Chapter 4

Pain Beliefs of Nursing Students and the Factors Related to Their Pain Beliefs

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Abstract

Objective: This study was conducted to determine the pain beliefs of nursing students and the factors related to their pain beliefs.

Method: This descriptive study was conducted with 351 nursing students training at a public university between February and April 2023. The data of the study were collected by group questionnaire method. The questionnaire form included socio-demographic questionnaire and Pain Beliefs Scale. Percentage, median, Kruskal Wallis H test, Mann Whitney U test and Spearman's Correlation Analysis were used to evaluate the research data. A p value of <0.05 was considered statistically significant in the analyses.

Results: The mean age of the research group was 20.6 years, and 70.4% of the students were women. The median scores from the pain beliefs scale were 3.50 in the organic beliefs sub-dimension and 2.25 in the psychological beliefs sub-dimension, respectively. A positive and significant (r:0.218; p:0.000) correlation was found between organic and psychological pain beliefs. While organic pain belief was significantly higher in 4rd grade students, psychological pain belief was significantly higher in students living in private dormitories ($p<0.05$). Generally, organic pain belief was significantly higher in those who experienced unbearable pain ($p<0.05$). Organic pain belief was

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higher in those who preferred pharmacological and non-pharmacological methods together in pain management ($p<0.05$).

Conclusion: It was determined that organic pain beliefs of the nursing students were higher than psychological pain beliefs, and nursing students' pain beliefs varied according to demographics and pain-related characteristics.

1. INTRODUCTION

Pain is a situation in which people are exposed to more or less different reasons in every period of life [1]. A situation that is so common has brought along many researches and studies [2]. In pain studies, is aimed to define the relationship between different dimensions of continuous pain and different events [2]. The common result of the studies conducted is that pain is basically a subjective condition and many different factors change this subjective perception [3].

Reducing pain to a minimum level as soon as possible, together with pharmacological, non-pharmacological and complementary treatments, is one of the main goals of healthcare personnel [4].At first glance, pain is thought to be an organic result of injury, and the first choice that comes to mind is to relieve pain as soon as possible with pharmacological aroaches [3,4]. However, although pain is thought to occur due to an organic cause, it should not be forgotten in psychosocial factors [2]. In fact, it is undeniable that knowing the cause of the pain factor is an important factor in determining the aropriate pain management aroaches [3,4,2,6].

When pain treatment is not done adequately, it can lead to a decrease in the satisfaction level of the patient in the early period, delayed recovery, the emergence of complications, an increase in the time that the health personnel will allocate to the patient, the cost of additional medication and cost, and the prolongation of the patient's hospital stay, and the pain may become chronic [2].

Therefore, it is important to examine many factors such as the patient's actual cause of pain, factors affecting it, the patient's coping methods, beliefs, values, culture, and gender [4,6]. When we look at the literature, it is seen that one of the factors affecting pain control and aroach to pain is pain beliefs. Pain beliefs are stated as one of the most important structures among the concepts related to pain [5,6,3]. In various studies on pain beliefs, has been stated that treatment processes and coping methods differ according to the beliefs of individuals [6,3]. Nurses have various responsibilities in terms of questioning the patient's pain beliefs about aroaching the patient with pain, evaluating how these beliefs affect the individual's ways of coping with

pain, and determining an aropriate coping method for the individual [2,6]. However, the beliefs of nurses and student nurses, who play a key role in the team, are as important as the beliefs of patients in pain management [6,4].

This research was conducted to determine the beliefs of nursing students about the organic and psychological nature of pain and the methods they use to cope with pain. It is thought that the results of this study, which gives information about the perception of pain of nursing students, their own pain beliefs and the methods they use to cope with pain, can affect the pain management of the individual they care for, will contribute to the literature.

2. METHOD

2.1 Design: The research was carried out as a descriptive study to determine the pain beliefs of nursing students, the methods they use to cope with pain and the factors related to their pain beliefs.

