

Research Article

Prevalence of Pain in Adult Patients Hospitalized in Hospitals in the Province of Erzurum: a Cross-Sectional Study

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Abstract

Aims and Objectives: Pain is a subjective and difficult to diagnose complication, varying from individual to individual, and is affected by many emotional and behavioral factors, such as the individual's environment, gender, culture, education and experience. This study aims to determine the prevalence of pain in hospitalized adult patients in the Erzurum region.

Background: Despite the number of studies that have been conducted on pain in nursing, medicine and behavioral sciences, hospitals still struggle to sufficiently relieve the pain of their patients.

Design: The present study used a descriptive research design.

Methods: The sample of the study involved 737 patients who were hospitalized in the 5 Erzurum hospitals and who were 18 years of age or older, admitted to the hospital at least 24 hours prior to the onset of the study.

Results: The mean age of the patients was 58.81 ± 17.88 years, and 52.6% were male. There was a positive, statistically significant moderate correlation between the most severe and mildest pain scores in the last 24 hours ($p < 0.05$). It was found that pain was accompanied by fatigue (36.4%) and insomnia (32.8%). In order of intensity, the most painful areas of the patients were determined to be the middle of the back area (21.9%). It was determined that the prevalence of the patients' pain was 68.38%.

Conclusion: The results of this study show that the prevalence of pain of the hospitalized patients is very high, and that the nurses and doctors play an important role in relieving the pain.

Keywords: Pain prevalence; Nurses; Adults; Erzurum

Introduction

Although the concept of pain has been known since the very beginning of humanity today is technological improvements in healthcare sciences are still unable to completely treat pain, and therefore, it continues to be the most pronounced symptom experienced by patients, drawing them to seek relieve from healthcare professionals. Previous studies have indicated pain to be a common problem. The definition of pain proposed by McCaffery states, "Pain is whatever the experiencing person says it is, existing whenever the experiencing person says it does" [1-4].

Pain is affected by many emotional and behavioral factors, such as one's environment, sex, culture, education and experiences, all of which differ from individual to individual, and it has a complex and subjective nature that makes it difficult to define [5]. The International Association for the Study of Pain (IASP) says that pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or is described in terms of such damage [6,7]. Previously, pain, particularly chronic pain, was only accepted as a symptom of various diseases, whereas today it is considered as a disease or syndrome on its own [8]. Studies on

pain showing the negative impacts it has on daily life and on the psychosocial situation of individuals indicate that pain is a frequently seen, common medical problem. In addition, pain is a personal state that accompanies various diseases and effects an individual's quality of life [9,10].

Pain is considered as the "fifth vital sign", together with pulse, breathing, blood pressure and body temperature [11]. Pain assessment is very complex, as it involves different pain perceptions of individuals and a variety of responses to pain [12]. Despite the number of studies that have been conducted on pain in nursing, medicine and behavioral sciences, hospitals still struggle to sufficiently relieve the pain of their patients. The chief reasons for this are that the science of pain is an emerging science, albeit the concept of pain is as old as human history, and that the knowledge nurses and physicians have about the diagnosis and management of pain is inadequate. This has also been indicated in previous studies [13-15].

Pain assessment is required to make the correct diagnosis and to determine the most efficacious treatment plan to cope with the pain [16,17]. Although the most reliable indicator for the pain assessment is a patient's own statement, the use of pain scales transforms this

statement into numeric values, which constitute a common language between the patient and the nurse to mediate pain management [1].

It is generally accepted that pain management be conducted with a multidisciplinary team approach. Nurses have an essential role in pain control as part of the multidisciplinary team, as they typically have longer contact with patients compared with other team members, have knowledge of pain experiences and the pain management methods to be used on patients, and are responsible for teaching pain coping mechanisms to the patients and for carrying out the planned analgesics treatment and following its results [13,16,18]. Moreover, nurses are ethically responsible for pain management and for reducing the pain. Effective pain management aims not just at the relief of the physical suffering but also at securing early recovery and getting patients back to work, and at ensuring shorter hospitalization stays and lower healthcare costs [19]. Pain prevalence and pain area, pain expression, severity of pain, pain beliefs and pain management methods are all affected by sociocultural and cognitive characteristics and thereby show differences among different groups [20,21].

