

The impact of chronic pain on the quality of life of patients attending primary healthcare clinics

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Abstract

Objectives: The objective was to study the nature and magnitude of the impact of pain on the quality of life of patients with chronic pain.

Design: This was a descriptive, cross-sectional quantitative study.

Setting and subjects: One thousand and sixty-six adult patients were screened between October and December 2010 in four primary healthcare clinics in south-west Tshwane.

Outcome measures: Patients reporting persistent pain for six months or longer were considered to be chronic pain patients (437, 41%), and were interviewed with regard to the impact of chronic pain on their quality of life using the Wisconsin Brief Pain Questionnaire.

Results: Four hundred and nineteen patients (95.9%, 95% confidence interval (CI): 93.6-97.6) of chronic pain patients reported that chronic pain impacted on their quality of life and functioning. Sixty-eight per cent of patients (95% CI: 63.3-72.4) reported being severely adversely affected by chronic pain. Pain had a severe impact on sleep quality in 39.2% patients, walking ability (37.4%), routine housework (33.8%), mood (20.1%), interpersonal relationships (15.3%) and enjoyment of life (16.3%). The more intense the experience of severe pain was, the greater the impact of chronic pain on everyday life (p -value < 0.001). Equally, patients with better pain relief enjoyed a better quality of life (p -value < 0.001).

Conclusion: A substantial proportion of patients attending primary healthcare clinics experience chronic pain which impacts on their lives in multiple and significant ways.

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Introduction

Chronic pain is an unpleasant sensory and emotional experience that exists beyond an expected timeframe of healing. "Chronic pain" refers to any kind of persistent pain in the body that lasts for months, years or even a lifetime.^{1,2} Chronic pain was defined as persistent pain for a minimum period of six months for the purposes of this study.

Poorly controlled chronic pain is a worldwide problem. Data from a World Health Organization survey indicated a 20-30% prevalence of chronic pain in various primary healthcare clinics.² An epidemiological study of 3 605 patients in the UK in a primary healthcare practice reported that more than 50% of patients had chronic pain.³ Recent South African data on 1 066 patients demonstrated that 41% of patients

attending primary healthcare clinics experienced chronic pain.⁴

Population-based epidemiological studies have confirmed that chronic pain is a highly prevalent condition. It has a significant impact on health and quality of life, as well as healthcare utilisation.⁵ Chronic pain impacts on patients' quality of life in multiple ways. Patients with chronic pain have a 2-5 times higher probability of developing depressive symptoms than the general population.⁶ Depressive symptoms mediate poor sleep,⁷ interfere with routine functioning and affect patients' social lives,⁸ collectively worsening their quality of life.⁹ In addition, chronic pain is often associated with disturbed sleep patterns. Poor sleep, in turn, may also worsen pain intensity in patients with

chronic pain.¹⁰ Chronic pain may compromise patients' daily activities and routine work.¹¹ This impact is associated with substantial disability, distress and poor quality of life.¹¹⁻¹³

Despite the known impact of chronic pain on patients' quality of life, in general limited research has been published on the impact of chronic pain on patients who attend primary healthcare facilities.¹ Specifically, there are no studies on the impact of chronic pain on patients' quality of life in such facilities in South Africa.

The findings in our study draw on data from a larger study on chronic pain prevalence⁴ and its impact on patients at primary healthcare facilities in south-west Tshwane. This manuscript focuses on the nature and magnitude of the impact of pain on the quality of life of chronic pain patients, and the association of this impact with pain intensity and pain relief.

Method

A prospective, cross-sectional study was conducted in four primary healthcare clinics, chosen randomly from 11 primary healthcare clinics situated in the south-western part of Tshwane.⁴ Two of the selected sites were outpatient clinics at two hospitals.

The number of patients selected in each clinic was proportional to the total number of patients attending the clinic during the study period. Every fourth adult patient aged 18 years and older was invited to participate in the study. If a patient declined, the next patient was invited to join. Patients who were mentally incompetent or incapacitated were excluded from this study.

