

A Comparison of the Sociodemographic and Clinical Characteristics of Patients Referring to a Pain Clinic with Subacute and Chronic Pain

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Abstract

Objectives: The aim of the present study was to assess and compare the sociodemographic characteristics and clinical features of patients referring to a university hospital's pain clinic with chronic (≥ 12 weeks) and subacute pain (< 12 weeks).

Methods: In this cross-sectional study, 426 patients were included. Demographic variables including education level, marital and employment status, and risk factors such as obesity, diabetes mellitus, hypertension, cigarette smoking, and opium addiction were recorded. Also, sites of pain, pain quality and associated symptoms, and pain severity were assessed using a numerical rating scale. Each one of these variables was compared between the chronic and subacute pain groups.

Results: Of the 426 studied patients, 292 (69%) had chronic pain and 134 (31%) reported subacute pain. Patients with chronic pain were older and had higher body mass indices. Additionally, self-employment was less frequent among the chronic pain group. The patients with chronic pain had a higher prevalence of addiction. The most commonly reported site of pain in all patients was the lower back (62.4%), followed by pain in the leg and foot (39.9%), knee (24.4%), and hip (18.8%). There were no statistically significant differences in pain sites between the two groups, except for knee pain, which was more common among the chronic pain group. The patients with chronic pain had a higher incidence of obscure and persistent pain, while those with subacute pain experienced more night pain.

Conclusions: About one-third of the patients referring to the pain clinic had subacute pain. The patients with chronic pain were older and more obese, had a higher prevalence of addiction, had more cases of knee pain, and reported more instances of obscure and persistent pain than those with subacute pain.

Keywords: Chronic Pain, Pain Clinic, Demographic Factors, Epidemiology

1. Background

Chronic pain is defined as a sensation of pain which lasts longer than three months (1). The prevalence of chronic pain is common all over the world, and various researchers have estimated that about 7% - 55% of the general population (20% on average) have various forms of chronic pain (2, 3). Chronic pain may be affected or exacerbated by a variety of environmental, sociodemographic, and individual factors (3-5). Quality of life is considerably affected not only for these patients themselves, but also for their families and friends (4). This type of pain is associated with incomplete treatment and other problems such as sleep abnormalities, chronic fatigue syndrome, drug abuse, loss of appetite, physical disability, anxiety, and depression (6, 7). There is a great deal of evidence showing that chronic pain has an unfavorable influence on physical health, men-

tal health, daily activity, employment, and financial well-being (2-7).

The epidemiology of chronic pain and its relationship with sociodemographic factors have been reported by numerous studies from various geographical regions and countries, and also among populations with different (low, middle, and high) income statuses across the globe (8). However, relevant data from Middle Eastern countries, including Iran, are limited. Zarei and colleagues (2012) (6) reported a prevalence rate of 38.9% for chronic pain. They also reported a significant relationship between chronic pain and age, sex, weight, income, educational level, and type of occupation. Those with low incomes and low educational levels coped with pain more effectively owing to a lack of knowledge. In a similar study, Asghari et al. (2008) (7) showed that chronic pain patients with higher education and higher pain self-efficacy beliefs were less physi-

cally disabled and less depressed.

Some researchers have tried to differentiate between subacute and chronic pain in terms of demographic and clinical features with a view to developing different treatment approaches for each individual patient referring to pain clinics (9-11). Although patients with subacute pain constitute approximately one-third of all patients referring to pain clinics, the existing literature contains a dearth of data on the demographic and clinical features of such patients (11). Moreover, most studies on subacute pain have focused on lower back pain, while most patients referring to pain clinics with subacute pain have various forms of pain in different anatomical sites.

2. Objectives

As a result of the limited available data, we sought to evaluate and compare the sociodemographic characteristics and clinical features of patients with chronic (≥ 12 weeks) and subacute pain (< 12 weeks) referring to a university hospital's pain clinic in Tehran, Iran.

3. Methods

3.1. Participants

This cross-sectional study was conducted on 440 patients who reported with the chief complaint of pain to the pain clinic of Shaheed Beheshti University of Medical Sciences, Tehran, Iran, between January and April 2016. Of the 440 patients, nine individuals refused to participate in the study, and five participants had incomplete data. Finally, data on 426 patients were recorded and entered for analysis. Subacute pain is generally defined as pain lasting between four and 12 weeks, and chronic pain is defined as pain that lasts ≥ 12 weeks (11). The inclusion criteria comprised having a history of subacute or chronic pain, an age ≥ 18 years old, the ability to speak and read in Farsi, and willingness to participate in the research project. Patients were excluded from the study if they had any type of cancer or overt opium addiction.

