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ASSESSING NURSING STUDENTS' BLOOD AND INJURY PHOBIA

Hemşirelik Öğrencilerinin Kan ve Yaralanma Fobisinin Değerlendirilmesi

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ABSTRACT

In this study, nursing students' blood and injury phobia and the conditions affecting it were evaluated. This descriptive study was conducted with 289 nursing students between September and December 2020. Data were collected using a prepared questionnaire and the Multidimensional Blood/Injury Phobia Inventory. Number, percentage, mean, standard deviation, quartiles, Mann–Whitney U and Kruskal–Wallis tests were used to evaluate the data. The mean score of students in the Multidimensional Blood/Injury Phobia Inventory was 56 ± 19.03, having a low level of blood injury phobia. In the total Multidimensional Blood/Injury Phobia Inventory, a significant difference ($p<0.05$) was found between "those who said that they had intervened in someone who had blood and injury phobia and others" and "those who said that they felt fear while injecting themselves and others", whereas no significant difference was found in the total score of the scale for the other variables. Before choosing nursing, candidates must pass various tests and those with this type of phobia must be guided.

Keywords: Blood, Injury, Nursing students, Phobia.

ÖZ

Bu çalışmada hemşirelik öğrencilerinin kan ve yaralanma fobisi ve etkileyen durumları değerlendirildi. Tanımlayıcı tipteki bu çalışma Eylül-Aralık 2020 tarihleri arasında 289 hemşirelik öğrencisi ile yürütüldü. Veriler hazırlanan anket formu ve Çok Boyutlu Kan/Yaralanma Fobisi Envanteri kullanılarak toplandı. Verilerin değerlendirilmesinde sayı, yüzde, ortalama, standart sapma, çeyreklikler, Mann-Whitney U ve Kruskal-Wallis testleri kullanıldı. Öğrencilerin Çok Boyutlu Kan/Yaralanma Fobisi Envanteri puan ortalaması 56 ± 19.03 olup düşük düzeyde kan yaralanması fobisine sahipti. Çok Boyutlu Kan/Yaralanma Fobisi Envanteri toplamında öğrencilerden "kan ve yaralanma fobisi yaşayan birine müdahalede bulunduğunu söyleyenlerle diğerleri" ve "kendisine ve başkalarına enjeksiyon uygulanırken korku hissettiğini söyleyenlerle diğerleri" arasında anlamlı fark bulunmadı ($p<0.05$), buna karşılık, diğer değişkenler ile ölçeğin toplam puanında anlamlı bir farklılık bulundu. Hemşireliği seçmeden önce adayların çeşitli testlerden geçmesi ve bu tür fobisi olanlara yol gösterilmesi gerekmektedir.

Anahtar kelimeler: Fobi, Hemşirelik öğrencileri, Kan, Yaralanma.

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INTRODUCTION

Specific phobia, also known as simple phobia, is defined as an 'irrational/extreme fear of certain situations or objects.' The fear, anxiety, or both felt are not proportional to the real danger from the situation or object (Öztekin, Aydın & Aydemir, 2017; Turkish Psychiatric Association, 2020). Specific phobias often negatively affect work and social life, causing psychiatric disorders (Kılıç, S. Ak & H. Ak, 2014). Also, specific phobias are accompanied by fear and disgust (Çavuşoğlu & Dirik, 2011). Examples include animal phobia, thunder and storm phobia, fear of airplanes, fear of loneliness, claustrophobia, phobia of driving, phobia of space/space, phobia of swallowing, and phobia of blood/injection/injury (Turkish Psychiatric Association, 2020).

Blood/injury phobia is the intense fear of blood, injection, or injury. Injury or medical applications reacted with passive avoidance movements, such as including closing the video, closing the eyes, dizziness, drop in blood pressure, and finally fainting in response to a patient or medical issue (Çavuşoğlu & Dirik, 2011; Meuret et al., 2017). Wani et al. (2016) stated that blood/injury phobia is more common in women than in men (Wani et al., 2016). According to these results, it can be said that gender and genetic factors are effective in the development of this phobia. Furthermore, blood phobia is more likely to be seen in family members, distinguishing this phobia (Ak, Birgül Ak & Cengiz, 2013). Many specific phobias start in early childhood, and most people state that they do not know when their phobia first started; however, blood/injury phobias start in early childhood (Uyan, Bahçeci & Hocaoğlu, 2018). Also, most people with a phobia do not seek treatment since phobias are not considered diseases but a temperament or character trait; therefore, people think they cannot be treated (Ak et al., 2013). Behavioral psychotherapy techniques, applied relaxation, and stretching techniques forblood/injury phobia are effective (Ducasse et al., 2012; Meuret et al., 2017). The motivational interview technique, which effectively creates behavior changes, can also solve blood, injection, and injury phobia (Finitsis, 2016).

