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Pain Management in Cancer Patients

Sana Seghiour
sana.seghiour@cu-barika.dz
Si El Haouès University Center of Barika, Algeria
Iliyes lahri
iliyes.lahri@univ-bba.dz
Mohamed El Bachir El Ibrahimi University of Bordj Bou Arréridj
https://orcid.org/0009-0000-8455-3179

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Abstract
Objectives: This study aimed to identify the level of pain management among cancer patients.
Methodology: The study was conducted on a purposive sample of 100 male and female cancer patients receiving treatment at **Al-Zahrawi Hospital** in M'Sila, Algeria. Data were collected using the **Pain Management Strategies Questionnaire** developed by **Martin Stoffel et al. (2013)**, specifically the Arabic version translated by **Taoulmit Shiraz (2024)**. After confirming the instrument's psychometric properties in the current study setting, the data were analyzed using the **Statistical Package for the Social Sciences (SPSS), Version 22**. Descriptive and inferential statistical methods, including means, standard deviations, and significance tests, were employed to examine the study hypotheses. The descriptive research design was adopted as the most appropriate approach for the nature of the study.
Results: The findings indicated a **moderate level of pain management** among cancer patients, with a mean score of **96.33**. The results also revealed **no statistically significant differences** in pain management attributable to gender (male/female) or to the duration of illness.
Keywords: Pain Management; Cancer; Cancer Patients.

Problem Statement

In recent years, cancer has become increasingly widespread, reaching alarming levels worldwide. According to recent estimates, approximately **20 million new cancer cases** were reported globally in **2022**. The **World Health Organization (WHO)** has warned that the number of new cancer cases is expected to rise to **35 million by 2050**, representing a **77% increase** compared with the number recorded in 2022.

This growing prevalence has been attributed to rapid social and economic changes that have influenced modern lifestyles, including increased tobacco use, physical inactivity, unhealthy dietary habits, and other factors associated with a higher risk of developing cancer (Brahimiya, 2018, p. 13).

One of the greatest challenges faced by cancer patients is the severe pain associated with the disease. Unlike many other forms of pain, cancer-related pain is often accompanied by profound psychological distress, making diagnosis and treatment more complex. Chronic pain can

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significantly disrupt patients' lives, leading them to abandon their jobs, withdraw from daily activities, and become socially isolated from family and friends. Consequently, their lives may revolve entirely around coping with pain due to its intensity and the difficulty of controlling it. Cancer pain may result directly from the disease itself, as malignant tumors compress and invade surrounding tissues, causing inflammation and tissue damage. It may also arise as a consequence of cancer treatments. Chemotherapy and radiotherapy are associated with numerous painful side effects, including mucositis, peripheral neuropathy, constipation, diarrhea, nausea, vomiting, and abdominal cramps (Taoulmit, 2024, p. 9).

In this context, **George Engel** (1977) emphasized the importance of interpreting pain through a **biopsychosocial perspective**, arguing that pain should be understood in terms of biological, emotional, cognitive, and social factors rather than solely as a consequence of physical injury (Chouikh, 2024, p. 32).

Accordingly, increasing attention has been devoted to **pain management**, with researchers seeking effective strategies to help cancer patients control and alleviate pain. **Melzack**, one of the leading theorists in pain management and the founder of the **Gate Control Theory**, defined pain management as an individual's ability and strategy to regulate pain and reduce the psychological distress associated with it through relaxation, acceptance, cognitive and psychological coping strategies, physical activity, social support, and appropriate pharmacological treatment (Abdel Hay, 2022, p. 273).

An essential first step in pain management is **pain assessment**, which constitutes the cornerstone of effective intervention. The **World Health Organization** developed an analgesic ladder based on pain intensity, recommending appropriate pharmacological interventions, including opioid medications when necessary. In addition, psychological and cognitive-behavioral interventions have demonstrated considerable effectiveness in pain management through specialized therapeutic techniques. For instance, the findings of **Mousavi et al. (2021)** showed that self-management interventions have a positive effect on reducing pain severity among cancer patients (Taoulmit, 2024, p. 10).

Despite these advances, cancer remains a chronic disease that generally does not disappear overnight. Rather, it is a long-term condition in which suffering often persists throughout the course of the illness and, in many cases, continues until death, although recovery remains possible for many patients.

Against this background, the present study seeks to provide further insight into pain management among cancer patients by addressing the following main research question:

- What is the level of pain management among cancer patients?

This central question gives rise to the following sub-questions:

- Are there significant differences in pain management among cancer patients according to gender?
- Are there significant differences in pain management among cancer patients according to the duration of illness?

Study Hypotheses

- The level of pain management among cancer patients is high.

- There are statistically significant differences in pain management among cancer patients attributable to gender.
- There are statistically significant differences in pain management among cancer patients attributable to the duration of illness.

Significance of the Study

The significance of the present study lies in the following aspects:

- It focuses on an important segment of society, namely **cancer patients**, whose quality of life deserves continuous attention and support.
- It highlights the importance of **pain management** as a fundamental aspect of patient care, helping patients cope with pain effectively while reducing the risk of excessive dependence on analgesic medications.
- It draws the attention of healthcare professionals and specialists involved in the care of cancer patients to the importance of pain management as a key component of comprehensive treatment and supportive care.

Objectives of the Study

The present study aims to:

- Identify the level of pain management among cancer patients.
- Examine differences in pain management among cancer patients according to **gender**.
- Examine differences in pain management among cancer patients according to the **duration of illness**.

Operational Definition of the Study Variable

Pain Management

Pain management is defined as an individual's response to a set of stimuli aimed at alleviating pain. It encompasses several dimensions, including **health awareness, social participation, coping with pain, physiological symptoms of pain, and psychological support** (Yassin et al., 2017, p. 7).

Operational Definition: In the present study, pain management refers to the total score obtained by participants on the **Pain Management Strategies Scale**, specifically the Arabic version translated by **Taoulmit Shiraz (2024)**. This score reflects the individual's level of pain management strategies.