Nurses often encounter incidences of pain. After upper respiratory infections, pain is the second most common reason people visit their doctors [22]. The pain prevalence of hospitalized patients in Italian hospitals was found to be 91.2% [23]. Some studies on pain prevalence in the literature address acute and chronic pain prevalence independently. The most frequently reported acute pain sites are the head and lower extremities, while the most frequently reported chronic pain site is the lower back. Research results suggest that chronic pain prevalence ranges between 2% and 54% [9,24,25]. Also, it has been reported that one-third of adults in the United States have chronic pain syndrome [26].

As part of this study, previous studies conducted in Turkey were examined. In the study conducted in the Department of Family Medicine of the Marmara University Faculty of Medicine, patients' reasons for presenting to the polyclinics were analyzed, where it was found that headache ranked 3rd and back pain 6th among the patients' complaints [27].

Ayvat et al. found that 73% of the 772 patients who applied to Adnan Menderes University Medical Faculty Hospital in 2007 had chronic pain [8]. In a study conducted with 1053 elderly patients in 2009 in Çanakkale, Erzurum, Malatya and Mersin, the pain prevalence and chronic pain prevalence were determined as 88.5% (n=932) and 64.7%, respectively [28].

As stated above, this high pain prevalence is a social health problem. There were no studies in the literature on the prevalence of pain in the Erzurum region particularly, although there were studies that have investigated its prevalence in other regions of Turkey. In view of this, the present study aims to determine the prevalence of pain in hospitalized adult patients in the Erzurum region.

Methods

The study design and samples

The study was conducted as descriptive research. Point prevalence is the proportion of persons of a given population with a defined characteristic or disease at a specific point in time (For instance, on the date of 31/02/2017). Data collection using the point prevalence

method saves labor and time but does not provide any information regarding the previous situation of the problem [29]. That is, it only provides information on the pain prevalence of the adult patients hospitalized in Erzurum province.

This study was conducted in Erzurum, a province that has the largest capacity to provide healthcare services for patients in the Eastern Anatolia Region. The research was conducted in one university hospital and four state hospitals located in the provincial center. Data were collected between September 10 and 15, and a different day was assigned for each hospital to collect data. The patients included in this study were 18 years of age or older, agreed to participate in the study, had conscious-minds and were able to speak. Gynecology, emergency services, intensive care units, pediatrics and psychiatry clinics were excluded from the scope in order to obtain unbiased data. The universe of the study consisted of 900 patients who were hospitalized in the hospitals and met the criteria to be included in the study. As the point prevalence method was used in the study, attempt were made to reach the maximum possible number of patients without using any sampling methodologies. 29 A total of 163 patients were not included in the study because of various reasons, such as they were not present in their beds during the data collecting time, they or their families did not agree to participate into the study, or they were unable to participate due to the presence of an advanced disease. With these patients excluded, the study was conducted with 737 patients (81.9%) in total.

Measurements and instrument

Data were collected using the "Questionnaire Form" the "Visual Analogue Scale for Pain" and the "Brief Pain Inventory".

Questionnaire form: The data collection form used in this study was designed based on a literature review. This form includes 18 sections addressing the sociodemographic characteristics of the patients, their diagnosis, length of hospitalization, weight and height, Body Mass Index (BMI), nutrition status, and serum albumin levels, and any other medical problems they may have and their mobility levels, consciousness and pain experiences [13,16,27].

Visual analog scale: The Visual Analog Scale is a measurement instrument that seeks to measure a characteristic or attitude that is believed to range across a continuum of values but is unable to be directly measured in an easy manner. The scale features a 10-cm line, with one end indicating no pain and the other end severe pain. The pain intensity experienced by the individual is marked accordingly on this line [27-29].

