

## EVALUATION OF NURSE'S KNOWLEDGE AND ATTITUDE ABOUT POST-SURGERY PAIN ASSESSMENT AND MANAGEMENT AND ITS RELATIONSHIP WITH PATIENT'S SATISFACTION

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Received : 16/09/2022  
Received in revised form : 13/11/2022  
Accepted : 27/11/2022

**Keywords:**  
Awareness, Attitude, Pain management, Nursing, Opinions.

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DOI: 10.47009/jamp.2023.5.1.19

Source of Support: Nil,  
Conflict of Interest: None declared

*Int J Acad Med Pharm*  
2023; 5 (1); 83-88



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### Abstract

**Background:** Effective management of postoperative pain can increase patient satisfaction and help reduce chronic postoperative pain. Pain assessment and reporting is an important part of pain management that should be done by nurses. In this study, we investigated the knowledge and attitude of surgical departments nurses regarding pain management. **Materials and Methods:** This cross-sectional study was analytical. Information in the form of questionnaires according to the studied variables such as patient gender, patient surgery and chronic history, patient history of drug usage, patient satisfaction score for pain relief, nurse (age, gender, education, work experience, pain management training course, attitude score, and knowledge score) was collected. Finally, the recorded data were statistically analysed by SPSS software version 22. **Result:** The results of the current study showed that 51.7% of the nurses in the study had a moderate attitude and 48.3% of the nurses in the study had a positive attitude, 86.2% of the nurses had a negative knowledge and 13.8% of the nurses had a positive attitude. **Conclusion:** Considering that nurses do not have the desired attitude and knowledge regarding the evaluation and management of post-surgery pain, it is observed that information and topics of medical education on this issue in Iran are not enough and we need more policies for educating nurses. Therefore, training and holding in-service retraining classes are recommended to promote the correct management of patients' pain and improve the quality of medical care and training in the use of pain assessment tools.

## INTRODUCTION

The International Association for the Study of Pain (IASP) defines pain as "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage". This was recommended by the Subcommittee on Taxonomy and was eventually adopted by the IASP Council in 1979.<sup>[1]</sup> Ever since surgery was introduced as a treatment, pain from surgery has always been a major obstacle and is one

of the most irritating and unpleasant postoperative side effects.<sup>[2,3]</sup> It was reported that 79% of the operated patients experienced high pain intensity during the first 24 hours after of the surgery.<sup>[4]</sup> Hundreds of millions of people around the world undergo surgery each year and experience postoperative pain which makes pain to be one of the most diagnosed problems in nursing, especially in surgical wards, where approximately 85% of patients admitted to surgical wards complain of pain.<sup>[5,6]</sup> Inadequate pain relief can cause acute

neurohormonal changes, anxiety, lack of sleep, and adverse effects on the cardiovascular and respiratory systems, and may predispose patients to chronic and prolonged pain.<sup>[7]</sup>

In providing effective pain relief, nurses have an essential role in evaluating and controlling patients' pain.<sup>[8]</sup> Nurses' performance in relieving pain depends on patients' needs, but may be influenced by patients' characteristics such as age, education, gender, and work experience.<sup>[9]</sup> Consequently, in many cases, pain is inadequately treated by nurses. The most common reasons for the aforementioned issue are the deficient training of nurses, lack of knowledge, shortage of staff, patients' behavior and attitude, the distance between the doctor's prescription and medication, incorrect judgment of nurses and patients' misjudgment, and patients' fear of side effects.<sup>[10]</sup>

Numerous studies have shown that nurses in many areas lack the knowledge and carry negative attitudes over postoperative pain management and evaluation which can dramatically lead to the misjudgment of pain. Therefore, having affluent knowledge, positive attitudes and skills in evaluating and managing postoperative pain are vital criteria.<sup>[10,11]</sup> Given that, postoperative pain is a problem for patients and might result in their dissatisfaction, despite the high quality of care in the ward, it is necessary to improve the quality of care along with the increase and awareness of pain-management knowledge among the nursing staff, simultaneously. Our studies have shown that such a study has not been conducted in medical centers of Guilan province so far.

## MATERIALS AND METHODS

This descriptive study was analytical cross-sectional which was carried out in a population that included nurses working in the surgical wards of hospitals affiliated to Guilan University of Medical Sciences in 2020, and patients admitted there to the surgical ward in the same period. The study was done on 87 nurses (bachelor, master and postgraduate) working in surgical wards who were selected by available sampling and for each nurse, two patients who had undergone surgery were included in the study. After obtaining the permission of the relevant authorities, the researcher referred to the hospital and distributed the relevant questionnaires among all the nurses working in the morning, evening, and night shifts.

