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The Knowledge of Nurses in Pain Management and Use of Non-Drug Methods and Associated Factors

Humeyra Yuksel[1], Senay Cetinkaya[2]

[1](Msc) Çukurova University, Health Sciences Institute, Nursing Care Main Branch of Science, Master of Science, Adana, Turkey

[2](PhD) Faculty of Health Sciences, Department of Nursing, Child Health and Nursing (Professor Doctor), Çukurova University, Adana, Turkey

Correspondig Author: Prof. Dr. Senay Cetinkaya

Abstract

Objective: The study was carried out as a cross-sectional study in order to examine the nurses' pain management and the use of non-drug methods in terms of the factors like educational level, clinics where nurses worked, and working durations, which affect these.

Methods: The research was conducted by surveys with 169 nurses working in the Internal-Surgical and Intensive Care Unit of Mersin University Health Research and Application Center in September and October 2018. The personal information form, the Knowledge and Behavioral Scale of Nurses Pain and Non-Drug Methods Form were used to collect the data.

Results: The mean age of the nurses who participated in the present study was 29.72 ± 5.54 (years), and the mean working time was 6.62 ± 5.36 years. It was determined that the nurses knew hot-cold treatment, massage, nutritional treatment and music listening methods among non-drug methods at the highest level. In pain management 88(52.1%) were found to use pharmacological and non-pharmacological methods. The pain information of the nurses, attitude survey, high school graduates 5.46 ± 1.88 and 5.99 ± 2.41 points of the graduate nurses were found to be close to the average of the average score. There was no statistically significant difference between the knowledge scores and education level of the nurses about the pain and the duration of the study ($p > 0.05$).

Conclusion: As a result, it was determined that nurses did not have sufficient knowledge about pain diagnosis and knowledge of non-pharmacological management of pain. The pain-related interventions must not be limited with pharmacological methods, and the use of non-pharmacological applications must be encouraged.

Keywords: Pain, pain management, nurse, nursing, non-drug method.

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Introduction

The Association for Pain Studies Confederation (EFIC) declared in 2001 to the world that pain relief was a human right in a declaration in the European Parliament. It was noted that pain was one of the most important health problems in European countries with the initiative that was called "Europe Against Pain" (Erdine & Kress, 2018). The prevalence of pain varies between 7-63.5%. Pain is a perception varying from person to person and throughout life (Aslan, 2017). Murray and Retief (2016) conducted a study and reported that 62% of the patients complained of severe or moderately-severe pain. It was also reported that developed countries had moderate and severe postoperative pain problems at a rate of 41-61% (Murray & Retief, 2016).

To increase the efficiency of pain management, it is possible to evaluate and treat the pain, monitor the complications caused by pain, to intervene in complications, and records must be kept to allow the reconsideration of previous stages (U.S. Department of Health and Human Services, 2019).

Since pain affects the individual physically, mentally and socially, it is important to control it. Controlling pain is important in terms of relaxation of the individual, increasing the quality of life, reducing complications and shortening the length of hospital stay. Nowadays, non-pharmacological methods are also used in cases where pharmacological methods cannot be used in the control of pain or to increase the effect of the pharmacological method (Özveren, 2011).

Regardless of the department where nurses work, pain is one of the problems faced frequently. Because of this frequency, nurses have significant responsibilities in pain management. For this reason, nurses need to have adequate knowledge, skills and experience in pain physiology, and in the evaluation and control of it (Özveren, Faydalı & Özdemir, 2016). In this context, the present study will cast light on the levels of knowledge of nurses about some non-pharmacological methods they can apply to reduce pain and on their application status in clinics.

Method

The present study was a cross-sectional one and was conducted in Mersin University Health Research and Application Center in Turkey to examine the factors like knowledge and behavior on pain, knowing non-drug methods and applying them, level of education, the clinic they work, and working years that might affect these factors of the nurses working at Internal Disease Unit and Intensive Care Units of the abovementioned healthcare center.

The study was conducted with surveys with all of the nurses (169) who agreed to participate in the study working in the specified clinics between September 20 and October 20, 2018, during working hours. The rate of participation in the research is 60%. The nurses filled the forms themselves after explaining how to fill out them. It took 15-20 minutes to fill out the forms.

The Personal Information Form, Pain Information and Behavior Questionnaire, Non-Drug Methods Form were used in data collection. These forms are described below.

Personal Information Form

The Personal Information Form, which was prepared by the researchers, had 18 questions about the socio-demographic data like the age, gender, educational status of the nurses, and on whether the nurses have experience in nursing and on pain.

Knowledge and Behavior on Pain Questionnaire

The scale consisted of 16 questions as correct/wrong answers to examine the knowledge and behavior of nurses about painful patients and pain management and was prepared at the basis of the studies conducted in this area (Ferrell & McCaffery, 2014), and the validity and reliability of the scale was conducted by Özer et al. The Cronbach Alpha Value of this scale was found to be at a reliable level as 0.865 (Özer, Akyürek & Başbakkal, 2006). One point is given to the correct response, and 0 for the wrong response to calculate the total score of the knowledge and behavior. The lowest score that can be received from the questionnaire is 0, and the highest score is 16 points (Özer, Akyürek & Başbakkal, 2006).

Non-Drug Methods Form

This form is a 20-question form determining the knowledge and application status of non-drug methods. In this form of non-drug methods, there

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are non-drug care applications preferred often (massage, hot-cold treatment, music treatment, nutrition treatment, aromatherapy, imagination, etc.). Written permission was received to use of the "Non-drug methods" questionnaire form, which was developed by Tercan and Sarıtaş (2017)(Tercan & Sarıtaş, 2017).

Ethics of Research

Our study complies with the Declaration of Helsinki. Ethical Approval was received from the Ethics Board of Çukurova University, Faculty of Medicine (05.10.2018, 87/21). Written permission was received from Mersin University, Health Research and Application Center to apply the questionnaire. The purpose of the study was explained to the participating nurses. The study was applied to the nurses who signed the written informed consent form approved by the Ethics Committee.

Data Analysis

Statistical analyses were made by using a demo package program called the SPSS. Frequency tables and descriptive statistics were used to interpret the findings. Nonparametric methods were used for measurement values not suitable for Normal distribution. In accordance with nonparametric methods, the "Mann-Whitney U test" (Z table value) method was used to compare the two independent groups with the measurement values. In accordance with non-parametric methods, the "Mann-Whitney U" test (Z-table value) was used to compare the measurement values of two independent groups. "Kruskal-Wallis H" test (χ2-table value) method was used to compare the measurement values of three or more independent groups.

