

# **Barriers to Effective Cancer Pain Management**

## **A Survey of Hospitalized Cancer Patients in Australia**

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### **Abstract**

The purpose of this study was to examine attitudinal barriers to effective pain management in a consecutively recruited cohort of 114 cancer patients from four Australian hospitals. When surveyed, 48% of this sample reported experiencing pain within the previous 24 hours. Of these, 56% reported this pain to be "distressing, horrible or excruciating," with large proportions indicating that this pain had affected their movement, sleep and emotional well-being. Three factors were identified as potentially impacting on patients' responses to pain—poor levels of patient knowledge about pain, low perceived control over pain, and a deficit in communication about pain. A trend for older patients to experience more severe pain was also identified. These older patients reported being more willing to tolerate pain and perceive less control over their pain. Suggestions are made for developing patient education programs and further research using concepts drawn from broader social and behavioral models.

Author Keywords: Cancer pain; barriers; communication; patient education

## Introduction

Over 15 years ago, a worldwide review of cancer pain statistics concluded that 50% of patients at all stages of the disease and 70% of patients with advanced neoplasms reported experiencing pain.[1 and 2] At the same time, Foley [3] estimated that approximately 95% of cancer patients could be free of significant pain. Several studies have continued to report that a significant number of cancer patients experience moderate to severe levels of pain. [4, 5 and 6] These studies demonstrate that nearly one-third (30%) of cancer patients are in pain when the disease is diagnosed, however, as the cancer progresses this percentage increases to between 65% and 85%. [2, 7 and 8] This pain, when of moderate or greater than moderate intensity, has been shown to adversely affect quality of life. [6 and 9]

The magnitude of the problem of cancer pain has been recognized by the World Health Organization, and a number of expert committees (e.g., Joint Commission for the Accreditation of Healthcare Organizations, The US Agency for Health Care Policy and Research) have established guidelines for cancer pain management.[8, 9, 10 and 11] In Australia, the National Health and Medical Research Council has recently published clinical guidelines for management of acute pain. [12] The available guidelines for cancer pain management emphasize acceptance of patients' reports of pain, use of oral route of administration, use of morphine for moderate to severe pain and around the clock dosing. Using these guidelines, Zech et al. [13] and Ventrafridda et al. [14] demonstrated good pain relief to be possible for more than 70% of patients.

Despite policy advances in cancer pain management and improvements in radiological and surgical treatments, and the efficacy of current pharmacology, research suggests that many patients with cancer continue to experience unnecessarily high levels of pain. For example, ten years after Bonica's[1] study, Zhukovsky et al. [7] reported that 44% of cancer patients were experiencing moderate to greater than moderate pain, but only 41% of those patients experiencing pain were unsatisfied with their pain management. Such findings have prompted recent investigators to look more broadly at organizational and behavioral factors that may be contributing to the cancer pain problem. There is a growing body of evidence which suggests that various social and attitudinal factors, such as negative public attitudes toward cancer pain and opioid analgesia, may be contributing to patients' reluctance to report pain and comply with pain therapy. [15, 16 and 17] Other studies have similarly noted that unrelieved cancer pain may be more the result of patients' and health care providers' beliefs and attitudes, rather than the lack of effective pain treatment. [18, 19, 20, 21 and 22]

The consequences of inadequate pain control are well documented. Studies report unrelieved pain can detrimentally affect physical functioning, psychological well-being and social interaction.[23 and 24] The importance of achieving effective pain control has also been further highlighted in recent times by evidence which suggests it to be an issue underpinning the current discussion about treatment decisions for the end stage of life. Fear of uncontrolled pain has been cited as a key motivator behind the growing movement to legalize euthanasia for terminally-ill patients. [9] It is important, therefore, that further studies be undertaken to gain a better understanding of factors contributing to the inadequate use of readily available pain therapies which have demonstrated efficacy.

This paper presents findings from the first phase of a larger two phase study exploring patient and nurse related beliefs and attitudes that may influence hospitalized patient's response to pain. Specifically, the purpose of this paper is to examine beliefs and attitudes amongst an Australian sample of hospitalized cancer patients that may influence the extent to which a person with cancer may communicate with health care professionals regarding pain. The specific objectives for this study were to:

- describe Australian cancer patients' beliefs, attitudes and communication behaviors regarding pain and pain relieving medication;
- determine the prevalence and severity of cancer patients' pain in the Australian setting;
- examine the relationship between demographic factors and pain experiences and beliefs for Australian cancer patients;
- examine the relationship between cancer patients' beliefs and attitudes towards cancer pain and their pain experiences and pain communication behaviors.