Previous Studies

Taoulmit (2024) conducted a study to examine the impact of **health locus of control** and **psychological hardiness** on pain management among cancer patients. The study was carried out on a sample of **93 cancer patients** using several instruments, including the **Numeric Pain Rating Scale**, the **Multidimensional Health Locus of Control Scale**, the **Psychological Hardiness Inventory**, and the **Pain Management Strategies Questionnaire**. A descriptive correlational design was employed. The findings revealed that cancer patients predominantly exhibited an **external health locus of control** and a **low level of psychological hardiness**. In addition, **prayer** and **ignoring pain** were identified as the most frequently used pain management strategies. The results further indicated a significant relationship between external

health locus of control and psychological hardiness, as well as a significant effect of both variables on the pain management strategy of prayer.

Zouiba and Maamria (2022) investigated pain management and psychological hardiness among patients with **leukemia**. The study included **60 patients** and utilized the **Pain Management Inventory** and the **Psychological Hardiness Scale**. Using a comparative descriptive approach, the researchers found no significant gender differences in pain management, no differences attributable to educational level, and no differences based on the duration of illness. Furthermore, no significant differences were observed across levels of psychological hardiness regarding pain management through medication, hot and cold compresses, or relaxation. However, significant differences were found in the use of treatment, massage, and distraction strategies according to levels of psychological hardiness.

Abdel Hay, Mahmoud, and Zeidan (2022) examined **psychological energy** and **hopelessness** as predictors of pain management among cancer patients. The study was conducted on **200 male and female cancer patients** using the **Psychological Energy Scale**, the **Beck Hopelessness Scale**, and the **Pain Management Scale** within a comparative descriptive framework. The findings demonstrated positive correlations between pain management and both psychological energy and hopelessness. Significant effects of **gender** on pain management were also identified, as well as significant differences according to the **stage of cancer** (Stage II versus Stage III). Moreover, pain management could be predicted from psychological energy and hopelessness.

Faleq (2021) investigated the effectiveness of a **proposed cognitive therapeutic program** for pain management among cancer patients. The study involved **two female cancer patients** and adopted a **single-case experimental design** based on **Aaron Beck's cognitive model**. The results indicated that repeated implementation of the therapeutic program led to a reduction in pain intensity in both patients. The cognitive intervention proved effective in pain management through techniques such as **reinterpretation of pain sensations, attention distraction, identification of automatic thoughts, and self-monitoring**. Overall, the proposed cognitive treatment plan produced a moderate improvement in both cases.

Mimi et al. (2012) evaluated the effectiveness of a **pain management program** on pain severity, medication use, and non-pharmacological pain management strategies among **breast cancer patients**. The experimental study included **20 participants**. The findings emphasized the importance of educating cancer patients on effective pain management to enhance their knowledge and correct misconceptions regarding cancer pain management (Yassin et al., 2018, p. 9).

Panel et al. (2010) explored the essential dimensions of **satisfaction with pain management** from the perspectives of cancer patients. The study involved **33 cancer patients** and employed the **Pain Severity Scale** together with **unstructured interviews**, following a descriptive research design. The results showed that **55%** of participants were highly satisfied with pain management overall. Four major themes contributing to high-quality pain management emerged: appropriate pain treatment, partnership and support from the healthcare team, effective pain control, and the availability of a reliable support network (Taoulmit, 2024, p. 34).

Guadalupe et al. (2007) examined pain management among patients with **chronic pain** and its relationship with daily activities. The study included **151 patients** and adopted a descriptive correlational design. The results indicated that **70%** of participants experienced inadequate pain management. A significant negative correlation was found between effective pain management and limitations in daily activities. No gender differences were observed regarding pain management or activity restriction (Zouiba & Maamria, 2022, p. 63).

Beck and Falkson (2001) investigated the factors influencing **cancer pain management in South Africa**. The study included **263 cancer patients** and employed an **ethnographic research design** based on document analysis, participant observation, and interviews. The findings demonstrated that **cultural beliefs and practices** constitute an essential context for understanding cancer pain and its management. Cultural differences were identified in perceptions of cancer, expectations regarding pain, pain tolerance, and ways of expressing pain. The study concluded that cultural norms, knowledge, available resources, communication, and effective relationships between patients and healthcare providers facilitate successful pain management, whereas their absence creates significant barriers to effective pain control (Taoulmit, 2024, p. 32).

Commentary on Previous Studies

A review of the previous literature indicates that the present study shares several similarities with, while also differing from, earlier research in terms of objectives, variables, methodology, instruments, and findings.

The current study is closely aligned with **Taoulmit (2024)** in its focus on **pain management** among **cancer patients**. Both studies adopted the **descriptive research design**, and the present study employed the same **Pain Management Strategies Questionnaire** used by Taoulmit. However, the two studies differ in their additional variables. Taoulmit examined **health locus of control** and **psychological hardiness**, using supplementary instruments including the **Psychological Hardiness Inventory**, the **Numeric Pain Rating Scale**, and the **Multidimensional Health Locus of Control Scale** on a sample of **93 patients**. The study concluded that **prayer** and **ignoring pain** were the most commonly used pain management strategies among cancer patients.

Similarly, the study by **Zouiba and Maamria (2022)** shared the present study's focus on **pain management** and involved patients diagnosed with cancer, specifically **leukemia**. Nevertheless, it differed in its objective by examining the relationship between pain management and **psychological hardiness** within a comparative framework. It also employed different instruments, namely the **Pain Management Inventory** and the **Psychological Hardiness Scale**, on a sample of **60 patients**. Among its principal findings was the absence of significant gender differences in pain management among leukemia patients.