People with a blood/injury phobia are afraid of the hospital; thus, refusing to visit any hospital (Ak et al., 2013). Blood and injury phobia, also known as "bloodsickness," in addition to reactions, such as feeling discomfort at the sight of blood, is a condition that results in fainting, changes in heart rate, nausea/vomiting when faced with many medical procedures, such as dismembered human bodies, accidents, blood donation, injections, and tooth extraction (Ak et al., 2013). Unlike other phobias, when exposed to the stimulus in blood/injury phobia, the body shows biphasic autonomic nervous system activities with the activation of the

sympathetic and parasympathetic nervous system (Çavuşoğlu & Dirik, 2011; Wani et al., 2016). Acute emotional stressors such as anxiety, fear, anger can trigger arrhythmias, cardiac responses and even sudden cardiac death. With decreased sympathetic activity in response to these stressors, syncope may develop due to cerebral hypoperfusion (Kuz, Çetin & Türkoğlu, 2020). As a result, some people may faint when they hear the word blood without experiencing any event that they associate with the concept of blood, such as hearing an ambulance siren or experiencing a surgical event (Ak et al., 2013). Blood injection injury phobia ranges from fear and avoidance of the dentist or dental treatments, putting the individual at risk of complications related to poor oral health (Mehrstedt et al., 2007). Those with a blood/injection/injury phobia may have their lives at risk because they refuse hospital procedures, such as injection and medical practices. Since these individuals are affected regarding treatment and socially, their phobias can significantly change their lives by directing their career choices, decisions to have children, and travels (American Psychiatric Association, 2013; Jiang, Upton & Newby, 2020).

It is inevitable for individuals working in health professions to encounter bleeding and injury. For example, in the operating room, a working area for nurses, incision and constantly encountering bleeding is common, for example, in dialysis. After all, they intervene in accidents and injuries or frequently encounter trauma cases in emergency services (Ak et al., 2013; Özer & Şar, 2019). If individuals in the nursing profession have blood/injury phobia, they will encounter difficulties while fulfilling their professional responsibilities. Although blood/injury phobia may have emerged from childhood experiences, students may have encountered an accident, injury, or trauma for the first time in their education after their nursing preferences. If they have such a phobia or if it occurred during their education, it is thought that students should be supported to overcome this situation. Therefore, this study was conducted to determine whether nursing students have blood/injury phobia and the conditions affecting them. The results obtained will contribute to planning for students' readiness for the nursing profession.

MATERIAL AND METHOD

Aim and Type of Study

This study was conducted in a descriptive and relationship-seeking type. Also, this study determines the presence of blood/injury phobias and the affecting situations of nursing students.

Population and Sample of the Study

The research population consisted of 300 students studying in the Nursing Department of a university. In this study, no sampling method was used, it was aimed to reach all students

studying in the nursing department, and students who could understand what they read volunteered to participate in the study were included in the study.

Data Collection and Analysis

In order to protect the confidentiality of the data so that the students would not be influenced by each other, the survey and scales were distributed to the students in envelopes.

The data collection tools were the "sociodemographic data questionnaire" and the "Multidimensional Blood/Injury Phobia Inventory (MBPI)", in which students were asked about their age, gender, marital status, grade, economic status, presence of psychological/mental disorder, illness, smoking/alcohol use, fear of injections, intervention status, and their views on the individual with blood/injury phobia.

The researcher conducted research implementation between September 1 and December 1, 2020. After the written informed consent of the students studying in the nursing program was obtained, they were asked to fill in the questionnaire form and the MDCT in a closed envelope, informing them that they did not need to write their names. The feedback of the answers took 15–30 min. After data collection, 11 students refused voluntary participation in the study, and the study was completed with 289 participants.

In this study, the Multidimensional Blood/Injury Phobia Inventory (MBPI) scale was used to collect data. MBPI; developed by Wenzel & Holt (2003), and Ak et al. (2013); Turkish validity and reliability study was conducted. MBPI comprises 40 items by crossing four types of stimuli (injection, hospital, blood, and injury) and five phobic responses (fear, avoidance, anxiety, fainting, and disgust). The options ranged from "not at all = 0 points" to "very much = 4 points." After the validity and reliability study of the MPI, Cronbach alpha value was calculated as 0.91 in the original MBPI, 0.94 in the Turkish validity and reliability study, and Kaiser–Meyer–Olkin (KMO) value was calculated as 0.92. The scale comprises sub-dimensions of "phobia of blood/injury to others, phobia of own blood, needle, hospital, and injury phobias."