Brief pain inventory: The Brief Pain Inventory (BPI) has been translated into more than 15 languages and has demonstrated validity and reliability in multiple cultures (Malaysia, Taiwan, Norway, France, Germany, India, and Japan, etc.). BPI has demonstrated high validity and reliability among different patient groups [30,31]. In a study conducted with patients during the postoperative period, the Cronbach's alpha coefficient for the reliability of BPI was found to be greater than 0.85 for two sub-dimensions. The validity of the scale was tested by factor analysis, where the results showed that two factors, namely, severity of pain and interference, were obtained [32]. The validity and reliability of the BPI were tested in Turkey in a sample consisting of patients who had undergone surgeries. The Cronbach's

alpha reliability coefficient was found to be 0.79 for the severity scale and 0.80 for the interference scale. The inventory is a simple, easy-to-understand, self-administered assessment tool used in pain management. Cleeland and Ryan [34] (1994) developed the BPI after noticing that pain limits a person's general ability to function. The numeric rating scale utilizes a linear scale from 0-10, with 0 representing "no pain" and 10 being indicative of "pain as bad as you can imagine". Patients were asked to rate their pain along the number continuum for items according to their pain at its worst in the last 24 hours and at its least in the last 24 hours, the average pain, and the pain during the interview. Interference measures pain limitations in the following aspects within the last 24 hours: the general activity level, emotional status, interpersonal relations, walking, sleeping, working and enjoying life. However, as pain related to working cannot be assessed in the early post-operative period for surgical patients, working was replaced with exercising. Each item (0-10) was scaled on a numeric pain scale (0=not affected, 10=totally affected). In addition, patients are asked to indicate the area of pain on a figure, and the medication and methods used to eliminate pain were evaluated, along with the percentile pain elimination level within the last 24 hours. BPI was first used with cancer patients to assess their pain. Later, it also began to be used in the treatment of cancer pain and cancer epidemiology, as well as in analgesic clinical trials. 38 BPI has been used for pain assessment in other chronic situations, like AIDS [35-39], phantom limb pain [37], ischemic limb pain, and painful neuropathy. Zalon (1999) demonstrated the reliability and validity of the BPI for use with surgical patients [36]. Its validity and reliability were confirmed by Mendoza et al. (2004) inpatients who underwent coronary artery bypass graft, and by Tittle, Mcmillan and Hagan (2003) in surgical patients with cancer [32,35].

Data collection procedure

Data were collected using one to one interviews conducted by researchers and selected interviewers. An undergraduate degree in nursing was required to be an interviewer. Before starting the data collection process, 15 interviewers who met the criteria were trained by the researchers. The training constituted two sections: theoretical and practical. In the first section of the training, interviewers received in-class training for four hours on risk factors of pain, the diagnosis of pain, and how to collect data using the Visual Analog Scale and the Brief Pain Inventory (BPI). During this training, case presentations on pain were made. After the theoretical training, interviewers underwent an assessment test, and those who scored at least an 80% were allowed to attend the second section of the training. However, one of the interviewers scored a 40% and was therefore dismissed from the study. In the second section of the training, interviewers were asked to diagnose 20 patients with pain. Diagnoses were done under the observation of researchers. A total of 14 interviewers who completed the training and demonstrated an 80% success rate in diagnosing patients with pain collected the data used in this study.

Ethical consideration

Written approvals from the management of Ataturk University Education and Research Hospital, the E** Public Hospital Association and the Ethical Committee of A** University Faculty of Health Sciences were received. Patients and their relatives were informed about the research and their verbal approvals to participate in the study were obtained.

Table 1: Descriptive Statistics for Patients (n=737).

Sociodemographic characteristics n=737		
Age (Mean) 58.81±17.88		
	n	%
Gender		
Female	349	47
Male	388	53
Marital Status		
Married	601	82
Single	70	9.5
Divorced	66	9
Educational Status		
Literate	104	14
Illiterate	208	28
Primary school	208	28
Secondary school	73	9.9
High school	95	13
Undergraduate	39	5.3
Clinics		
Internal	497	67
Surgical	240	33
Social security		
Yes	633	86
No	104	14
TOTAL	737	100

Table 2: The Distribution of Mean Scores of Pain Experienced by Patients (n=737).

