12.24
Genetic predisposition	14	22.50± 5.47	25.79± 8.70	0.86± 1.29	49.14± 12.54	14.93± 6.55	15.64± 8.93	0.71± 1.86	32.00± 17.40	12.43± 5.91	15.14± 6.44	0.79± 1.19	28.36± 11.88
Other	17	25.35± 6.69	29.47± 10.71	2.65± 2.94	57.47± 18.72	15.41± 6.18	17.47± 7.29	1.41± 2.09	36.35± 15.69	13.59± 5.49	14.65± 5.15	1.06± 1.71	29.29± 10.42
TS; p		F: 0.662 p: 0.58	F: 0.533 p: 0.66	χ^2: 3.501 p: 0.32	F: 0.617 p: 0.61	F: 0.458 p: 0.71	F: 0.235 p: 0.87	χ^2: 2.933 p: 0.40	F: 0.290 p: 0.83	F: 0.745 p: 0.53	F: 0.036 p: 0.99	χ^2: 3.646 p: 0.30	F: 0.334 p: 0.80

*[1]r: Pearson correlation, Spearman correlation, T: Independent samples t-test, Z: Mann-Whitney U test, F: One-way analysis of variance, χ2: Kruskal Wallis H Test *p<0.05: Significant at level, TS: Test statistics; **Other: General practitioner/Haji-Hoca/Nurse-Midwife*

4. DISCUSSION

The study's findings indicated the efficacy of a peer education intervention for mental illness in modifying nursing students' negative perceptions concerning mental illness. It was observed that the decline in students' negative beliefs regarding the dangerousness, despair and deterioration of interpersonal relationships associated with mental illness continued to escalate during the second-month following the training. These results led to the acceptance of hypotheses H1, H2, and H3.

There is substantial evidence from high-level studies indicating that nurses hold negative beliefs and attitudes toward mental illnesses and individuals with mental illness [10-12]. However, data on the attitudes of nursing students toward individuals with mental illness is insufficient, with reports suggesting that student nurses can hold either positive or negative attitudes toward these individuals [19-22].

Studies have examined the impact of psychiatric nursing courses on nursing students' beliefs, attitudes, and views regarding stigma toward mental illnesses during their education [19,21,23, 24]. Nevertheless, there is a noted scarcity of intervention studies aimed at reducing mental health stigma among nursing students [14]. It is emphasized that creating and implementing anti-stigma interventions for mental illness in nursing schools to increase student nurses' awareness is crucial [13,25,26]. Higher levels of education among nurses are associated with an increased likelihood of having more positive attitudes toward mental illnesses. Education and specific interventions related to mental illnesses have the potential to reduce the negative beliefs and attitudes of nurses and nursing students toward individuals with mental illness [9,14]. The presence of negative beliefs and stigma toward individuals with mental illness among not only nurses but also nursing students underscores the importance of implementing stigma-reducing educational interventions during the pre-professional period [13]. Pusey-Murray [22] highlights the necessity of reviewing teaching strategies in nursing schools and modifying mental health education programs. Indeed, a common feature of studies examining nurses' perspectives toward individuals with mental illness is the reported experience of educational deficiencies in the nursing curriculum among student nurses [10].

Various methods have been identified for combating stigmatizing attitudes toward mental illnesses among nursing students, with the leading strategies reported as being education and contact with individuals who have experienced mental illness [27]. In contrast to these methods, our study investigated the effect of peer education on combating stigma against mental illness among nursing students. The study's pre-test, post-test, and follow-up test results showed that peer education effectively reduced negative beliefs toward mental illnesses among student nurses, and this effect increased during both the first-week and second-month follow-up periods.

