

Pain incidence, assessment, and management in Vietnam: a cross-sectional study of 12,136 respondents

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Objective: To describe the rate and demographics of pain among Vietnamese people in 48 provinces and describe the impact of pain on individuals, levels of satisfaction with treatment results, and behavior of pain sufferers.

Methods: The cross-sectional study was conducted in adults presenting to outpatient clinics throughout 48 provinces in Vietnam and were randomly selected for inclusion in this study. A physician trained to administer a questionnaire in a standardized fashion interviewed each patient and collected data regarding gender, age, career, acute and chronic pain, diagnoses, treatment, and satisfaction with treatment.

Results: There were 12,136 respondents (50.65% male and 49.35% female) from 48 of the 63 provinces in Vietnam. About 86.53% of respondents reported experiencing pain that affected their daily lives, with 24.10% complaining of acute pain and 62.43% having chronic pain. About 67.71% reported pain that affected job performance. Headache was the most common complaint in 35.43% of the respondents. Fewer than half (43.35%) of all patients with pain sought help from a doctor; only a quarter (27.50%) sought help within 1 month of experiencing that pain. A majority (61.98%) of patients who did seek help were satisfied with treatment results. The median cost of treatment was between 150 and 250 USD.

Conclusion: Pain severe enough to impact patients' daily lives is common in Vietnam. Treatment costs are a significant economic burden and may help explain why only a minority of patients seek treatment. Access to lower cost, effective treatment for pain should be improved.

Keywords: survey, chronic pain, impact of pain, health care, Vietnamese adults

Introduction

Pain is a common health care problem not only in terms of medical effects but also due to its socioeconomic impact. Many large-scale epidemiological surveys of pain have been conducted in developed countries such as Germany, the Netherlands, Canada, Japan, and other countries.¹⁻⁵ Causes of chronic pain were different between surveys and countries, but the most common were osteoarthritis and lower back pain.⁶⁻⁹ The results in some studies have shown that the rate of chronic pain is higher in females than in males.¹⁰⁻¹² Chronic pain is associated with increasing age and the elderly are the most vulnerable population to suffer from.^{12,13} In developing countries, chronic pain is of more concern as it leads to decreasing quality of life. Inadequate or undertreated chronic pain affects people's daily activities and behavior which in turn contribute to a substantial rate of depression and anxiety. Few reports have investigated the prevalence of pain in community and reflected the real status about how chronic patients were managed.¹⁴⁻¹⁶ Currently, there is no any published epidemiological data concerning pain in Vietnam.

The objectives of this study were to 1) determine the prevalence and demographics of pain in Vietnam's 48 provinces; 2) explore the impact of pain on daily activities including employment; and 3) gain a better understanding of the practices, cost, and satisfaction associated with treatment.

Methods

The cross-sectional study was conducted in adults presenting to outpatient clinics. Data were collected between December 2014 and May 2015. Our investigators surveyed hospitals in 48 of the 63 provinces, representing all seven economic regions of Vietnam (Table 1).

The Vietnamese population in 2015 was used as the standard population.

All the respondents received care in outpatient facilities at center of medicine or clinics. Respondents were excluded from the study if they were younger than 10 years. Respondents with pain who were currently involved in clinical trials were excluded to ensure that the data reflected respondents who were receiving standard treatment for their pain. Our questionnaire (Figure S1) was adapted from the one used by Breivik et al.⁵ The interviews were conducted in Vietnamese. The corre-

sponding author (Nguyen Trung Kien) translated the original questionnaire to a Vietnamese version before starting study. All patients provided written informed consent. The study was conducted in accordance with the Declaration of Helsinki.

The initial questionnaire was a screening interview to assess the rate of pain within each province, age and gender of respondents, the duration of pain, time when pain occurred, location of pain. The respondents were considered to suffer from chronic pain if they have 1) pain persisting for ≥ 3 months, 2) pain felt within the preceding 1 month, and 3) frequency of pain feeling ≥ 2 times/week. Respondents who fulfilled these screening criteria of the initial screening questionnaire were then interviewed in depth. Questions in the in-depth interview assessed: 1) demographics; 2) frequency, duration, and intensity of pain; 3) the impact of pain on respondents' work and quality of life; 4) attitude of respondents toward their pain and its treatment; 5) respondents' interaction with health care professionals, including how many doctors respondents had visited, how often they had seen them, and how long they had been seeing them; and 6) treatments, including prescription and non-prescription medicines and non-medication strategies.

