# Assessment of first-time attendees at a pain clinic using a pain inventory tool

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## ABSTRACT

**Aims:** Pain presents a complex challenge affecting the quality of life of over a million adults annually. Understanding the variety and distribution of pain types is vital for effective management and intervention strategies. This study aimed to assess the characteristics and distribution of pain among first-time attendees at a pain clinic using the Brief pain inventory (BPI).

**Methods:** A cross-sectional survey was conducted with 100 adult outpatients at the pain clinic of the İstanbul Training and Research Hospital from July to November 2012. The BPI was administered face-to-face and demographic data were collected. Individuals under 18 years of age, mentally retarded, previous pain clinic attendance, cancer pain, or diagnosed rheumatic diseases was excluded. Written informed consent was obtained from all participants. Descriptive statistics were used to describe the means, standard deviations, and frequency distributions.

**Results:** The study included 100 adult patients with a mean age of 46.4, predominantly female (65%), who sought treatment for various pain complaints at a pain clinic. The majority reported throbbing (41% knee, 31% lumbar, and 65% shoulder) and exhausting pain (74% knee, 73% lumbar, and 65% shoulder), with significant proportions experiencing constant pain, especially in the knee (82%) and lumbar region (81%). Regular analgesic use was noted in 54% of the patients, with 65% requiring daily medication, indicating high demand for pain management. Despite treatment, 90% expressed the need for stronger pain relief and 50% reported side effects from analgesics. Various nonpharmacological methods have been used, such as hot compression (38%) and relaxation techniques (30%).

**Conclusion:** The study reveals the significant pain burden among first-time pain clinic patients, with throbbing and exhausting sensations prevalent in knee and lumbar regions. The extensive use of analgesics and need for stronger pain relief indicate ongoing pain management challenges. The adoption of nonpharmacological methods highlights the need for a multifaceted approach. These findings emphasize the necessity of tailored, multidimensional pain management strategies for enhanced patient care and quality of life.

**Keywords:** Brief pain inventory (BPI), pain assessment, pain clinic, outpatient pain characteristics

## INTRODUCTION

The pervasive nature of pain, especially chronic pain, presents a significant global challenge to the healthcare system. The burden of chronic pain extends beyond an individual's physical and emotional suffering to substantial socioeconomic costs, with annual expenditures in the United States ranging between $550 and $625 billion. These costs encompass direct healthcare expenses as well as indirect implications such as diminished work productivity, reduced tax revenue, legal costs, and disability benefits.[1] On average, current treatment modalities offer a 30-40% reduction in pain intensity and benefit less than half of those treated, leaving a majority to endure ongoing pain that substantially hampers their quality of life and induces considerable physical and psychological strain.[2]

Healthcare providers and the public usually assume that pain originates from a pathological condition. Consequently, the standard procedure involves exhaustive physical examinations and diagnostic tests to identify a "pain generator".[3] However, when organic issues are not detected, the healthcare system often attributes symptoms to psychological factors, perpetuating a binary view of pain as either somatic or psychogenic.[4] This outdated perspective, rooted in historical medical practice since Descartes's time, does not align with contemporary research or the current understanding of chronic pain.[5]

To adequately manage chronic pain, a comprehensive evaluation approach that incorporates the biological causes of pain and

a thorough assessment of the individual's psychosocial and behavioral contexts is required. This includes understanding the patients' emotional state, their perception and cognitive evaluation of symptoms, and the social dynamics surrounding their condition. A multifactorial perspective of chronic pain acknowledges its complexity and various influences on an individual's experience and functional capacity within the context of chronic pain.[4]

The Brief Pain Inventory (BPI) is a scientifically validated questionnaire that is widely used to measure both the intensity of pain and the degree to which pain hampers patients' daily functions. Originally developed by Cleeland and Ryan[6] in 1991, the BPI has become an essential tool for clinical pain assessment and is utilised globally in a variety of healthcare settings.