In evaluating the data, numbers, percentages, mean, standard deviation, and quartiles were used for descriptive statistics. Skewness kurtosis values (normal if between −1 and +1) were taken as the basis for MBPI compliance to the normal distribution. Mann–Whitney U test was used for the two-group variables unsuitable for the normal distribution to compare the students' characteristics with the MBPI mean score. The Kruskall–Wallis test compared the variables with more than one or two groups. For the statistical significance level, $p < 0.05$ was accepted.

Study Limitations

The limitation of this study is that it was conducted with only one university's nursing students.

Ethical Considerations

For the research, the ethics committee approval dated 17.07.2020 and numbered 41901325-050.99 from the Ethics Committee of Uskudar University Non-Pharmaceutical and Medical Device Research. Permission was obtained from the dean's office of the nursing faculty to conduct the study. Written and verbal consent was obtained from the students who participated in the study by informing them about it. Finally, the permission to use the scale was obtained via e-mail from Sertaç Ak, who conducted the Turkish validity and reliability study for the MLSF used in the study.

RESULT

Student nurses in this study were between 17 and 34 years old, with an average age of 19.89 ± .07 years, and 81,3% were women. The economic status of 69.6% of these individuals is moderate. Regarding the negative situations that affect blood smear phobia, 4.5% of the students had psychological/spiritual problems, 2,8% had a physiological disorder, and 24.2% were smokers. Finally, 7.6% of them used alcohol. To the question "whether they interfered with someone who has a phobia of blood and injury during their education," 26.3% of the students answered "yes"; "do you feel fear while giving yourself or someone else an injection?" 22.5% answered "yes" to the question (Table 1).

Table 1. Descriptive Characteristics of Student Nurses (n = 289)

Descriptive Characteristics	n	%
Age (years) (x̄: 19.89±2.07)		
17-19	153	52.9
20-34	136	47.1
Gender		
Female	235	81.3
Male	54	18.7
Marital status		
Married	5	1.7
Single	284	98.3
Class		
Firs Class	72	24.9
Second Class	78	27.0
Third Class	70	24.2
Fourth Class	69	23.9
Economical situation		
Good	80	27.7
Middle	201	69.6
Bad	8	2.8

Presence of psychological/psychic problems		
Yes	13	4.5
No	276	95.5
Have a physical illness		
Yes	8	2.8
No	281	97.2
Smoking		
Yes	70	24.2
No	219	75.8
Alcohol use		
Yes	22	7.6
No	267	92.4
Have you dealt with someone who has a phobia of blood and injury?		
Yes	76	26.3
No	213	73.7
Did you feel fear while giving yourself or someone else the injection?		
Yes	65	22.5
No	224	77.5

The mean score of the participants in the MDCI was 56 ± 19.03. Mean scores of the MSPI sub-dimensions; "phobia of blood/injury to others" was 13,15 ± 5.34; "own blood phobia" was 11.12 ± 5.09; "needle phobia" was 10.83 ± 4.77; "hospital phobia" was 11.66 ± 4.92; "injury phobia" was 8.32 ± 3.11 (Table 2).

Table 2. MSPI and Sub-Dimension Scores of Student nurses (n = 289)

MSPI and its sub-dimensions	$\bar{x}$±SD	Min-Max	Cronbach α
MSPI total score	56.10±19.03	40-182	0.928
Phobia of someone else's blood-injury	13.15±5.34	10-46	0.851
Phobia of own blood	11.12±5.09	9-41	0.853
Needle phobia	10.83±4.77	8-36	0.854
Hospital phobia	11.66±4.92	9-43	0.853
Injury phobia	8.32±3.11	4-19	0.859

A significant difference was found between the students who intervened with someone and others with blood and injury phobia and those who said they felt fear while injecting themselves or others ($p<0.05$). In contrast, other variables were not different. Notably, the factor of feeling fear while being injected was also significant in all sub-dimensions ($p <0.05$) (Table 3).

Table 3. MSPI and Sub-Dimension Scores According to the Characteristics of the Students (N = 289)

