

Chronic pain in New Zealand: a community sample

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Abstract

Aim The 2010 New Zealand Chronic Pain Survey aimed to gather information from people who experience chronic pain about their pain, mental health, disabilities, and acceptance of pain.

Methods In December 2010, surveys were distributed in paper or online to GPs, hospitals, pain clinics asking for people with chronic pain to respond. The survey was open for 6 weeks.

Results There were 142 responses to the survey. Most people reported more than one cause of their pain, and pain in more than one site. Although respondents reported a wide range of causes of their pain, most people were unsure of the cause, or endorsed injury or arthritis as the cause. The most common site of pain was the lower back, followed by the pelvis and joints. Levels of disability were high. Pain was significantly correlated with depression and anxiety, and negatively correlated with acceptance.

Conclusion New Zealanders experience chronic pain stemming from multiple origins, with multiple causes. Consistent with international data, the experience of pain causes high levels of mental health issues and disability, but can be modulated by acceptance. Future studies should examine treatment availability and effectiveness.

Chronic or persistent pain can be defined as pain that lasts longer than the usual time of healing. This type of on-going pain is a major health issue, both internationally and in New Zealand.¹

In the New Zealand Health Survey 2011/12, 16% of adults reported chronic pain (defined as pain that occurs every day, for at least 6 months).² Data from the New Zealand Burden of Diseases, Injuries and Risk Factors Study in 2006 note that chronic pain accounts for at least 5% of health loss recorded in the study.³ Health loss measures how much healthy life is lost due to premature death, illness or impairment. This makes chronic pain similar in size to that of anxiety and depression.

In New Zealand, rates of chronic pain are higher for older people, Māori, and people living in deprived areas.¹ Internationally; data suggests chronic pain is more prevalent among females and older people.⁴

A person's culture can impact not only how they perceive and experience pain but also how they interact with healthcare professionals and adhere to advice provided.⁵ It is evident that culture plays an important role in determining various aspects of pain experience and response.⁶ In Māori, cultural factors such as the role of whanau (family) and the importance of the development of relationships with healthcare providers are ways to enhance Māori health.⁵

Pain which has taken a chronic course is complex in presentation, it often has all aspects of a biopsychosocial condition present and each needs to be examined.¹ It will have usually started with tissue damage but progressed to a pain problem influenced by a wide range of psychosocial factors.

Previous research suggests that those presenting to primary care services also often have more than one site of pain.^{7,8} For example, Raftery et al (2011) reported the mean number of pain sites to be 4.2, with almost 80% of people experiencing pain in more than one site.⁹

Chronic pain is associated with a wide range of disabilities, including mental health issues. Many studies have reported an association between pain and depression.^{4,10–13} Baune et al (2008) reported that rates of comorbid major depression and chronic pain ranged from 30–54%.

Anxiety is also correlated with chronic pain. In a community sample, in which sociodemographic and medical conditions were controlled for, the odds ratio (OR) of anxiety disorder in chronic pain patients was reported as 2.13; similarly, the OR for depression in chronic pain patients was 2.00.¹⁰ Of those with *multiple* chronic pains, depression (without anxiety) had an OR of 2.5, and anxiety an OR of 2.3.¹²

A study of over 13,000 community-based participants in New Zealand reports the prevalence of depression with multiple pain sites was 12.6%, compared to 5.4% for those with no pain. Specific anxiety disorders ranged from 5.8–8.3% for those with multiple pain sites compared to 1.6–4.5% for those with no pain.¹³

As well as increasing mental health issues, pain also produces a wide range of other disabilities. For example, Raftery et al (2011) reported that 37% of people who have chronic pain have high levels of disability, defined as: impairment, activity limitations, and participation restrictions.⁹

A study in Portugal found 92% of chronic pain sufferers have some disability related to their pain, most often family/home responsibilities, recreational activities, occupation/work, and sleep/rest.¹⁴ It is also well documented that sleep problems co-occur in up to half of those who experience chronic pain. The interaction is not as simple as pain preventing sleep however, with sleep problems also being likely to contribute to pain.¹⁵

Although medical models can usually explain the cause of pain (e.g., as an experience that is directly related to a site of injury), given the complex nature of chronic pain, psychological models can be helpful in explaining the experience of chronic pain.