The BPI is renowned for its balanced focus on both quantitative and qualitative aspects of a patient's pain experience. It requires patients to score their pain on a scale of 0 to 10, where 0 signifies "no pain" and 10 indicates "pain as severe as imaginable." This rating was accompanied by enquiries about pain location, quality, and relief. Furthermore, the BPI evaluates the consequences of pain on various aspects of life, including mood, mobility, work, social relationships, sleep, and the overall quality of life. Patients can report their pain severity at four different points: "at its worst," "at its least," "on average," and "" right now over the past 24 hours.

This study aimed to evaluate the pain characteristics of patients who attended a pain clinic for their initial consultation. BPI measures how much pain has interfered with seven daily activities, including general activity, walking, work, mood, enjoyment of life, relations with others, and sleep. This evaluation was performed using the BPI, with a focus on assessing the severity of pain and its impact on patients' daily activities. This study sought to elucidate the distribution of pain experiences within this cohort, thereby facilitating the refinement of pain management strategies.

## METHODS

### Study Design

This study was a cross-sectional assessment conducted at the Department of Anesthesiology and Reanimation, İstanbul Training and Research Hospital, between July and November 2012. This study aimed to administer the BPI through face-to-face interviews with participants attending a pain clinic for the first time.

### Study Population

This study included 100 outpatients aged ≥18 years. The exclusion criteria were individuals below 18 years of age, those with mental retardation, prior attendance at any pain clinic, current cancer pain, or a diagnosis of rheumatic diseases. Demographic data, including age, sex, and occupation, were systematically collected from all eligible participants.

### Ethical Considerations

Institutional approval was obtained in this thesis study. Since this study is produced from a thesis before 2020, ethics committee approval is not required. This article has been written in accordance with the principles of Helsinki Declaration. The purpose of the study was explained to the participants and informed consent was obtained in writing.

### Statistical Analysis

Statistical analyses were performed using NCSS (Number Cruncher Statistical System) 2007 Statistical Software (Utah, USA). Descriptive statistical methods, including means, standard deviations, frequency distributions, and percentages were used to evaluate the data.

## RESULTS

In this study, 100 individuals presenting with pain complaints during their initial visit to the Pain Clinic were included. The composition of the patient population was 35% male (n=35) and 65% female (n=65). The mean age of the patients was found to be 46.4 years, range: 21-76 years). The average age of female patients was 46.78 years (range, 21-76 years), while for male patients, the mean age was 46.68 years (range, 21-69 years). Regarding marital status, 18% of the patients (n=18) were never married, 75% (n=75) were married, 4% (n=4) were widowed, and 3% (n=3) were divorced.

Regarding educational background, 10% of the patients (n=10) were not literate, 3% (n=3) were literate without formal education, 40% (n=40) had primary school education, 8% (n=8) had middle school education, 23% (n=23) had completed high school, 4% (n=4) had some college education, 10% (n=10) were university graduates, and 2% (n=2) held doctoral degrees.

Employment status was reported as follows: working full-time outside the home by 29.3% (n=29), part-time by 3% (n=3), working at home by 27.3% (n=27), retired by 18.2% (n=18), unemployed by 12.1% (n=12), and other situations accounting for 10.1% (n=10).

Pain complaints were as follows: knee pain was reported by 39% of patients (n=39), back pain by 26% (n=26), shoulder pain by 17% (n=17), head pain by 15% (n=15), hip pain by 13% (n=13), ankle pain by 9% (n=9), back pain by 8% (n=8), wrist pain by 8% (n=8), neck pain by 7% (n=7), elbow pain by 5% (n=5), abdominal pain by 5% (n=5), and chest pain by 1% (n=1).

The distribution of pain among the participants was evaluated (Table 1).

| Table 1. Patient reported pain experiences | | |
|---|---|---|
| Question | n | % |
| Have you experienced any pain due to your current condition? | 96 | 96 |
| Was pain one of your complaints when you first received your diagnosis? | 91 | 91 |
| Have you undergone any surgery in recent months? | 28 | 28 |
| Have you experienced any pain in the past week, other than these? | 87 | 87 |
| Have you taken any medication for pain in the past week? | 87 | 87 |
| Do you feel as though you have a type of pain that is present every day and requires treatment? | 83 | 83 |
| n:number | | |