Descriptive Characteristics	**n**	**MSPI total score** [Q(Q_1-Q_3)]	**Phobia of someone else's blood-injury** [Q(Q_1-Q_3)]	**Phobia of own blood** [Q(Q_1-Q_3)]	**Needle phobia** [Q(Q_1-Q_3)]	**Hospital phobia** [Q(Q_1-Q_3)]	**Injury phobia** [Q(Q_1-Q_3)]
Age							
17-19	153	50.0 (46.0-59.5)	11.0 (10.0-15.0)	9.0 (9.0-11.0)	9.0(8.0-12.0)	9.0 (9.0-12.0)	8.0 (6.0-10.0)
20-34	136	48.0(43.2-59.0)	10.0(10.0-13.7)	9.0 (9.0-10.0)	8.0(8.0-12.0)	9.0(9.0-13.0)	8.0(6.0-10.0)
Test*;p		-1.804; .071	-2.269; **.023**	-1.722; .085	-0.733; .463	-0.023; 0.981	-0.501; .616
Gender							
Famele	235	50.0(44.0-61.0)	11.0(10.0-15.0)	9.0(9.0-10.0)	9.0(8.0-12.0)	9.0(9.0-13.0)	8.0(6.0-10.0)
Male	54	48.0(44.8-56.0)	10.0(10.0-13.0)	9.0(9.0-10.0)	8.0(8.0-11.0)	9.0(9.0-13.0)	7.0(5.8-9.0)
Test*;p		-1.399; .162	-0.844; .399	-0.239; .811	-1.040; .298	-0.349; .727	-1.905; .057
Marital status							
Married	5	44.0(41.0-70.0)	10.0(10.0-15.5)	9.0(9.0-13.5)	8.0(8.0-13.5)	9.0(9.0-15.0)	8.0(5.0-11.0)
Single	284	49.0(45.0-59.0)	11.0(10.0-14.0)	9.0(9.0-10.0)	9.0(8.0-12.0)	9.0(9.0-13.0)	8.0(6.0-10.0)
Test*;p		-0.851; .395	-0.612; .541	-0.479; .632	-0.258; .796	-0.746; .456	-0.337; .736
Class							
Firs Class	72	50.0(47.0-59.8)	11.0(10.0-14.8)	9.0(9.0-11.0)	9.0(8.0-12.0)	10.0(9.0-15.0)	8.0(7.0-10.0)
Second Class	78	49.0(45.0-61.5)	11.0(10.0-15.0)	9.0(9.0-11.0)	8.5(8.0-12.0)	9.0(9.0-11.0)	8.0(6.0-11.0)
Third Class	70	50.0(44.0-62.0)	11.0(10.0-15.0)	9.0(9.0-11.0)	9.0(8.0-13.0)	9.0(9.0-13.0)	8.0(6.0-10.0)
Fourth Class	69	47.0(43.0-54.0)	10.0(10.0-11.5)	9.0(9.0-9.0)	8.0(8.0-10.5)	9.0(9.0-12.0)	8.0(5.0-10.0)
Test;p**		6.496; .090	8.454; **.038**	8.160; **.043**	4.900; .179	2.516; .472	0.749; .862
Economical situation							
Good	80	50.0(43.3-61.8)	11.0(10.0-14.8)	9.0(9.0-10.0)	9.0(8.0-12.0)	9.0(9.0-13.0)	8.0(5.3-10.0)
Middle	201	49.0(44.5-59.0)	11.0(10.0-14.0)	9.0(9.0-11.0)	9.0(8.0-12.0)	9.0(9.0-12.5)	8.0(6.0-10.0)
Bad	8	49.5(41.8-63.8)	11.5(10.3-15.5)	9.0(9.0-9.8)	8.0(8.0-9.8)	9.0(9.0-17.3)	10.0(4.0-13.0)
Test;p**		0.017; .992	0.837; .658	0.248; .883	0.927; .629	0.475; .788	0.249; .883
Presence of psychological/psychic problems							
Yes	13	50.0(46.5-79.0)	10.0(10.0-15.5)	9.0(9.0-16.0)	9.0(8.0-14.5)	11.0(9.0-16.0)	8.0(5.5-12.0)
No	276	49.0(44.0-59.0)	11.0(10.0-14.0)	9.0(8.0-12.0)	9.0(8.0-12.0)	9.0(9.0-12.0)	8.0(6.0-10.0)
Test*;p		-0.724; .469	-0.360; .719	-0.178; .648	-0.456; .648	-1.764; .078	-0.524; .600
Have a physical illness							
Yes	8	47.0(41.3-50.0)	10.0(10.0-11.8)	9.0(9.0-9.0)	8.0(8.0-8.8)	9.0(9.0-12.3)	7.0(4.0-10.3)
No	281	49.0(44.0-59.5)	11.0(10.0-14.0)	9.0(9.0-10.0)	9.0(8.0-12.0)	9.0(9.0-13.0)	8.0(6.0-10.0)
Test*;p		-1.159; .246	-0.970; .332	-1.223; .221	-1.807; .071	-0.427; .669	-0.951; .341