One model, which explains differing experiences of pain, is acceptance. Acceptance of pain can be seen as an alternative to experiential avoidance, that is, not participating in usual activities due to expected pain. Pain patients vary in the ability to accept pain, or to let go of the struggle with pain, and be aware of it without attempting to change it.¹⁶

Higher acceptance levels have been shown to be a reliable and valid predictor of lower levels of pain, disability, depression, anxiety, and also of a better work status.¹⁷ Acceptance has also been found to be positively associated with a shorter duration of pain reported in a New Zealand Tertiary Pain Management Centre.¹⁸

Chronic pain is a major health issue, both in New Zealand and worldwide. It is prevalent, disabling and has strong associations with depression and anxiety.

The present study aimed to examine the experience of pain in a New Zealand community sample. To date, research has focused on either clinical samples or epidemiological data.

This research aims to gather participants from the community who consider themselves to suffer from chronic pain, and examine how their experiences compare to those reported in epidemiological studies and pain treatment studies.

This type of survey provides a snapshot in the lives of those suffering from chronic pain. Fitting with data regarding chronic pain, it was expected that people would report a variety of causes of pain, and a variety of locations of pain. In addition, it was hypothesized that pain would be related to depression and anxiety, disability and sleep problems, and that pain would be moderated by acceptance.

Method

Recruitment—Participants filled in a survey that was available in both paper and online versions. Paper copies of the survey were sent out to the waiting rooms of Pain Clinics, General Practitioners, Physiotherapists and outpatient clinics in several major cities (Dunedin, Wellington, Auckland and Wanganui).

A link to the online survey was posted on the Endometriosis NZ and Arthritis NZ websites as well as in the Multiple Sclerosis web newsletter, which directed participants to a version of the survey that was available on Google documents.

In both paper and online versions the cover page had “Do you suffer from chronic pain?” as the invitation to complete the survey. The first question was “do you suffer from persistent pain?” and if the respondent said no their survey was discarded.

Survey instrument—The survey consisted of a demographics section, and questions pertaining to pain, mental health, disability, acceptance, treatment and opinions (not all results reported here).

The level of pain experienced was measured using the Brief Pain Inventory (BPI).¹⁹ Respondents identified the site of their pain from a list of 14 sites, and were able to nominate additional sites. The listed sites were: neck, lower back, upper back, wrist, head (headache or migraine), joints (e.g. knee, hip or elbow), muscles, feet, chest, stomach, dental, pelvic, skin (burns), amputation (stump or phantom).

There were 12 options that respondents could tick to identify the cause of their pain. The categories were: neuropathic, injury, cancer, amputation, osteoporosis, carpal tunnel syndrome, arthritis, due to surgery, burns, multiple sclerosis, fibromyalgia, and cardiovascular disease. Participants could also choose “I’m not sure” and “other, please list”.

For testing anxiety and depression we used the Hospital Anxiety and Depression scale (HAD).²⁰ It consists of 14 questions, with responses rated from 0–3, giving a possible score of 0–42, with higher scores representing greater impairments. The short form of the Chronic Pain Acceptance Questionnaire (CPAQ) was used to measure acceptance.²¹

Ethical approval was obtained from the Psychological Medicine Department at the University of Otago.

Results

Responses were collected and entered into a spreadsheet. Analysis was conducted using PASW (version 20) software (formerly SPSS statistics).

Participants—The 142 respondents were 16% men and 84% women. Seventy percent responded online. The average age was 40.6 years (SD=16.5; range 15–78). Ethnicity was: 88% NZ European and 8% Māori.

The responses came from all over the country: Otago (23%), Wellington (23%), Canterbury (11%), Manawatu-Wanganui (11%), Auckland (10%), other (13%). Most participants were married (57%), with 33% being single and 10% widowed or separated.

In terms of occupation, 30% worked fulltime and 16% part time, 14% were homemakers, 8% were students and 14% were retired. More than 1 in 5 (22%) participants were unemployed or on a sickness benefit.

Level of education was as follows; 40% had finished high school or less, 31% had completed some university or a diploma, and 30% had achieved a bachelors, masters or PhD.

Cause of pain—Participants with chronic pain were asked what had caused their pain. They were able to endorse more than one response. Table 1 summarises the most common responses, with the top responses being that they were not sure (23%), followed by injury (21%), and arthritis (20%).

Less common causes endorsed by respondents were; osteoporosis, complex regional pain syndrome, cancer, neuralgia, drug side effects, carpal tunnel, burns, pancreatitis, cardiovascular cause, reflux, ulcer, polio, polycystic ovaries, and amputation.