Table 1 Survey site

Serial no.	Province name	Respondents			Serial no.	Province name	Respondents		
		Number	Gender				Number	Gender	
			Male	Female				Male	Female
01	Bac Giang	343	169	174	25	Khanh Hoa	200	102	98
02	Bac Kan	137	79	58	26	Kien Giang	55	29	26
03	Bac Lieu	77	39	38	27	Lam Dong	133	61	72
04	Bac Ninh	58	26	32	28	Lang Son	356	105	251
05	Binh Dinh	312	142	170	29	Lao Cai	82	32	50
06	BinhThuan	22	12	10	30	Long An	134	60	74
07	Ben Tre	334	175	159	31	Nam Dinh	583	262	321
08	Ca Mau	63	29	34	32	Nghe An	397	223	174
09	Can Tho	106	33	73	33	Ninh Binh	411	213	198
10	Cao Bang	24	10	14	34	PhuTho	543	290	253
11	Dac Lak	73	34	39	35	Quang Binh	63	26	37
12	Dien Bien	55	18	37	36	Quang Ninh	72	25	47
13	Dong Nai	507	265	242	37	Quang Tri	229	72	157
14	Dong Thap	51	25	26	38	Soc Trang	77	36	41
15	Gia Lai	1,012	508	504	39	Son La	87	39	48
16	Ha Nam	15	9	6	40	Thai Binh	186	104	82
17	Ha Noi	1,038	500	538	41	Thai Nguyen	197	93	104
18	Ha Tinh	24	12	12	42	Thanh Hoa	133	61	72
19	Hai Duong	59	26	33	43	Thua Thien Hue	795	387	408
20	Hai Phong	291	164	127	44	Tien Giang	930	493	437
21	Hau Giang	59	31	28	45	Tuyen Quang	22	9	13
22	HCM City	1,224	800	424	46	Vinh Long	74	36	38
23	Hoa Binh	27	15	12	47	Vinh Phuc	282	156	126
24	Hung Yen	7	4	3	48	Yen Bai	177	108	69

Notes: Total, 12,136 (male =6,147 [50.65%] and female =5,989 [49.35%]).

Doctors working at general hospitals and medical centers in the provinces were selected to interview patients, and were trained to administer the questionnaire in a standardized fashion. The survey data were collected and analyzed in one center. Data were analyzed by SPSS software version 20.1.

This study was performed after obtaining approval from the ethics committee of Military Hospital 103.

Results

Of the 12,136 respondents screened, 10,501 (86.53%) had experienced significant pain at some time during their lives, with 7,576 (62.43%) reporting pain that was chronic in nature. A total of 3,247 (26.76%) respondents had experienced pain for at least 12 months. In total, 10,501 respondents reported suffering from pain and their interviews yielded the following data.

Demographics

Patients who reported pain were evenly distributed between the two genders (50.65% female, 49.35% male). Those under 40 years of age appeared to suffer less, whereas the 41–70 years age group appeared to more likely suffer from pain than others (Table 2).

Pain characteristics

The duration of pain was often prolonged. A majority of respondents suffered from chronic pain, as mentioned previously (62.43%; Table 3).

Table 2 Age of respondents

Age (years)	Number	Percentage
10–19	1,711	16.29
20–29	2,979	28.37
30–39	1,721	16.39
40–49	1,692	16.11
50–59	982	9.35
60–69	665	6.33
70–79	401	3.82
80–89	267	2.54
>90	83	0.65

Table 3 Duration of pain

Duration of pain (months)	In-depth interview (N=10,501)		Screening (%), (N=12,136)		Type of pain		
	Number of patients	Percentage					
<3	2,925	27.85	24.10		Acute		
3–5	2,299	21.89	72.15	18.94	62.43	Chronic	
6–12	2,030	19.33		16.73			
13–24	1,473	14.03		12.14			26.76
>24	1,774	16.89		14.62			

Table 4 presents the most commonly reported body locations and causes of pain. Headache and neck/back pain were most common.

The intensity of reported pain is presented in Table 5.

Impact of pain

Impact of pain on daily activities

To gauge the impact of pain on respondents' lives, the interviewers read a list of activities and asked respondents if their daily activities or employment activities were limited by pain. About 86.53% of the respondents reported that pain affected their daily lives and 67.71% reported that pain affected their jobs.

Treatment practice

Respondent's attitudes

The interviewers read a list of statements to respondents to determine their attitudes and beliefs about their pain. About 81.46% of respondents considered their pain to be a part of their medical condition.

Pain management

The services patients sought for treatment are shown in Figure 1. The most common method was self-treatment.