Smoking							
Yes	70	48.5(43.0-55.5)	10.0(10.0-13.0)	9.0(9.0-10.0)	8.0(8.0-10.3)	9.0(9.0-11.3)	7.5(5.0-9.0)
No	219	50.0(45.0-61.0)	11.0(10.0-15.0)	9.0(9.0-10.0)	9.0(8.0-12.0)	9.0(9.0-13.0)	8.0(6.0-10.0)
Test*;p		-1.841; .066	-1.676; .094	-0.949; .343	-1.665; .096	-0.005; .996	-2.443; **.015**
Alcohol use							
Yes	22	47.5(40.8-86.5)	10.0(10.-14.3)	9.0(9.0-16.5)	9.0(8.0-15.5)	12.0(9.0-17.3)	6.0(4.0-9.3)
No	267	49.0(45.0-59.0)	11.0(10.0-14.0)	9.0(9.0-10.0)	9.0(8.0-12.0)	9.0(9.0-12.0)	8.0(6.0-10.0)
Test*;p		-0.321; .748	-1.026; .305	-0.338; .735	-0.790; .430	-2.322; **.020**	-1.720; .085
Have you dealt with someone who has a phobia of blood and injury?							
Yes	76	47.0(43.0-54.0)	10.0(10.0-12.0)	9.0(9.0-9.0)	8.0(8.0-11.8)	9.0(9.0-12.0)	8.0(5.0-9.0)
No	213	50.0(45.0-62.0)	11.0(10.0-15.0)	9.0(9.0-11.0)	9.0(8.0-12.0)	9.0(9.0-13.0)	8.0(7.0-10.0)
Test*;p		-2.681; **.007**	-3.799; **.000**	-2.241; **.025**	-0.842; .400	-0.389; .697	-2.488; **.013**
Did you feel fear while giving yourself or someone else the injection?							
Yes	65	63.0(52.0-84.5)	13.0(10.0-20.5)	10.0(9.0-17.5)	14.0(9.5-17.0)	10.0(9.0-17.0)	9.0(8.0-12.0)
No	224	48.0(44.0-55.0)	10.5(10.0-13.0)	9.0(9.0-10.0)	8.0(8.0-10.0)	9.0(9.0-11.0)	8.0(6.0-9.0)
Test*;p		-6.641; **.000**	-4.252; **.000**	-4.504; **.000**	-7.329; **.000**	-3.333; **.000**	-4.761; **.000**

* Mann–Whitney U test was performed, z values were given.
** These are Kruskal–Wallis test values.

At the end of the questionnaire, an open-ended question was asked to the students to write if there were any "opinions they would like to express about the phobia of blood/injury." Interestingly, 112 students answered this question. Their answers were "although it is difficult to practice nursing with blood injury phobia at the beginning, I think that this phobia can be overcome/controlled in time" (50 students) and "I do not have a blood/injury phobia, and it is necessary not to have such a phobia to be able to do the nursing profession" (23 students), containing two fundamentally opposing views. They also stated that "as a healthcare worker, I approach patients with a phobia with more confidence" (27 students), i.e., it would affect their behavior toward patients (Table 4).

Table 4. Students' Opinions about Blood/Injury Phobia (n = 289)

Opinions	**(n)**	**(%)**
Although it is difficult to practice nursing with blood injury phobia at the beginning, I think that this phobia can be overcome/controlled in time.	50	17.3
As a healthcare worker, I approach patients with a phobia with more confidence	27	9.3
I do not have a blood/injury phobia, and it is necessary not to have such a phobia to be able to do the nursing profession	23	8.0
The level of fear will increase in relation to the severity of blood injury.	11	3.8
If I see blood in myself, I will not be afraid, but if I see bleeding in anyone around me, I will be worried.	3	1.0
I think that this phobia is caused by a previous trauma in the person.	2	0.7
Blood injury phobia is a situation we can always encounter and we need to be made aware before we encounter it.	2	0.7
The problem is all about injection.	1	0.4
I think it's a phobia of pity.	1	0.4

DISCUSSION

During their education, nursing students take clinical courses, such as internal and surgical diseases, obstetrics, and pediatrics, and face blood/injury situations. This situation in class IV made us think that they were confronted with their phobias until they started learning to cope in the fourth grade. Literature findings suggest that repeated exposure to threat-related stimuli that generate fear and anxiety effectively treats certain phobias (Ayala, Meuret & Ritz, 2009; Jessup et al., 2020). The fourth year is also when care for psychiatric problems is taught in undergraduate nursing education. The students also stated that "although it is difficult to practice the nursing profession with blood injury phobia initially, this phobia can be overcome/controlled over time," supporting these results.

It has been determined that the patient's anxiety levels decreased and the patient's anxiety level improved in controlling fear and anxiety attacks, showing good compliance with the nursing care applied to a patient with needle phobia based on the Roy adaptation model (Mendonça et al., 2020). Furthermore, it was determined that the median value was the highest

among all variables (65 students) among those who stated that they "feel fear while giving injections to themselves or others," and there was a significant difference in all sub-dimensions. This result can be explained by creating anticipatory anxiety (Demirci, Sağaltıcı & Yıldırım, 2015) against the possibility of encountering a phobic situation or object.