The study conducted by **Abdel Hay et al. (2022)** also investigated **pain management** among **cancer patients**, making it comparable to the present research. However, its primary objective was to examine **psychological energy** and **hopelessness** as predictors of pain management. The researchers used the **Psychological Energy Scale**, the **Beck Hopelessness Scale**, and the **Pain**

Management Scale, adopting a **comparative descriptive design**. The study concluded that pain management was positively associated with both psychological energy and hopelessness.
In contrast, **Faleq (2021)** examined pain management through the implementation of a **cognitive therapeutic intervention** designed specifically for cancer patients. The study was conducted on **two clinical cases** using a **single-case design**. While both studies focused on pain management among cancer patients, they differed substantially in research purpose, methodology, and instruments. Faleq's intervention, based on **Beck's cognitive model**, demonstrated a positive effect in reducing pain intensity.
The study by **Mimi et al. (2012)** also focused on **pain management** among **breast cancer patients**, making it comparable in terms of the main variable and target population. However, its objective was to evaluate the effectiveness of a structured **pain management program** in reducing pain severity and improving both pharmacological and non-pharmacological pain management strategies. The study adopted an **experimental design** involving **20 participants** and concluded that cancer patients should receive education and training to develop effective pain management skills.
Likewise, **Panel et al. (2010)** examined cancer patients' **satisfaction with pain management**, a concept closely related to the variable investigated in the present study. Both studies involved cancer patients and adopted a **descriptive research design**. However, Panel et al. employed different data collection methods, including the **Pain Severity Scale** and **unstructured interviews**. Their findings indicated a generally **moderate level of satisfaction** with pain management.
The study by **Guadalupe et al. (2007)** also corresponds to the current study in its investigation of **pain management** among patients with **chronic illness**, a category that includes cancer. Both studies adopted the **descriptive methodology**. Guadalupe et al. examined pain management in relation to daily activities among **151 patients**, reporting that pain management was generally inadequate and that a high proportion of participants experienced insufficient pain control.
Finally, **Beck and Falkson (2001)** shared the present study's focus on **pain management among cancer patients**. However, their research specifically explored the **factors influencing cancer pain management in South Africa** using an **ethnographic approach** involving **263 patients**. Data were collected through document analysis, participant observation, and interviews. The findings emphasized that **cultural beliefs, cognitive factors, available resources, communication, and relationships between patients and healthcare providers** play essential roles in promoting effective pain management.

Theoretical Framework

1. Definition of Pain Management

Pain management is defined as **"the strategies and efforts exerted by an individual to reduce or overcome pain, whether through behavioral or cognitive strategies"** (Abdel Hay, 2022, p. 365).
It also refers to **"the strategies employed by patients to control their pain, which may include cognitive strategies such as distraction and ignoring pain sensations, or behavioral**

strategies aimed at increasing activity through engagement in alternative activities" (Religioni et al., 2022, p. 3).

According to **Taylor**, pain management is **"the coordination of neurological, cognitive, behavioral, and psychodynamic efforts to modify pain"** (Al-Salem, 2021, p. 11).

Others define pain management as **"physiological, psychological, and behavioral interventions designed to alleviate pain perception and reduce its associated consequences"** (Coons, 2020, p. 1608).

Similarly, it has been described as **"a set of approaches intended to improve the overall pain experience by addressing the cognitive, emotional, behavioral, and social factors that contribute to pain-related distress and disability. These approaches target various domains, including physical functioning, analgesic use, and mood"** (Inter-Agency Task Force, 2019, p. 37).

Pain management has also been conceptualized as **"practices aimed at reducing pain, improving quality of life, and enhancing functional performance"** (Valo, 2012, p. 17).

Furthermore, it is defined as **"enabling patients to achieve their maximum functional potential, thereby promoting independence in managing the impact of pain on their daily lives"** (The British Pain Society, 2010, p. 56).

Fallon and Connell argue that effective pain management depends on **a comprehensive assessment of the patient's characteristics, the nature of the pain, and the individual's response to medication** (Fallon & Connell, 2006, p. 136).

Based on the preceding definitions, it can be concluded that most researchers conceptualize pain management as a collection of **strategies, practices, interventions, or approaches** designed to reduce pain or improve the individual's overall pain experience. Taylor emphasized that pain management involves the coordination of neurological, cognitive, behavioral, and psychodynamic processes to achieve effective pain control.

While some authors have limited pain management strategies to **cognitive and behavioral approaches**, Coons expanded the concept to include **physiological and psychological interventions**. Other definitions adopt an even broader perspective by incorporating **cognitive, emotional, social, and behavioral factors**, all of which are closely related to patient characteristics, the nature of pain, and responsiveness to treatment.

Accordingly, **pain management may be defined as the process of controlling and alleviating pain in order to reduce its severity, enhance comfort, improve quality of life, and optimize functional performance through the integration of physiological, psychological, cognitive, behavioral, and social factors.**

Factors Influencing Pain Management

Numerous factors influence the effectiveness of pain management. Among the most important are the following:

Psychological Factors

Over recent decades, pain management specialists have increasingly recognized the close relationship between **pain and mental health**. Psychological factors play a fundamental role in shaping an individual's perception of pain, response to treatment, and overall ability to

manage pain by influencing treatment adherence and the duration of pain (Inter-Agency Task Force, 2019, p. 37).

Persistent pain also has profound and far-reaching effects on patients' quality of life. It may increase feelings of **anxiety, helplessness, and hopelessness**, the latter being a major risk factor for depression. These psychological conditions influence patients' cognitive appraisal of pain, their expectations regarding illness progression, and their fears of disease worsening. Consequently, emotional distress intensifies, leading to diminished perceived control and less effective pain management.

Personal Factors

Before experiencing chronic pain, individuals possess unique **genetic predispositions** and **learning experiences** that contribute to the development of their personalities. These individual differences significantly influence both the experience of pain and the ways in which people respond to and manage it.

Past experiences enable individuals to develop distinctive coping styles for interpreting information and dealing with stressful situations, avoidance behaviors, and pain itself. These experiences shape their perceptions of pain and influence their behavioral and emotional responses.

Numerous studies have identified **anxiety sensitivity** as an important vulnerability factor for pain. Individuals with high levels of anxiety sensitivity tend to be excessively vigilant toward painful sensations as well as other unpleasant bodily experiences (Turk & Monarch, 2018, p. 9).