"χ2" crosstabs and Fisher Exact test were used to examine the relationships between two qualitative variables

Results

The mean age of the nurses who participated in the present study was "29.72±5.54" (years). A total of 96(56.8%) were under the age of 30, and 73(43.2%) were aged 30 and over. A total of 92(54.4%) nurses were married, and 77(45.6%) were single; and 117(69.2%) were female, and 52(30.8%) were male.

The working duration of the nurses was "6.62±5.36" years; and 36(21.4%) of the nurses stated that they had worked for less than 3 years, 70(41.4%) over 3-6 years, 31(18.3%) over 7-10 years, and 32(18.9%) over 10 years. When the educational status of the nurses was examined, it was determined that 144(85.2%) were undergraduate degree holders, 15(8.9%) graduated from high school, 10(5.9%) had undergraduate or above degrees.

The distribution of the nurses according to the unit where they worked was as follows; 44(26%) worked in Surgical Unit, 43(25.4%) in Internal Diseases Unit, 42(24.9%) in Internal Diseases Intensive Care Unit, 40(23.7%) in Surgical Intensive Care Unit.

Some findings on the frequency of the nurses on the frequency of using the pain scale, the pain scales they used, following the publications related to pain management, training in pain treatment, etc. are seen in Table 1. It was determined that 47 nurses (27.8%) used pharmacological methods, 34(20.1%) used non-pharmacological methods, and 88(52.1%) used pharmacological and non-pharmacological methods in pain management in their daily lives (Table 1).

Table 1. Distribution of Some Findings on the Methods Used by Nurses in Pain Management, Using Pain Scale, Following Trainings and Publications in This Field

Variable (N=169)	N	%
Managing pain in daily life		
Pharmacologic method	47	27.8
Non-pharmacologic method (music etc. applications)	34	20.1
Pharmacologic and Non-pharmacologic method	88	52.1

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Using pain scale in service		
Yes	168	99.4
No	1	0.6
Frequency of using pain scale		
Rarely	5	3.0
Often	46	27.4
Always	117	69.6
Pain scale used		
VAS (Visual Analogue Scale)	24	14.2
Digital pain Scale	135	80.4
Verbal pain Scale	9	5.4
Following publications on pain management		
Yes	17	10.1
No	152	89.9
Publication type followed		
Book	3	17.6
Scientific journal	8	47.1
Newspaper	3	17.6
Radio-television	1	5.9
Other	2	11.8
Status of receiving education on pain treatment		
Yes	74	43.8
No	95	56.2
Post-graduate pain treatment education		
Yes	69	40.8
No	100	59.2
Post-graduate pain treatment education		
In-service training	54	78.3
Course	8	11.6
Seminar	7	10.1

The distribution of the pain evaluation and recording methods of the nurses is seen in Table 2.

Table 2. Distribution of the Pain Evaluation and Recording Methods of the Nurses

Variable (n=169)	N	%
Recording the pain evaluation of the patients		
Yes always	160	95.2
Sometimes	8	4.8
Where the pain was recorded*		
Nurse observation form	147	78.2
Intensive Care patient follow-up form	40	21.3
Patient file. other forms used by doctors	1	0.5
Patient pain severity indicators*		
Facial expression of patient	139	38.1
Patient's own expressions	141	38.6
Physiological indicators of patient (Fever, Pulse, Blood Pressure)	85	23.3
Possible effect of nurse in pain treatment		
Ineffective	2	1.2
Low-effective	21	12.4
Effective	83	49.1

Very effective	63	37.3

<div align="center">***More than one option can be ticked in this question**</div>

The examination of the relations between the knowledge and application of non-drug methods of nurses in pain management and their educational levels, clinic where they worked, and their working durations are given in Table 3.

Table 3. Distribution of Status of Nurses Regarding Knowing and Applying Non-Drug Methods in Pain Management

Non-drug methods in pain management	Educational status		Clinic Worked				Working duration				Total (N=169/%)
	High School (n=15/%)	Undergraduate and above (n=154/%)	Internal diseases (n=43/%)	Surgical (n=44/%)	Internal ICU (n=42/%)	Surgical ICU (n=40/%)	Below 3 years (n=36/%)	3-6 years (n=70/%)	7-10 years (n=31/%)	10 years and above (n=32/%)	
Knowing massage Yes	13 (%86.7)	127 (%82.5)	35 (%81.4)	35 (%79.5)	36 (%85.7)	34 (%85.0)	33 (%91.7)	53 (%75.7)	24 (%77.4)	30 (%93.8)	140 (%82.8)
No	2 (%13.3)	27 (%17.5)	8 (%18.6)	9 (%20.5)	6 (%14.3)	6 (%15.0)	3 (%8.3)	17 (%24.3)	7 (%22.6)	2 (%6.3)	29 (%17.2)
	p=0.506**		χ^2=0.774 p=0.856				χ^2=7.794 p=0.051				
Applying massage Yes	9 (%60.0)	99 (%64.3)	29 (%67.4)	26 (%59.1)	30 (%71.4)	23 (%57.5)	24 (%66.7)	45 (%64.3)	14 (%45.2)	25 (%78.1)	108 (%63.9)
No	6 (%40.0)	55 (%35.7)	14 (%32.6)	18 (%40.9)	12 (%28.6)	17 (%42.5)	12 (%33.3)	25 (%35.7)	17 (%54.8)	7 (%21.9)	61 (%36.1)
	χ^2=0.002 p=0.961		χ^2=2.417 p=0.490				χ^2=7.650 p=0.054				
Knowing Aromatherapy Yes	-	38 (%24.7)	8 (%18.6)	14 (%31.8)	9 (%21.4)	7 (%17.5)	4 (%11.1)	17 (%24.3)	8 (%25.8)	9 (%28.1)	38 (%22.5)
No	15 (%100.0)	116 (%75.3)	35 (%81.4)	30 (%68.2)	33 (%78.6)	33 (%82.5)	32 (%88.9)	53 (%75.7)	23 (%74.2)	23 (%71.9)	131 (%77.5)
	p=0.024**		χ^2=3.168 p=0.366				χ^2=3.582 p=0.310				
Applying Aromatherapy Yes	-	15 (%9.7)	5 (%11.6)	5 (%11.4)	3 (%7.1)	2 (%5.0)	2 (%5.6)	7 (%10.0)	2 (%6.5)	4 (%12.5)	15 (%8.9)
No	15 (%100.0)	139 (%90.3)	38 (%88.4)	39 (%88.6)	39 (%92.9)	38 (%95.0)	34 (%94.4)	63 (%90.0)	29 (%93.5)	28 (%87.5)	154 (%91.1)
	p=0.366**		χ^2=1.638 p=0.651				χ^2=1.345 p=0.718				