Visits to doctors

About 43.35% of respondents (4,553) had visited doctors; 63.42% of them had seen their doctor in the first month, while only 2.55% had seen their doctor after 1 year. About 56.65% of respondents had not seen their doctor at all (Table 6).

Satisfaction with treatment for pain

About 42.89% of respondents were satisfied with the treatment they received for their pain, while 19.99% were unsatisfied and 3.23% had nothing to disclose (Table 7).

Cost of pain treatment

According to the 7,537 respondents who answered to the question regarding the cost of treatment, the median cost

Table 4 Body locations of pain

Location	Percentage
Head	68.71%
Face	4.87%
Neck	11.26%
Upper limbs	
Shoulder	8.14%
Arm	5.02%
Elbow	4.44%
Hand	3.83%
Finger	2.57%
Lower limbs	
Buttock	6.47%
Thigh	2.68%
Leg	4.01%
Foot	2.59%
Toe	2.04%
Back pain	27.75%
Chest	4.42%
Abdomen	13.53%
Joint of upper limbs	
Shoulder	6.09%
Elbow	4.42%
Wrist	4.61%
Metacarpal	3.41%
Finger	1.66%
Joint of lower limbs	
Hip	2.23%
Knee	5.68%
Ankle	3.33%
Metatarsal	2.99%
Toe	1.54%

Table 5 Intensity of pain

Intensity (%)	Respondents (N=10,501)	
	Number	Percentage
Mild	2,583	24.60
Moderate	3,137	29.87
Severe	2,190	20.86
Very severe	298	2.84
Unexplained intensity	2,293	21.83

of treatment was between 150 and 250 USD. Only a small number of persons (0.20%) paid more than 1,000 USD for treatment (Table 8).

Discussion

It is clear from this large-scale survey of 12,136 respondents that pain is very common in Vietnam. Data were collected from 48 of the 63 provinces, which included all seven major economic areas in Vietnam. Doctors involved in conducting the survey were trained in social communication and administering the questionnaire. Thus, we are confident

that the specific prevalence data for pain are valid for the documented provinces.

Geographically, respondents included in this study were located throughout Vietnam. Twenty-six provinces had over 100 respondents and two large cities (Hanoi and Ho Chi Minh City) accounted for more than 1,000 respondents each.

Our result showed that nearly all respondents suffered from significant pain at some point in their lives, and that chronic pain impacting daily activities and employment was very common. One reason that the prevalence of pain was high in this study may be that we surveyed persons who had presented to an outpatient clinic with some complaint, as opposed to a random survey of the population at large. Therefore, our pre-test probability was likely elevated. Interestingly, this result is similar to the study of Boerlage and et al, which found that the prevalence of chronic pain was 69% in three Dutch residential homes.² In postal surveys, the prevalence was 39.3% in Japan and 35.5% in Ireland.^{4,16} With telephone interviewing, with or without the assistance of computer, the prevalence of chronic pain was found to vary from 13% to 45.9%.^{3,5,7,9,14}

Our investigation excluded children below the age of 10 years (16.4% of Vietnam's population per 2015 census data), because the etiology, assessment, treatment, and natural course of pain in children are substantially different from adults. Pain in children is beyond the scope of this study.

The prevalence of pain was high in elderly persons,^{18,19} and management in this population was more complicated.^{18,20,21} The most frequent location of pain was joints, and the rate was found to be higher in females than in males.¹⁰⁻¹² The results of our study also indicated that the prevalence of pain was higher in females (53.0%) than in males. Similar findings have been noted in Libya¹¹ and in other countries, particularly in older females.^{9,10,17}

Pain is one of the most common reasons for seeking medical attention. People seek health care for pain, not only to improve their physical health but also because pain interferes with psychological and social health. Pain has deleterious effects on mental health, employment status, sleep, and personal relationships.^{22,23} Psychosocial factors, including individual attitudes about pain and learned coping mechanisms, have particularly strong effects upon daily activities and quality of life, in some cases exceeding the influence of simple pain intensity.²⁴ Functional limitations vary with the type of pain, with low back and multiple pain localizations correlating with the most functional limitations.²⁴ This survey demonstrated that pain has a negative impact on daily activities (88.16% unpleasant, 67.71% work-related).