Data were collected over a nine-week period between October and December 2010, using interviewer-administered questionnaires. Research assistants were trained in interview techniques and on the content of the questionnaire. The interviews were conducted in private rooms, while participants waited for their medical consultations. Research assistants explained the purpose of the study to each prospective participant in his or her local language, and gave each one an information leaflet. Those willing to participate were asked to give written informed consent. Patients who agreed to participate in the study were asked to provide demographic information, and were screened for the presence of chronic pain. Patients reporting persistent pain for six months or longer were considered to be chronic pain patients. Of 1 066 patients, 437 (41%) were identified as chronic pain patients.⁴

Chronic pain patients were interviewed using the Wisconsin Brief Pain Questionnaire (BPI).¹⁴ The BPI has been found to be reliable and valid, with an internal consistency (Chronbach's alpha of 0.85) in different pain populations.¹⁵ It has been translated into four local South African languages. Questionnaires were completed in English. Research assistants used the translations as a reference since

patients could respond to questions in their language of choice. Research assistants were proficient in English and the local languages.

Using the BPI, chronic pain patients rated the impact of pain during the week prior to being interviewed. They rated the impact of chronic pain on their sleep quality, walking ability, routine housework, mood, interpersonal relationships and enjoyment of life. They described their experience of the impact of pain using a score of 0-4, where "0" indicated no impact, "1" a little impact, "2" moderate impact, "3" considerable impact and "4" extreme impact. The intensity of pain was recorded as pain scores using scales of 0 (no pain) to 10 (worst imaginable pain). Respondents rated their pain, both in terms of what was experienced most of the time in the month prior to the interview, as well as the most severe pain (maximum pain intensity) experienced in that period. They also rated pain relief from pain medications on a scale of 0% (no pain relief) to 100% (optimum pain relief). The principal investigator reviewed the data during the process of data collection to ensure that the questionnaires were complete.

This study was approved by the Ethics and Research Committee of the University of Pretoria.

Data analysis

Using Stata® Statistical Software: Release 11, data were examined to describe the impact of chronic pain on aspects of patients' quality of life. The impact was reported as a percentage, using a 95% confidence interval (CI). Patients who scored the pain to be from 1-4 were considered to have experienced chronic pain. Patients who reported impact scores of 3 or 4 were considered to be experiencing severe chronic pain. The chi-square test was used to assess the difference between socio-demographic groups with respect to the impact of chronic pain.

Reported pain relief was grouped in three categories: no or poor pain relief (0-29%), moderate pain relief (30-69%) and good pain relief (70-100%). The chi-square test was used to determine the association of pain relief with the impact of chronic pain on respondents' quality of life.

Testing was conducted at the 0.05 level of significance.

Results

Of the 1 066 (481 male and 585 female) patients studied, 437 (166 male and 271 female) were identified as suffering from chronic pain. The bio-socio-demographical data (percentages) of these chronic pain patients and the reported duration of pain are summarised according to gender in Table I, since chronic pain was significantly more prevalent in female (46.59%) than in male patients (34.65%), (p-value 0.019, odds ratio adjusted for age and marital status of 1.80).⁴

Table I: Bio-socio-demographic characteristics of chronic pain patients according to gender

Characteristics of patients with chronic pain (n = 437)	Male, % (n = 166)	Female, % (n = 271)
Chronic pain prevalence (n = 1 066)	34.65	46.59
Age (years)		
18-30	13.86	26.49
31-45	33.13	27.24
46-60	30.72	27.99
61-80	22.29	18.28
Race		
Black	71.52	73.46
White	20.25	15.77
Asian	6.33	7.69
Coloured	1.90	3.08
Educational attainment		
None	3.21	2.75
Primary	23.71	20.39
Secondary	67.31	69.41
Tertiary	5.77	7.45
Marital status		
Single	35.85	40.63
Married	45.91	33.20
Divorced or widowed	18.24	26.17
Employment status		
Employed	52.44	39.55
Unemployed	47.56	60.45
Pain duration		
6 months to one year	36.95	40.70
1-5 years	34.06	33.19
> 5 years	28.99	26.11

Of the chronic pain patients, 95.9% (419/437, 95% CI: 93.6-97.6) reported that pain adversely impacted on their quality of life in varying degrees (a score of 1-4), whereas 68% of patients (293/437, 95% CI: 63.3-72.4) reported being severely adversely affected (a score of 3-4) by chronic pain (Table II).