Moreover, **Asmundson and Norton (1995)** demonstrated a positive relationship between anxiety and fear, showing that anxiety sensitivity directly intensifies **fear of pain** and indirectly increases **pain-avoidance behaviors**, even after controlling for the direct effects of pain severity (Turk & Monarch, 2018, p. 9).

Social and Cultural Factors

Human beings are inherently social and function within a cultural context from birth. Therefore, understanding an individual's experience of pain without considering its historical and sociocultural context provides only a limited perspective. Beliefs about pain are acquired through previous learning experiences as well as social and cultural transmission.

Social and cultural factors influence not only how patients respond to pain but also how their families and communities perceive and react to their condition. Individuals can learn new pain-related responses by observing how others cope with pain. For example, children acquire beliefs and behaviors related to illness from their parents and from prevailing cultural, environmental, and social norms. Based on these experiences, they gradually develop strategies for avoiding pain and learn socially appropriate ways of responding to it (Turk & Monarch, 2018, p. 9).

Moreover, children's frequent exposure to minor injuries provides important learning opportunities. Adults' reactions to these everyday incidents shape children's future responses by teaching them whether to ignore pain, respond appropriately, or exaggerate their reactions.

A substantial body of empirical research accumulated over several decades has demonstrated the influence of social and cultural factors on pain management. Studies assessing children

experiencing pain have examined indicators of pain management such as pain complaints, school absenteeism, and the frequency of medical consultations (Turk & Monarch, 2018, p. 9). In a study conducted by **Richard (1988)**, children whose parents suffered from chronic pain were found to exhibit pain responses that were more closely associated with pain-related behaviors than those whose parents did not experience chronic pain.

Spiritual Factors

Spiritual practices, particularly **prayer** and the recitation of religious texts, play an important role in pain management, especially in Muslim communities where recitation of the **Holy Qur'an**, remembrance of God (*dhikr*), and supplication are commonly practiced. These activities may serve as distraction techniques that reduce awareness of pain, increase pain tolerance, and alleviate suffering.

Participation in collective religious worship also provides patients with valuable spiritual and social support. Research has shown that involvement in communal religious activities is associated with better mental and physical health.

Conversely, some patients may experience resentment or anger toward God because of their illness, believing that they have been unfairly subjected to severe suffering. Such reactions may reflect spiritual distress and can negatively affect pain management (The Joint Commission on Accreditation of Healthcare Organizations, 2000, p. 6).

Accordingly, patients' spiritual beliefs may substantially influence their health beliefs and their perceived ability to manage pain. Therefore, mental health professionals are encouraged to extend care beyond conventional clinical interventions by providing **spiritual care**, which is not necessarily limited to religious practices. Nevertheless, religious care, when appropriately provided, should always address the patient's broader spiritual needs (The British Pain Society, 2010, p. 27).

Self-Efficacy

Bandura (1991) highlighted the role of **self-efficacy** in pain and pain management through several key propositions (Haddan, 2015, p. 54):

- Patients who believe they are capable of controlling or reducing their pain are more likely to seek information and acquire skills that help them manage pain effectively, while maintaining their daily activities despite experiencing pain.
- A strong sense of self-efficacy reduces expectations of distress, physical tension, and anxiety, thereby contributing positively to pain reduction.
- Individuals with strong and positive self-efficacy beliefs tend to perceive unpleasant stimuli as less threatening, which consequently lowers the intensity of pain they experience.

Empirical Framework

Study Procedures

Research Design

The present study adopted the **descriptive research design**, which is appropriate for describing the phenomenon under investigation, analyzing its characteristics, and expressing the findings quantitatively.

Pilot Study

The pilot study was conducted on a **purposive sample of 60 cancer patients**. The primary objective of this preliminary phase was to examine the suitability of the research instrument and to establish its psychometric properties before administering it to the main study sample.

Table 1. Characteristics of the Pilot Study Sample

Study Variables	Category	Frequency (n)	Percentage (%)
Gender	Male	22	36.6
	Female	38	63.3
Duration of Illness	Less than one year	33	55.0
	More than one year	27	45.0

As shown in **Table 1**, the pilot sample consisted predominantly of **female cancer patients**, who represented **63.3%** of the sample, whereas **male patients** accounted for **36.6%**.

Regarding the **duration of illness**, patients who had been diagnosed with cancer for **less than one year** constituted the majority of the pilot sample (**55.0%**), compared with those who had been living with the disease for **more than one year**, who represented **45.0%**.

Main Study Sample

The **main study sample** was selected using **purposive sampling** and consisted of **100 patients diagnosed with different types of cancer**.

Study Setting

The study was conducted at the **Al-Zahrawi Hospital**, **Oncology Department**, located in **M'Sila Province, Algeria**.

Study Period

The field study was carried out over a three-month period, from **April to June 2026**.

The following tables present the demographic characteristics of the main study sample according to **gender** and **duration of illness**.

Table 2. Distribution of the Main Study Sample by Gender

Study Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	30	30.0
	Female	70	70.0
Total		**100**	**100.0**

As presented in **Table 2**, the study sample included participants of both sexes, with **70% females** and **30% males**. These findings indicate that **female patients constituted the majority of the sample**, suggesting a higher representation of women among the cancer patients included in the present study.

Table 3. Distribution of the Main Study Sample by Duration of Illness

Study Variable	Category	Frequency (n)	Percentage (%)
Duration of Illness	Less than one year	46	46.0
	More than one year	54	54.0
Total		**100**	**100.0**

As shown in **Table 3**, patients who had been diagnosed with cancer for **more than one year** represented the largest proportion of the sample (**54%**), whereas those diagnosed **less than one**

year earlier accounted for **46%**. Although the former group constituted the majority, the latter also represented a substantial proportion of the study sample.

