



Clinical pain research

Prevalence and characteristics of chronic pain: Experience of Niger



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HIGHLIGHTS

- Chronic pain is common reason for consultation in Niger with a prevalence of 21.33%.
- Men and patients aged over 50 years were the most affected in 61.8% and 51.6%, respectively.
- Musculoskeletal and joint pathologies were the most common causes (86.8%) of chronic pain in Niger.

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ABSTRACT

Introduction: Chronic pain is a major health problem, considered as a disease in its own right. The prevalence of chronic pain is estimated to be between 2% and 40% in adult populations. In Niger, there are no data on chronic pain.

Aims: This study was designed to provide the demographic, clinical and etiological profile of chronic pain in patients from Niger in order to create a database on chronic pain in Niger.

Patients and methods: Our study is prospectively conducted at the department of external consultation of the Hôpital National de Niamey over a period of 10 months from 31 May 2016 to 30 January 2017 collecting all cases of chronic pain. The demographic, clinical and etiological characteristics of all patients were collected and analyzed.

Results: During the period of the study, 1927 patients consulted at the department of external consultation of the Hôpital National de Niamey, among which 411 patients had chronic pain (21.33% [95% CI: 19.53% and 23.13%]). The average age was 48.28 years (± 12.84) with 51.6% of patients aged over 50 years. The male sex was predominant (61.8%). The most common sites of chronic pain were legs (25.5%), back (14.4%), neck (13.6%), knees (13.4%) and feet (13.1%). Osteoarthritis was the most common cause of chronic pain (35.5%), followed by herniated disc (22.2%), spondylodiscitis (14.6%) and migraine (4.1%). Significantly patients aged 50–59 years suffered from neck and legs pain (p value < 0.001). Significantly chronic headaches and rheumatoid arthritis were more common in women while osteoarthritis, herniated disc and spondylodiscite were more common in men (p value = 0.001). Significantly osteoarthritis and herniated disc were more common in patients older than 40 years (p value < 0.001).

Conclusion: Our study provides demographic, clinical and etiological data of chronic pain in patients from Niger, and shows that chronic pain is a common reason for consultation in Niger concerning 1 in 5 patients with a high prevalence among men and patients aged over 40 years.

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1. Introduction

Chronic pain is a major health problem, considered as a disease in its own right [1]. It affects mainly women and patients

aged over 60 years [2]. The prevalence of chronic pain is estimated to be between 2% and 40% in adult populations [3]. The most common causes of chronic pain are musculoskeletal and joint pathologies (30–40%), neck and back pain (30%), headache and migraine (7%) [4]. In Niger, there are no data on chronic pain.

The purpose of this study is to provide the demographic, clinical and etiological characteristics of chronic pain in patients from Niger in order to create a database in Niger on this pathology.

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2. Materials and methods

2.1. Data source

We conducted a prospective and descriptive study over a period of 10 months from May 2016 to January 2017, at the department of external consultation of the Hôpital National de Niamey (HNN), Niger. It is the largest urban and tertiary-care referral centre in Niger. It covers an area of 23120.50 m² and comprises 36 buildings with a beds capacity of 790. This hospital attracts people from all corners of the country to seek medical care. Ethical approval was obtained from the Institutional Review Committee of this hospital. For the collection of the data, we have crafted a computerized exploitation sheet including the following informations: age, sex, duration of pain, pain site, type of pain, and etiologic diagnosis retained by the physicians.

We considered the pain to be chronic, any pain persistent or recurrent evolving for more than 3 months [5].

2.2. Study population

Our study included 411 patients without age limit according to the following criteria: 1) pain persistent or recurrent evolving for more than 3 months whatever its nature and its site, and 2) patients who consulted at the department of external consultation of the HNN during the period of the study (May 2016 to January 2017). Patients with pain which evolved less than 3 months had not been included in the study as well as those suffering from chronic pain with cancer. For each patient, we collected the following information: age, sex, duration of pain, pain site, type of pain, and etiologic diagnosis retained by the physicians.

2.3. Statistical analysis

In the descriptive analysis of the data, patient characteristics were expressed as percentages for the qualitative variables and mean $\pm$ standard deviation for the quantitative variables. The Chi-square test of Pearson was used to compare the variables. *p* value was considered statistically significant at *p* < 0.05. All data were analyzed by using SPSS software version 20.0 for Windows (SPSS Inc, Chicago, IL, USA).