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	High School	Undergraduate and above	Internal Diseases	Surgical	Internal Diseases ICU	Surgical Y.B.	3 years and below	3-6 years	7-10 years	10 years and above	Total
Knowing hot/cold treatment Yes No	14 (%93.3) 1 (%6.7)	153 (%99.4) 1 (%0.6)	42 (%97.7) 1 (%2.3)	44 (%100.0) -	41 (%97.6) 1 (%2.4)	40 (%100.0) -	36 (%100.0) -	70 (%100.0) -	30 (%96.8) 1 (%3.2)	31 (%96.9) 1 (%3.1)	167 (%98.8) 2 (%1.2)
	p=0.170**		χ^2=2.001 p=0.572				χ^2=3.407 p=0.333				
Hot/cold treatment Yes No	14 (%93.3) 1 (%6.7)	147 (%95.5) 7 (%4.5)	41 (%95.3) 2 (%4.7)	44 (%100.0) -	38 (%90.5) 4 (%9.5)	38 (%95.0) 2 (%5.0)	36 (%100.0) -	68 (%97.1) 2 (%2.9)	27 (%87.1) 4 (%12.9)	30 (%93.8) 2 (%6.2)	161 (%95.3) 8 (%4.7)
	p=0.532**		χ^2=4.330 p=0.228				χ^2=7.086 p=0.069				

* "χ^2-cross tables" were used in examining the two qualitative variables.

Table 3. Comparison of Status of Nurses in Pain Management Regarding Knowing and Applying Non-drug Methods (Continued)

Non-drug methods in pain management	Educational status		Clinic worked				Working duration				Total (N=169/%)
	High School (n=15/%)	Undergraduate and above (n=154/%)	Internal Diseases (n=43/%)	Surgical (n=44/%)	Internal Diseases ICU (n=42/%)	Surgical Y.B. (n=40/%)	3 years and below (n=36/%)	3-6 years (n=70/%)	7-10 years (n=31/%)	10 years and above (n=32/%)	
Knowing Meditation Yes No	4 (%26.7) 11 (%73.3)	60 (%39.0) 94 (%61.0)	13 (%30.2) 30 (%69.8)	20 (%45.5) 24 (%54.5)	13 (%31.0) 29 (%69.0)	18 (%45.0) 22 (%55.0)	15 (%41.7) 21 (%58.3)	25 (%35.7) 45 (%64.3)	11 (%35.5) 20 (%64.5)	13 (%40.6) 19 (%59.4)	64 (%37.9) 105 (%62.1)
	χ^2=0.433 p=0.510		χ^2=3.860 p=0.277				χ^2=0.537 p=0.911				
Applying Meditation Yes No	2 (%13.3) 13 (%86.7)	19 (%12.3) 135 (%87.7)	2 (%4.7) 41 (%95.3)	2 (%4.5) 42 (%95.5)	6 (%14.3) 36 (%85.7)	11 (%27.5) 29 (%72.5)	3 (%8.3) 33 (%91.7)	10 (%14.3) 60 (%85.7)	3 (%9.7) 28 (%90.3)	5 (%15.6) 27 (%84.4)	21 (%12.4) 148 (%87.6)
	p=0.583**		χ^2=**13.386** p=**0.004**				χ^2=1.293 p=0.731				
Knowing											

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	High School	Undergraduate and above	Internal Diseases	Surgical	Internal Diseases ICU	Surgical Y.B.	3 years and below	3-6 years	7-10 years	10 years and above	Total
Nutrition Yes	12 (%80.0)	96 (%62.3)	22 (%51.2)	33 (%75.0)	30 (%71.4)	23 (%57.5)	25 (%69.4)	51 (%72.9)	17 (%54.8)	15 (%46.9)	108 (%63.9)
No	3 (%20.0)	58 (%37.7)	21 (%48.8)	11 (%25.0)	12 (%28.6)	17 (%42.5)	11 (%30.6)	19 (%27.1)	14 (%45.2)	17 (%53.1)	61 (%36.1)
	χ^2=1.162 p=0.281		χ^2=7.117 p=0.068				**χ^2=8.039 p=0.045**				
Applying Nutrition Yes	10 (%66.7)	78 (%50.6)	16 (%37.2)	24 (%54.5)	28 (%66.7)	20 (%50.0)	23 (%63.9)	39 (%55.7)	15 (%48.4)	11 (%34.4)	88 (%52.1)
No	5 (%33.3)	76 (%49.4)	27 (%62.8)	20 (%45.5)	14 (%33.3)	20 (%50.0)	13 (%36.1)	31 (%44.3)	16 (%51.6)	21 (%65.6)	81 (%47.9)
	χ^2=0.837 p=0.360		χ^2=7.567 p=0.056				χ^2=6.571 p=0.087				
Knowing Herbal Application Yes	5 (%33.3)	70 (%45.5)	15 (%34.9)	29 (%65.9)	16 (%38.1)	15 (%37.5)	16 (%44.4)	32 (%45.7)	13 (%41.9)	14 (%43.8)	75 (%44.4)
No	10 (%66.7)	84 (%54.5)	28 (%65.1)	15 (%34.1)	26 (%61.9)	25 (%62.5)	20 (%55.6)	38 (%54.3)	18 (%58.1)	18 (%56.2)	94 (%55.6)
	χ^2=0.397 p=0.529		**χ^2=11.272 p=0.010**				χ^2=0.131 p=0.988				
Applying Herbal Treatment Yes	4 (%26.7)	54 (%35.1)	12 (%27.9)	23 (%52.3)	12 (%28.6)	11 (%27.5)	9 (%25.0)	26 (%37.1)	11 (%35.5)	12 (%37.5)	58 (%34.3)
No	11 (%73.3)	100 (%64.9)	31 (%72.1)	21 (%47.7)	30 (%71.4)	29 (%72.5)	27 (%75.0)	44 (%62.9)	20 (%64.5)	20 (%62.5)	111 (%65.7)
	χ^2=0.136 p=0.712		**χ^2=8.517 p=0.036**				χ^2=1.797 p=0.616				

*"χ^2-cross tables" were used in examining the two qualitative variables. **Fisher Exact Test was used.