## Methods

### Design

A cross-sectional survey was conducted with all eligible surgical, medical and oncology patients in two large public hospitals in Brisbane, Australia. For the present paper, survey data from the 114 oncology patients only are discussed.

### Sample

Eligibility criteria for inclusion in the larger study included being a medical, surgical or oncology patient over 18 years of age; conscious, and able to read and converse in English; and in a stable and satisfactory condition, as determined by the Clinical Nurse Consultant. Seven hundred and twenty-one (721) eligible medical, surgical and oncology patients were consecutively identified from these two hospitals during a six week data collection period. Of these, 560 (77.7%) agreed to participate. Apart from refusal to participate, reasons for non-participation included not being in the ward at data collection time or being discharged before the survey was completed. These reasons for non-participation did not differ between medical, surgical, or oncology patients. Of those who participated in the study, 114 (20.4%) were patients with cancer and it is the survey responses for this particular group that are examined in this paper. These patients had solid tumor or hematological malignancies, were at varying stages of disease, and were admitted to the oncology units for chemotherapy and/or radiotherapy. The demographic characteristics of the respondents in this study are presented in Table 1.

Table 1. Demographic Characteristics of Oncology Patients (n = 114)

	Frequency	%
<b>Gender (n = 113)</b>		
Male	50	44.2
Female	63	55.8
<b>Age (n = 113)</b>		
< 30 years	5	4.4
30–44 years	21	18.6
45–59 years	35	31.0
61–74 years	41	36.3
≥75 years	11	9.7
<b>Marital Status (n = 114)</b>		
Single	16	14.0
Married	70	61.4
Defacto	1	0.9
Divorced/Separated	15	13.2
Widowed	12	10.5
<b>Country of Birth (n = 113)</b>		
Australia	79	69.0
United Kingdom	16	14.2
Europe	6	5.3
New Zealand	6	5.3
Other	6	5.3
Unknown	1	0.9
<b>Current Paid Work (n = 114)</b>		
Yes	24	21.1
No	90	78.9
<b>Status if NOT in Paid Work (n = 89)</b>		
Homemaker	29	32.6
Retired	40	44.9
Unemployed	7	7.9
Other	13	14.6

### Instrument

A structured 64-item questionnaire, comprising existing and modified instruments, was used to assess the key concepts relevant to the study. The instrument was adapted from a survey developed and pilot tested in previous studies by the investigators[25] and comprised three main sections assessing: (1) attitudes, beliefs and knowledge about pain and pain management; (2) communication behaviors in response to pain; and (3) pain experiences.

### Attitudes, Beliefs and Knowledge about Pain and Pain Management

The instrument for the present study comprised a range of measures to assess attitudes and beliefs that have been identified in the literature as potentially influencing patients' responses and behaviors in relation to pain. According to the available literature, attitudinal barriers to effective pain management may include factors such as beliefs that analgesic medication were "bad for the body," fears regarding toxicity and drug addiction, and the belief that pain is "normal." [26, 27 and 28] A series of 47 items were included in the questionnaire to assess these beliefs and attitudes toward pain. These included 12 items from the Pain Beliefs Questionnaire which assessed



strength of belief in the organic and psychological basis of pain, [28] five items from the Survey of Pain Attitudes [27] assessing perceived control over pain, and 13 items from the Barriers Questionnaire by Ward [29] assessing concerns about addiction and attitudes to injections. In addition, 17 items assessing willingness to communicate and tolerate pain that were developed by the investigators in previous studies were also included. [25] For each of these 47 attitude items, patients rated their agreement on a 5-point scale ranging from 1 = Strongly Agree to 5 = Strongly Disagree.

To identify subscales of key attitudes and beliefs that may influence pain, principal component analysis with varimax rotation was performed on these 47 attitude items. Twelve factors resulted with an eigenvalue greater than one, but on the basis of the scree plot and the variance explained by each factor, 5 factors were considered optimal. This solution accounted for 36.6% of the total variance. Items were excluded if they had roughly equal or low loadings—or both—on several factors, or if they had a factor loading of less than 0.40. In addition, three items that were conceptually linked, but did not fit conceptually with the remaining items loading on the scale, were extracted and used to form a separate scale. The final solution therefore comprised 6 subscales assessing attitudes and beliefs concerning pain and pain management. One of these subscales, Attitudes to Injections, was originally included in the questionnaire for its relevance to our larger study of hospitalized patients comprising both cancer and non-cancer patients. However, since few cancer patients would be receiving analgesia by way of intermittent injection, this scale was also excluded from the present analysis that addresses issues for cancer patients only.

