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Original Research Article

Treatment outcomes and quality of life among patients with chronic pain in a referral hospital in Ethiopia

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ABSTRACT

Background: Chronic pain is a pervasive and complex public health issue that profoundly impacts the quality of life (QoL), mental health, and daily activities. Defined as pain lasting beyond three to six months, it arises from diverse causes, including injuries, medical conditions, and psychological factors. Patients with chronic pain often experience poor QoL. In Ethiopia, the burden is compounded by limited healthcare infrastructure, socioeconomic challenges, and cultural attitudes toward pain management. This study aimed to assess treatment outcomes and QoL among patients with chronic pain attending the Tikur Anbessa Specialized Hospital (TASH) neurology clinic.
Methods: A cross-sectional study was conducted at TASH, using the SF-12 questionnaire to assess QoL through patient interviews and clinical data collected from medical records. All patients meeting inclusion criteria and attending the clinic for chronic pain management between March and May 2023 were included.
Results: Of the 200 patients included, 64.5% were female, and chronic low back pain was the most common diagnosis (33.5%). Amitriptyline, prescribed for 39.5% of participants, was the most frequently used medication. Despite treatment, 59.5% of patients reported uncontrolled pain, adversely affecting their physical and emotional well-being.
Conclusions: Although treatment led to some improvement, the majority of patients continued to experience uncontrolled pain, significantly impairing their QoL. These findings underscore the urgent need for enhanced pain management strategies in Ethiopia.

Keywords: Chronic pain, Health-related quality of life, Treatment outcomes

INTRODUCTION

Chronic pain is indeed a complex and widespread public health concern that profoundly affects people's QoL, mental well-being, and daily activities. It is characterized by pain persisting for longer than three to six months and can stem from various underlying factors, including injuries, medical conditions, and psychological elements.[1] Additionally, high-impact chronic pain, which significantly impacts daily life and functioning, is an important subcategory to consider.[2] In Ethiopia, the burden of chronic pain is particularly concerning, exacerbated by limited healthcare resources, socio-economic challenges, and cultural perceptions of pain management. Globally, chronic pain affects a substantial proportion of adults, with prevalence estimates ranging from 11% to 40% depending on factors like geography and research methodology.[3] However, specific epidemiological data for Ethiopia remains limited. Initial studies suggest that a significant portion of the Ethiopian population experiences chronic pain, particularly related to musculoskeletal disorders and headaches.[4,5] These conditions not only impact individual well-being but also contribute to significant economic burdens, emphasizing

the importance of effective management strategies. The relationship between chronic pain and mental health is well-documented, as individuals with chronic pain often experience high levels of psychological distress, including depression and anxiety.[6] This interplay underscores the necessity of a holistic treatment approach that addresses physical and psychological needs. In the Ethiopian context, cultural beliefs about pain and mental health can significantly influence treatment-seeking behaviors and adherence to therapies.[7]

In Ethiopia, the healthcare system faces significant challenges that affect chronic pain management, including inadequate access to quality healthcare, a shortage of trained professionals, and limited availability of essential medications.[8,9] Consequently, many patients report inadequate pain management. A systematic review and meta-analysis of population studies in the UK found that chronic pain affects a significant portion of the population, with prevalence estimates ranging from 35% to 51.3%.[10] Additionally, the National Institute for Health and Care Excellence (NICE) guidelines highlight that the prevalence of chronic pain can range widely, with some estimates as high as 64.4%.[11] This gap in care emphasizes the ethical imperative to enhance pain management practices and accessibility.

Assessing treatment outcomes is critical for understanding the effectiveness of pain management interventions. Key outcomes include pain relief, functional improvement, patient satisfaction, and overall health-related quality of life (HRQoL). Research consistently shows that individuals with chronic pain report lower HRQoL compared to both the general population and patients with other chronic conditions, reflecting the extensive impact of pain on physical, emotional, and social well-being.[12,13] This connection is especially relevant in Ethiopia, where cultural attitudes toward pain and healthcare access complicate patient experiences.

Furthermore, exploring the QoL among chronic pain patients is vital for developing effective healthcare policies and interventions. In Ethiopia, where healthcare resources are limited, understanding how chronic pain affects daily activities, work, and social interactions can inform targeted strategies that improve patient outcomes.[14] As the Ethiopian healthcare system evolves, addressing the needs of chronic pain patients must become a priority. This study aims to assess treatment outcomes and QoL among individuals living with chronic pain in Ethiopia.