The patterns of analgesic use among the study participants were examined. It was reported that 54 individuals (54%) regularly took medication for pain, whereas 46 participants (46%) took medication only when necessary. Within a 24-hour period, the frequency of analgesic intake was as follows: 65 individuals (65%) took medication daily, 21 (21%) took it once or twice a day, 12 (12%) three to four times a day, and 2 (2%) five to six times a day. Ninety participants (90%) indicated a need for stronger pain medication and 47 (47%) reported a need for more

analgesics than prescribed by their doctors. Twenty individuals (20%) believed that taking a large quantity of pain relievers protected them from pain, whereas 50 (50%) experienced side effects from pain relief. Moreover, 68 participants (68%) felt the need for more information regarding analgesics. In efforts to alleviate pain, non-pharmacological methods were also utilized: 38 individuals (38%) used hot compresses, 14 (14%) used cold compresses, 30 (30%) practiced relaxation techniques, 5 (5%) engaged in distraction activities, and 13 (13%) used other methods.

Assessment of the characteristics of pain and its implications are documented and presented in Tables 2-5.

### Table 2. Average pain intensity among patients

| Description (n=100) | Mean (±SD) | Min. | Max. |
|---|---|---|---|
| Time elapsed since initial diagnosis | 24.8 (±47.32) | 1 | 276 |
| Worst pain experienced in the past week | 7.5 (±2.24) | 0 | 10 |
| Least severe pain experienced in the past week | 5.18 (±3.03) | 0 | 10 |
| Average pain experienced over the past week | 6.33 (±2.41) | 0 | 10 |
| Current pain intensity | 5.94 (±2.97) | 0 | 10 |
| Reduction in pain due to medication/ treatment in the past week | 4.39 (±2.82) | 0 | 10 |
| n: Number, SD: Standart deviation, Min: Minimum, Max: maximum | | | |

The distribution of pain intensity among participants was evaluated (Table 2).

The distribution of the impact of pain on daily activities of the participants was evaluated (Table 3).

### Table 3. Impact of pain on daily activities in the past week

| Daily activity affected by pain (n=100) | Mean (±SD) | Min. | Max. |
|---|---|---|---|
| General activity | 6.79 (±2.95) | 0 | 10 |
| Mood (emotional state) | 6.9 (±2.81) | 0 | 10 |
| Walking ability | 5.77 (±3.37) | 0 | 10 |
| Normal work (including home and outside work) | 6.92 (±2.87) | 0 | 10 |
| Relationships with other people | 5.48 (±3.09) | 0 | 10 |
| Sleep | 6.41 (±3.07) | 0 | 10 |
| Enjoyment of life | 6.66 (±3.20) | 0 | 10 |
| n: Number, SD: Standart deviation, Min: Minimum, Max: maximum | | | |

The duration of pain relief delivered through analgesic use was also assessed (Table 4).

The analysis of the patients' pain characterisation across different body regions provided a comprehensive breakdown of the data (Table 5).

### Table 4. Duration of pain relief and type distribution

| Duration until pain recurrence after medication | n | % |
|---|---|---|
| Medication did not help | 20 | 20 |
| 1 hour | 2 | 2 |
| 2 hours | 15 | 15 |
| 3 hours | 8 | 8 |
| 4 hours | 18 | 18 |
| 5-12 hours | 19 | 19 |
| >12 hours | 14 | 14 |
| Did not take pain reliever | 4 | 4 |
| Effectiveness of treatment (e.g., medication, surgery, radiation, prosthetic device) | n | % |
| Yes | 20 | 20 |
| No | 80 | 80 |
| Relation to primary treated condition | n | % |
| Yes | 88 | 88 |
| No | 12 | 12 |
| From another medical problem unrelated to primary disease (e.g., arthritis) | n | % |
| Yes | 6 | 6 |
| No | 94 | 94 |
| n: Number | | |

## DISCUSSION

This study is one of the minorities to examine the diverse nature and severity of pain among individuals attending pain clinics. The patient population in this study exhibited a predominance of female patients, which is consistent with the broader consensus in pain literature that women are more likely to seek help for pain. The average age of male and female patients is nearly equal, indicating that pain affects adults in mid-life similarly across genders. However, the slightly higher age range for women may suggest a greater exposure or delayed reporting of pain symptoms. Most patients are