A summary of the descriptive statistics pertaining to the 5 scales which were subsequently used to assess pain beliefs and attitudes in this study of people with cancer, is presented in Table 2. Scores were recoded so that a higher score on the measure represented a stronger belief / attitude.

Table 2. Distribution of the Beliefs and Attitudes Scales (n = 114) (Potential Range 10–50)

Scale	No. of Items	$\alpha$	Mean	Standard Deviation	Actual Range
Willingness to Tolerate Pain	9	0.80	25.5	6.4	10–41
Physical Dimensions of Pain	6	0.69	38.0	5.7	25–50
Psychological Dimensions of Pain	8	0.77	37.9	4.7	26–50
Concern About Addiction to Pain-Relieving Medication	3	0.78	35.7	8.3	17–50
Perceived Control Over Pain	3	0.72	34.6	8.2	10–50

In addition to these five scales, a scale ( $\alpha = 0.85$ ) to measure the degree of concern about side effects (e.g., constipation, drowsiness, nausea) was also developed by summation of 6 component parts from one item developed from Laing et al.[30] These items were measured on a 6-point scale where 0 = Not at all concerned and 5 = Extremely concerned.

A number of single items were also included to assess expectations and knowledge regarding pain. Expected (developed from Lavies[31]) and actual relief (adapted from Donovan [32]) from pain relieving medication were measured on two individual items. Another item (developed from Lavies [31]) asked patients with pain whether this pain had been worse, not as bad, or the same as expected, or if they were unsure, or had not thought about it. Knowledge about pain relieving medication was assessed on a 6-point scale from 0 = Nothing at all to 5 = A great deal, and a patient's interest in receiving pain management information and the preferred format for this information were elicited in three items.

#### Communication Behaviors in Response to Pain

Participants were asked to identify, using a series of yes/no response items, whether during the previous 24 hours they had spoken to nurses, doctors, other health professionals, relatives/friends, other patients, or no one about the pain they had experienced.

#### Pain Experience

The experience of pain was assessed using items modified from the Brief Pain Inventory (BPI).[33] The BPI is widely used in research and clinical practice, and measures a number of dimensions of the pain experience. Patients were asked if they have experienced pain, other than everyday kinds of pain, in the last 24 hours. [33] Those patients who had experienced pain then answered a series of items exploring various aspects of this pain experience. Pain severity over the past week was rated on three items: at its worst, average, and right now, on an 11-point numerical rating scale ranging from 0 = No pain to 10 = Pain as bad as you can imagine (modified from the BPI [33]). In addition to these measures of pain intensity, a verbal descriptor scale (VDS) of pain intensity during the past 24 hours was also included, using a numerical rating scale from 1 = Mild to 5 = Excruciating (modified from the Present Pain Intensity Scale [34]). A single item measured the duration of pain that was then categorized as acute pain (hours or days) or chronic pain (weeks or more), and the impact of pain on wellbeing (interference subscale) was measured by items adapted from the BPI. [33] Patients were asked to rate the impact of pain during the past 24 hours on three physical and six emotional aspects of their well-being using a 6-point scale of 0 = Not at all affected to 5 = Extremely affected.

#### Procedure

Ethics Committees at each of the participating organizations granted ethics approval. Research assistants, who were experienced registered nurses, were trained to administer the questionnaire. Over a consecutive six-week period, the Clinical Nurse Consultant in the oncology units identified all patients who met the eligibility criteria and data collection occurred.

#### Results

##### Cancer Patients' Beliefs and Attitudes About Pain and Pain-Relieving Medication

The responses to items assessing patients' beliefs and attitudes toward pain and pain management are presented in Table 3. The responses to these items suggest that many patients continue to hold beliefs and perceptions that could be considered barriers to effective pain management. For example, over one third (38.6%) of patients agreed that they would wait until pain was bad before asking for help, and almost one third (32.5%) agreed that pain relieving medication should be saved in case pain gets

worse. Similarly, one-third (33.3%) of the sample agreed it was important to be strong and not talk about pain, while a further 17.5% were unsure about their response to this item. Many patients either agreed or were unsure (42.1% and 27.2% respectively) that if you take pain relieving medication when you have some pain, then it might not work as well if the pain becomes worse.