Study Instrument

Pain Management Strategies Questionnaire

Description of the Instrument

The **Pain Management Strategies Questionnaire (PMSQ)** was originally developed by **Rosenstiel and Keefe (1983)**. The original version consisted of **48 items** distributed across **eight dimensions**, with responses recorded on a **7-point Likert scale** ranging from **0 ("Not at all")** to **6 ("Always")**.

The questionnaire has subsequently been translated and adapted into several languages, with a number of abbreviated versions being developed. However, previous studies examining its factorial structure were generally unable to establish a stable and valid factor solution. This limitation led to the development of a **German short version**, which was adopted in the present study.

The abbreviated German version was developed by **Martin Stoffel, Dorota Reis, Daniela Schwarz, and Annette Schröder (2013)**. In this revised version, two dimensions were removed, resulting in a questionnaire comprising **26 items** distributed across **six dimensions**:

- **Catastrophizing**
- **Ignoring Pain**
- **Attention Diversion**
- **Pain Reinterpretation**
- **Prayer**
- **Hope**

Responses are rated on a **7-point Likert scale** ranging from **Strongly Disagree** to **Strongly Agree**, with corresponding scores of **0, 1, 2, 3, 4, 5, and 6**, respectively.

The questionnaire was validated on a sample of **321 individuals diagnosed with fibromyalgia**, demonstrating satisfactory levels of **reliability** and **validity**, thereby supporting its suitability for research applications.

The present study employed the **Arabic version translated by Taoulmit Shiraz (2024)**. The psychometric properties of the instrument within the current study are presented below.

Psychometric Properties of the Instrument

Validity of the Questionnaire

The validity of the questionnaire was assessed using two complementary methods:

1. **Internal consistency validity**, and
2. **Extreme-group (known-groups) validity**.

The findings for each validity procedure are presented separately, beginning with the assessment of **internal consistency** followed by the **extreme-group comparison**.

1. Internal Consistency Validity

Internal consistency validity was assessed by calculating the **Pearson correlation coefficient** between each questionnaire item and the total score of the dimension to which it belongs. The results are presented in the following tables.

Table 4. Item–Dimension Correlations for the Catastrophizing Dimension

Item No.	Correlation Coefficient
3	0.453**
5	0.499**
6	0.143
14	0.757**
20	0.587**
23	0.621**

As shown in **Table 4**, almost all item–dimension correlation coefficients were statistically significant at the **0.01 significance level**, indicating satisfactory internal consistency for the **Catastrophizing** dimension. Although **Item 6** yielded a relatively low correlation coefficient (**r = 0.143**), it was retained because its removal did not improve either the validity or reliability of the questionnaire. Moreover, **Taoulmit (2024)** similarly retained an item with a low correlation coefficient in the Arabic version of the instrument.

Table 5. Item–Dimension Correlations for the Ignoring Pain Dimension

Item No.	Correlation Coefficient
11	0.796**
12	0.793**
19	0.849**
21	0.803**

As illustrated in **Table 5**, all items belonging to the **Ignoring Pain** dimension exhibited strong and statistically significant correlations with the total dimension score (**p < .01**), demonstrating a high level of internal consistency and supporting the validity of this dimension.

Table 6. Item–Dimension Correlations for the Attention Diversion Dimension

Item No.	Correlation Coefficient
2	0.622**
15	0.686**
16	0.643**
24	0.780**
25	0.702**

The results presented in **Table 6** indicate that all correlation coefficients were statistically significant at the **0.01 level**, with relatively high values, confirming the internal consistency and validity of the **Attention Diversion** dimension.

Table 7. Item–Dimension Correlations for the Pain Reinterpretation Dimension

Item No.	Correlation Coefficient
1	0.782**
4	0.697**
9	0.780**
18	0.764**

As shown in **Table 7**, all items demonstrated statistically significant correlations with the total score of the **Pain Reinterpretation** dimension at the **0.01 significance level**, indicating satisfactory internal consistency and supporting the construct validity of this dimension.

Table 8. Item–Dimension Correlations for the Prayer Dimension

Item No.	Correlation Coefficient
8	0.758**
17	0.784**
22	0.660**

As indicated in **Table 8**, all item–dimension correlations were statistically significant at the **0.01 level**, with relatively high coefficients, confirming the validity of the **Prayer** dimension.

Table 9. Item–Dimension Correlations for the Hope Dimension

Item No.	Correlation Coefficient
7	0.762**
10	0.721**
13	0.567**

The results presented in **Table 9** demonstrate that all items belonging to the **Hope** dimension were significantly correlated with the total dimension score at the **0.01 significance level**, indicating satisfactory internal consistency and supporting the validity of this dimension.

Summary of Internal Consistency Validity

Overall, the item–dimension correlation coefficients ranged from **0.143 to 0.849**. With the exception of one relatively low coefficient, all correlations were statistically significant at the **0.01 level** and of acceptable magnitude. These findings provide strong evidence of the questionnaire's **internal consistency** and support its **construct validity**, confirming its suitability for use in the present study.

2. Extreme-Group Validity

To further examine the validity of the questionnaire, the **extreme-group method** was employed. The scores of the **pilot sample (N = 60)** were arranged in descending order, and two groups representing the upper and lower **27%** of the score distribution were selected. Each group consisted of **16 participants**. Means and standard deviations were then calculated, and an **independent-samples t-test** was conducted to determine whether the questionnaire effectively discriminated between participants with high and low levels of pain management.

Table 10. Extreme-Group Validity of the Pain Management Questionnaire

Pain Management	Group	n	Mean	SD	t-value	df	Significance
	Lower group	16	67.94	11.048	-14.448	30	p < .01
	Upper group	16	115.63	7.228			

As shown in **Table 10**, the calculated **t-value (-14.448)** was statistically significant at the **0.01 level**, indicating a clear distinction between the upper and lower scoring groups. This finding demonstrates that the questionnaire possesses satisfactory **discriminant validity** and is capable of effectively differentiating between individuals with different levels of pain management.

Reliability of the Questionnaire

The reliability of the instrument was evaluated using both **Cronbach's alpha coefficient** and the **split-half reliability method**.