2.2 Setting: This descriptive study was conducted with 351 nursing students studying at a state university between February and April 2023.

2.3.Sample : The population of the research consisted of 500 students studying in the 1st, 2nd, 3rd and 4th grades of a state university of Nursing Department. In the research, it was aimed to reach the whole universe, but 351 students who agreed to participate in the research formed the sample. All students who met the inclusion criteria were included in the study without using the sample selection method. All students aged 18 and over, who speak Turkish, who have no communication problems, and who voluntarily agreed to participate in the study were included in the study.

2.3.Data Collection Tools: The data of the research were collected by the group survey method. Student Sociodemographic Questionnaire and Pain Beliefs Scale were used to collect data. The questionnaire form includes sociodemographic questionnaire and Pain Beliefs Scale. Before applying the questionnaire, the purpose of the research was explained to the students. Written consent was obtained and students' voluntary participation in the study was ensured.

2.3.1.*Socio-demographic Questionnaire*

The form included 19 questions that questions about age, gender, class, place of residence, perceived income level, presence of chronic disease, and experience of undergoing a surgical operation. In this form, students' pain experiences (frequency of pain, aching area, pain intensity, cause of pain, methods of pain relief) were also questioned.

2.3.2.*Pain Beliefs Scale*

Edwards et al. (1992), the Pain Beliefs Scale consists of 12 questions and two sub-dimensions: psychological beliefs and organic beliefs [7]. The Turkish validity and reliability study of the scale, which consists of 12 questions and has two sub-dimensions, organic beliefs and psychological beliefs, was conducted by Sertel Berk in 2006 [8]. The Cronbach's Alpha internal consistency coefficient of the scale was 0.73 for the psychological beliefs sub-dimension and 0.71 for the organic beliefs sub-dimension. In Berk's study, it was found to be 0.70 for the organic beliefs sub-dimension and 0.73 for the psychological beliefs sub-dimension [7,8].

The scale is a 12-item scale that evaluates two different types of beliefs about the source and consequences of pain, psychological and organic [7,8]. The items in the scale are 6-point Likert and scoring is done in two sub-dimensions: psychological and organic pain belief [7,8]. An increase in the score obtained from the sub-dimension of the scale indicates that the belief in pain regarding the sub-dimension is high, while a decrease in the score indicates low pain belief in the sub-dimension [7,8].

2.4.Data Collection

The data were collected by the researcher using the questionnaire method during the course hours of the students in the Nursing Department of a State University, Faculty of Health Sciences, between February and April 2023. The purpose of the research and the questions were explained to the students. Informed consent was given to those who wanted to participate, their signatures were taken and questions were given to the students.It took about 15 minutes for students to fill out the questionnaires.

2.5. Ethical Approval

Before starting the research, approval from the the Hitit University Institutional Review Board(protocol code :2023-02 and 28.02.2023) and legal permission from the University where the research was carried out were obtained. The purpose, objectives and duration of the research were explained to the students who participated in the research. Written informed consent was obtained from the students and their voluntary participation in the research was ensured. The Declaration of Helsinki was complied with.

2.6. Statistical Analysis

SPSS (Statistical Package for the Social Sciences) analysis package program was used to evaluate the data.Percentage, median, Kruskal Wallis

H test, Mann Whitney U test and Spearman Correlation Analysis were used to evaluate the research data. A p value of <0.05 was considered statistically significant in the analyses.

3. RESULTS

3.1. *Participants Sociodemographic Features*

The median age of the research group is 20 years and 70.4% of them are women. 30.5% of the participants are second year students and 61.8% live in government dormitories. The rate of those who state that their monthly income is equal to their expenses is 59.8%. 93.7% of the students stated that they did not have any chronic disease and 81.2% of them stated that they had no experience of surgical operation. The median scores of the students in the pain beliefs scale were found to be 3.50 in the organic sub-dimension and 2.25 in the psychological sub-dimension. The characteristics of the participants are given in Table 1.