Table 3. Distribution of Oncology Patients' Beliefs and Attitudes About Pain and Pain-Relieving Medication

Scale Items	n	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
		%				
<b>Willingness to Tolerate Pain</b>						
I would wait until my pain was really bad before I asked for help.	114	7.9	30.7	5.3	42.1	14.0
I wouldn't like to bother the nurse if I had pain.	114	4.4	12.3	5.3	63.2	14.9
I would wait until the nurse asked me if I wanted pain-relieving medication.	114	6.1	13.3	7.0	65.8	7.9
Pain-relieving medication should be 'saved' in case the pain gets worse.	113	5.3	27.2	15.8	43.9	7.0
It is important to be strong by not talking about pain.	113	7.0	26.3	17.5	43.9	4.4
Only weak people complain about pain.	113	4.4	6.1	9.6	58.8	20.2
I would be afraid to ask for pain-relieving medication.	114	0.0	3.5	2.6	77.2	16.7
I would rather have the pain than any of the side effects from pain-relieving medication.	114	4.4	11.4	27.2	47.4	9.6
If you take pain-relieving medication when you have some pain, then it might not work as well if the pain becomes worse.	111	7.9	34.2	27.2	25.4	2.6
<b>Physical Dimensions of Pain</b>						
Being in pain prevents you from enjoying hobbies and social activities.	112	33.3	50.0	7.0	7.0	0.9
Pain is a sign of illness.	113	12.3	53.5	12.3	20.2	0.9
The amount of pain is related to the amount of damage.	112	12.3	48.2	24.6	12.3	0.9
Experiencing pain is a sign that something is wrong with the body.	112	37.7	53.5	2.6	4.4	0.0
Physical exercise makes pain worse.	112	15.8	28.1	25.4	28.1	0.9
Pain is the result of damage to the tissues of the body.	113	21.9	51.8	21.1	4.4	0.0
<b>Psychological Beliefs About Pain</b>						
Feeling depressed makes pain worse.	111	21.9	60.5	10.5	3.5	0.9
Being anxious makes pain worse.	114	16.7	63.2	14.0	5.3	0.9
Pain can be controlled by changing your thoughts.	111	6.1	40.0	32.5	17.5	0.9
Thinking about pain makes it worse.	114	20.2	62.3	8.8	7.9	0.9
When relaxed, pain is easier to cope with.	114	30.2	71.1	5.3	3.5	0.0

Concentration or relaxation can take 'the edge' off pain.	113	14.0	59.6	14.9	10.5	0.0
It is possible to learn to manage pain,	112	11.4	62.3	14.9	9.6	0.0
It is possible to influence the amount of pain you feel.	114	5.3	50.0	28.1	14.9	1.8
Concern About Addiction						
Pain-relieving medication is very addictive.	114	13.2	24.6	34.2	24.6	3.5
There is a real danger of becoming addicted to pain-relieving medication.	113	21.9	42.1	21.1	11.4	2.6
People can easily become addicted to pain-relieving medication.	114	22.8	48.2	17.5	11.4	0.0
Perceived Control Over Pain						
Impossible to do much for oneself to relieve pain.	112	5.3	20.2	10.5	51.8	10.5
It is impossible to control pain on your own.	112	7.9	30.7	14.9	37.7	7.0
There is little that can be done to ease the pain you feel.	113	0.9	8.8	8.8	64.9	15.8

Negative perceptions regarding pain and pain treatments were also commonly expressed in response to items which indicated that the majority of patients agreed that being in pain prevents you from enjoying hobbies and social activities (83.3%), and that experiencing pain is a sign that something is wrong with the body (91.2%). Moreover, many patients expressed concern about the effects of pain relieving medication. Seventy-one per cent believed it is easy to become addicted to pain relieving medication, and 64% believed there to be a real danger of addiction. A further indication of patients' concern about addiction is evidenced in the results in Table 4 in which the responses indicating the degree of concern for each side-effect are categorized where: 0,1 = No/little concern; 2,3 = Some concern; 4,5 = Very concerned. These results indicate many patients were also concerned about constipation, vomiting and nausea as side effects of pain relieving medication.