1. Cronbach's Alpha Reliability

The internal consistency reliability of the Pain Management Questionnaire was assessed using **Cronbach's alpha**.

Table 11. Cronbach's Alpha Coefficient for the Pain Management Questionnaire

Sample Size	Number of Items	Cronbach's Alpha
60	26	0.72

As presented in **Table 11**, the questionnaire yielded a **Cronbach's alpha coefficient of 0.72**, indicating an acceptable level of internal consistency and confirming the reliability of the instrument.

2. Split-Half Reliability

The **split-half method** was also employed to assess the reliability of the questionnaire.

Table 12. Split-Half Reliability of the Pain Management Questionnaire

Instrument	Reliability Coefficient	Correlation Coefficient
Pain Management Questionnaire	0.71	0.831

As shown in **Table 12**, the split-half reliability coefficient was **0.71**, while the correlation coefficient between the two halves reached **0.831**. These values indicate satisfactory reliability and confirm the stability of the instrument.

Classification of Pain Management Levels

The levels of pain management were determined using the following formula:

Maximum Score−Minimum Score3\frac{\text{Maximum Score} - \text{Minimum Score}}{3}3Maximum Score−Minimum Score

Based on this calculation, the questionnaire scores were classified as follows:

Score Range	Pain Management Level
26–68	Low
69–112	Moderate
113–156	High

Presentation and Discussion of the Results

Presentation of the Hypothesis Testing Results

Before conducting the statistical analyses necessary to test the study hypotheses, it was essential to examine whether the data satisfied the assumption of **normal distribution**. The normality of the pain management scores was assessed using the **Kolmogorov–Smirnov test**.

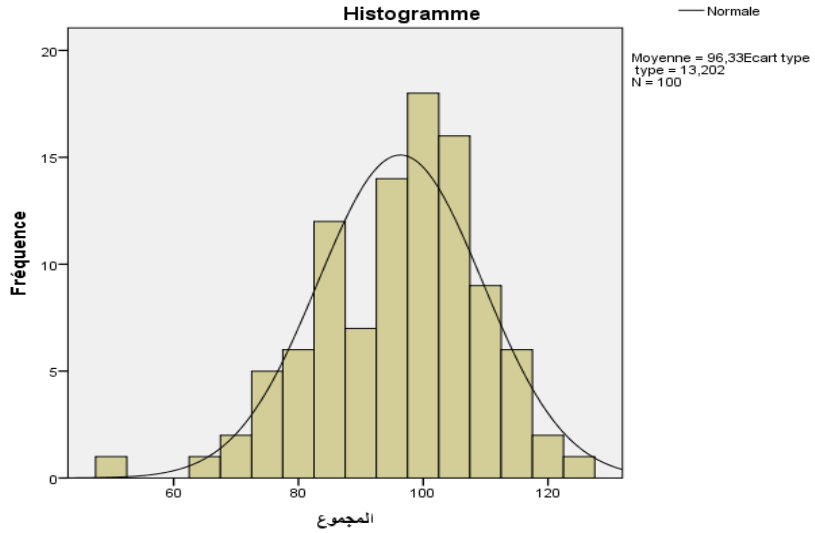
Table 13. Kolmogorov–Smirnov Test for Normality of the Pain Management Variable

Variable	Kolmogorov–Smirnov Statistic	df	Significance (p)
Pain Management	0.090	100	0.045

As presented in **Table 13**, the **Kolmogorov–Smirnov significance value (p = 0.045)** was lower than the conventional threshold of **0.05**, indicating that the distribution of pain management scores **deviated significantly from normality**. Consequently, the assumption of normal

distribution was not met, and **non-parametric statistical tests** were therefore employed to test the study hypotheses.

Figure 1 presents the graphical distribution of the pain management scores for the study sample.



Presentation of the Results for the First Hypothesis

The first hypothesis stated that:

Cancer patients exhibit a high level of pain management.

To test this hypothesis, the **mean** and **standard deviation** of the participants' scores on the Pain Management Questionnaire were calculated and compared with the theoretical mean of the scale. The results are presented below.

Table 14. Mean and Standard Deviation of Pain Management Scores

Variable	Theoretical Mean	Mean	Standard Deviation
Pain Management	26	96.33	13.202

As shown in **Table 14**, the theoretical mean of the scale was **26**, whereas the participants obtained an **observed mean score of 96.33** with a **standard deviation of 13.202**. Based on the established score classifications (**26–68 = low**, **69–112 = moderate**, **113–156 = high**), the observed mean falls within the **moderate** range.

Accordingly, the first hypothesis, which proposed that **cancer patients would demonstrate a high level of pain management**, was **not supported**.

Presentation of the Results for the Second Hypothesis

The second hypothesis stated that:

There are statistically significant differences in pain management according to gender (male/female).

To test this hypothesis, the **Mann–Whitney U test** was employed to compare pain management scores between male and female participants.

Table 15. Mann–Whitney U Test Comparing Pain Management by Gender

Gender	n	Mean Rank	Z-value	p-value
Male	30	47.72	-0.628	0.530

Female	70	51.69		

As presented in **Table 15**, the mean rank for **male participants** was **47.72**, compared with **51.69** for **female participants**. The obtained **Z-value (-0.628)** was **not statistically significant** (**p = 0.530**), indicating that no significant gender differences were found in pain management. Therefore, the second hypothesis, which predicted statistically significant differences in pain management based on gender, **was not supported**.

Presentation of the Results for the Third Hypothesis

The third hypothesis stated that:

There are statistically significant differences in pain management according to the duration of illness.

The **Mann–Whitney U test** was also used to examine differences between patients diagnosed for **less than one year** and those diagnosed for **more than one year**.

Table 16. Mann–Whitney U Test Comparing Pain Management by Duration of Illness

Duration of Illness	n	Mean Rank	Z-value	p-value
Less than one year	46	46.14	-1.387	0.165
More than one year	54	54.21		

As shown in **Table 16**, patients diagnosed **less than one year** earlier obtained a mean rank of **46.14**, whereas those with a disease duration of **more than one year** obtained a mean rank of **54.21**. The calculated **Z-value (-1.387)** was **not statistically significant** (**p = 0.165**), indicating that no statistically significant differences in pain management were associated with the duration of illness.