3.2. Measurements

The demographic variables were comprised of sex, age, residency in Tehran or other cities, education level, marital status, and employment status. Medical history consisted of risk factors such as obesity, diabetes mellitus, hypertension, cigarette smoking, and opium addiction. Data on pain duration, pain site, and average pain intensity as well as information regarding health care and drug usage for pain relief were recorded.

Pain intensity was assessed using a numerical rating scale. On this scale, the patients needed to rate their pain severity on an 11-point scale ranging from 0 to 10, where 0 showed "no pain" and 10 signified "worst possible pain."

3.3. Statistical Analysis

The collected data were analyzed with SPSS statistical software, version 22.0 (SPSS/IBM Inc. Chicago, IL, USA). The participants with chronic pain were compared with those who had pain durations of < 12 weeks in terms of the continuous variables using a series of independent sample t-tests. The assumption of equal variance between the two groups was tested using Levene's test. The categorical variables were compared between the study subgroups using a chi-squared or Fisher's exact test. Statistical significance was considered to be a P value ≤ 0.05 .

4. Results

Of the 426 studied patients, 134 (31.5%) had pain durations of < 12 weeks (categorized in the subacute group) and 292 (68.5%) had pain durations ≥ 12 weeks (categorized in the chronic pain group). All of the demographic and clinical variables were then compared between these two subgroups.

Table 1 demonstrates the demographic parameters of the patients. Most of the patients referring to the pain clinic were women (250/426; 58.7%). As is presented in Table 1, the patients who referred to the pain clinic with chronic pain were older (57.2 ± 15.3 vs. 53.5 ± 15.9 y; $P = 0.022$) and had higher body mass indices (BMI) than the patients with subacute pain; moreover, occupational status was different between the two groups, in that self-employment was less frequent among those in the chronic pain group. As is shown in Table 2, among the clinical risk factors, only opium addiction was significantly different between the two groups, and the patients who had longer histories of pain had higher prevalence rates of opium addiction (5.5% vs. 1.5%; $P = 0.006$).

The most commonly reported site of pain among all patients was lower back pain ($n = 266$; 62.4%), followed by pain in the leg and foot ($n = 170$; 39.9%), knee ($n = 104$; 24.4%), hip ($n = 80$; 18.8%), and neck ($n = 44$; 10.3%). There were no statistically significant differences in the pain sites between the chronic and subacute pain groups, except for knee pain, which presented more frequently in the chronic group ($n = 88$; 30.1%) than in the subacute group ($n = 16$; 11.9%) ($P = 0.001$). Table 3 summarizes the anatomic sites of pain for both study groups. Table 4 depicts the distribution of the quality of pain and the associated symptoms among the patients in the two study groups. The patients

Table 1. Demographic Characteristics of the Chronic and Subacute Pain Groups

	Chronic Pain, n = 292	Subacute Pain, n = 134	P Value
Sex, M	178 (61.0%)	72 (53.7%)	0.193
Age, y	57.2 ± 15.3	53.5 ± 15.9	0.022
Weight, kg	74.7 ± 14.4	71.0 ± 17.2	0.052
Height, cm	164 ± 13.9	166.9 ± 11.9	0.187
Body mass index	27.4 ± 5.9	25.7 ± 5.1	0.010
Married	246 (84.2%)	102 (76.1%)	0.182
Education, associate degree and higher	186 (63.7%)	88 (65.4%)	0.846
Job, self-employment	98 (33.6%)	58 (43.3%)	0.041
First referral to a pain clinic	265 (90.9%)	105 (78.6%)	0.336

Table 2. Clinical Risk Factors Among the Chronic and Subacute Pain Groups

	Chronic Pain, n = 292	Subacute Pain, n = 134	P Value
Diabetes mellitus	36 (12.3%)	12 (9.0%)	0.391
Hypertension	52 (17.8%)	16 (11.9%)	0.164
Cigarette smoking	28 (9.6%)	22 (16.4%)	0.173
Opium addiction	16 (5.5%)	2 (1.5%)	0.006
History of asthma	0	2 (1.5%)	0.184
History of rheumatic diseases	4 (1.4%)	0	0.412
Obesity	59 (20.2%)	20 (14.9%)	0.243
Overweight	95 (32.5%)	36 (26.8%)	0.287

with chronic pain had a higher incidence of obscure (12.3%) and persistent (19.9%) pain than those with subacute pain, whereas the latter group experienced night pain more often (14.9% vs. 8.2%; $P = 0.048$). There were no statistically significant differences between the associated psychological symptoms, such as sleep disorder, anxiety, and depression, between the two study groups (Table 4). Furthermore, the patients with chronic pain reported higher severity of pain (on the numerical rating scale) than the patients with subacute pain (Table 5).