The severe impact of chronic pain on patients' sleep quality, mood, interpersonal relationships and enjoyment of life was significantly higher in female than in male patients (Table III). However, there was no statistically significant difference between male and female patients with regard to severe impact on walking ability and routine household work. Similarly, there was no statistically significant difference in terms of the severe impact of chronic pain on patients with respect to race, age, educational attainment, marital status and/or employment.

Fifty per cent of the chronic pain patients reported on the adverse impact of pain on all six studied parameters

Table II: The impact of chronic pain on chronic pain patients' quality of life (%)

Impact due to pain	Percentage of chronic pain patients	
	Score of 1-4 (%), 95% CI	Score of 3-4 (%), 95% CI
Depressed or sad mood	76.1 (71.8-79.9)	20.1 (16.6-24.2)
Problems with maintaining relationships with other people	69.4 (64.9-73.5)	15.3 (12.3-19.)
Pain when walking	81.7 (77.7-85.1)	37.4 (33-41.9)
Sleeping disturbances and difficulty falling asleep	83.8 (80-87.1)	39.2 (34.8-43.8)
Problems in performing and coping with routine housework	83.3 (79.4-86.5)	33.8 (29.5-38.4)
Lack of enjoyment of life	80.3 (76.2-83.8)	16.3 (3-20.1)

CI: confidence interval

Table III: Percentage of chronic pain patients with a severe impact pain score (a score of 3-4) according to gender

Impact on quality of life	Percentage of chronic pain patients with pain with a severe impact (a score of 3-4) according to gender		
	Male (%) 95% CI	Female (%) 95% CI	p-value
Depressed or sad mood	11.4 (7.3-17.3)	25.4 (20.5-31)	0.0005
Problems with maintaining relationships with other people	10.1 (6.5-15.6)	18.5 (14.3-23.7)	0.01
Sleeping disturbances and difficulty falling asleep	31.4 (25-38.7)	44 (38.1-49.9)	0.009
Lack of enjoyment of life	11.7 (7.5-17.8)	19.1 (14.7-24.4)	0.05

CI: confidence interval

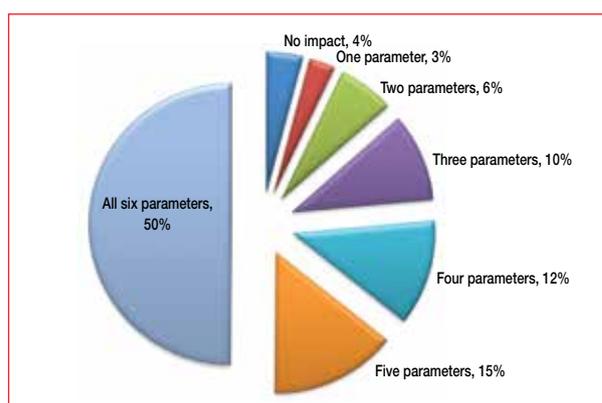


Figure 1: The impact of chronic pain on all six studied parameters

pertaining to quality of life: sleep quality, walking ability, routine housework, mood, interpersonal relationships and enjoyment of life (Figure 1).

The increase in the pain intensity in chronic pain patients [mean: 4.57, standard deviation (SD of 0.62)⁴ experienced by patients on most of the days in the month prior to being

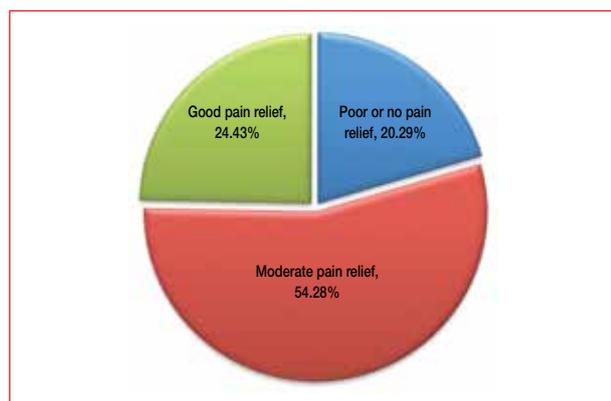


Figure 2: Reported pain relief

interviewed was significantly associated with poorer quality of life (Student's t-test analysis, p -value < 0.001). Similarly, an increase in maximum pain intensity (mean: 7.69, SD of 0.99)⁴ was significantly associated with a greater negative impact on patients' quality of life (Student's t-test analysis, p -value < 0.001).