### Table 5. Distribution of pain descriptors across different body regions

| Pain character | Knee | Lumbar | Shoulder | Headache | Hip | Ancle | Back | Wrist |
|---|---|---|---|---|---|---|---|---|
| Tolerable | 6 (15%) | 7 (27%) | 4 (24%) | 1 (7%) | 4 (31%) | 1 (11%) | 2 (25%) | 1 (13%) |
| Throbbing | 16 (41%) | 8 (31%) | 11 (65%) | 12 (80%) | 5 (39%) | 6 (67%) | 3 (38%) | 5 (63%) |
| Burning | 5 (13%) | 3 (12%) | 4 (24%) | 2 (13%) | 3 (23%) | 2 (22%) | 1 (13%) | 1 (13%) |
| Stabbing | 16 (41%) | 12 (46%) | 9 (53%) | 3 (20%) | 6 (46%) | 3 (33%) | 3 (38%) | 3 (38%) |
| Soft | 2 (5%) | 4 (15%) | 1 (6%) | 1 (7%) | 3 (23%) | 0 (0%) | 0 (0%) | 1 (13%) |
| Exhausting, draining | 29 (74%) | 19 (73%) | 11 (65%) | 12 (80%) | 13 (100%) | 7 (78%) | 4 (50%) | 5 (63%) |
| Piercing | 12 (31%) | 5 (19%) | 7 (41%) | 3 (20%) | 4 (31%) | 1 (11%) | 3 (38%) | 2 (25%) |
| Constantly bothersome | 32 (82%) | 21 (81%) | 14 (82%) | 9 (60%) | 9 (69%) | 6 (67%) | 5 (63%) | 6 (75%) |
| Numbness | 23 (59%) | 13 (50%) | 10 (59%) | 6 (40%) | 10 (77%) | 5 (56%) | 1 (13%) | 4 (50%) |
| Terrible | 20 (51%) | 13 (50%) | 10 (59%) | 10 (67%) | 8 (62%) | 7 (78%) | 7 (88%) | 4 (50%) |

married, which could be due to an age-related increase in pain conditions or the support structure of marriage encouraging patients to seek medical advice. The educational background of patients is diverse, with a notable proportion lacking formal education. This emphasizes the importance of patient education in managing pain, as those with higher education levels may have better access to information and resources for pain management. The findings align with the global burden of chronic pain, with a higher prevalence of pain in women (65%). This aligns with existing research, which indicates that women are more likely to report and experience pain more intensely. The most common descriptors of pain were 'throbbing' and 'exhausting', particularly in the knee (41%) and lumbar regions (73%), highlighting the significant discomfort associated with these areas.

A global study conducted by the World Health Organization across Asia, Europe, Africa, and the Americas found that 21.5% of primary healthcare services reported chronic pain (64). In Italy, 91.2% of inpatients experienced pain.[7] Hasse et al.[8] identified headaches as the third most common reason for visiting family physicians. Despite no clear consensus on the prevalence of pain, it is universally recognised that pain affects all individuals. Sociocultural and cognitive factors influence the location, expression, intensity, and coping methods for pain, and manifest differently across cultures and in various forms. Sertel Berk et al.[9] emphasised in a literature review the significance of subjective beliefs about pain control, beliefs about pain, and the behaviours exhibited in coping with pain, as well as the effectiveness of these behaviours.

Our analysis revealed that 54% of the patients consistently relied on analgesics, with 65% requiring daily pain management, emphasising the need for more effective pain management. The finding that 90% of patients desired stronger pain medication highlights the limitations of current pain control measures. Moreover, 50% of the patients experienced adverse effects from analgesics, suggesting a gap in the effectiveness and tolerability of pain treatment options.