Severity of Pain	(Minimum-Maximum)	X	SD
The worst pain within the last 24 hours	0-10	4.961	3.0609
The mildest pain within the last 24 hours	0-10	2.198	2.2515
The average pain within the last 24 hours	0-10	3.468	2.441
Current Pain	0-10	2.962	2.8074

Data analysis

The coding and analysis of data were done using the SPSS 20.0 (Statistical Package for the Social Science, Version 15.0) program. Arithmetic mean, standard deviation, minimum-maximum values, frequency and percentages were used as descriptive statistics to analyze data. The t-test and ANOVA were used to analyze the pain prevalence of the patients.

Results

The findings of this study, which aimed to determine the prevalence of pain in hospitalized adult patients in the Erzurum region, are presented in tables.

The mean age of the patients who participated in this study was 58.81±17.88 years; 47.4% were female and 52.6% were male; 81.5% were married, 28.2% were illiterate, and 28.2% were primary school graduates. In addition, 67.4% of the patients were hospitalized in

Table 3: Distribution of Pain Areas (n=737).

Aching Body Parts	n	%
Head- Neck	177	18
Tooth	5	0.5
Abdomen	178	18
Stomach	77	7.9
Back-waist	214	22
Knee	76	7.8
Hand	21	2.2
Foot-Leg	143	15
Arm	51	5.2
Hip	46	4.7
Shoulder	25	2.6
Chest	147	15
Muscle- Skeleton	56	5.7
Joint Pain	69	7.1

Table 4: Accompanying Symptoms (n=737).

Accompanying Symptom	n	%
Nausea	158	16
Vomiting	102	11
Fatigue	268	28
Anorexia	196	20
Dizziness	116	12
Insomnia	242	25

Table 5: Pain Treatment (n=737).

Treatment	N	%
No	278	38
Analgesics (drug, etc.)	457	62
Alternative treatment	2	0.3
Total	737	100

internal clinics and 32.6% in surgical clinics. It was determined that 85.9% of the patients had social security. In light of these data, it was determined that the prevalence of the pain of the patients was 68.38% (Table 1).

The distribution of total and mean scores of pain experienced by the patients in this study within the previous 24 hours from when the data was taken is presented in Table 2. It was determined that the most severe pain score experienced by the patients in the previous 24 hours was 4.96 ± 3.06 , the mildest pain score was 2.19 ± 2.25 , the average pain score was 3.46 ± 2.25 , and the pain score at the time of the interview was 2.96 ± 2.80 (Table 2).

Analysis of the distribution of the most painful areas of the patients showed that the top three pain areas, in order of severity, were the back waist area (21.9%), head and neck (18.2%), and abdomen (18.3%) (Table 3).

Among the patients, 27.5% had accompanying fatigue, 24.8% accompanying insomnia, 20.1% accompanying anorexia, 16.2%

Table 6: Elimination of pain by the pain treatment (n=737).

Elimination of pain	N	%
10%	20	2.7
20%	34	4.6
30%	48	6.5
40%	49	6.6
50%	46	6.2
60%	48	6.5
70%	64	8.7
80%	71	9.6
90%	88	12
100%	56	7.6
Those who did not receive treatment	213	29
Total	737	100

Table 7: Comparing the Sub-dimensions of the Brief Pain Inventory.

Correlations		Total score on severity of pain	Total score on interference to daily life activities
Total score on severity of pain	r	1.000	.561**
	p	.	.000
Total score on interference to daily life activities	r	.561**	1.000
	p	.000	.

accompanying nausea, 11.9% accompanying dizziness, and 10.5% accompanying vomiting (Table 3).

The patients were examined in terms of the treatment applied for the relieve of their pain, and it was determined that 37.7% did not use any analgesic medications, 62% used analgesics, and 0.3% used alternative treatments (Table 3).

Further examinations were performed on how well the treatments applied to the patients were able to relieve their pain, and it was found that 28.9% of the patients did not received any pain treatment, 7.6% experienced 100% relief of their pain, 11.9% experienced 90% relief of their pain, and 2.7% experienced 10% relief of their pain (Table 4).

A medium level significant positive correlation was found between the total score of the severity of pain (severity) and the total score of its limitation on Daily Life Activities (DLA) (interference) ($p < 0,05$). An increase in the total score of pain severity was determined to result in an increase in the total score of interference of daily life activities (Table 5).