Table 4. Distribution of Oncology Patients' Concerns about the Side Effects of Pain-Relieving Medication (n = 114)

	No/Little Concern %	Some Concern %	Very Concerned %	Mean	SD
Drug Addiction	28.9	14.9	56.1	3.1	2.1
Constipation	26.3	25.4	48.2	2.9	1.9
Vomiting	28.9	26.3	44.7	2.8	1.9
Nausea	31.6	34.2	34.2	2.6	1.8
Drowsiness	41.2	30.7	28.1	2.2	1.8
Itch	46.5	24.6	28.9	2.0	1.9

A wide range of views was evident with regard to perceptions of the extent to which one has control over pain (see Table 3). On the one hand, many patients agreed it is possible to learn to manage pain (73.7%), with 62.3% agreeing it was possible to do something for oneself to relieve pain, and 80% agreeing it was possible to ease the pain you feel. However, while a notable proportion of patients reported to believe something could be done to manage pain, only around half (55.3%) agreed it is possible to influence the amount of pain they felt.

### Knowledge of Pain-Relieving Medications and Expectations of Pain Relief

Although most patients had high expectations of pain relief (78.5% expected "a lot/complete" relief), almost one-third of the oncology patients claimed to know "nothing at all" about pain relieving medications and, on average, patients knew only a little about pain relieving medications (Mean = 1.7, SD = 1.5). These results are presented in Table 5. Almost two-thirds of patients wanted to know more about pain relieving medication, with the preferred format for patient information being a combination of a booklet and discussions with staff.

Table 5. Distribution of Oncology Patients' Knowledge and Expectation of Pain-Relieving Medication (n = 114)

	Frequency	%
<b>Level of Knowledge</b>		
No knowledge	36	31.6
Very little knowledge	17	14.9
Some knowledge	47	41.3
Considerable knowledge	14	12.3
<b>Expectation of Pain Relief</b>		
No relief	3	2.7
Some relief	21	18.8
A lot of relief	51	45.5
Complete relief	37	33.0

### Pain Experience

Forty-eight percent (55) of the 114 oncology patients reported having pain (more than everyday type of pain) in the 24 hours prior to being surveyed. Of these patients, 56.3% reported their pain to be mild or discomforting, but the remaining 43.7% reported their pain to be distressing, horrible or excruciating. On a scale from 0 (no pain) to 10 (pain as bad as can be imagined), mean pain scores for pain at its worst in the past 24 hours was 5.4 (SD = 2.4), and pain on average in the past 24 hours was 3.8 (SD = 2.2). With half the patients reporting no/very little pain right now, the median rating for pain right now was 1 and over ninety percent of patients rated pain right now at below 5. The distributions of scores are graphed in Figure 1. Over one third (38.2%) of participants reported that on average their pain during the previous 24 hours was at or above 5. This level has been identified by Cleeland and Syrjala[9] as being of clinical significance, as people who report pain at this level are likely to have experienced a significant impact on activities of daily living.

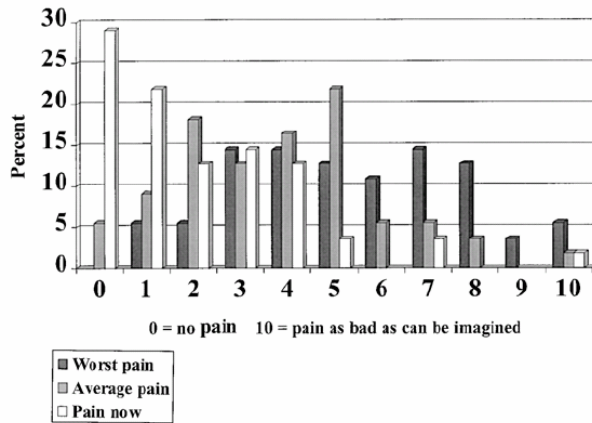


Fig. 1. Pain experienced by oncology patients during the past 24 hours.

Of those patients who had experienced pain in the past 24 hours, most reported that their pain had affected their well-being (see Table 6). Nearly half the patients reported that pain had some to an extreme effect on their ability to sleep (49.1%) and move (49.0%) and it made them feel exhausted (56.4%), depressed (41.8%), worried (38.2%), frightened (30.9%), alone (29.1%) and angry (18.2%).