3. Results

During the period of the study, 1927 patients were received at the department of external consultation of the HNN for various symptoms, among which 411 patients had chronic pain with a prevalence of 21.33% [95% CI: 19.53% and 23.13%]. We noted a male predominance (61.8%, 95% CI: 59.4% and 64.2%) with a sex ratio at 1.62 (Table 1). The average age of the patients was 48.28 years ($\pm$ 12.84) with 55.5% (95% CI: 50.7% and 60.3%) of the patients aged 40–59 years. The most common sites of chronic pain were legs (25.5%), back (14.4%), neck (13.6%), knees (13.4%) and feet (13.1%) (Table 1). Peripheral neuropathic pain was the most common (49.5%), followed by musculoskeletal pain (42.3%), orofacial pain and headache (7.5%) and central neuropathic pain (0.7%) (Table 2). Among the peripheral neuropathic pain, lumbosciatic and cervicobrachial neuralgia were the most common in 35% and 11.4% respectively which are secondary to a herniated disc or spondylodiscitis or osteoarthritis. Osteoarthritis was the most common cause of chronic pain (35.5%), followed by herniated disc (22.2%), spondylodiscitis (14.6%) and migraine (4.1%) (Table 2). Significantly patients aged 50 to 59 years suffered from neck pain and legs pain (*p* value < 0.001) (Table 3). There was no significant difference between the sexes in the pain site (*p* value 0.567) and in the type of pain (*p* value = 0.076). Significantly

Table 1
demographic and clinical characteristics of the patients (*n* = 411).

Variables	Values
Sex	Females 38.2% (95% CI: 33.5% and 42.9%) Males 61.8% (95% CI: 59.4% and 64.2%) Sex ratio (males/females) 1.62
Age (years)	Average 48.28 $\pm$ 12.84 Median 50 Average/female 46.29 $\pm$ 12.2 Average/male 49.51 $\pm$ 13.1 8–18 2.4% 19–29 5.6% 30–39 13.4% 40–49 27% 50–59 28.5% $\geq$ 60 23.1%
Pain site	Neck 13.6% Elbow 0.7% Back 14.4% Shoulder 1.2% Knee 13.4% Leg 25.5% Jaw 0.2% Hand 8.3% Muscle 1.2% Foot 13.1% Head 7.5% Chest 0.7%

Table 2
etiologies and types of pain.

Etiologies of pain	Values
Arthritis	Knee 1.3% Temporomandibular joint 0.2%
Osteoarthritis	Cervical 9.7% Elbow 0.2% Shoulder 0.2% Knee 8.8% Lumbar 16.5%
Chronic headaches	1%
Sickle cell anaemia	1.9%
Herniated disc	Cervical 2.7% Lumbar 19.5%
Thalamic ischaemia	0.7%
Migraine	4.1%
Myositis	1.2%
Post-zoster neuralgia	0.7%
Trigeminal neuralgia	2.4%
Ankylosing polyarthritis	1%
Rheumatoid arthritis	2.7%
Diabetic polyneuropathy	1.7%
Spondylodiscitis	Cervical 2.2% Dorsal 1% Lumbar 11.4%
Carpal tunnel syndrome	0.7%
Tendinitis	Elbow 0.5% Shoulder 1%
Other	6.6%
Types of pain	
Musculoskeletal pain	Tendinitis 42.3% Rheumatoid arthritis Ankylosing polyarthritis Myositis Osteoarthritis Spondylodiscitis Arthritis Other
Peripheral neuropathic pain	Diabetic polyneuropathy 49.5% Carpal tunnel syndrome Post-zoster neuralgia Lumbosciatic (35%) Cervicobrachial neuralgia (11.4%)
Central neuropathic pain	Thalamic ischaemia 0.7%
Headaches and orofacial pains	Migraine 7.5% Chronic headaches Trigeminal neuralgia

Table 3
Sites, etiologies and types of pain by age groups.

Variables	Age groups (years)						p value	
	8–18	19–29	30–39	40–49	50–59	≥60		
Pain site								
Neck	1	4	9	13	20	9	<0.001	
Elbow	0	0	0	1	2	0		
Back	1	4	12	18	15	9		
Shoulder	0	0	0	1	3	1		
Knee	6	4	2	15	10	18		
Leg	0	2	7	19	43	34		
Jaw	0	0	0	0	0	1		
Hand	0	2	3	12	8	9		
Muscle	0	1	2	1	1	0		
Foot	0	3	13	25	5	8		
Head	1	5	5	6	9	5		
Chest	1	0	0	0	1	1		
Etiologies of pain								
Arthritis	2	2	1	0	0	1	<0.001	
Osteoarthritis	0	0	15	41	45	45		
Chronic headaches	0	0	0	0	4	0		
Sickle cell anaemia	4	4	0	0	0	0		
Herniated disc	0	1	0	20	40	30		
Thalamic ischaemia	0	0	0	0	0	3		
Migraine	1	5	5	3	2	1		
Myositis	0	1	2	1	1	0		
Post-zoster neuralgia	1	0	0	0	1	1		
Trigeminal neuralgia	0	0	0	3	3	4		
Rheumatoid arthritis	0	0	2	4	2	3		
Ankylosing polyarthritis	0	0	1	2	1	0		
Diabetic polyneuropathy	0	0	1	0	2	4		
Spondylodiscitis	1	10	18	17	11	3	0.005	
Carpal tunnel syndrome	0	0	0	2	1	0		
Tendinitis	0	0	0	2	4	0		
Other	1	0	10	16	0	0		
Types of pain								
Headaches and orofacial pains	1	5	5	6	9	5		
Musculoskeletal pain	8	11	28	50	40	36		
Central neuropathic pain	0	0	0	0	0	3		
Peripheral neuropathic pain	1	7	22	55	68	51		

chronic headaches and rheumatoid arthritis were more common in women (p value = 0.001) while osteoarthritis, herniated disc and spondylodiscitis were more common in men (Table 4). Significantly arthritis and migraine were more common in patients less than 40 years of age ($p < 0.001$) (Table 3). Osteoarthritis and herniated disc were common in patients over the age of 40 years. Significantly neuropathic pain was more common in patients over 50 years of age, while musculoskeletal pain and headache and orofacial pain were more common in patients less than 50 years of age (p value = 0.005) (Table 3).