Discussion

Pain prevalence is one of the most significant pieces of data for presenting the patient situation. Pain negatively affects individuals' daily lives and their psychosocial status. Studies focused on these issues related to pain indicate that pain is a frequently seen common medical problem [9,27,40]. Determination of pain prevalence helps to prevent patients from using excessive amounts of drugs and thereby cuts medical-related costs and is useful insofar as it allows for comparisons to be made for further medical practices. Therefore, determining pain prevalence is an important measure in that it can help to shorten the treatment period of patients and to facilitate more effective healthcare services from nurses. In this regard, the findings of this study, conducted to determine the prevalence of pain in adult patients hospitalized in hospitals in the province of Erzurum, are

discussed in accordance with the literature [9,27].

As stated in the Findings section above, the mean age of the patients was 58.81 ± 17.88 years, and it was found that as the mean age increased, the pain prevalence increased. Pain prevalence was higher for the patients with low education levels and for the married patients (Table 1). The literature suggests that pain prevalence is positively related with age and negatively related with educational status, and that women experience more pain than men [23,27,28,40,41]. These results show similarities with our findings.

In this study, pain prevalence was calculated as 68.38%. In similar studies conducted in Turkey, pain prevalence in adults was found to be 63.7% [42]. As can be seen, this figure for pain prevalence is close to the figure calculated in the present study. This similarity may be due to the more extensive structures of these research studies. In one study, it was determined that 78.6% of the research group experienced pain in the last year [27], while in another study it was reported that 92.8% of patients experienced pain in various parts of their body [43]. The pain prevalence reported in these studies was higher than that found in our study. This difference could possibly be attributed to the use of smaller research groups in those studies.

International studies were also examined. In a study conducted in United Kingdom, it was found that 72.4% of the people who were over the age of 50 experienced pain in the last four weeks [46]. This prevalence is very close to our rate. The pain prevalence of patients hospitalized in Italian hospitals was found to be 91.2% [43,44]. Although there are some differences on the national and international level, our study results show similarities with other studies in general. These similarities may be due to certain factors, like the hospital environment, patients' living environment, and their specific diseases and disease status.

The most painful areas of the patients, in order of severity, were observed to be the back-waist (21.9%), abdomen (18.3%), head-neck (18.2%), chest (15.1%), and foot-leg (14.7%) (Table 3). In one study, it was reported that the top five most painful areas, in order of severity, were the shoulder, waist, neck, back and knee [43]. Erdine et al. conducted a study in 2001, where participants described, in order of severity, the head, waist and lower limb as the most painful areas [40]. The most painful areas were generally similar in different studies, with certain differences only being seen in the severity of pain experienced in these areas. It can be argued that these differences are the results of cultural structures, the mean age and living places.

The most commonly seen accompanying symptoms were fatigue (27.5%), insomnia (24.8%), and anorexia (20.1%) (Table 3). In an international-based study, the score of sleep interference according to pain was calculated to be 5.2 [45]. This is a very high score compared to the lower one determined in our study. This difference could be attributed to cultural factors, lifestyles and individual differences.

Pain has a negative impact on sleep. Therefore, patients were negatively affected in cases where there was insufficient pain control. On this matter, nurses play particularly significant roles. Taking into consideration the importance that sleep has on the recovery process, it can be concluded that pain may lengthen the recovery process or may have negative effects on patients' state of mind.

Conclusion

To conclude, pain prevalence was calculated to be 68.38%. The study findings indicate that pain is a common problem and that sociodemographic and economic conditions affect various features of pain. Older ages, being married, low income level and lower educational status increase the number of pain experiences. As the accompanying symptoms, such as fatigue, insomnia, and anorexia, are responsible for triggering many psychological and physical problems, it is suggested to do whatever is necessary to eliminate pain (Table 4,6,7). Furthermore, in pain control studies that focus on a specific population, it is suggested that evaluations be conducted on sociodemographic and economic risk factors and the pain beliefs of individuals.

A majority of patients use analgesics to eliminate pain, which indicates that patients who experience pain and the nurses who try to relieve and eliminate pain are effective in helping patients to cope with pain.

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