The objectives of the study and were explained to the volunteering participants of the study and their oral consent was obtained. The instruments were consisted of three parts:

- 1) Check List: each nurse's demographic information including age, sex, marital status, educational level, position, employment status, job experience, workplace, educational courses related to pain-management industries.

- 2) Questionnaire: To evaluate the attitude of each nurse regarding pain management: Nurses' Attitude Survey (NAS).
- 3) Pain Management Principles Assessment Test (PMPAT): Questionnaire for the management of pain. Based on their opinion, they chose an answer, the scoring system is based on the Likert method. I completely disagree, disagree, agree, strongly agree, which gives a score of 1, 2, 3, 4, respectively. Higher scores indicate a positive attitude. If the respondent receives 70% of the score, he/she has the highest and most positive attitude.

The Knowledge Assessment Questionnaire includes 31 multiple-choice; four- and five-choice questions that assess a person's level of knowledge about the concept of pain, pain assessment and relief. The correct option is marked according to the response of the respondent and each correct answer is assigned a score. The data-collection tool for patients was a researcher-made questionnaire consisting of two parts; The first part included each patient's personal information including age, gender, history of surgery and chronic diseases, drug usage history, and the second part included 12 questions which would assess their satisfaction with pain control after surgery.

### Data Collection

Data were collected using a questionnaire compiled by the researchers after a search of the literature and the Nurses' Attitude Survey (NAS) Pain Management Principles Assessment Test (PMPAT).<sup>[12,13]</sup> Each question on the data collection form was asked from the participants, and the forms were filled out by the researchers, with each form taking approximately 20–25 minutes. The questionnaires were filled out during the morning and evening shifts when the nurses had rest time, were not busy, or had completed their shifts.

### Statistical Analysis

The data analysis was performed using the Statistical SPSS 22. The distribution of variables was examined with the Kolmogorov–Smirnov and Shapiro–Wilks tests. The evaluated data were presented as a mean  $\pm$  standard deviation, and the categorical data included the number of observations and relative frequencies. Chi-square and Fisher tests were used to evaluate the relationship between patients' satisfaction with pain control and contextual characteristics in terms of demographic, and nurses' knowledge and attitudes regarding post-surgery pain assessment and management. The results were evaluated at a 95% confidence interval and a  $P < 0.05$  significance level.

## RESULTS

Participants in this study were 87 nurses working in surgical wards of hospitals affiliated to Guilan University of Medical Sciences and 174 patients

admitted there. Findings from the study showed that the average age of nurses in surgical wards 27.6% was less than 36 years old. 50% were female, 85.1% had a bachelor's degree and 14.9% had a master's degree 17.2% had under 3 years of experience, 4.6% had from 4 to 7 years of experience, 5.7% had from 8 to 11 years of experience, 42.5% had from 12 to 15 years of experience, 17.2% had from 16 to 19 years of experience and 12.6% had over 20 years of experience. 32.2% passed the pain management training course. Their mean knowledge score was 31 out of which 86.2% had negative knowledge and 13.8% had moderate knowledge. [Table 1].

The demographic characteristics of the patients studied in this study was 50% male and 36.2% had no history of surgery, while 63.8% had a history of surgery. 60.9% had no history of drug usage, while 39.1% had a history of drug usage and 37.4% without a history of an underlying disease. The mean score of their satisfaction out of 12 points was 6.39±1.58, of which 48.9% had low satisfaction, 43.7% had moderate satisfaction and 7.5% had high satisfaction [Table 2].

Nurses' attitudes regarding pain evaluation and management after surgery were not significantly related to the mean age, marital status, educational level and experience ( $P \geq 0.05$ ) [Table 3]. Nurses' knowledge about the evaluation and management of postoperative pain was not significantly related to the mean and marital status with the level of education and experience of nurses by taking a pain management training course of nurses ( $P \geq 0.05$ ) [Table 4]. Patients' satisfaction with post-surgery pain control had no significant relationship with patients' gender, their history of surgery, underlying diseases and drug usage [Table 5].

Using Shapirovilk test with considering the abnormality of attitude and knowledge score ( $P$ -value  $< 0.05$ ) and using the Spearman correlation coefficient, the attitude had a significant relationship with nurses' knowledge about post-surgery pain assessment and management ( $P = 0.009$ ) As the awareness increases; nurses' attitude also moves in a positive direction ( $r = 0.278$ ).