The literature includes various short-term programs that examine nursing students' negative beliefs and attitudes toward mental illness. These interventions include contact with psychiatric patients, using different teaching techniques in psychiatric nursing courses, and laboratory and clinical applications [25,26,28]. However, there are no studies that specifically examine the effect of peer education on nursing students' negative beliefs toward mental illness. Inan et al. [29] studied the impact of a peer education program conducted by nursing students on the beliefs toward mental illnesses among university students in non-health and non-medicine fields. Their research found that peer education positively affected university students' beliefs about mental illnesses. Although this study was conducted with a different sample group, it shares similarities with our research in examining the effect of peer education on negative beliefs toward mental illness and implementing peer education by nursing students. These similarities support the findings of our study.

In a study developed with a community-based participant, the effect of the peer mentor program intervention on nursing students' stigmatizing attitudes toward individuals with mental illness was examined. The intervention program effectively reduced the stigmatizing attitudes of nursing students from pre-intervention to post-intervention and up to a one-month follow-up [30].

Another study investigated the effectiveness of a planned mental health course intervention, consisting of 70 theoretical academic hours that included techniques and methods such as interviews with individuals battling mental health illnesses, watching films, and simulation practices. The intervention, structured as a mental health course, was found to improve nursing students' attitudes toward individuals with mental illness [31]. Inan et al. [28] examined the effect of a mental health nursing module, clinical practice, and an anti-stigma program on nursing students' attitudes toward mental illnesses. The study found that students' perceptions of danger changed positively after the intervention; however, there was no change in perceptions of helplessness and shame. Another pre-test-post-test design study with nursing students observed that an intervention program that included didactic lessons, integrated role-playing, and contact with psychiatric patients reduced the stigma and negative attitudes of nursing students toward individuals with mental illness [26].

Many different interventions aimed at reducing negative beliefs and attitudes toward mental illness in nursing students have shown positive effects. However, these interventions' duration, scope, cost, and applicability can be concerning. Peer education is a teaching method successfully used in nursing education to enhance student participation and the quality of the learning experience, providing many benefits to students [32]. Peer education, being shorter in duration, cost-effective, and accessible compared to other teaching methods, holds the potential to be widely used as a teaching method to reduce negative beliefs and attitudes toward mental illnesses and individuals with mental illness among nursing students. Therefore, it is believed that the results of this study could guide future studies and that peer education could be widely and easily implemented to reduce negative beliefs and attitudes toward mental illness.

Limitations

This research encompasses first-, second-, and third-year nursing students studying at the institution where the study was conducted. Thus, the results cannot be generalized to the entire population. The limitations of the study include the limited time available to complete the research, the repeated application of data collection tools, the fact that multiple studies were being conducted simultaneously on students within the same period at the faculty where the research was carried out, the lack of high enthusiasm among students to participate in the research, and the relatively small sample size of the study.

5. CONCLUSION

In this study, which investigated the effect of a peer education program aimed at combating stigma against mental illness among nursing students using a single-group pre-test, post-test, and follow-up test quasi-experimental design, it was found that students' negative beliefs decreased compared to before the education, and this decrease continued to increase more significantly at the first-week and second-month post-education. This research is significant as it is the first known study to investigate the effect of peer education on negative beliefs toward mental illness among nursing students. The study's results are expected to contribute to developing new methods that can be alternatives to traditional methods in reducing stigma against mental illness in nursing undergraduate education. Additionally, it is believed to contribute to future healthcare professionals, namely nursing students, in providing humane, equal, and professionally valued nursing care to all individuals under their care. Future studies are recommended to investigate the effectiveness of peer education interventions with different designs and larger samples, including individual and sociocultural characteristics that may affect students' negative beliefs toward mental illness.

Ethics Committee Approval

The ethical appropriateness of the research was accepted by the decision of İstanbul Kültür University Ethics Committee dated 17.11.2022 and numbered 2022/151.

Contribution of Authors
Cennet Kara Özçalık: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing - original draft and Writing, review and editing; **Esra Çakal:** Data curation, Funding acquisition, Investigation, Resources, Visualization, Implementation and Writing - original draft.

Conflict of Interest
The authors declare that they have no conflict of interest.

Funding
This work was supported by The Scientific and Technological Research Council of Türkiye (TÜBİTAK) [grant numbers 1919B012204859].

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