The majority of the chronic pain patients were dissatisfied with the treatment of their pain at their clinics. Most reported poor, minimal or moderate pain relief (Figure 2), while only 24.43% described their treatment as providing good pain relief (70% or more).

Good pain relief was associated with better sleep quality (p -value < 0.001), a reduction in difficulties with walking (p -value < 0.001), greater ability to cope with and carry out routine housework (p -value 0.005), a better mood (p -value < 0.001), better relationships with others (p -value < 0.001), and greater enjoyment of life (p -value 0.005).

Discussion

Chronic pain has a significant bio-psycho-social impact on the health, functioning and quality of patients. The findings are noteworthy as this is the first South African study to confirm the nature and extent of the adverse effects of chronic pain on a significant percentage of primary healthcare patients. This study also draws attention to the disturbing fact that more than half of the chronic pain patients had been suffering from the impact of pain for a year or longer (Table I). Furthermore, only one quarter of chronic pain patients reported good pain relief after being treated at the clinics. Thus, the remaining 75% were in need of a substantially improved pain relief intervention.

Similar to previous studies,^{16,17} this study found that the majority of the chronic pain sufferers were female patients who reported that pain created significantly more problems with regard to their sleep quality, mood, interpersonal relationships and enjoyment of life, than the male patients, as stated elsewhere in the literature.^{7,18} While there is no definitive explanation for this finding, possible reasons include sex differences in the transmission and modulation of pain signals.^{19,20} Characteristic periodic temporal fluctuation

of hormones in the female reproductive cycle and increased pain sensitivity with these hormonal changes also play a role in increased pain presentation in females. Furthermore, the structural organisation and function of the sympathetic system is different in females than it is in males.¹⁹ In short, pain is a complex and multidimensional expression with sensory, cognitive, discriminative, emotional and social differences with regard to the perception of pain by, and coping abilities of, male and female patients.^{19,20}

This study points to the adverse effects of chronic pain, confirming findings in the international literature.²¹ These include interference with daily activities, emotional distress, a depressed mood and worsening quality of life.^{6,7,8,22,23} Similar to international reports,²⁴ this study also found that the impact of chronic pain was greater in patients suffering from higher pain intensity and poor pain relief, than in chronic pain patients with a relatively lower pain intensity and better pain relief. Although not explored in this study, the literature suggests that addressing the impact of pain on quality of life (i.e. feeling sad or sleep disturbances) may reduce pain intensity in chronic pain patients.⁶

The severity, duration and/or localisation of pain may significantly impact on an individual's functioning.²¹ In this study, the majority of chronic pain patients reported pain when walking and when carrying out routine household activities. Similarly, international research suggests that pain lowers patient functioning and work performance.¹⁸ As pain is likely to reduce the amount and duration of physical activity, chronic pain patients are at greater risk of experiencing a decline in their muscle strength and flexibility, which, in turn, may be associated with fatigue, weight gain and less overall productivity.²⁵

In terms of the impact of chronic pain on restorative sleep, the findings of this study place South African chronic pain patients attending primary care facilities at the extreme end of comparative international experience.²⁵ While 83.72% of patients reported sleep problems, internationally the extent of the problem ranges from 50-88%.²⁶

The current study was limited to the experiences of chronic pain patients in the week prior to being interviewed at the clinic. As such, it was unable to determine the overall impact of chronic pain for a longer duration. Moreover, this study was unable to explore the adverse impact of chronic pain on the families of patients and their communities. This would seem to be an important area of future research, given the high prevalence of the problem.

Although the scope of this research was too limited to generalise beyond the four clinics in the study, the findings contain an important message for healthcare service providers and the community. A large number of patients suffer high levels of chronic pain which impacts on their lives in multiple ways. Most do not enjoy effective pain relief.

Conclusion

Chronic pain is a significant problem in patients at primary healthcare clinics in south-west Tshwane. A large proportion of patients suffered adversely from the bio-psycho-social impact of chronic pain on their lives. The more intense their experience of severe pain, the greater the impact of chronic pain on their everyday lives. Equally, patients with better pain relief enjoyed a better quality of life. Therefore, healthcare providers need to be able to recognise, assess and better respond to chronic pain in order to reduce pain intensity and improve patient quality of life.

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