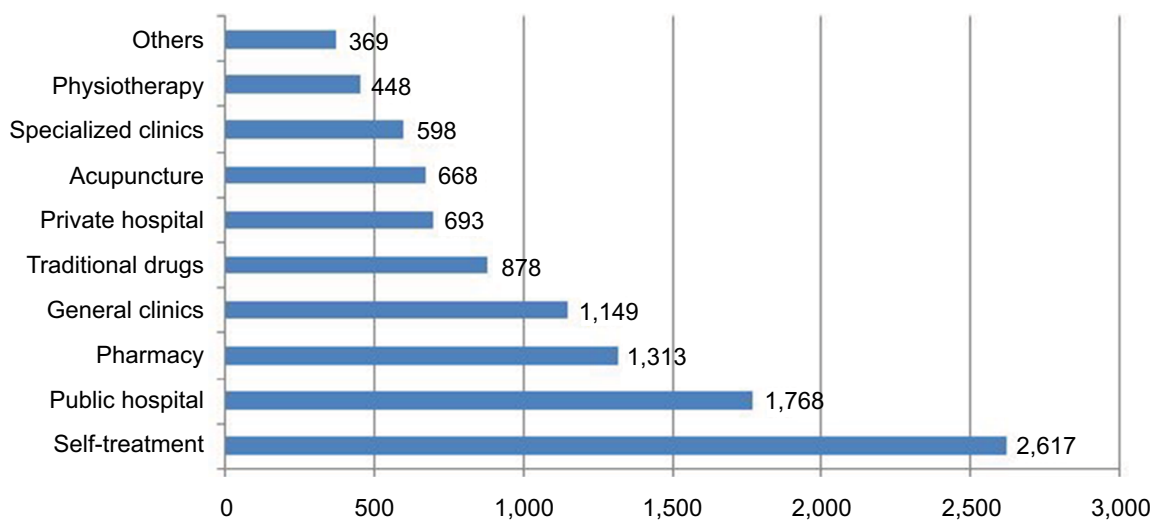


Figure 1 Pain management.

Table 6 Visits to doctor

Time from onset to visit (month)	Respondents (N=4,553)	
	Number	Percentage
<1 month	2,888	63.42
<6 months	926	20.33
<12 months	623	13.68
>12 months	116	2.55

Table 7 Treatment satisfaction

Treatment satisfaction	Respondents	
	Number	Percentage
Extremely satisfied	732	16.08
Satisfied	1,953	42.89
Not satisfied	910	19.99
Extremely not satisfied	811	17.81
No comments	147	3.23

Table 8 The cost of treatment for 6 months

Cost	Respondents (N =10,501)	
	Number	Percentage
<150 USD	2,649	25.23
150 USD–250 USD	2,793	26.60
250 USD–500 USD	1,773	16.88
500 USD–750 USD	235	2.24
750 USD–1,000 USD	66	0.63
>1,000 USD	21	0.20
No comments	2,964	28.22

Abbreviation: USD, US dollar.

However, the most common choice patients made regarding pain management was self-treatment. Apart from inadequate relief, this may result in delayed diagnosis of related medical problems and a poor prognosis of otherwise treatable

ailments. The next most common choices were seeking help at public hospitals, pharmacies, and general clinics. This reluctance to seek professional attention may be rooted in a Vietnamese cultural preference to treat diseases at home rather than in hospital. This might be due to the fact that the professional medical establishment in Vietnam has not paid enough attention to pain management, and that there is room to improve appreciation for diagnosis and treatment of both acute and chronic pain.

Inadequate or undertreated pain significantly reduces the ability of many patients to participate in daily activities and work. An understanding of individual needs is essential in pain management.²⁵ In our study, 24.92% of respondents opted for self-treatment at home. For moderate to severe pain, treatment at home is often suboptimal;²⁶ in many cases, optimal management may require a short course of opioids,²⁷ which may be unavailable to those who choose self-treatment. Dureja et al showed that the majority (68%) of their respondents were treated for pain with over-the-counter (OTC) drugs, and most were taking nonsteroidal drug (95%).¹⁴ In Müller-Schwefe's study, 35% of the respondents took pain medication that was not prescribed by their doctor,²⁸ presenting potential safety and legal issues. Breivik's survey of chronic pain in Europe showed that even among patients who sought help from a doctor, very few were managed by pain specialists and 40% received inadequate pain management.⁵

The current review of literature revealed many factors that limited the possibility of achieving effective pain management by health care systems, medical staff, and patients.²⁹ Health care system is the first fundamental barrier

that is related to poor pain management. According to statistics, patients are likely to not receive analgesic medication when required and treatment is likely to be delayed or ineffective.^{30,31} Vietnam has very limited resources and few pain specialists to care for patients with pain, and medical staff in pain management are not professional as well because there is no any training course in medical universities. Furthermore, other big hindrance is that patients usually buy analgesic agents by themselves from pharmacy store without prescription from doctors (Figure 1). All of these factors led to inadequate pain management among Vietnamese adults.