3.1.1. *Characteristics of the participants regarding their pain experiences*

As seen in Table 2, 46.7% of the students stated that they suffered from pain once a month. The most common pain is the head and neck region with 35.6%. 70.9% of the students stated that they generally experienced moderate pain. Fatigue (56.4%), stress (45.6%) and menstruation (34.5%) were shown as the top three causes of pain. The rate of those who prefer pharmacological and non-pharmacological methods together to relieve pain is 31.9%.

3.1.2. *Distribution of the scores obtained from the pain beliefs scale according to the demographic characteristics and pain experiences of the participants*

Organic pain belief was found to be significantly higher in fourth grade students compared to other grades ($p<0.05$). Psychological pain belief is the highest among students staying in private dormitories ($p<0.05$). Organic pain belief was significantly higher in those who described their pain as severe/very severe/unbearable ($p<0.05$). Organic pain belief is higher in those who use pharmacological and non-pharmacological methods together to relieve pain ($p<0.05$).

3.1.3. *Correlation of variables associated with students' organic pain beliefs*

As seen in Table 4, a positive significant relationship was found between psychological pain belief and organic pain belief ($r:0.250$; $p<0.001$). A significant positive correlation was found between the ages of the students

and their organic pain beliefs (r:0.108; p<0.05). A significant positive correlation was found between students' grade level and organic pain beliefs (r:0.136; p<0.05).

4. DISCUSSION

In pain perception, beliefs and attitudes towards pain, together with cultural values, create a unique pain experience that belongs only to that person. These attitudes and beliefs about pain can create significant barriers to effective pain management [6] . Beliefs about the psychological or organic origin of pain can cause differences in the strategy of coping with pain and in pain treatment [6].

In the study, it was observed that the students had experienced pain complaints before. Similarly, in the study of Yılmaz and Atay (2014), all of the nursing students stated that they experienced pain individually [6,13].70.4% of the students participating in the research are women. In Akkaya's (2012) study, it was found that 7.3% of the students were male [5]. In his study conducted in Karakus (2020), it was found that 71.3% of the participants were women [2]. This shows that the concept of nursing is associated with the compassionate, healing and altruistic aspect of women.

The pain belief scale is a scale that can evaluate the pain beliefs of individuals and patients in two parts, organically and psychologically [7-9]. The organic belief test shows the belief that pain has physiological and physiopathological origins, and the psychological belief test, which is the second part, shows that the pain experience is under the influence of psychological factors and external factors [7-10]. As a result of our study, it is seen that the challenge scores of organic and psychological beliefs in the pain belief scale are quite close to each other. In the studies of Kocoglu and Berk in the literature, it was determined that the participants' organic and psychological beliefs about pain were at similar levels [11,9]. In our study was found that the organic beliefs score of the patients was lower than the psychological beliefs score, but a positive significant relationship was found between psychological pain belief and organic pain belief. Although this result contains results that are partially similar to Babadag's study, there was no significant difference between the scores in this study [6]. In Berk's (2006) study with patients with chronic pain, it was observed that the organic beliefs score was lower than the psychological beliefs score, but a significant difference was found between psychological pain belief and organic pain belief [8]. It is thought that the difference in organic and psychological beliefs scores according to studies is due to the effect of other variables such as medical diagnosis, pain location, pain severity, and age of pain beliefs.

In our study, it was determined that 46.7% of the students experienced moderate pain once a month, mostly due to fatigue, stress, and menstruation. In the study of Kilicarslan and Kazan (2021), it was stated that more than half of the students experienced moderate pain once a month and that this pain was caused by stress, menstruation and fatigue-insomnia [4]. In the study of Babadag and Alparslan,it was observed that students experienced moderate pain mostly due to fatigue and insomnia [6].