5. Discussion

It is essential to know that the multiple aspects of chronic pain cannot be explained by considering nociception only. It is obvious that genetic, sociodemographic, and clinical factors allied with acute, subacute, and chronic pain are important in recognizing and planning relevant diagnoses and treatment modalities. Current investigations require the integration of epidemiological studies with the clinical assessment and management of acute, subacute, and chronic pain (12).

Chronic pain is a common public health problem in that it affects one-fifth of adults worldwide (13). Pain relief, either medically or surgically, is an essential human

right and is a responsibility of physicians especially anesthesiologists working in pain clinics (14-16). Also, about 20% of Europeans complain of chronic pain (12). However, a considerable portion of the patients who refer to pain clinics have a history of pain < 12 weeks, and as such cannot be classified as having "chronic pain." In the present study, approximately one-third (31.5%) of the 426 patients who referred to this particular university pain clinic had a past history of pain < 12 weeks, categorized as "subacute pain." The epidemiology of chronic pain has been extensively studied in the literature (17, 18), but there is little data regarding the sociodemographic and clinical factors of patients referring to pain clinics with subacute pain. The aim of the current study was to evaluate and compare the demographic and clinical features of patients referring to a university hospital's pain clinic with chronic and subacute pain.

As is shown in Table 1, most of the patients who referred to the pain clinic were women (250/426; 58.7%). Also, chronic pain was relatively more frequent than subacute pain among the female patients (61% vs. 53.7%); however, this difference was not statistically significant. Generally, women tend to exhibit a lower pain sensation threshold and refer to physicians more commonly than men (12). Torrance et al. (2006) (3) reported that 52.3% - 60.1% of the patients presenting with chronic pain in different cities of

Table 3. Anatomic sites of Pain Among the Chronic and Subacute Pain Groups^a

	Chronic Pain, n = 292	Subacute Pain, n = 134	P Value
Back	190 (65.1%)	76 (56.7%)	0.122
Hip	56 (19.2%)	24 (17.9%)	0.859
Leg	120 (41.1%)	50 (37.3%)	0.526
Knee	88 (30.1%)	16 (11.9%)	0.001
Wrist	24 (8.2%)	6 (4.5%)	0.231
Head	8 (2.7%)	0	0.121
Face	2 (0.7%)	2 (1.5%)	0.794
Jaw	6 (2.1%)	0	0.219
Neck	32 (11.1%)	12 (9.0%)	0.646
Elbow	12 (4.1%)	4 (3.0%)	0.770
Hand	22 (7.5%)	10 (7.5%)	1.000
Abdomen	4 (1.4%)	0	0.412

^aEach patient may have had more than one site of pain.

Table 4. Quality of Pain and Associated Symptoms Among the Chronic and Subacute Pain Groups^a

	Chronic Pain, n = 292	Subacute Pain, n = 134	P Value
Burning pain	80 (27.4%)	26 (19.4%)	0.099
Pressure pain	42 (14.4%)	20 (14.9%)	1.000
Sharp pain	32 (11.0%)	10 (7.5%)	0.343
Dull pain	36 (12.3%)	6 (4.5%)	0.019
Dagger pain	12 (4.1%)	2 (1.5%)	0.265
Persistent pain	58 (19.9%)	14 (10.4%)	0.023
Night pain	24 (8.2%)	20 (14.9%)	0.048
Morning pain	22 (7.5%)	18 (13.4%)	0.079
Increasing pain	18 (6.2%)	4 (3.0%)	0.254
Intolerable pain	30 (10.3%)	6 (4.5%)	0.070
Pain during sleep	20 (6.8%)	10 (7.5%)	0.979
Anxiety	104 (35.6%)	38 (28.4%)	0.336
Depression	66 (22.6%)	22 (16.4%)	0.103
Fear	4 (1.4%)	2 (1.5%)	1.000
Fatigue	54 (18.5%)	26 (19.4%)	0.929

^aEach patient may have had more than one form of pain or associated symptoms.

the United Kingdom were women. Chronic pain appears to have a direct relationship with age, and is more common among elderly people (13). In our study, the patients with chronic pain were older than those with subacute pain (57.2 ± 15.3 vs. 53.5 ± 15.9 y; $P = 0.022$).