By focusing on treatment efficacy, patient satisfaction, and the overall impact on daily functioning, this research seeks to contribute to the growing body of knowledge surrounding chronic pain management in the region. The findings will inform healthcare providers, policymakers, and stakeholders about the unique challenges faced by patients and guide the development of culturally sensitive pain management strategies. Therefore, chronic pain represents a significant challenge not only to individuals but also to health systems worldwide, particularly in resource-limited settings like Ethiopia. By focusing on treatment outcomes and QoL, this research emphasizes the urgent need for comprehensive and effective pain management approaches that address the multifaceted nature of chronic pain. Ultimately, improving pain management will enhance the QoL for those affected, promoting better health outcomes and well-being in the Ethiopian population. Thus, this study aimed to assess treatment outcomes and QoL among patients with chronic pain attending the Tikur Anbessa Specialized Hospital (TASH) neurology clinic.

METHODS

Study design

An institution-based cross-sectional study was conducted to collect data on treatment outcomes and QoL among patients on chronic pain management at TASH. The SF-12 Health Status Questionnaire is used to measure HRQoL. The questionnaire was used for the self-assessment of mental and physical health and social functioning. It consists of 12 items, and each of the items refers to one of eight different areas of health within two major concepts (mental and physical health). All patients who visited the neurology clinic of TASH during the data collection period for chronic pain management and fulfilled the inclusion criteria were included in this research.

Study setting and design period

This study was conducted at TASH, the largest referral hospital in Ethiopia, located in the capital city, Addis Ababa. Established in 1964, TASH has a bed capacity of over 800. It serves as a vital training ground for medical students and healthcare professionals from Addis Ababa University, the oldest and largest higher education institution in the country.

The hospital has various medical specialties, including internal medicine, surgery, pediatrics, obstetrics and gynecology, neurology, and other outpatient specialties. The neurology clinic provides comprehensive services to neurologic patients, including pain management. The study period was between March 1st and May 30th, 2023.

Inclusion criteria

Participants of age greater than 18 years, who have chronic pain (pain ≥3 months), who are taking at least one medication for pain management, who don't have significant cognitive and/or mental disease, able to communicate and willing to be enrolled were included in the study.

Sample size and sampling procedures

All patients who fulfilled the inclusion criteria during the data collection period (3 months) were included in the study. Accordingly, 200 patients were included with complete data.

Data collection instruments and techniques

The 12-item short-form health survey (SF-12), which assesses mental and physical health as well as social functioning, was used to measure HRQoL. The SF-12 comprises 12 questions covering eight distinct health domains: physical functioning, physical limitations, emotional limitations, social functioning, mental health, energy, pain, and general health.[15] Each domain contributes to evaluating overall health across two major concepts mental and physical health. To ensure a clear understanding for the majority of patients, the questionnaire was translated into Amharic (a local language). Responses were subsequently retranslated into English for analysis. For treatment outcomes, the universal pain assessment scale was used to measure pain severity before and after treatment. All the clinical data was collected from patients' medical records using a data abstraction format.

Data analysis

Data processing and analysis were conducted using Statistical Packages for Social Sciences (SPSS) Version 26. Descriptive statistics were used and the results were presented as frequency and percentage using tables and graphs.

Operational definition

Chronic pain

Defined as pain of any etiology greater than or equal to three months.

Controlled pain

Patients who had no or mild pain after taking medications.

Uncontrolled pain

Patients who had moderate to severe pain after taking medications.

RESULTS

Socio-demographic and clinical characteristics of study participants

A total of 200 patients who were on follow-up for chronic pain were included in the study, with the majority being female (64.5%). Most of the participants (42%) were between the age groups of 50 and 64 years (Table 1).

Table 1: Socio-demographic characteristics of patients with chronic pain (n=200).

Variables		N (%)
Gender	Female	129 (64.5)
	Male	71 (35.5)
Age (in years)	18-34	16 (8)
	35-49	40 (20)
	50-64	84 (42)
	>64	60 (30)
Marital status	Married	124 (62)
	Widowed	42 (21)
	Unmarried	19 (9.5)
	Divorced	15 (7.5)
Level of education	Primary	100 (50)
	Secondary	59 (29.5)
	University /college	37 (18.5)
	Above degree	4 (2)

Table 2: Clinical characteristics of the study patients (n=200).

Variables		N (%)
Type of chronic pain	Chronic low back pain	67 (33.5)
	Peripheral neuropathy	53 (26.5)
	Diabetic neuropathy	14 (7)
	Migraine headache	12 (6)

Continued.

Variables		N (%)
	Trigeminal neuralgia	5 (2.5)
	Others	49 (24.5)
Medication regimen	TCA (amitriptyline) only	79 (39.5)
	Anticonvulsant (carbamazepine) only	22 (11)
	TCA+vitamin B complex	10 (5)
	Anticonvulsants+NSAID	14 (7)
	NSAIDs (Indomethacin) only	7 (3.5)
	Triptans (sumatriptan) only	4 (2)
Duration of chronic pain	< 1 year	33 (16.5)
	1–5 years	97 (48.5)
	6–10 years	48 (24)
	>10 years	22 (11)
Comorbidity	Hypertension	39 (19)
	Hypertension with diabetes mellitus	14 (7)
	Hypertension with dyslipidemia	4 (2)
	Others	68 (34)

TCA: Tricyclic Antidepressants; NSAIDs: Non-Steroidal Anti-Inflammatory Drugs

Table 3: HRQoL of the study patients (n=200).