4. Discussion

In this prospective and descriptive study of 411 patients with chronic pain collected at the department of external consultation of the HNN over a period of 10 months from May 2016 to January 2017, we described the demographic, clinical and etiological characteristics of chronic pain in Niger. No study has been published previously by Niger on chronic pain to report on the demographic, clinical and etiological features of this pathology in Niger. Thus, we realized this study with the aim of creating a database on chronic pain in Niger. At the end of this study, the prevalence of chronic pain in Niger was 21.33%. We found a predominance of the sex male (61.8%), patients aged over 40 years (78.6%), and neuropathic pain (50.2%). Legs, back, neck, knees and feet were the most common seats of chronic pain.

A major health problem, chronic pain is a frequent reason for consultation. In our study, the prevalence of chronic pain was 21.33% corresponding to 1 in 5 patients received in consultation. According to the studies and method of recruitment of patients, the

prevalence of chronic pain varies from less than 1 to 82% [2–4,6,7]. Several studies suggest that female sex is a major risk factor for chronic pain [2,4,6,8–11], while in our study the male sex was predominant (61.8%). Studies had shown that age is also a risk factor for chronic pain. Thus, Wong et al. [6] reported a peak of chronic pain in patients aged 40–49 years and then it decreases after 50 years. In our study, we found a peak of pain in patients aged 50–59 years and then it decreases after 60 years. Our result is similar to that reported by Hardt et al. [12] who reported a peak of chronic pain between 50 and 59 years, and then it declines after 60 years.

In our study, the most common pain sites were legs (25.5%), back (14.4%), neck (13.6%), knees (13.4%) and feet (13.1%). These results are similar to those of Wong et al. [6] who reported a predominance of leg pain (33%), back pain (29%) and head pain (19%). Neuropathic pain (central and peripheral) was the most common chronic pain (50.2%) in our study with a higher frequency in patients aged 50 years to older (29.7%). In this study, musculoskeletal and joint pathologies were the most common causes (86.8%) of chronic pain followed by headache and orofacial pain (7.5%). These results are similar to those reported by Breivik et al. [4].

Our study has some limitations. First, the study does not evaluate the cost of care for patients with chronic pain in Niger. Second, the study does not evaluate the relationship between chronic pain and the socioeconomic level of the patients, and the relationship between chronic pain and its impact on patients' lives. Thirdly, the selection of the patients was very restrain concerning only patients who consulted at the HNN while a large proportion of the patients with chronic pain consulted with traditional practitioners. A door-to-door study is needed to determine the exact prevalence of chronic pain in Niger.

Table 4
Sites, types and etiologies of pain by sex.

Variables	Sex		p value
	Males	Females	
Pain site			
Neck	37	19	0.567
Elbow	3	0	
Back	34	25	
Shoulder	4	1	
Knee	33	22	
Leg	66	39	
Jaw	1	0	
Hand	21	13	
Muscle	2	3	
Foot	35	19	
Head	15	16	
Chest	3	0	
Types of pain			
Headaches and orofacial pains	15	16	0.076
Musculoskeletal pain	99	74	
Central neuropathic pain	2	1	
Peripheral neuropathic pain	138	66	
Etiologies of pain			
Arthritis	3	3	0.001
Osteoarthritis	91	55	
Chronic headaches	0	4	
Sickle cell anaemia	5	3	
Herniated disc	66	25	
Thalamic ischaemia	2	1	
Migraine	9	8	
Myositis	2	3	
Post-zoster al neuralgia	3	0	
Trigeminal neuralgia	6	4	
Rheumatoid arthritis	0	11	
Ankylosing polyarthritis	3	1	
Diabetic polyneuropathy	5	2	
Spondylodiscitis	33	27	
Carpal tunnel syndrome	2	1	
Tendinitis	6	0	
Other	18	9	

5. Conclusion

Chronic pain is a common reason for consultation at the HNN that affects 1 in 5 patients with a predominance of the sex male and patients aged over 40 years. Legs, back, neck, knees and feet were the most common sites of chronic pain in our study with a predominance of musculoskeletal and articular pathologies.

Authors' contributions

Dr. H. Assadeck designed the study and he conducted the recruitment of the patients and the analysis of the data. Dr. M. Toudou Daouda conducted a literature search and he wrote the manuscript

in its entirety. Dr. F. Hassane Djibo, Pr. D. Douma Maiga and Pr. E. Adehossi contributed to subsequent versions. All authors approved the final version of the article.

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Ethical issues

The current study respected the ethical principles depicted in the Declaration of Helsinki, and it was approved by the local Institutional Review Committee.

Conflicts of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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