Table 3. Comparison of Status of Nurses in Pain Management Regarding Knowing and Applying Non-drug Methods (Continued)

Non-drug methods in pain management	Educational status		Clinic worked				Working duration				Total (N=169/%)
	High School (n=15/%)	Undergraduate and above (n=154/%)	Internal Diseases (n=43/%)	Surgical (n=44/%)	Internal Diseases ICU (n=42/%)	Surgical Y.B. (n=40/%)	3 years and below (n=36/%)	3-6 years (n=70/%)	7-10 years (n=31/%)	10 years and above (n=32/%)	
Knowing imagina	6 (%40.	64 (%41.6	18 (%41.	22 (%50	18 (%42.	12 (%30.	17 (%47	32 (%45	10 (%32	11 (%34.4)	70 (%41.

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tion Yes No	0) 9 (%60. 0)	) 90 (%58.4)	9) 25 (%58. 1)	.0) 22 (%50 .0)	9) 24 (%57. 1)	0) 28 (%70. 0)	.2) 19 (%52 .8)	.7) 38 (%54 .3)	.3) 21 (%67 .7)	21 (%65.6)	4) 99 (%58. 6)
	χ²=0.014 p=0.907		χ²=3.524 p=0.318				χ²=2.759 p=0.430				
Applying imagination Yes No	4 (%26. 7) 11 (%73. 3)	44 (%28.6) 110 (%71.4)	9 (%20. 9) 34 (%79. 1)	15 (%34 .1) 29 (%65 .9)	14 (%33. 3) 28 (%66. 7)	10 (%25. 0) 30 (%75. 0)	9 (%25 .0) 27 (%75 .0)	26 (%37 .1) 44 (%62 .9)	7 (%22 .6) 24 (%77 .4)	6 (%18.8) 26 (%81.2)	48 (%28. 4) 121 (%71. 6)
	p=0.571**		χ²=2.611 p=0.456				χ²=4.817 p=0.186				
Knowing Biofeedback Yes No	1 (%6.7) 14 (%93. 3)	13 (%8.4) 141 (%91.6)	1 (%2.3) 42 (%97. 7)	7 (%15 .9) 37 (%84 .1)	2 (%4.8) 40 (%95. 2)	4 (%10. 0) 36 (%90. 0)	2 (%5. 6) 34 (%94 .4)	9 (%12 .9) 61 (%87 .1)	- 31 (%100 .0)	3 (%9.4) 29 (%90. 6)	14 (%8.3) 155 (%91. 7)
	p=0.641**		χ²=6.217 p=0.102				χ²=5.130 p=0.163				
Applying Biofeedback Yes No	1 (%6.7) 14 (%93. 3)	7 (%4.5) 147 (%95.5)	- 43 (%100 .0)	4 (%9. 1) 40 (%90 .9)	1 (%2.4) 41 (%97. 6)	3 (%7.5) 37 (%92. 5)	2 (%5. 6) 34 (%94 .4)	6 (%8. 6) 64 (%91 .4)	- 31 (%100 .0)	- 32 (%100 .0)	8 (%4.7) 161 (%95. 3)
	p=0.532**		χ²=5.183 p=0.159				χ²=5.470 p=0.140				
Knowing dance Yes No	- 15 (%10 0.0)	33 (%21.4) 121 (%78.6)	8 (%18. 6) 35 (%81. 4)	14 (%31 .8) 30 (%68 .2)	6 (%14 .3) 36 (%85 .7)	5 (%12. 5) 35 (%87. 5)	6 (%16. 7) 30 (%83. 3)	17 (%24. 3) 53 (%75. 7)	4 (%12 .9) 27 (%87 .1)	6 (%18. 8) 26 (%81. 2)	33 (%19. 5) 136 (%80. 5)
	p=0.044**		χ²=6.245 p=0.100				χ²=2.074 p=0.557				
Applying dance Yes No	- 15 (%10 0.0)	16 (%10.4) 138 (%89.6)	2 (%4.7) 41 (%95. 3)	7 (%15 .9) 37 (%84 .1)	4 (%9. 5) 38 (%90 .5)	3 (%7.5) 37 (%92. 5)					
	p=0.210**		χ²=3.475 p=0.324				χ²=5.026 p=0.170				

*"χ²-cross tables" were used in examining the two qualitative variables. **Fisher Exact Test was used.

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Table 3. Comparison of Status of Nurses in Pain Management Regarding Knowing and Applying Non-drug Methods (Continued)

Non-drug methods in pain management	Educational status		Clinic worked				Working duration				Total (N=169/%)
	High School (n=15/%)	Undergraduate and above (n=154/%)	Internal Diseases (n=43/%)	Surgical (n=44/%)	Internal Diseases ICU (n=42/%)	Surgical ICU (n=40/%)	3 years and below (n=36/%)	3-6 years (n=70/%)	7-10 years (n=31/%)	10 years and above (n=32/%)	
Knowing music Yes No	6 (%40) 9 (%60)	82 (%53.2) 72 (%476.8)	20 (%46.5) 23 (%53.5)	25 (%56.8) 19 (%43.2)	23 (%54.8) 19 (%45.2)	20 (%50) 20.0 (%50)	25 (%69.4) 11 (%30.6)	36 (%51.4) 34 (%48.6)	12 (%38.7) 19 (%61.3)	15 (%46.9) 17 (%53.1)	88 (%52.1) 81 (%47.9)
	$\chi^2=0.504$ p=0.478		$\chi^2=1.120$ p=0.772				$\chi^2=6.929$ p=0.074				
Applying music Yes No	4 (%26.7) 11 (%73.3)	63 (%40.9) 91 (%59.1)	14 (%32.6) 29 (%67.4)	21 (%47.7) 23 (%52.3)	17 (%40.5) 25 (%59.5)	15 (%37.5) 25 (%62.5)	16 (%44.4) 20 (%55.6)	30 (%42.9) 40 (%57.1)	9 (%29) 22 (%71)	12 (%37.5) 20 (%62.5)	67 (%39.6) 102 (%60.4)
	$\chi^2=1.159$ p=0.282		$\chi^2=2.193$ p=0.533				$\chi^2=2.169$ p=0.538				
Knowing prayer Yes No	10 (%66.7) 5 (%33.3)	94 (%61.0) 60 (%39.0)	31 (%72.1) 12 (%27.9)	33 (%75.0) 11 (%25.0)	20 (%47.6) 22 (%52.4)	20 (%50) 20 (%50)	22 (%61.1) 14 (%38.9)	47 (%67.1) 23 (%32.9)	18 (%58.1) 13 (%41.9)	17 (%53.1) 15 (%46.9)	104 (%61.5) 65 (%38.5)
	$\chi^2=0.022$ p=0.881		**$\chi^2=11.081$ p=0.011**				$\chi^2=2.047$ p=0.563				
Applying prayer Yes No	8 (%53.3) 7 (%46.7)	76 (%49.4) 78 (%50.6)	23 (%53.5) 20 (%46.5)	26 (%59.1) 18 (%40.9)	17 (%40.5) 25 (%59.5)	18 (%45) 22 (%55)	16 (%44.4) 20 (%55.6)	39 (%55.7) 31 (%44.3)	15 (%48.4) 16 (%51.6)	14 (%43.8) 18 (%56.2)	84 (%49.7) 85 (%50.3)
	$\chi^2=0.001$ p=0.981		$\chi^2=3.582$ p=0.310				$\chi^2=1.885$ p=0.597				
Knowing Hypno	- 15	27 (%17.5	9 (%20.	10 (%22.	2 (%4.	6 (%15)	5 (%13.	13 (%18.	3 (%9.	6 (%18.	27 (%16.