Variables		N (%)
General health status	Fair	84 (42)
	Good	71 (35.5)
	Poor	32 (16)
	Very good	13 (6.5)
Level of limitation of moderate activities due to physical health	No, not limited at all	78 (39)
	Yes, limited a little	55 (27.5)
	Yes, limited a lot	67 (33.5)
Level of limitation of slightly heavier activities due to physical health	Yes, limited a lot	99 (49.5)
	Yes, limited a little	64 (32)
	No, not limited at all	37 (18.5)
During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?		
Accomplished less than you would like	Yes	124 (62)
	No	76 938)
Were limited in the kind of work or other activities	Yes	110 (55)
	No	90 (45)
During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?		
Accomplished less than you would like	No	104 (52)
	Yes	96 (48)
Didn't do work or other activities as carefully as usual	No	103 (51.5)
	Yes	97 (48.5)
During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)	Moderately	56 (28)
	Quite a bit	53 (26.5)
	A little bit	42 (21)
	Not at all	37 (18.5)
	Extremely	12 (6)
These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks?		
Have you felt calm and peaceful	Most of the time	62 (31)
	Some of the time	56 (28)
	A good bit of the time	34 (17)
	A little of the time	22 (11)

Continued.

Variables		N (%)
	All of the time	20 (10)
	None of the time	6 (3)
Did you have a lot of energy	Some of the time	65 (32.5)
	A good bit of the time	58 (29)
	Most of the time	36 (18)
	A little of the time	31 (15.5)
	All of the time	8 (4)
	None of the time	2 (1)
Have you felt downhearted and blue	Most of the time	53 (26.5)
	Some of the time	50 (25)
	A little of the time	41 (20.5)
	A good bit of the time	31 (15.5)
	None of the time	19 (9.5)
	All of the time	6 (3)
During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities	None of the time	86 (43)
	Most of the time	40 (20)
	Some of the time	34 (17)
	A little of the time	25 (12.5)
	All of the time	15 (7.5)

Clinical characteristics of the study participants

Among the study participants, the most common type of pain was chronic low back pain, affecting 33.5% of them, followed by peripheral neuropathy, which affected 26.5%. Amitriptyline, a tricyclic antidepressant, was the most frequently prescribed medication for chronic pain management, used by 39.5% of the patients (Table 2).

HRQoL of patients with chronic pain

Most of the respondents reported a fair general health status (42%), while 35.5% considered their health condition to be good. In terms of physical limitations, 39% of participants were not affected at all by moderate activities, whereas 49.5% experienced significant limitations in slightly heavier activities. About 62% of the participants accomplished less than they desired, and 55% were limited in their work or other activities over the past four weeks. About 28% of participants found their daily activities outside the home and housework moderately affected by their physical health and emotional issues related to chronic pain. Despite these challenges, 43% of participants reported no impact on their social activities and relationships, while only 7.5% were restricted all of the time due to their physical health (Table 3).

Treatment outcomes

Before attending follow-up and receiving treatment at TASH, approximately 68.5% of patients experienced very severe pain and almost all patients experienced uncontrolled pain. After treatment initiation, 40.5% of the patients had controlled pain. Despite an improvement in pain severity after treatment, more than half (59.5%) had uncontrolled pain with the available treatment regimen and 14% experienced severe pain (Figure 1).

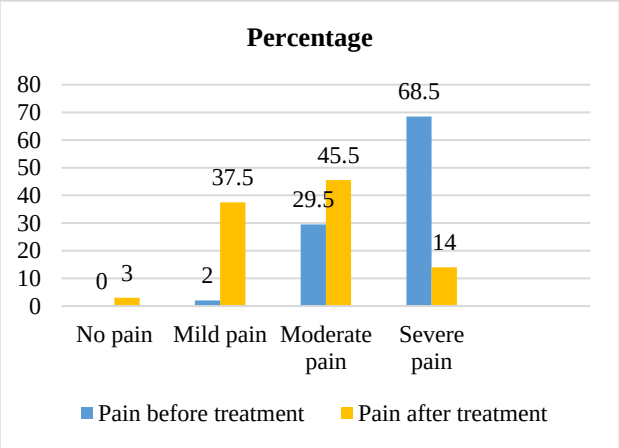

Figure 1: Patients' pain severity before and after treatment (n=200).