The median values of the nonsmokers in the injury phobia sub-dimension were higher than the users, and the difference was significant in this study. However, the median values in the hospital phobia sub-dimension were lower, and the difference was significant in those who did not use alcohol. No relationship between cigarette or alcohol use with fear or phobia has been found in the literature. However, many studies have suggested that smoking increases the risk of developing anxiety (Lasser et al., 2000; Tobias, Templeton & Collings, 2008; Lawrence et al., 2010; Swendsen et al., 2010; Moylan et al., 2013). There is a need to investigate the relationship between smoking and alcohol use and phobias in this context.

In this study, there was no significant difference in the total and sub-dimension scores of gender, marital status, economic status, psychological/mental problem, having a physical illness, and blood/injury phobia. Also, some studies have shown that there was no difference between male and female genders in terms of blood injury phobia (Kılıç et al., 2014; Hirai, Vernon & Dolma, 2018). Fredrikson et al. (1996) reported no difference in injury phobia between men and women. Contrary to the results of our study, there are also studies reporting that women's phobia is higher when evaluating blood/injury phobia (Kose & Mandıracıoğlu, 2007; Wani, Ara & Bhat, 2014; McLenon & Rogers, 2019). Although the same scale was not measured in a study conducted in Iran, it was stated that the fear of injections is higher in women and people with a lower education level have a higher degree of blood/injection/injury phobia (Arian & Talepasand, 2019; Bienvenu & Eaton, 1998). Bienvenu and Eaton (1998) also reported that blood injection injury phobia was higher among women and those with lower education levels. Contrary to this result, a study also showed that blood/injection/injury phobia is not associated with education level (Kılıç et al., 2014). All students in this study are in the university. The effects of education level on their phobias were examined yearly. However, it would not be correct to generalize these results to nursing education and compare them with the education levels in other studies. In this study, most student nurses stated that they did not have any physical (97.2%) or psychological (95.5%) disease. There was no significant difference in phobia levels between those with and without the disease. Additionally, a study reported that most young people with blood/injection/injury phobia have a co-occurring physical health problem (Oar et al., 2016). Another study stated that blood/injection/injury

phobia is associated with physical and psychiatric diseases (Miloyan & Eaton, 2016). It has been reported that blood/injection/injury phobia is also associated with many medical disorders, such as cancer, diabetes, and cardiovascular disease (Bienvenu & Eaton, 1998; Carey & Harris, 2005; McLenon & Rogers, 2019). In a study stating the opposite, only 4.1% of all participants, most of whom had chronic diseases, had a phobia of blood/injury (Arian & Talepasand, 2019). In line with these results, we can say that individuals with blood/injection/injury phobia have a high probability of having another physical or psychological disease. Blood/injection/injury phobia is associated with other fears, hypertension, anxiety, and personality disorders (Miloyan & Eaton, 2016). Also, patients with anxiety and fear of medical treatment often fail to receive treatment in time (Patel, Baker & Nosarti, 2005), or fear medical treatment related to blood/injury phobia, or individuals avoid being vaccinated (McLenon & Rogers, 2019). In line with these results, we can say that individuals with blood/injury phobia can refuse to seek medical help and receive hospital treatment due to the anxiety they experience due to exposure. A study determined that hospital phobia is among the least encountered phobias (Miloyan & Eaton, 2016). Therefore, it can be said that the phobia levels in blood/injury phobia and its sub-dimensions vary according to the groups in which the study was conducted.

CONCLUSION

Since nursing is a profession that is frequently faced with situations, such as blood, injection, and injuries, it can be said that the phobias of the members of the profession, such as blood/injection/injury, will leave people in a difficult situation, being an obstacle. Therefore, people with this type of phobia should consider their own situation when choosing the nursing profession. Additionally, before choosing the nursing profession, the candidates must pass various tests and guide those with this type of phobia. Considering the deficiency in the literature, it is recommended to develop coping strategies by applying measures of blood injury phobia for students in nursing and other health disciplines and professionals, and to conduct research on blood/injury phobia in these groups. Nursing educators should also guide these students to receive supportive professional support through interventions that include behavioral psychotherapy techniques such as applied relaxation and stretching techniques and motivational interviewing techniques that create behavioral changes.

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REFERENCES

Ak, S., Birgül Ak, H. & Cengiz, K. (2013). Çok boyutlu kan-yaralanma fobisi envanteri (ÇBKFE) geçerlik ve güvenilirlik çalışması. *Türk Psikiyatri Dergisi,* 24, 1–8. https://doi: doi: 10.5080/u7211.

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders: DSM-5. *American Psychiatric Association*, Arlington. VA. p.140-150.