	High School	Undergraduate and above	Internal Diseases	Surgical	Internal Diseases ICU	Surgical Y.B.	3 years and below	3-6 years	7-10 years	10 years and above	Total
...sis Yes	(%100)										
No		127 (%82.5)	34 (%79.1)	34 (%77.3)	40 (%95.2)	34 (%85)	31 (%86.1)	57 (%81.4)	28 (%90.3)	26 (%81.2)	142 (%84.0)
	p=0.133**		χ^2=6.243 p=0.100				χ^2=1.568 p=0.667				
Applying Hypnosis Yes	-	2 (%1.3)	-	1 (%2.3)	-	1 (%2.5)	-	1 (%1.4)	-	1 (%3.1)	2 (%1.2)
No	15 (%100)	152 (%98.7)	43 (%100)	43 (%97.7)	42 (%100)	39 (%97.5)	36 (%100)	69 (%98.6)	31 (%100)	31 (%96.9)	167 (%98.8)
	p=0.830**		χ^2=2.057 p=0.561				χ^2=1.870 p=0.600				

*"χ^2-cross tables" were used in examining the two qualitative variables.

Table 3. Comparison of Status of Nurses in Pain Management Regarding Knowing and Applying Non-drug Methods (Continued)

Non-drug methods in pain management	Educational status		Clinic worked				Working duration				Total (N=169/%)
	High School (n=15/%)	Undergraduate and above (n=154/%)	Internal Diseases (n=43/%)	Surgical (n=44/%)	Internal Diseases ICU (n=42/%)	Surgical Y.B. (n=40/%)	3 years and below (n=36/%)	3-6 years (n=70/%)	7-10 years (n=31/%)	10 years and above (n=32/%)	
Knowing Reiki Yes	-	13 (%8.4)	3 (%7.0)	4 (%9.1)	3 (%7.1)	3 (%7.5)	1 (%2.8)	7 (%10)	1 (%3.2)	4 (%12.5)	13 (%7.7)
No	15 (%100)	141 (%91.6)	40 (%93.0)	40 (%90.9)	39 (%92.9)	37 (%92.5)	35 (%97.2)	63 (%90)	30 (%96.8)	28 (%87.5)	156 (%92.3)
	p=0.609**		χ^2=0.172 p=0.982				χ^2=3.662 p=0.300				
Applying Reiki Yes	-	3 (%1.9)	1 (%2.3)	-	1 (%2.4)	1 (%2.5)	-	-	1 (%3.2)	2 (%6.3)	3 (%1.8)
No	15 (%100)	151 (%98.1)	42 (%97.7)	44 (%100.0)	41 (%97.6)	39 (%97.5)	36 (%100)	70 (%100)	30 (%96.8)	30 (%93.8)	166 (%98.2)
	p=0.755**		χ^2=1.079 p=0.782				χ^2=5.965 p=0.113				
Knowing Acupuncture Yes	-	40 (%26.0)	11 (%25.6)	10 (%22.7)	9 (%21.4)	10 (%25.0)	6 (%16.7)	22 (%31.4)	3 (%9.7)	9 (%28.1)	40 (%23.7)
No	15 (%100)	114	32	34	33	30	30	48	28 (%90.3)	23	129

The Knowledge of Nurses in Pain Management and Use of Non-Drug Methods and Associated Factors

Non-drug method	High School	Undergraduate and above	Internal Diseases	Surgical	Internal Diseases ICU	Surgical Y.B.	3 years and below	3-6 years	7-10 years	10 years and above	Total
No		(%74.0)	(%74.4)	(%77.3)	(%78.6)	(%75.0)	(%83.3)	(%68.6)	)	(%71.9)	(%76.3)
	p=0.023**		$\chi^2=0.265$ p=0.967				$\chi^2=7.021$ p=0.071				
Applying Acupuncture Yes	-	8 (%5.2)	-	1 (%2.3)	4 (%9.5)	3 (%7.5)	-	4 (%5.7)	1 (%3.2)	3 (%9.4)	8 (%4.7)
No	15 (%100)	146 (%94.8)	43 (%100)	43 (%97.7)	38 (%90.5)	37 (%92.5)	36 (%100)	66 (%94.3)	30 (%96.8)	29 (%90.6)	161 (%95.3)
	p=0.468**		$\chi^2=5.543$ p=0.136				$\chi^2=3.623$ p=0.305				
Knowing spa Yes	6 (%40)	76 (%49.4)	19 (%44.2)	24 (%54.5)	21 (%50)	18 (%45)	16 (%44.4)	40 (%57.1)	14 (%45.2)	12 (%37.5)	82 (%48.5)
No	9 (%60)	78 (%50.6)	24 (%55.8)	20 (%45.5)	21 (%50)	22 (%55)	20 (%55.6)	30 (%42.9)	17 (%54.8)	20 (%62.5)	87 (%51.5)
	$\chi^2=0.478$ p=0.489		$\chi^2=1.198$ p=0.753				$\chi^2=4.019$ p=0.259				
Applying spa Yes	1 (%6.7)	38 (%24.7)	12 (%27.9)	12 (%27.3)	8 (%19)	7 (%17.5)	7 (%19.4)	20 (%28.6)	8 (%25.8)	4 (%12.5)	39 (%23.1)
No	14 (%93.3)	116 (%75.3)	31 (%72.1)	32 (%72.7)	34 (%81)	33 (%82.5)	29 (%80.6)	50 (%71.4)	23 (%74.2)	28 (%87.5)	130 (%76.9)
	p=0.114**		$\chi^2=2.086$ p=0.555				$\chi^2=3.605$ p=0.307				

*"χ^2-cross tables" were used in examining the two qualitative variables. **Fisher Exact Test was used.