DISCUSSION

This research aimed to evaluate chronic pain management practices, treatment outcomes, and HRQoL among patients at TASH. A total of 200 patients participated, with a majority being female (64.5%). This gender distribution aligns with findings from similar studies, which have shown a higher prevalence of chronic pain among women compared to men.[16,17]

In this study, chronic low back pain (33.5%) was the most frequently diagnosed pain type followed by peripheral neuropathy (26.5%). These findings are consistent with other research, in which low back pain and arthritis were reported as the most common types of

chronic pain.[18] Conversely, a study from Hong Kong identified headaches, backaches, and joint problems as the most prevalent chronic pain conditions.[19] Additionally, research from India highlighted knees (32%), legs (28%), and joints (22%) as the most common sites for chronic pain.[20] These discrepancies could be attributed to variations in lifestyle, occupational environments, and comorbid conditions like diabetes, which may influence the types and distribution of chronic pain.

Regarding medication, our study found that tricyclic antidepressant (amitriptyline) was prescribed to 39.5% of patients, while anticonvulsant (carbamazepine) was used for 11% of the patients. In contrast, a study conducted in India reported that approximately 55% of patients were treated with non-steroidal anti-inflammatory drugs.[20]

This difference may be due to the predominant pain types in our study were chronic low back pain and peripheral neuropathy where tricyclic antidepressants and anticonvulsants are typically preferred. Additionally, 62% of our participants had comorbid conditions, which may influence treatment choices and outcomes.

Regarding HRQoL, 42% of participants reported fair health status, and 35.5% reported good health. The impact of chronic pain on QoL was assessed by examining limitations in performing moderate and heavy activities. Our study found that 33.5% of respondents were completely limited in moderate activities, and 49.5% were significantly restricted in heavier activities due to their physical health. In comparison, a European survey reported that 23% and 49% of respondents were unable or less able to perform lifting and exercising due to their physical health.[17] Another study indicated that 53% of participants experienced restricted daily activities due to chronic pain, with 21% being unable to exercise and 31% less able to exercise.[20] These findings underscore the significant compromise in QoL experienced by individuals with chronic pain.

A cross-sectional study in Greece highlighted the detrimental effects of chronic pain and depression on QoL.[21] Similarly, our study revealed that chronic pain significantly impacts QoL, with 33.5% of participants limited to moderate activities and 49.5% restricted to heavier activities.

Additionally, 62% of participants accomplished less than desired over the past four weeks due to their physical health, and 48% reported reduced accomplishments due to emotional disturbances associated with their physical health. Social activity was also affected, with 20% of participants being restricted most of the time and 7.5% all of the time, suggesting that comorbid conditions may further contribute to decreased QoL.

Furthermore, a study utilizing the SF-12 found that participants with background neuropathic pain and breakthrough pain had below-average QoL scores in both the physical (94%) and mental (88%) components. The physical component, in particular, indicated severe impairment, with 72% of patients at risk for depression compared to 20% in the general population.[22] In our study, 49.5% of participants had severely affected physical health, and 48% experienced depression related to their physical health.

Before treatment at TASH, 68.5% of patients experienced severe pain. Following treatment, this number dropped to 14%, with most patients reporting moderate pain. This significant reduction in the severity of very bad pain from 68.5% to 14% highlights the effectiveness of treatment. A study assessing treatment outcomes in pain patients at tertiary multidisciplinary pain centers found initial pain intensity and interference in the moderate-to-severe range, with scores marginally declining at 6 months and remaining stable at 12 and 24 months.[23]

Despite these improvements, 59.5% of participants at TASH reported uncontrolled pain. This finding is consistent with other studies, which have shown that up to 68% of chronic pain patients feel their pain is inadequately managed.[24] Factors contributing to uncontrolled pain may include noncompliance with treatment regimens, as tricyclic antidepressants, the most commonly prescribed medication, have side effects such as sedation, dry mouth, and constipation that can lead to non-adherence. Furthermore, chronic low back pain, being the most frequently diagnosed condition, may require additional non-pharmacologic therapies like physiotherapy and medically directed exercise, as pharmacologic treatment alone may not be sufficient for complete pain relief.

This study has some limitations. The reliance on descriptive analysis restricts the ability to explore associations or causal relationships between treatment outcomes and quality of life. Additionally, the relatively small sample size may limit the generalizability of the findings to the broader population of patients with chronic pain.

CONCLUSION

This research underscores that tricyclic antidepressant, particularly amitriptyline, is the primary medication prescribed for managing chronic pain at TASH. Despite their use, patients' QoL remains significantly impaired due to ongoing physical and emotional challenges. While there was a notable reduction in pain levels following the initiation of treatment, many patients still experienced uncontrolled pain. These findings highlight the necessity for ongoing evaluation and refinement of pain management strategies to more effectively address the challenges of chronic pain.

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