In our study, we found that 54% of the participants regularly took medication for pain, whereas 46% did so when needed. Regarding dosage, 65% of the participants took medication every 24 h, 21% once or twice a day, 12% three or four times a day, and 2% five or six times a day. Additionally, 90% of the participants felt the need for stronger medication, 47% required more analgesics than prescribed, and 20% believed that excessive use of painkillers was protective against pain. Furthermore, 50% of the participants experienced side effects, and 68% sought more information on analgesics. To manage pain, 38% of participants used hot compresses, 14% used cold compresses, 30% used relaxation techniques, 5% engaged in distraction activities, and 13% used other methods. Our study also found varying rates of nonpharmacological interventions, such as hot compresses (38%) and relaxation techniques (30%), indicating the potential benefits of a multimodal approach for pain management. However, the impact of these methods on pain relief was not the focus of this study and warrants further investigation.

This study found that most patients experienced persistent pain in various body regions, with the knee and lumbar regions being the most affected. This persistent nature of pain could have a significant impact on the quality of life and healthcare utilisation. The prevalence of 'piercing' pain in the knee and

elbow suggests potential joint or musculoskeletal issues, while the 'numbness' reported in the hip region may indicate neuropathic pain requiring a different treatment approach. This study also highlights the global prevalence of pain, which is influenced by sociocultural and cognitive factors, as evidenced by the diverse descriptors used by patients to describe their pain.

Pain is a common occurrence, with studies revealing that over 50% of the population experiences it.[10] Factors such as social, cultural, and economic changes as well as longer life expectancy may contribute to this high prevalence.[11] An epidemiological study in Sweden showed that 54% of the population suffers from chronic pain. In Turkey, headaches, back pain, and lumbar pain are among the most common reasons for patient visits to clinics.[12] Japanese research on musculoskeletal pain indicated that neck and shoulder pain was more common than other types of pain, followed by lumbar pain.[13,14] In Iran, 22.7% of musculoskeletal complaints in rural areas are related to shoulder pain.[15]

In the US, approximately one-fourth of adults experience daily lumbar pain within a three-month period, while 7.6% report severe lumbar pain at least once annually.[16] Eliot et al. discovered that back and joint pain were the most frequent complaints, with back pain more common among younger age groups and males, and joint pain was common in older age groups and females. Another study found that headache was the most common complaint among adolescents. In our study, the areas most affected by pain were the knee, lumbar, and shoulder regions. Our results indicate that pain in the shoulder and lumbar regions was more intense than that in other areas and significantly impacted work capabilities. Although the literature on pain often focuses on prevalence, studies examining pain intensity are rare; therefore, we cannot compare our results in this regard. A study on pain prevalence found that 91 patients (96.7%) used medication to relieve their pain and 67.8% used daily analgesics. In older individuals, only analgesic use as a pain-relief method has been reported, with a prevalence ranging from 27% to 44.[17]

### Limitations

The limitations of our study include its cross-sectional design and reliance on self-reported measures, which may have introduced a bias. Additionally, the lack of distinction between acute and chronic pain in our assessment may have masked the differences in pain patterns. Future studies could benefit from longitudinal designs and objective pain measures to enrich the understanding of pain experiences.

## CONCLUSION

The key findings of this study underscore the importance of understanding pain and its various expressions in different demographic groups. By focusing on pain in crucial areas, such as the knee, lower back, and shoulder, as well as emphasising the reliance on medication and non-pharmacological methods for pain relief, this research provides valuable information for improving pain management. In conclusion, the significant variations in how people experience, and report pain highlight the need for a personalised, patient-centred approach to pain management. By considering both medication and nonmedication pain relief options, healthcare providers can develop a comprehensive treatment plan that considers the

unique experiences of individuals with pain. Such an approach not only improves patient outcomes but also informs the development of more effective pain management strategies and the allocation of healthcare resources to enhance patient well-being.

## ETHICAL DECLARATIONS

### Ethics Committee Approval

Institutional approval was obtained in this thesis study. Since this study is produced from a thesis before 2020, ethics committee approval is not required.

### Informed Consent

All patients signed and free and informed consent form.

### Referee Evaluation Process

Externally peer-reviewed.

### Conflict of Interest Statement

The authors have no conflicts of interest to declare.

### Financial Disclosure

The authors declared that this study has received no financial support.

### Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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