**Table 1: Demographic characteristics of the nurses studied in the study**

Variable	Number	Mean±SD	Minimum	Maximum
Age	87	36.87±6.82	23	46
Attitude score	87	68.55±5.13	58	83
Awareness score	87	11.02±3.55	4	19
Variable	Frequency		Percent	
Gender	Female	87	100	
Age category	Less than 87/36 years	24	27.6	
	More than 87/36 years	43	49.4	
	Missing	20	23	
Marital status	Single	14	16.1	
	Married	73	83.9	
Education rate	Bachelor	74	85.1	
	Masters	13	14.9	
Work experience	Under 3 years	15	16.1	
	From 4 to 7 years	4	83.9	
	From 8 to 11 years	5	7/5	
	From 12 to 15 years	37	5/42	
	From 16 to 19 years	15	2/17	
20 years and up	11	6/12		
Completing the training period	Yes	28	2/32	
Pain management	No	59	59	
Attitude score	Medium	45	7/51	
	Positive	42	3/48	
Awareness score	Negative	75	2/86	
	Medium	12	8/13	

**Table 2: Demographic characteristics of the patients studied in the study**

Variable	Number	Mean±SD	Minimum	Maximum
Satisfaction score	174	6.39±1.58	3	10
Variable	Frequency		Percent	
Gender	Male	87	50	
	Female	87	50	
History of surgery	Yes	111	8/63	
	No	63	2/36	
History of drug use	Yes	68	1/39	
	No	106	9/60	
History of chronic diseases	Yes	109	6/62	
	No	65	4/37	
Satisfaction score	Down	85	9/48	
	Medium	76	7/43	
	Top	13	5/7	

**Table 3: Relationship between nurses' attitudes regarding post-surgery pain assessment and management**

		Age		Total	P-Value
		Under 36/87	up 36/87		
Attitude	Medium	14(58/3%)	20(46/5%)	34(50/7%)	0/447
	Positive	10(41/7%)	23(53/5%)	33(49/3%)	
Total		24	34	67	
		Marital status		Total	P-Value
		Single	Married		
Attitude	Medium	18(57/1%)	37(50/7%)	45(51/7%)	0/774
	Positive	6(42/9%)	36(49/3%)	42(48/3%)	
Total		14	43	87	
		Education rate		Total	P-Value
		Bachelor	Masters		
Attitude	Medium	38(51/4%)	7(53/8%)	45(51/7%)	0/999
	Positive	36(48/6%)	6(46/2%)	42(48/3%)	
Total		87	13	74	
		Attitude		Total	P-Value
		Positive	average		
Work experience	Under 3 years	8(53/3%)	7(46/7%)	15	0/547
	4 to 7 years	3(75%)	1(25%)	4	
	8 to 11 years	2(40%)	3(60%)	5	
	12 to 15 years	16(43/2%)	21(56/8%)	37	
	16 to 19 years	8(53/3%)	7(46/7%)	15	
	Over 20 years	8(72/7%)	3(27/3%)	11	
Total		45(51/7%)	42(48/3%)	87	
		Passing a pain management training course		Total	P-Value
		Yes	No		
Attitude	medium	16(57/1%)	29(42/9%)	45(51/7%)	0/486
	Positive	12(49/2%)	30(50/8%)	42(48/3%)	
Total		28	59	87	

**Table 4: Relationship between nurses' knowledge regarding post-surgery pain assessment and management**

		Age		Total	P-Value
		Under 36/87	up 36/87		
Knowledge	Negative	18(75%)	37(86%)	34(50/7%)	0/324
	Medium	6(25%)	6(14%)	33(49/3%)	
Total		24	43	67	
		Marital status		Total	P-Value
		Single	Married		
Knowledge	Negative	11(78/6%)	64(87/7%)	75(86/2%)	0/4
	Medium	3(21/4%)	9(12/3%)	12(13/8%)	
Total		14	73	87	
		Education rate		Total	P-Value
		Bachelor	Masters		
Knowledge	Negative	66(89/2%)	9(69/2%)	75(86/2%)	0/999
	Medium	8(10/8%)	4(30/8%)	12(13/8%)	
Total		74	13	87	
		Attitude		Total	P-Value
		Negative	average		
Work experience	Under 3 years	13(86/7%)	2(13/3%)	15	0/08
	4 to 7 years	4(100%)	0(0%)	4	
	8 to 11 years	3(60%)	2(40%)	5	
	12 to 15 years	29(78/4%)	8(21/6%)	37	
	16 to 19 years	15(100%)	0(0%)	15	
	Over 20 years	11(100%)	0(0%)	11	
Total		75(86/2%)	12(13/8%)	87	
		Passing a pain management training course		Total	P-Value
		Yes	No		
Knowledge	Negative	25(33/3%)	50(66/7%)	75(51/7%)	0/486
	medium	3(25%)	9(75%)	12(48/3%)	
Total		28	59	87	