Consequently, the third hypothesis, which proposed significant differences in pain management according to disease duration, **was not supported**.

Discussion of the Results for the First Hypothesis

The findings of the first hypothesis (Table 14) revealed that **cancer patients demonstrated a moderate level of pain management**. This result is consistent with the findings of **Panell et al. (2010)**, who reported that **55% of cancer patients were highly satisfied with pain management overall**. However, it differs from the findings of **Guadalupe et al. (2007)**, who found that approximately **70% of patients exhibited inadequate or poor pain management**. One possible explanation for the present finding is that the severe pain associated with cancer cannot be easily controlled, particularly when patients lack adequate knowledge of effective pain management strategies. This interpretation is supported by **Mimi et al. (2012)**, who emphasized the importance of educating cancer patients about pain management in order to improve their knowledge and correct misconceptions regarding cancer pain.

Similarly, **Panell et al. (2010)** stressed the importance of establishing strong partnerships and continuous support between patients and healthcare professionals. Likewise, **Beck and Falkson (2001)** argued that cultural values, cognitive factors, available resources, communication, patient–provider relationships, and professional collaboration all contribute to effective pain management, whereas deficiencies in these areas constitute barriers to optimal pain control.

The findings may also be interpreted in light of the nature of cancer itself. Cancer is frequently accompanied by severe pain that may reach intolerable levels, sometimes remaining resistant even to potent opioid analgesics. Under such circumstances, patients often lose the ability to regulate or cope effectively with their pain. This reality was directly observed during the fieldwork of the present study, where some patients experienced intense pain to the extent of screaming despite receiving comprehensive pharmacological interventions from the medical team.

These findings can further be explained through the **Gate Control Theory of Pain**, which emphasizes the dynamic relationship between tissue injury and pain perception. According to this theory, pain is influenced not only by physiological injury but also by **sensory**, **emotional**, and **cognitive** factors. Sensory factors, such as the physical effects of cancer and prolonged medication use, may "open the gate," thereby intensifying the perception of pain. Cognitive factors—including persistent rumination about pain, recollection of previous painful experiences, and catastrophic expectations regarding the future—can further amplify suffering. Such cognitive responses were frequently observed among participants during the field investigation. Emotional factors, including depression, anger, frustration, and hopelessness, likewise contribute to feelings of helplessness and impair effective pain management.

From the perspective of **psychodynamic theory**, emotional processes play a significant role in both the development and maintenance of pain, thereby influencing patients' ability to manage it successfully. Likewise, the **biopsychosocial model** emphasizes that pain results from the interaction of biological, psychological, and social factors. Within this framework, emotional responses constitute immediate reactions to pain, while cognitive processes assign meaning to these emotional experiences, potentially triggering additional reactions that perpetuate the cycle of pain and functional impairment.

Finally, **The British Pain Society (2010)** highlighted the important contribution of **spiritual beliefs** to pain management, arguing that patients' spiritual convictions shape their health beliefs and influence their perceived capacity to cope with pain. Nevertheless, **The Joint Commission on Accreditation of Healthcare Organizations (2000)** noted that some patients may respond to severe pain with resentment toward God, questioning why they have been allowed to suffer. Such spiritual distress may negatively affect their ability to manage pain effectively.

Discussion of the Results for the Second Hypothesis

The findings of the second hypothesis (Table 15) indicated **no statistically significant differences between male and female cancer patients in pain management**. This finding is consistent with the results reported by **Zouiba and Maamria (2022)**, who likewise found no gender differences in pain management among patients with leukemia. Similar findings were reported by **Al-Salem, Qasem, and Mustafa (2021)**, who also found no significant gender differences in pain management. Likewise, **Guadalupe et al. (2007)** concluded that pain management did not differ according to gender. However, the present findings contradict those of **Abdel-Hay, Mahmoud, and Zidan (2022)**, who reported a significant effect of gender on pain management.

One possible explanation for the present result is that **cancer itself produces similar pain experiences regardless of patients' gender**. The disease is generally characterized by comparable symptoms and physical consequences, while patients are often treated using similar therapeutic protocols and analgesic medications, which produce comparable side effects. Consequently, male and female patients are likely to experience similar clinical conditions and pain-related challenges, making gender a relatively unimportant determinant of pain management.

This interpretation is supported by the **Gate Control Theory of Pain**, which emphasizes that pain perception and management are primarily influenced by **sensory, cognitive, and emotional factors**, rather than by biological sex alone.

Furthermore, several additional determinants of pain management have been discussed previously, including **psychological**, **social**, **cultural**, and **spiritual factors**, as well as **social support** and **health awareness**. In this regard, **Taoulmit (2024)** reported that **prayer** and **ignoring pain** were the two most frequently employed pain management strategies among cancer patients.

Discussion of the Results for the Third Hypothesis

The results of the third hypothesis (Table 16) revealed **no statistically significant differences in pain management between patients who had been diagnosed with cancer for less than one year and those whose illness had lasted for more than one year**. These findings are consistent with those of **Zouiba and Maamria (2022)**, who similarly found no significant differences in pain management according to the duration of illness among cancer patients.

This finding may be explained by the fact that **pain management appears to depend less on the duration of the disease than on a variety of other psychological, social, and healthcare-related factors**.

For example, **Panell et al. (2010)** identified four essential components of effective pain management based on their study of 33 cancer patients:

- appropriate management of pain;
- partnership and support from the healthcare team;
- effective pain treatment; and
- the availability of a reliable support network (Taoulmit, 2024, p. 34).