In this study, although the students experienced pain in different parts of the body, it was seen that the pain experience was more in the head and neck region. In addition, the experience of pain in the back-lumbar region was in the second place. In the study of Kilicarslan and Kazan (2021), it was determined that students generally suffer from headache, and they also experience pain in the abdomen and back-lumbar region [4]. In the Karakus 2020 study, showed that 40.1% of the students experienced headaches [2]. In a study by Akkaya, 59.9% of the nursing students, in a study by Babadag and Al-parslan 53.0% of the students, in a study by Erciyas 40.9% of the students, in a study by Uzuncakmak and Kılıc 52.3% of students experienced headache the most [2,6,9,12]. Other studies in the literature have similar results suorting our study: it has been determined that students mostly experience headache, abdominal pain, low back pain and musculoskeletal pain [2,5]. It is thought that university students mostly experience pain in the head area due to the stress and fatigue they experience in their education life.In addition, it is thought that they stay at a desk for a long time to study nursing courses and they experience back and lower back pain due to standing for a long time in hospital internships.

In our study, it was observed that 31.9% of the students used non-pharmacological and pharmacological methods together.In the literature, it has been stated that the rate of preference of both methods in pain management is generally low [14,6]. Pharmacological methods are the most preferred method by nurses in the clinic, and it is thought that students are affected by the reasons such as the fact that this method is used frequently, this method is seen as a time-saving method by the practitioner, and the patient's pain complaint quickly disaears. In addition, the lack of aropriate equipment for non-pharmacological methods to be alied in wards, the perceptions of nurses, patients and students regarding the use of non-pharmacological methods affect this situation. In our study, those who used pharmacological and non-pharmacological methods together in pain relief had a higher belief in organic pain. We could not find any source suorting or refuting our finding in the literature review. Believing that pain is caused by an organic cause is thought to be due to the desire of students to relieve

pain as soon as possible by using pharmacological and non-pharmacological methods.

In the study, the organic beliefs scores of the 4th grade students were found to be significantly higher than the other grades. Akkaya (2019) conducted, 3rd year nursing students got higher scores from the organic belief sub-dimension compared to 1st year students [5]. In addition, a similar conclusion was reached in the studies of Erciyas, Babadag and Alparslan [6,9].Organic beliefs are based on the idea that the origin of pain occurs as a result of an injury in the body [2] . High organic beliefs of individuals may cause difficulties in coping with pain. Because there is a belief that the main factor must be eliminated. Psychological pain belief is the highest among students living in private dormitories. Linton & Shaw (2011) in their study examining the effect of psychological factors on pain experience; pain beliefs and attitudes were reported to be affected by the opinions of individuals [15]. Therefore; It is important to question the pain beliefs of individuals in pain management and to consider the individual's preferences for pain beliefs in pain treatment and care.

A positive and significant relationship was found between the ages of nursing students and organic pain beliefs. In the study conducted by Akkaya et al. in 2019, no relationship was found between the ages of nursing students and organic beliefs sub-dimension scores [5]. This finding revealed the belief that as the age of nursing students progressed, the belief that pain occurs due to injury to the body became more accepted.

Limitation of the Research

The limitations of the study were that the data is collected only at certain time intervals during the course hours, some students do not want to participate in the study, failure to collect data from students who are absent from classes,the first year nursing students have less knowledge about pain-related coping methods than other classes.

5. CONCLUSION

The following results were obtained in the study conducted to evaluate the relationship between nursing students' pain beliefs and coping with pain.

As a result, it was determined that the organic pain belief of the students was higher than the psychological pain belief. In addition, it was determined that students with high organic pain levels used non-pharmacological and pharmacological methods together to cope with pain, and their age and class level were higher.

It is recommended to make the subject of pain more comprehensive in undergraduate edu-cation in order for students to learn pain beliefs and current pain coping strategies (pharma-cological and non-pharmacological methods) throughout their education process.In addition, it is another suggestion to determine the psychosocial factors affecting pain beliefs and pain management by conducting more studies on the subject. It should be aimed to increase the awareness of students, who are health professionals of the future, about pain beliefs, and thus to provide more effective pain management in patients.