Arian, M. & Talepasand, S. (2019). Investigation of psychometric properties of blood/ınjection fear scale-persian version (BIFS-PV). *Medical-Surgical Nursing Journal,* 8(2), e90420. https://doi.org/10.5812/msnj.90420.

Ayala, E. S., Meuret A. E. & Ritz T. (2009). Treatments for blood-injection-injury phobia: A critical review of current evidence. *Journal of Psychiatric Research,* 43(15), 1235-1242. https://doi: 10.1016/j.jpsychires.2009.04.008.

Bienvenu, O. J. & Eaton, W. W. (1998). The epidemiology of blood-injection-injury phobia. *Psychological Medicine,* Sep;28(5), 1129-36. https://doi: 10.1017/s0033291798007144.

Carey, C. L. & Harris, L. M. (2005). Damardan kemoterapi gören kanser hastalarında kan enjeksiyonu korkusu / fobisinin kökenleri. *Davranış Değişimi,* 22(4), 212–219.

Çavuşoğlu, M. & Dirik, G. (2011). Fear or disgust? The role of emotions in spider phobia and blood-injection-injury phobia. *Türk Psikiyatri Dergisi,* 22(2), 115–122.

Demirci, O. O., Sağaltıcı, E. & Yıldırım, A. (2015). Özgül fobinin göz hareketleri ile duyarsızlaştırma ve yeniden işleme yöntemi ile tedavisi: bir olgu sunumu, 124-129.

Ducasse, D., Capdevielle, D., Attal, J., Larue, A., Macgregor, A., Brittner, M. & Fond, G. (2012). Blood-injection-injury phobia: Physochophysiological and therapeutical specificities. *L'encephale,* 39(5), 326-331. https://doi: 10.1016/j.encep.2012.06.031.

Finitsis, D. J. (2016). Development of a brief motivational ınterview to promote help seeking among ındividuals with symptoms of blood. ınjection. Injury Phobia". Doctoral Dissertations, 1137.

Fredrikson, M., Annas, P., Fischer, H. & Wik, G. (1996). Gender and age differences in the prevalence of specific fears and phobias. *Behaviour Research and Therapy,* 34(1), 33-9.https://doi.org/10.1016/0005-7967(95)00048-3.

Hirai, M., Vernon, L. L. & Dolma, S. A. (2018). Gender invariant model of disgust propensity in blood-injection-injury phobia in Latina/o individuals. *Psychology, Health&Medicine,* 23(10), 1275–1281. https://doi.org/10.1080/13548506.2018.1487985.

Jessup, S. C., Tomarken, A., Viar-Paxton, M. A. & Olatunji, B. O. (2020). Effects of repeated exposure to fearful and disgusting stimuli on fear renewal in blood-injection-injury phobia. *Journal of Anxiety Disorders,* Aug;74, 102272. https://doi: 10.1016/j.janxdis.2020.102272.

Jiang, M. Y. W., Upton, E. & Newby, J. M. (2020). A randomised wait-list controlled pilot trial of one-session virtual reality exposure therapy for blood-injection-injury phobias. *Journal of Affective Disorders,* 276, 636-645. https://doi: 10.1016/j.jad.2020.07.076.

Kılıç, C., Ak, S. & Ak, H. B. (2014). Anxiety sensitivity: Another reason to separate dental fears from blood–injury fears?. *Journal of Anxiety Disorders,* 28(2), 280-282. https://doi: 10.1016/j.janxdis.2014.01.001.

Kose, S. & Mandıracıoğlu, A. (2007). Fear of blood/injection in healthy and unhealthy adults admitted to a teaching hospital. *International Journal of Clinical Practice,* 61(3), 453-457. https://doi: 10.1111/j.1742-1241.2006.01150.x.

Kuz, M., Çetin, F. H. ve Türkoğlu, S. (2020). Kan-iğne-yaralanma fobisi olan bir ergenin bilişsel davranışçı terapi sürecinde uygulamalı kas germe ve maruz bırakma: Bir olgu sunumu. *Journal of Cognitive Behavioral Psychotherapies and Research,* 10(1), 128-135.

Lasser, K., Boyd, J. W. Woolhandler, S., Himmelstein, D. U., McCormick, D. & Bor, D. H. (2000). Smoking and mental illness: A population-based prevalence study. *Journal of the American Medical Association,* 284, 2606–2610. https://doi: 10.1001/jama.284.20.2606.

Lawrence, D., Considine, J., Mitrou, F. & Zubrick, S. R. (2010). Anxiety disorders and cigarette smoking: results from the Australian Survey of Mental Health and Wellbeing. *Australian & New Zealand Journal of Psychiatry,* 44, 520–527. https://doi.org/10.3109/00048670903571580.