While 45% of respondents endorsed only one cause of their pain, 34% listed two causes and 21% listed three or more causes. The average number of causes per person was 1.8.

Table 1. Responses to “what is the cause of your pain?” (n=142)

Variables	%(n)
Not sure	23(32)
Injury	21(29)
Arthritis	20(28)
Endometriosis	19(27)
Multiple sclerosis	18(25)
Surgery	16(23)
Neuropathic	14(20)
Irritable bowel	11(14)
Fibromyalgia	9(12)
Other	31(44)

Site of pain—Respondents were asked where they felt pain. The most common complaint was pain in the lower back (59%). As shown in Table 2, 49% of participants reported pain in the pelvis or stomach, and 39% reported pain in joints such as knees, elbows or fingers. Similar to the causes of pain, people reported many sites of pain, with 56% reporting three or more pain sites and only 21% reporting a single pain site. The average number of pain sites per person was 3.6.

Table 2. Most common pain locations

Pain site	%(n)
Lower back	59(84)
Pelvis/abdomen	49(69)
Joints	39(56)
Neck	34(48)
Muscle	31(44)
Headache	31(44)
Foot	28(39)
Upper back	23(32)
Wrist	12(17)

Intensity of pain—On the VAS scale from 0 (no pain) to 10 (worst pain imaginable), the average pain rating was 5.8 (in general; SE=0.2). On average, participants rated their pain as 7.7 at its worst (SE=0.2), and 3.6 at its least (SE=0.2). When asked what their pain was at the time of completing the survey, the average score was 5.1 (SE=0.2). Pain constancy was rated 7.2, on average (SE=0.2).

Depression and anxiety—Levels of depressive symptoms were high (mean =7.1, SE=0.3). It was found that 32% of people had a HADS-D score of >7, indicating current depression. If a more conservative cut-off of 10 was used (Crawford et al, 2001), 19% of the participants in the current study met the criteria for potentially clinically relevant depression.

Scores for anxiety were high, with the average score of the entire sample (mean=8.5, SE=0.3) being classed as borderline anxiety on the HADS-A. One in three (33%) people were rated as having an anxiety disorder, using a cutoff score of >7, and 29% reported that anxiety was a problem for them, using a direct question.

Pain-related disability—Respondents were asked to endorse any disabilities in addition to mental health problems that they may have experienced in relation to their pain. Disability was high for this group of people, with the majority having trouble walking (76%), sleeping (75%), concentrating (64%) and maintaining relationships (56%) due to their pain (Table 3). Again, most people endorsed multiple disabilities, with the average number (from 10 choices) being 5.

Table 3. Reported disabilities as a result of chronic pain

Disability	%(n)
Difficulty walking or moving	76(110)
Inability to sleep	75(108)
Inability to concentrate	64(91)
Strained relationships with family/friends	56(79)
Inability to meet family commitments	42(59)
Inability to drive	28(39)
Inability to care for self	25(35)
Loss of a job or chance of promotion	24(34)
None of these	0(1)

Pain acceptance—To investigate the effect of acceptance on respondents experiences of pain, we divided respondents into quartiles based on CPAQ scores, and related acceptance to mental health issues, pain experiences, and unemployment (see Table 4).

The Table suggests that, in all the variables measured, greater acceptance predicted better outcomes. That is - lower pain, disability, mental health issues and higher employment.

Table 4. Scores of pain, mental health, and unemployment by acceptance ratings quartiles

Acceptance	Pain in general	Pain right now	Pain constancy	Disability	Depression	Anxiety	Unemployment
1 (least acceptance)	6.8	6.0	8.0	6.2	9.9	10.9	27%
2	5.9	5.2	7.2	4.8	8.4	9.1	24%
3	6.4	5.4	7.3	4.7	5.9	7.5	16%
4 (most acceptance)	4.2	3.9	6.3	3.6	4.2	6.6	12%

Pain experienced—A multiple linear regression was performed using “pain in general” as an outcome. Variables of interest were: being in paid employment, acceptance, and anxiety and depression. Research suggests fixed effects of gender and age so these were also added to the model as covariates. Variables were all added to the model and then removed in a stepwise fashion until all remaining predictors were statistically significant.

The relationship between “pain in general”, the CPAQ score, and the HAD score was statistically significant ($F=14.6$, $p<.01$). Pain in general could be predicted by the following equation:

$$\text{pain in general} = 5.45 - 0.04(\text{CPAQ score}) + 0.07(\text{HAD score}) + 0.04(\text{age})$$

This indicates that the experience of pain increased in association with higher depression and anxiety scores, age, and decreased in association with higher acceptance scores.