Table 3. Comparison of Status of Nurses in Pain Management Regarding Knowing and Applying Non-drug Methods (Continued)

Non-drug methods in pain management	Educational status		Clinic worked				Working duration				Total (N=169/%)
	High School (n=15/%)	Undergraduate and above (n=154/%)	Internal Diseases (n=43/%)	Surgical (n=44/%)	Internal Diseases ICU (n=42/%)	Surgical Y.B. (n=40/%)	3 years and below (n=36/%)	3-6 years (n=70/%)	7-10 years (n=31/%)	10 years and above (n=32/%)	
Knowing Chiropractic Yes	1 (%6.7)	10 (%6.5)	2 (%4.7)	7 (%15.9)	2 (%4.8)	-	2 (%5.6)	4 (%5.7)	2 (%6.5)	3 (%9.4)	11 (%6.5)
No	17 (%93.3)	144 (%93.5)	41 (%95.3)	37 (%84.1)	40 (%95.2)	40 (%100)	34 (%94.4)	66 (%94.3)	29 (%93.5)	29 (%90.6)	158 (%93.5)
	p=0.652**		$\chi^2=2.076$ p=0.150				$\chi^2=0.559$ p=0.906				

The Knowledge of Nurses in Pain Management and Use of Non-Drug Methods and Associated Factors

Applying Chiropractic Yes	-	5 (%3.2)	1 (%2.3)	3 (%6.8)	1 (%2.4)	-	1 (%2.8)	2 (%2.9)	-	2 (%6.2)	5 (%3)
No	15 (%100)	149 (%96.8)	42 (%97.7)	41 (%93.2)	41 (%97.6)	40 (%100)	35 (%97.2)	68 (%97.1)	31 (%100)	30 (%93.8)	164 (%97)
	p=0.625**	χ²=3.611 p=0.307					χ²=2.159 p=0.540				
Knowing Yoga Yes	2 (%13.3)	36 (%23.4)	8 (%18.6)	13 (%29.5)	7 (%16.7)	10 (%25)	8 (%22.2)	15 (%21.4)	6 (%19.4)	9 (%28.1)	38 (%22.5)
No	13 (%86.7)	118 (%76.6)	35 (%81.4)	31 (%70.5)	35 (%83.3)	30 (%75)	28 (%77.8)	55 (%78.6)	25 (%80.6)	23 (%71.9)	131 (%77.5)
	p=0.525**	χ²=2.591 p=0.459					χ²=0.805 p=0.848				
Applying Yoga Yes	1 (%6.7)	10 (%6.5)	1 (%2.3)	4 (%9.1)	3 (%7.1)	3 (%7.5)	1 (%2.8)	5 (%7.1)	3 (%9.7)	2 (%6.2)	11 (%6.5)
No	14 (%93.3)	144 (%93.5)	42 (%97.7)	40 (%90.9)	39 (%92.9)	37 (%92.5)	35 (%97.2)	65 (%92.9)	28 (%90.3)	30 (%93.8)	158 (%93.5)
	p=0.652**	χ²=1.811 p=0.613					χ²=1.385 p=0.709				

*"χ²-cross tables" were used in examining the two qualitative variables.

The Distribution of Nurses According to the Responses to the Questionnaire on Knowledge and Behavior of the Nurses about Pain is given in Table 4.

Table 4. Distribution of the Nurses according to their Answers Given to the Questionnaire on Knowledge and Behaviors of Nurses on Pain

Questions on Knowledge about Pain (Distribution of Raw Answers) (False-F) (True-T)	Correct		Wrong	
	n	**%**	**n**	**%**
1. The changes in vital signs are important indicators in diagnosing that a patient has severe pain. (F)	163	96.4	6	3.6
2. Pain severity should be evaluated by medical staff. not by the patient. (F)	50	29.6	119	70.4
3. A patient can sleep despite moderate or severe pain. (T)	63	37.3	106	62.7
4. If the attention of the patient can be diverted, this means that the patient does not have a high pain severity as s/he states. (F)	93	55.0	76	45.0
5. Before applying a pain mitigation method, the patient should be encouraged to withstand pain as much as possible. (F)	63	37.3	106	62.7
6. If a patient relaxes with placebo (sterile water injection), the pain is not real. (F)	132	78.1	37	21.9
7. Pain sensitivity is low and pain experiences are limited in children under the age of 2 because the neurological system is not fully developed. (F)	121	71.6	48	28.4
8. Aspirin and other NSAIs (Non-Steroidal Anti-Inflammatory) agents are not effective analgesics for chronic pains caused by metastases. (F)	133	78.7	36	21.3

9. Non-drug interventions (e.g. hot treatment, music) are very effective for moderate pain, but are not effective in very serious pain. (F)	146	86.4	23	13.6
10. In patients who receive opioids for long durations (months), respiratory depression rarely occurs. (T)	121	71.6	48	28.4
11. Single analgesic agents should be used in a patient with pain rather than combined drug groups (e.g. opioid+NSAII). (F)	102	60.4	67	39.4
12. Sedative drugs are effective in reducing pain. (F)	136	80.5	33	19.5
13. Patients who have a history of substance abuse should not be given opioids for pain management, because such patients are at high risk for recurrent addiction. (F)	144	85.2	25	14.8
14. The pain expressed by children under the age of 14-11 should not be trusted, for this reason, nurses should rely on parents about the severity of the pain of the child. (F)	60	35.5	109	64.5
15. A patient should be advised to use non-drug techniques alone, not together with painkillers. (F)	85	50.3	84	49.7
16. For hot and cold treatment to be effective, they should only be applied to the painful area. (F)	117	69.2	52	30.8

No statistically significant differences were detected in pain knowledge scores according to the educational levels, the clinic where the nurses worked, and working durations (p>0.05) (Table 5).