McLenon, J. & Rogers, M. A. (2019). The fear of needles: A systematic review and meta-analysis. *Journal of Advanced Nursing,* 75(1), 30-42. https://doi.org/10.1111/jan.13818.

Mehrstedt, M., John, M. T., Tönnies, S. & Micheelis, W. (2007). Oral health-related quality of life in patients with dental anxiety. *Community Dent Oral Epidemiol,* 35(5), 357-363. https://doi:10.1111/j.1600-0528.2007.00376.x.

Mendonça, A. B., Pereira, E. R., Magnago, C., Silva, R. M. C. R. A. & Martins, A. D. O. (2020). Nursing process for a patient with needle phobia: a case study. *Revista Brasileira de Enfermagem,* 73(4). e20190095. https://doi:.org/10.1590/0034-7167-2019-0095.

Meuret, A. E., Simon, E., Bhaskara, L. & Ritz, T. (2017). Ultra-brief behavioral skills trainings for blood injection injury phobia. *Depression and Anxiety,* 34(12), 1096-1105. https://doi: 10.1002/da.22616.

Miloyan, B., & Eaton, W. W. (2016). Blood-injection-injury phobia in older adults. *International Psychogeriatrics,* 28(6), 897. https://doi.org/10.1017/S1041610215002331.

Moylan, S., Jacka, F. N., Pasco, J. A. & Berk, M. (2013). How cigarette smoking may increase the risk of anxiety symptoms and anxiety disorders: a critical review of biological pathways. *Brain and Behavior,* May;3(3), 302-326. https://doi: 10.1002/brb3.137.

Oar, E. L., Farrell, L. J., Waters, A. M. & Ollendick, T. H. (2016). Blood-injection-injury phobia and dog phobia in youth: Psychological characteristics and associated features in a clinical sample. *Behavior Therapy,* 47(3), 312-324. https://doi: 10.1016/j.beth.2016.01.004.

Özer, Ö. & Şar, S. (2019). Pharmacophobia: Fear of the medication and other fears in healthcare. *Ankara Üniversitesi Eczacılık Fakültesi Dergisi,* 43(2), 209–219. https://doi.org/10.33483/jfpau.536304.

Öztekin, S., Aydın, O. & Aydemir, Ö. (2017). DSM-5 özgül fobi siddet ölçegi Türkçe formunun geçerliliği ve güvenilirliği. *Anadolu Psikiyatri Dergisi,* 18(2), 31-37. https://doi: 10.5455/apd.240709.

Patel, M. X., Baker, D. & Nosarti, C. (2005). Injection Phobia: A Systematic Review of Psychological Treatments. *Behavioural and Cognitive Psychotherapy, 33*(3), 343-9. https://doi.org/10.1017/S1352465805002134.

Swendsen, J., Conway, K. P., Degenhardt, L., Glantz, M., Jin, R. & Merikangas, K. R. (2010). Mental disorders as risk factors for substance use abuse and dependence: results from the 10-year follow-up of the National Comorbidity Survey. *Addiction,* 105, 1117–1128. https://doi: 10.1111/j.1360-0443.2010.02902.x.

Tan, M. P. & Parry, S. W. (2008). Vasovagal Syncope in the Older Patient. *Journal of the American College of Cardiology,* 51(6), 599–606. https://doi.org/10.1016/j.jacc.2007.11.025.

Taşkın Uyan T., Bahçeci, B. & Hocaoğlu, Ç. (2018). Gök Gürültüsü Korkusu 'Brontophobia': Bir Olgu Sunumu. *Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi,* 8(3), 151–153.

Tobias, M., Templeton, R. & Collings, S. (2008). How much do mental disorders contribute to New Zealand's tobacco epidemic? *Tob Control,* 17(5), 347–350. https://doi: 10.1136/tc.2008.026005.

Türk Psikiyatri Derneği. (2020). https://www.psikiyatri.org.tr/halka-yonelik/30/ozgul-fobiler [Accessed 4 January 2020].

Wani, A. L., Ara, A. & Bhat, S. A. (2014). Blood injury and injection phobia: the neglected one. Hindawi Publishing Corporation. *Behavioural Neurology*, Article ID 471340, 7 pages https://doi.org/10.1155/2014/471340.

Wani, A. L., Bhat, S. A. & Ara, A. (2016). Persistence and Inheritance of Blood Injury and Injection Phobia. *Gulhane Medical Journal*, 58, 67-73 https://doi:10.5455/gulhane.172838.

Wenzel, A. & Holt, C. S. (2003). Validation of the Multidimensional Blood/Injury Phobia Inventory: Evidence for a Unitary Construct. *Journal of Psychopathology and Behavioral Assessment*, 25, 203-211.