Discussion

A survey of a group of community-based New Zealanders with chronic pain revealed high levels of disability and mental health issues. An examination of these issues are important because the population prevalence of chronic pain is estimated by one study to be 16.9%, which is likely to be an underestimate as many people who have conditions commonly associated with pain (e.g. migraine) do not consider themselves to have chronic pain.²²

The present results are consistent with previous epidemiological NZ research that showed injury or accident, and health condition to be the two most often attributed reasons people gave for their chronic pain.¹

The participants' pain was experienced in multiple areas, consistent with a recent study in Ireland that was conducted with a community sample.⁹ Also consistent with the present research, recent research suggests that lower back pain is the leading cause of disability in Australasia.²³ Interestingly, of those reporting back pain in the present research, only one person reported *only* lower back pain. This supports the argument that chronic pain is a problem with the pain system rather than an issue in the tissues.²⁴

As shown in the present study, chronic pain limits New Zealanders in a number of ways. Most participants in the present study reported that their pain made some usual daily activities difficult. This high level of disability is consistent with previous international studies.^{9,14}

As well as the physical disability we might expect with painful conditions, participants who experienced chronic pain also reported high levels of mental health issues. In New Zealand it has been reported that anxiety and depression interact synergistically with arthritis and neck/back pain disorders to increase the odds of reporting chronic pain beyond an additive model.²⁵

In the present study 19% met criteria for depression, which is consistent with international research, which showed that 15% of chronic pain patients met criteria for a significant depressive disorder.⁹ Rates of anxiety were also high in the present research. Clearly, although causation cannot be inferred, people who experience chronic pain also have significant psychological morbidity.

Given the slice-of-life nature of our survey, we were unable to determine whether mental health problems occurred as a result of chronic pain, or whether these problems were pre-existing and contributed to a person's experience of pain. Other research suggests in most cases anxiety disorders exist before the onset of pain, and depressive disorders come on after the chronic pain experience.²⁶

The present anxiety rates are higher than those that have been reported in a representative community sample,¹³ indicating the respondents in this survey of people who consider themselves to have chronic pain may be different from people in the wider community who report having experienced pain in the previous year. This difference may be due to a response bias. That is, people who are considered resilient (have pain but little disability), may not have responded to a survey asking for respondents who "suffer from chronic pain".

Although the participants may be self-selected, and thus not representative of all chronic pain sufferers, the current participants represent a significant number of pain sufferers, from a range of backgrounds, who are clearly impacted by their pain. It is useful to understand this group's experiences of pain, as they are likely to represent the group of people who will be seeking support for their pain experiences. Although there was also an uneven gender split of respondents, this is consistent with epidemiological studies showing women experience more chronic pain.⁴

In addition to finding that a number of disabilities were associated with participants' experiences of pain, we found that acceptance moderated the experience of pain.

Unlike depression and anxiety that are positively associated with pain (increase pain), acceptance was negatively associated with pain (reduces pain). This is consistent with previous research examining acceptance which suggests that higher levels of acceptance predict lower levels of pain.¹⁷ This finding supports a recent call to further examine the psychosocial factors which contribute to chronic pain in greater specificity.²⁷ Blyth et al (2007) suggest we need to examine with more clarity what we mean when examining psychosocial aspects.

The finding that acceptance is associated with pain experienced adds to this dialogue. Acceptance and Commitment Therapy (ACT), a form of cognitive behavioural therapy, may help meet a need for accessible and cost-effective treatments for chronic pain. ACT has a growing evidence base.²⁸ In New Zealand, level of acceptance of pain have been positively associated with reported duration of pain and negatively associated with total disability.¹⁸

Recent research shows that chronic pain is a major health issue in New Zealand.¹ The current research has provided a more in-depth picture of a group of chronic pain patients in New Zealand. These people provide a snapshot of their experience, which suggests pain stems from multiple origins, with multiple causes.

Consistent with international data, the experience of pain causes high levels of mental health issues and disability. Interestingly levels of pain can be modulated by acceptance. This community data is consistent with findings from epidemiological and clinical samples.

Further research into the treatment of these chronic pain sufferers would help to form a complete picture of what type of services are available and utilised in New Zealand.

Competing interests: Nil.

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