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Table 1. Participants Sociodemographic Characteristics

Features (n=351)	Median	Number	%
Age	20.00		
Gender			
Woman		247	70,4
Men		104	29,6
Class			
1		79	22,5
2		107	30,5
3		87	24,8
4		78	22,2
Accommodations			
Family		101	28,8
Government dormitory		217	61,8
Private dormitory		13	3,7
Student House		20	5,7
Economic Status			
Income Less Than Expenses		116	33,0
Income Equivalent to Expense		210	59,8
Income More Than Expense		25	7,1
Chronic disease			
Yes		22	6,3
No		329	93,7
Surgical operation experience			
Yes		66	18,8
No		285	81,2
Pain Beliefs Scale			
Organic Beliefs	3,50		
Psychological Belief	2,25		

Table 2. Characteristics of the participants regarding their pain experiences

Pain experiences	**Number**	**%**
Pain frequency		
Everyday	20	5,7
1-2 times a week	132	37,6
≥3 times a week	35	10,0
1 time per month	164	46,7
Pain Location		
Head-Neck	125	35,6
Back-Waist	78	22,2
Abdominal	75	21,4
Extremities	73	20,8
Pain severity		
Mild Pain	43	12,3
Moderate Pain	249	70,9
Severe/Very Severe	59	16,8
Cause of pain*		
Fatigue	198	56,4
Stress	160	45,6
Menstruation	121	34,5
Environmental	107	30,5
Psychological	77	21,9
Beliefs	25	7,1
Unknown	10	2,8
Pain relief method	112	31,9
Pharmacological and Non-Pharmacological	108	30,8
Pharmacological	45	12,8
Nonpharmacological	8	27,9

Table 3. Distribution of the scores of the participants from the pain beliefs scale according to their demographic characteristics and pain experience

Pain Beliefs Scale	Organic Beliefs	Psychological Beliefs
Gender		
Woman	179,42	179,71
Men	167,88	167,19
Z/p	0,976/0,329	1,060/0,289
Class		
1	166,06	185,84
2	158,09	163,59
3	188,07	175,37
4	197,17	183,76
X^2/p	8,758/**0,033**	2,825/0,419
Accommodations		
Family	179,26	165,17
Government dormitory	172,75	175,97
Private dormitory	183,81	255,04
Student house	189,78	179,68
X^2/p	0,776/0,855	9,139/**0,027**
Economic Status		
Income Less Than Expenses	174,18	176,43
Income Equivalent to Expense	177,28	177,27
Income More Than Expense	173,72	163,32
X^2/p	0,840/0,590	0,409/0,807
Chronic disease		
Yes	156,86	150,84
No	177,28	177,68
X^2/p	0,916/0,360	1,206/0,228
Surgical operation experience		
Yes	172,92	155,86
No	176,71	180,66
X^2/p	0,274/0,784	1,797/0,072
Pain frequency		
Everyday	135,35	164,68
1-2 times a week	180,00	169,52
≥3 times a week	171,77	195,91
1 time per month	178,64	178,34
X^2/p	3,603/0,308	2,241/0,524
Pain location		
Head-Neck	175,06	173,34
Back-Waist	181,52	163,72

Abdominal	155,89	186,49
Extremities	192,38	182,88
X^2/p	5,114/0,164	2,385/0,496
Pain severity		
Mild Pain	146,77	149,07
Moderate Pain	166,34	171,60
Severe/Very Severe	207,69	174,81
X^2/p	9,353/**0,009**	2,233/0,327
Pain relief method		
Pharmacological and Non-Pharmacological	203,19	179,87
Pharmacological	174,43	173,95
Nonpharmacological	172,00	175,12
Does not use method	171,47	173,60
X^2/p	4,438/**0,035**	1,098/0,295

* ***p<0.05***

Table 4. Correlation of variables associated with students' organic pain beliefs

Pain Beliefs Scale	**r**	**p**
Psychological Belief	0,250	**0,000**
Age	0,108	**0,042**
Class	0,136	**0,011**

* ***p<0.05***

** ***p<0.001***