Table 5. Distribution of Total Mean Scores of the Knowledge and Behavior of Nurses on Pain according to Some Introductory Characteristics

Variable (N=169)	n	Pain knowledge score $\overline{X} \pm S.D.$	Median [Min-Max]	Statistical analysis* Probability
Education level				
High School	15	5.46±1.88	6.0 [2.0-8.0]	Z=-0.441
Undergraduate and over	154	5.99±2.41	6.0 [1.0-13.0]	p=0.659
Clinic worked				
Internal Diseases service	43	6.51±2.48	6.0 [2.0-13.0]	χ^2=6.173
Surgical service	44	5.29±2.41	5.0 [2.0-11.0]	p=0.103
Internal Diseases Intensive Care	42	6.21±2.44	6.0 [1.0-11.0]	
Surgical Intensive Care	40	5.78±1.97	5.5 [2.0-10.0]	
Working duration				
Below 3 years	36	5.78±2.03	6.0 [2.0-10.0]	χ^2=0.263
3-6 years	70	6.00±2.69	5.5 [2.0-13.0]	p=0.967
7-10 years	31	5.97±2.04	6.0 [2.0-11.0]	
10 years and over	32	6.00±2.36	5.5 [1.0-11.0]	

*The "Mann-Whitney U" test (Z-table value) was used in the comparison of the measurement values of two independent groups that did not have normal distribution; and the "Kruskal-Wallis H" test (χ^2-table value) statistics were used in the comparison of the measurement values of three and more independent groups.

The Knowledge of Nurses in Pain Management and Use of Non-Drug Methods and Associated Factors

Discussion

It was determined that 99.4% of the nurses used pain scales (Table 1), and in the study in the study of Özer et al. (2006), it was found that 74.5% of the nurses did not use pain scales (Özer, Akyürek & Başbakkal, 2006). This result shows that the use of pain scale of nurses have increased to measure the pain of patients. In the study of Abdalrahim et al. (2008), which examined 322 postoperative patient records, it was determined that 4.3% of the nurses used pain scales to evaluate pain, and 95.7% did not use (Abdalrahım, Majalı & Bergbom, 2008).

It was also determined that 89.9% of the nurses did not follow any publications on pain management (Table 1). Similar results were reported in the study that was conducted by Tercan and Sarıtaş (87.3%) (Tercan & Sarıtaş, 2017). Today, it is very important for nurses to follow the publication when it comes to pain, which is considered as the 5th vital finding.

It was determined that 52.1% of the nurses used pharmacological and non-pharmacological methods together in pain management (Table 1). In the study that was conducted by Tercan and Sarıtaş, it was determined that 62.4% of the nurses applied pharmacological and non-pharmacological methods together (Tercan & Sarıtaş, 2017), which is parallel to the results of our study. In another study, in 63.5% of the participating patients, pharmacological and nonpharmacological methods were used together after pain evaluation in patients (Yılmaz & Atay, 2014). The findings obtained in their study support the literature on the subject.

In a study conducted by Efe et al. (2007) with the name "Knowledge and application of the pediatrists and nurses working in pediatric services in some provinces in Turkey", it was determined that 63.8% of the nurses applied non-pharmacological methods in pain management (Efe, Altun, Çetin, & İşler, 2007). In our study, on the other hand, it was determined that 20% of the nurses applied only non-pharmacological methods (Table 1). According to these results, it can be speculated that the conditions of applying non-pharmacological methods have changed according to the services where the participating nurses worked.

When the participation of the nurses in trainings regarding pain management was examined, it was determined that 74 nurses (43.8%) received pain therapy training during their educations, and 100 nurses (59.2%) did not receive any post-graduation pain treatment training (Table 1). These results are very important in terms of providing training regarding pain management during the education of nurses, and repeating these training with in-service training after graduation.

It was determined that the nurses mostly knew hot-cold treatments, massage, nutritional treatment and music listening methods among non-drug methods (Table 3). In a study conducted by Özveren et al. (2018), it was reported that the participating nurses used the positioning of the patient (48.3%), hot treatment (17.2%), diverting attention (27.3%), and massage (23.9%) among non-drug methods (Özveren, Faydalı, Gülnar, & Faydalı, 2018). In a study conducted by Unver et al. (2016), more than half (55.5%) of the participating nurses tried to divert the attention of the patient (55.5%), applying massage/exercise to the patient (38.9%), providing a calm environment (30.6%), hot treatment (13.9%), cold treatment (5.6%) (Ünver, Kızılcık, Avcıbaşı, & Babacan, 2016).

As a result of the study, it was determined that 82.5% of the nurses who had an undergraduate and above educational level knew the massage method, and 64.3% applied it to reduce pain (Table 3). It was determined that patients were given painkillers after surgery; however, they still experienced mild pain, and when massage was applied to them, it was found to be effective in reducing this pain (Ettrich, Seifert, Scharnagel, & Günther, 2007).

In the present study of ours, it was found that 79.5% of the nurses working in the Surgical Service, 85% of the nurses working in Surgical Intensive Care Unit knew the massage technique in pain management; and 59.1% of the nurses working in Surgical Service used massage technique in pain management, and 57.5% of nurses working in Surgical Intensive Care Unit used massage technique in pain management (Table 3). It can be speculated that nurses use non-drug methods more in pain management with each passing day.

The Knowledge of Nurses in Pain Management and Use of Non-Drug Methods and Associated Factors

It was determined that of the nurses who had undergraduate (60%) and postgraduate educational degrees (64.3%) applied the massage method among non-drug methods used to reduce the pain of patients, and 95.5% of the nurses applied hot/cold treatment (Table 3). Arikan and Aytekin (2007) investigated the effect of the age and educational levels of mothers on pain control applications in children with non-drug methods, they reported that 81.5% of the mothers used the massage method, 66% used hot treatment, and 59.9% used the cold treatment (Arıkan & Aytekin, 2007). According to the results of the literature, it may be considered that the high frequency of using the massage technique is due to its easy applicability in pain management.

In a study conducted by Yılmazer and Bilgili (2017) to reduce the pain, it was found that 74.6% of the nurses used hot/cold treatment method (Yılmazer & Bilgili, 2017). In the present study of ours, it was determined that 100% of the nurses working in Surgical Service used hot/cold treatment (Table 3). In the study conducted by of Inan et al. (2014), it was reported that there was no significant difference between the pain of the groups to which hot and cold treatments were applied, and that hot/cold treatments were effective in reducing pain (İnan & Kıyak, 2014).

A total of 40.5% of the nurses working in Internal Diseases Intensive Care Unit, 37.5% of those working in Surgical Intensive Care Unit were found to apply music for pain management (Table 3). Bradt et al. (2016) reported that music reduced the level of pain and anxiety at a rate of 95% (Bradt, Dileo, Magill, & Teague, 2016).

Among the methods nurses do not use too much, there are methods including acupuncture, meditation, aromatherapy and biological feedback (Table 3). In line with the results obtained in the study, the fact that the nurses do not know or apply these methods in pain relief may be explained as they do not have sufficient levels of knowledge on this subject, and do not apply their independent functions. In addition, it may also be considered that the nurses cannot apply these methods because they require expertise and certification. The methods used mostly by nurses may be included in their independent roles (U.S. Department of Health and Human Services, 2019).