Chronic pain, especially lower back pain, is associated with increased levels of obesity (19, 20). Evidence indicates that the positive relationship between obesity and chronic pain is partially imposed by the over-loading of weight-bearing joints, including the spine, hip, and knee (21). Nonetheless, Brox et al. (22) found that sex, age, height, and body weight were not significantly different between the patients with subacute and chronic low back pain. In our study, body weight was not significantly differ-

ent between the two groups, but the patients with chronic pain had a higher BMI than those with subacute pain ($P = 0.010$).

The most frequent site of pain in the patients who referred to the pain clinic in the present study was the lower back (62.4%), followed by pain in the leg and foot (39.9%), knee (24.4%), and hip (18.8%). In the study by Torrance et al. (2006) (3), the most common sites of pain were the back (69.9%), leg and foot (64.6%), neck and shoulder (62.6%), and hip (42.2%). Nevertheless, most of the patients complained of pain in more than one site. Boulanger et al. (2007) (23) in Canada reported a similar pattern in the body sites of non-cancer-related chronic pain, and cited that the most common sites were the lower back, leg, knee, neck,

Table 5. Pain Severity Measured by the Numerical Rating Scale for the Chronic and Subacute Pain Groups

	Chronic Pain, n = 292	Subacute Pain, n = 134	P Value
Maximum severity reported	8.89 ± 1.47	8.33 ± 1.78	0.002
Minimum severity reported	3.42 ± 1.85	3.18 ± 1.86	0.205
Mean pain severity	6.26 ± 2.31	5.67 ± 2.33	0.015

head, and hip (in order).

In our study, the patients reported various qualities of pain, such as burning (24.9%), persistence (16.9%), and pressure (14.6%) (Table 4). Most pain qualities were similar between the chronic and subacute pain groups, except for dull and persistent pain, which was more common in the chronic pain group ($P < 0.05$). Different pain qualities can affect the sensation of pain and the psychological aspects of pain perception. For example, Jensen et al. (24) reported that particular pain qualities including sharpness, sensitivity, and itchiness appear to play a substantial and exclusive role in the sensation of pain and global pain severity and unpleasantness.

The most common symptoms associated with pain were anxiety, depression, fatigue, and fear in the present study; there were no significant differences between the two study groups in this regard (Table 4). Some studies have found similar features (25, 26). For instance, Bair et al. (26) concluded that the coexistence of chronic pain with depression and anxiety was strongly related to more severe pain, increased disability, and poorer health-related quality of life. In their study, 54% of the patients reported pain only, 20% complained of pain concomitant with depression, 3% had pain and anxiety, and 23% suffered from pain, depression, and anxiety.

In our study, mean pain severity was higher in the chronic pain group (numerical rating scale = 6.26 ± 2.31) than in the subacute pain group (5.67 ± 2.33) ($P = 0.015$). In the study by Torrance et al. (3), mean pain severity was 5 ± 1.5 on the numerical rating scale. Bair et al. (26) showed the severity of 5.3 ± 0.6 in their chronic pain patients and reported that it increased with the presence of anxiety or depression.

5.1. Conclusions

Our study revealed that a notable percentage (31.5%) of the patients referring to the pain clinic complained of experiencing pain in the preceding 12 weeks (subacute pain). These patients were somewhat different from those presenting with chronic pain vis-a-vis demographic and clinical features. About 59% of the patients were women. The patients with chronic pain were older than those with subacute pain and had higher BMIs. Occupational status was also different between the two groups, with self-

employment being less frequent among the chronic pain group. The patients with chronic pain had a higher prevalence of opium addiction. The most commonly reported site of pain for all patients was the lower back, followed by pain in the leg and foot, knee, hip, and neck. There were no differences in terms of the pain sites between the two groups, except for knee pain, which was more common in the chronic pain group. The patients with chronic pain had a higher frequency of obscure and persistent pain, while those with subacute pain experienced more night pain.

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Footnotes

Authors' Contribution: Seyed Masoud Hashemi conducted the study and supervised the project. Ramin Rohanifar collected all data from patients and contributed to the research design planning and manuscript writing. Rasoul Azarfarin contributed to the manuscript writing and statistical analyses. Seyed Sajjad Razavi contributed to the research design planning and data collection. Sirous Momenzadeh contributed to the manuscript writing, data collection, and submission of the manuscript.

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