**Table 5: Relationship between patients' satisfaction about post-surgery pain**

		Gender		Total	P-Value
		Male	Female		
Satisfaction	Down	43(49/4%)	42(48/3%)	85(48/9%)	0/127
	Medium	41(47/1%)	35(40/2%)	76(43/7%)	
	Top	3(3/4)	10(11/5)	13(7/5)	
Total		87	87	174	
		History of surgery		Total	P-Value
		Yes	No		

Satisfaction	Down	54(48/6%)	31(49/2%)	85(48/9%)	0/941
	Medium	48(43/2%)	28(44/4%)	76(43/7%)	
	Top	9(8/1)	4(6/3%)	13(7/5%)	
Total		111	63	174	
		History of drug usage		Total	P-Value
		Yes	No		
Satisfaction	Down	41(60/3%)	44(41/5%)	85(48/9%)	0/057
	Medium	23(33/8%)	53(50%)	76(43/7%)	
	Top	4(5/9)	9(8/5%)	13(7/5%)	
Total		68	106	176	
		History of the underlying disease		Total	P-Value
		Yes	NO		
Satisfaction	Down	52(47/7%)	33(50/8%)	85(48/9)	0/886
	Medium	48(44%)	28(43/1%)	76(43/7%)	
	Top	9(8/3%)	4(6/2%)	13(7/5%)	
Total		109	65	174	

## DISCUSSION

The results of the present study showed that nurses working in surgical wards had a moderate attitude toward patients' pain management. To improve attitude, nurses need sufficient and adequate training in order to operate more effectively in patients' pain management. Training classes which are regularly held to teach pain management are not enough and it is better to be held continuously. Needless to say, with more accurate and effective training, nurses' knowledge and attitude will improve. Their attitudes and knowledge regarding post-surgery pain assessment and management were not significantly related to mean age, marital status, education, work experience, and pain management training.

Patients' satisfaction with post-surgery pain control had no significant relationship with gender, surgical history, drug history, and history of the underlying diseases. In fact, the attitude was significantly associated with nurses' knowledge and awareness on post-surgery pain assessment and management. Our findings were in line with other studies which their results showed that more than 70% of nurses had a negative to moderate attitude and 71.6% of them had a low level of knowledge about pain management. According to the results, it is recommended that authorities should put resuming pain-management training programs for all employed nurses under more serious consideration.<sup>[12]</sup> Also in our study, it was observed that 45 nurses had a moderate attitude and 42 nurses had a positive attitude and 75 nurses had a negative knowledge and 12 nurses had moderate knowledge. In contrast, the author reported that there was a significant relationship between the characteristics of nurses such as age, gender, hospital, and their history of service with their knowledge about nature of pain relief.<sup>[8]</sup> The study mentioned that, as awareness increases, nurses' attitudes also move in a positive direction and this result was in line with other findings.<sup>[14]</sup>

The present study revealed that nurses' attitudes about post-surgery pain assessment and management were not significantly related to mean age, marital status, education, work experience, and pain management training. Furthermore, some advocates showed that lack of knowledge and negative attitudes

related to pain management was prominent. They concluded that a better understanding of the factors that affect this knowledge and attitude and the lack of differences between attitudes and actions can be useful information in nursing education programs and policies related to pain management.<sup>[15]</sup> In our study, it was also observed that 45 nurses had a moderate attitude and 42 nurses had a positive attitude and 75 nurses had a negative attitude and 12 nurses had moderate knowledge.

## CONCLUSION

This study showed that nurses of surgical wards in hospitals affiliated to Guilan University of Medical Sciences in Iran have knowledge insufficiency regarding pain management and there is a discrepancy between their attitudes and practices regarding to it. Nurses expressed a lower level of pain knowledge than that previously reported worldwide. This may highpoint the need for continuous pain-management education within hospitals. Furthermore, reforming undergraduate curricula to address pain management in its content is suggested.

### Limitations

One of the limitations of the study was that due to the crowded and high workload of full staff in the surgical department, full staff were not able to fill out the questionnaires at the same time. Idols were collected.

### Acknowledgments

The researchers thank the Guilan University of Medical Sciences and Anesthesiology Research Center Department of Anesthesiology and Razi Clinical Research Development Unit, as well as the nurses who participated in the study.

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