In the study, which investigated the knowledge, behavior and non-drug methods of the nurses regarding pain, the rate of the nurses who answered the question "The changes in vital symptoms in diagnosing that a patient has severe pain are important indicators" correctly was 3.6% (Table 4). This rate was found to be considerably lower than 88.4%, which was reported in the results of the study by McCaffery and Robinson (McCaffery & Robinson, 2002). When the literature was examined, it was reported that the pain experience is individual, and those physiological and behavioral symptoms of pain might vary among individuals, and the severity of pain affects the reactions of the patient (U.S. Department of Health and Human Services, 2019).

It is a great result that the majority of the nurses (70.4%) think that pain severity should be diagnosed by the patient, not by medical staff (Table 4). This result is consistent with the results of the study of Clarke et al. (1996) (Clark, French, Bilodeau, & Capasso et al, 1996). In a study conducted by Akdağ (2008), 12.5% of the nurses who participated in the study agreed that the person who should decide the intensity of pain severity was the patient, 47% agreed partly, 17.9% of them stated that they certainly disagreed, 14.3% said they did not agree partly, and 8.3% said they were undecisive (Akdağ, 2008). In the study that was conducted by Idvall et al. (2002) with nurses and patients regarding postoperative pain management, they reported that 24% of the patients said that they felt pain at a higher intensity than nurses expected (Idvall, Hamrın, Sjostrom, & Unosson, 2002).

In a study that was conducted by Çelik et al. (2018), it was reported that the rate of the participants who answered correctly to the question "A patient can sleep despite moderate or severe pain" was 72.7% (Çelik, Baş, Korkmaz, & Karaşahin et al, 2018), and was 37.3% according to the results of this study (Table 4). In a 2002 study conducted by McCaffery and Robinson, it was determined that 90.6% of the nurses responded correctly to this question (McCaffery & Robinson, 2002). In light of these results, it can be considered that the knowledge and behavior of the nurses regarding pain management varies according to the hospital and region where they work.

The Knowledge of Nurses in Pain Management and Use of Non-Drug Methods and Associated Factors

In the study, it was determined that 78.1% of the nurses answered incorrectly to the question "If a patient relaxes with placebo, the pain is not real" (Table 4). Similar results were reported in the study conducted by Özer et al. (Özer, Akyürek & Başbakkal, 2006). The placebo effect may not only change among diseases, but can also vary among countries or even regions. Even the belief of the doctor in placebo plays a role in the placebo effect, and increases it. One interesting aspect for placebo is the side effects they cause (Göka, 2002). In this respect, it may be speculated that the nurses who participated in the study on placebo application had wrong attitudes about the pharmacological and non-pharmacological management of pain and about pain being personalized.

A total of 71.6% of the nurses answered incorrectly to the question "The neurological system is not fully developed in children under the age of 2, and therefore, pain sensitivity is low and pain experiences are limited" (Table 4). In the study of Özyazıcıoğlu and Çelebioğlu (2008), 87.9% of the students stated that the newborn could feel pain, 34.1% of the students said that babies could perceive pain when they were not born, and 38.2% stated that babies could feel pain as soon as they were born (Özyazıcıoğlu & Çelebioğlu, 2008). It can be speculated that nurses working in internal and surgical clinics do not have adequate knowledge and experience about pain in children.

A great majority of the nurses (86.4%) answered incorrectly to the question "Non-drug interventions (e.g. hot treatment, music) are very effective for moderate-severe pain, but are not effective in very serious pains" (Table 4). Özer et al. (2006) conducted a study and determined that 89.4% of the nurses gave the wrong answer (Özer, Akyürek & Başbakkal, 2006). There are differences in the level of knowledge of nurses about whether non-drug methods are used according to the pain status of the patients. It is considered that these differences might occur because of the characteristics of the sampling, and the differences in educational status, and whether or not nurses follow the literature. The state of ordering non-drug applications in hospitals might vary depending on the treatment of patients, the severity of the pain, and the condition of application in hospital.

A total of 60.4% of the nurses answered incorrectly to the question "Single analgesic agent should be used rather combined drug groups (e.g. opioid+NSAII) in a painful patient" (Table 4). In the study that was conducted by Çelik et al., 67.7% of the nurses responded incorrectly (Çelik, Baş, Korkmaz, & Karaşahin et al, 2018). In a study conducted in Saudi Arabia, more than 50% of respondents incorrectly answered the question about pain assessment information about the use and dosage of analgesics (eg opioids, morphine) (Albaqawi, Maude & Shawhan-Akl, 2016). According to these results, it may be considered that nurses do not have adequate knowledge about this issue.

Özveren et al. (2018) conducted a study with nurses and reported that the first application should be applying painkiller to patient, then positioning, diverting attention, cold treatment, and massage (Özveren, Faydalı & Özdemir, 2016). According to these findings, it was determined that nurses prioritize giving painkillers to relieve pain.

In the Pain Knowledge and Behavior Question, 5.9200 points is interpreted as low, and 5.9201-11.3800 points is interpreted as medium knowledge and behavior. The rate for high school graduates was found to be 5.46±1.88, Median=6 [min=2.0 max=8.0], 5.99±2.41 for undergraduate and above level Median=6.0 [1.0-13.0] points (Table 5).

Considering the socio-demographic characteristics (level of education, the working year, clinic worked at) of the nurses who participated in the study, it was determined that their scores in knowledge and behavior regarding pain were low, and they did not have adequate knowledge about pain physiology and pain management (Table 5). The study that was conducted by Ekim and Ocakçı (2013), reported that the nurses who had a working experience of 1-5 years had higher knowledge levels than nurses who had more than 10 years of work experience (Ekim & Ocakçı, 2013). According to these results, it is considered that nurses are not included in post-graduation training or in-service training regarding pain management.

Conclusion and Suggestions

It was determined that the knowledge and behavior score of the nurses who participated in the study on pain was found to be 5.46 ± 1.88 in high school graduates, 5.99 ± 2.41 in undergraduate and over. Bigger emphasis must be given on pain and pain management during the nursing undergraduate education period, the interventions related to pain must not be limited to pharmacological methods, and the use of non-pharmacological applications (independent) must be encouraged.

The level of knowledge of nurses about defining pain and physiological changes in the patient, and their awareness about pain and control must be increased. It is necessary that the differences among nurses are reduced with routine in-service training that will be organized every year, and nurses are informed about following the publication on pain control and the importance of this.

Acknowledge

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