Other reason is financial problems. The economic burden to the patient is substantial in a developing country. In our survey, the average cost was 200 USD/person. In Vietnam, the poverty threshold is less than 600 USD/year. The cost of pain management represents a significant burden for affected people. Vietnam is a developing country and we must consider how the economic situation of its people affects the prevalence and treatment of pain. In the survey conducted by Tsang et al, there was no obvious association between the prevalence of chronic pain and economic situation.¹⁷

Satisfaction with treatment is an increasingly popular outcome measure in pain management. In our survey, 58.97% of respondents were either satisfied or extremely satisfied with their pain control. These results are in line with those reported by McCracken et al.³² Importantly, 37.8% of respondents were either dissatisfied or extremely dissatisfied. We suspect that a combination of inadequate treatment, high cost of treatment, relatively high pain intensity (23.7% of our respondents rated their pain as severe), and limitation in health care system are largely responsible for this dissatisfaction. Nursing homes involved in pain management in the Netherlands showed that the satisfaction rate was 60%,³³ suggesting that poor pain control may be a worldwide issue. Awareness and knowledge about pain assessment and treatment need to be raised not only for medical staff but also for all residents.

Conclusion

Pain is common in Vietnam, with headache and neck/back pain accounting for the majority of ailments. Many individuals with chronic pain suffer limitations in their daily activities, including employment. Treatment is often limited by the economic situation of patients and their reluctance to seek professional assistance. There are many opportunities to improve the accessibility and quality of pain management in Vietnam.

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Disclosure

The authors report no conflicts of interest in this work.

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Supplementary material

	Question	Answer	Coding	Next question			
Q 2.1.	Have you ever had pain in your life?	- Yes - No	1 2				
Q 2.2.	Location of pain?					
Q 2.3.	When pain occurred (to now)					
Q 2.4.	Chronic pain (pain > 3 months/6 months nearly)	- Yes - No	1 2				
Q 2.5.	Where is your pain located? (accept multiples)	1. Head	7. Abdomen	13. Buttock	Joint	1. Shoulder	6. Hip
		2. Face	8. Shoulder	14. Hip		2. Elbow	7. Knee
		3. Neck	9. Arm	15. Thigh		3. Wrist	8. Ankle
		4. Upper Back	10. Elbow	16. Foot		4. Metacarpal	9. Metatarsal
		5. Low back	11. Hand	17. Ankle		5. Finger	10. Toe
		6. Chest	12. Finger	18. Toe	Others:		
Q 2.6.	How long have you suffered from pain?					
Q 2.7.	What age were you when you suffered from pain? years old.					
Q 2.8.	What is the degree of your pain intensity? How much degree is your pain intensity?	- Mild - Moderate - Severe - Very severe	1 2 3 4				
Q 2.9.	What other remedies have you ever tried to relieve your pain? (accept multiples)	1. Self-treatment 2. Traditional medicine 3. Acupuncture 4. Physical therapy 5. Pharmaceutials 6. Public hospital 7. Private hospital 8. General clinics 9. Specialized clinics 10. Other					
Q 2.10.	How many doctors have you seen for your pain? (traditional medicine was not counted)	- Yes - No	1 2 →	Q.2.14			
Q 2.11.	How long after pain occurred did you go to see doctor?					
Q 2.12.	Do you know the doctor's diagnosis?	- Yes (detail): - No	1 2				
Q 2.13.	What is the level of pain management from your doctor?	- Extremely satisfied - Satisfied - No comments - Not satisfied - Extremely unsatisfied	1 2 3 4 5				
Q 2.14.	What kind of pain medication did you use? (Over the counter and prescription)	- Drug name: Prescription:..... - Over the counter drug before going to the doctor:..... - Over the counter drugs (self-treatment):					
Q 3.1.	Do you think that pain is a major problem and should be treated early?	- Yes - No	1 2				
Q 3.2.	Pain that affected job performance	- No influence - Had some influence on work - No longer work	1 2 3				
Q 3.3.	Cost for pain management in recent 6 months?					

Figure S1 Pain survey questionnaire

Notes: Adapted with permission from Breivik H, Collett B, Ventafridda V, Cohen R, Gallacher D. Survey of chronic pain in Europe: prevalence, impact on daily life, and treatment. *Eur J Pain.* 2006;10(4):287–333. © 2005 European Federation of Chapters of the International Association for the Study of Pain. Published by Elsevier Ltd. All rights reserved.¹ The interviews were conducted in Vietnamese. The corresponding author (Nguyen Trung Kien) translated the original questionnaire to a Vietnamese version before starting study.

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