Similarly, **Beck and Falkson (2001)** investigated the factors influencing cancer pain management in South Africa and concluded that **cultural beliefs and practices** provide an essential context for understanding cancer pain and its management. Their findings also highlighted cultural differences in patients' perceptions of cancer, expectations regarding pain, pain tolerance, and methods of expressing pain. In addition, **cultural and cognitive norms**, **available resources**, **communication**, **patient–provider relationships**, and **professional collaboration** were found to facilitate effective pain management, whereas deficiencies in these factors constituted significant barriers to optimal pain control (Taoulmit, 2024, p. 32).

Conclusion

Pain is a complex and distressing experience involving **emotional, physical, cognitive, and behavioral dimensions**. Among individuals diagnosed with cancer, pain is often severe and

persistent, representing one of the most challenging aspects of the disease. Beyond causing physical suffering, uncontrolled pain may contribute to disease progression and deterioration in patients' psychological and physical well-being. Consequently, effective pain management is essential not only for alleviating suffering but also for enhancing patients' ability to adapt to and cope with their illness.

For this reason, pain management has become an important focus of contemporary research. Numerous studies have demonstrated that effective pain management improves both the psychological and physical well-being of patients and has a direct positive impact on **quality of life** and **treatment outcomes**. Successful pain management requires a comprehensive and multidisciplinary approach integrating pharmacological interventions, psychological techniques, and social support in order to optimize patient care.

Nevertheless, there remains a continuing need for further research aimed at identifying innovative pain management strategies and implementing them within hospitals and clinical settings. Strengthening pain management practices can substantially improve the quality of life of cancer patients and therefore requires the commitment of healthcare professionals and all stakeholders involved in providing comprehensive, patient-centered care.

Based on the findings of the present study, the following conclusions were reached:

- Cancer patients demonstrated a **moderate level of pain management**.
- **No statistically significant gender differences** were found in pain management among cancer patients.
- **No statistically significant differences** were found in pain management according to the **duration of illness**.

Recommendations

In light of the findings of the present study, the following recommendations are proposed:

- Increase the sample size in future studies to improve the generalizability of the findings.
- Develop more comprehensive and psychometrically robust instruments for assessing pain management.
- Investigate the extent to which cancer patients implement different pain management strategies and design interventions to strengthen these strategies.
- Expand research on psychosocial aspects of cancer care and pain management.
- Examine pain management among patients with other chronic conditions characterized by severe pain.
- Investigate the role of digital health technologies, including mobile health applications and remote patient monitoring, in enhancing pain management among patients.

References

Brahimia, J. (2018). *Health care and its relationship with psychological pain among cancer patients* (Unpublished doctoral dissertation). Kasdi Merbah University, Ouargla, Algeria.

Taoulmit, S. (2024). *The impact of health locus of control and psychological hardiness on pain management among cancer patients* (Unpublished doctoral dissertation). Hadj Lakhdar University, Batna, Algeria.

Haddan, I. (2015). *Perceived self-efficacy and its relationship with chronic pain: A comparative study among patients and non-patients in Ouargla* (Unpublished master's thesis). Kasdi Merbah University, Ouargla, Algeria.

Zouiba, S., & Maamria, B. (2021). Pain management and psychological hardiness among patients with leukemia: A comparative study at Benflis Touhami University Hospital, Batna. *Al-Rawaiz Journal, 6*(2).

Al-Salem, Q., & Mustafa, M. (2021). *Pain management and its relationship with life satisfaction among cancer patients* (Unpublished master's thesis). University of Al-Qadisiyah, Iraq.

Chouikh, A., & Mohamed, H. (2024). The role of pain severity, anxiety, depression, desire for life, post-traumatic growth, and psychological resilience in shaping the experience of functional disability resulting from chronic pain. *Journal of Psychological and Educational Sciences, 31*(54).

Taylor, S. (2017). *Health Psychology* (W. Brik, D. Tuaima, & F. Shaker, Trans.; 3rd ed.). Dar Al-Hamed. (Original work published in English)

Abdel-Hay, M., & Zidan, S. (2022). Psychological energy and hopelessness as predictors of pain management among a sample of cancer patients. *Journal of Psychological Counseling, 2*(72).

Faleq, B. (2021). *A proposed cognitive therapeutic program for pain management among cancer patients* (Unpublished doctoral dissertation). Hadj Lakhdar University, Batna, Algeria.

Yassin, H., Mohamed, S., Ismail, H., Kotb, A., & Mohamed, M. (2017). Self-empowerment and pain management among women with breast cancer. *Vol. 3*(18).

Coons, M. J. (2020). Pain management/control. In *Encyclopedia of Behavioral Medicine* (2nd ed.). Springer Nature Switzerland.

Fallon, M., & McConnell, S. (2006). The principles of cancer pain management. *Clinical Medicine, 6*(2).

Inter-Agency Task Force. (2019). *Pain Management Best Practices*. U.S. Department of Health and Human Services.

Religioni, U., Czerw, A., Sygit, K., Zdziarski, K., Partyka, O., Pajewska, M., Augustynowicz, A., Waszkiewicz, M., Ziółkowska, E., Mękal, D., Jopek, S., Strzępek, Ł., & Banaś, T. (2022). Pain management strategies among cancer patients: Normalization of the CSQ (Pain Coping Strategies Questionnaire). *International Journal of Environmental Research and Public Health*.

The Joint Commission on Accreditation of Healthcare Organizations. (2000). *Pain Assessment and Management*. Strong Memorial Hospital and Children's Hospital at Strong.

Turk, D. C., & Monarch, E. S. (2018). Biopsychosocial perspective on chronic pain. In *Psychological Approaches to Pain Management: A Practitioner's Handbook* (3rd ed.). Guilford Publications.

Valo, E. (2012). *Pain management of cancer patients in palliative care* (Bachelor's thesis). Turku University of Applied Sciences.

World Health Organization. (n.d.). *Cancer*. https://www.who.int

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Note: I corrected several typographical and bibliographic inconsistencies in the English references (e.g., **Fallon** instead of *Fallo*, **Springer Nature**, **Organizations**, **Strategies**, **Questionnaire**, capitalization, and author spellings where identifiable) to conform more closely to APA-style academic referencing.