Table 6. Distribution of the Impact of Pain on Well-being (n = 55)

Well-being	Impact of Pain		
	None %	Some %	Extreme %
<b>Physical</b>			
Sleep	50.9	30.9	18.2
Move	50.9	34.5	14.5
Eat	65.5	18.2	16.4
<b>Psychological</b>			
Angry	81.8	10.9	7.3
Alone	70.9	20.0	9.1
Worried	61.8	18.2	20.0
Exhausted	43.6	29.1	27.3
Depressed	58.2	18.2	23.6
Frightened	69.1	14.5	16.4

#### Communication About Pain

About half (52.7%) the oncology patients who were in pain in the past 24 hours had not spoken to anyone about pain relieving medication. The patients who spoke to someone about pain relieving medication were most likely to speak to nurses (34.5%) and sometimes to doctors (18.2%). Less than 10% of patients with pain had discussed this pain with family or friends.

#### Pain Experiences and Demographic Factors

A series of t-tests, non-parametric Mann-Whitney U-tests and Chi-square tests were conducted to assess the relationship between age and gender with pain experiences

pain beliefs and attitudes. Table 7 presents results of bivariate analyses examining the relationship between demographic variables and pain experiences.

Table 7. Differences in Oncology Patients' Prevalence and Severity of Pain by Age and Gender (n = 55)

Pain Severity	Age		P
	60 yrs & under (n = 32)	Over 60 yrs (n = 22)	
Distressing/Horrible/Excruciating	31.3%	59.1%	0.04
Worst Pain (5–10)	56.3%	63.6%	0.59
Average Pain (5–10)	34.4%	45.5%	0.41
Pain Right Now (5–10)	6.3%	13.6%	0.36
	Gender		P
	Male	Female	
Distressing/Horrible/Excruciating	31.8%	53.1%	0.12
Worst Pain (5–10)	54.5%	65.6%	0.41
Average Pain (5–10)	31.8%	43.8%	0.38
Pain Right Now (5–10)	4.5%	12.5%	0.32

No gender differences were observed in pain experiences for this sample. Moreover, while fewer patients over 60 years reported experiencing pain in the past 24 hours compared to the younger aged patients, there was no significant difference in prevalence of pain. However, significant age differences in reported pain severity were identified, with patients over 60 years reporting pain of significantly higher severity (using the VDS) ( $t = 4.1$ ,  $P = 0.04$ ) than those 60 years or less. This significant difference in pain severity was not identified in analyses using the three NRS scales assessing pain at its worst, on average, and right now.

#### Beliefs/Attitudes to Pain and Pain Management and Demographic Factors

Table 8 presents results of bivariate analyses examining relationships between demographic variables and pain beliefs and attitudes for the total sample of 114 oncology patients.





Table 8. Differences in Oncology Patients' Beliefs/Attitudes to Pain and Pain Management by Age, Gender (n = 114)

Pain Experience	Age		P	Gender		P
	60 yrs & under (n = 63) Mean (SD)	Over 60 yrs (n = 50) Mean (SD)		Male (n = 50) Mean (SD)	Female (n = 63) Mean (SD)	
Willingness to Tolerate Pain	24.6(6.0)	26.8(6.8)	0.07	26.0(6.4)	25.4(6.2)	0.59
Physical Dimensions of Pain	37.3(5.6)	38.9(5.6)	0.13	38.5(5.8)	37.4(5.5)	0.33
Psychological Dimensions of Pain	38.2(4.4)	37.4(5.1)	0.36	37.8(3.9)	37.9(5.2)	0.91
Concern About Addiction to Pain-Relieving Medication	35.5(8.3)	35.8(8.5)	0.83	35.9(8.0)	35.8(8.4)	0.90
Perceived Control Over Pain	35.5(7.9)	33.1(8.3)	0.12	34.8(8.2)	34.4(8.3)	0.77
Concern About Side Effects of Pain-Relieving Medication	17.6(7.2)	13.1(9.3)	0.01	15.4(8.2)	16.1(8.7)	0.68



No gender differences in pain beliefs and attitudes were identified. However, in terms of overall concerns about the side effects of pain relieving medication, younger patients (60 years and under) were significantly more concerned about many side effects than older patients ( $t(112) = 2.89, P = 0.005$ ). In particular, they were more concerned about nausea, vomiting and constipation. More than 40 percent of younger patients indicated they were very concerned about nausea compared to 24 percent of older patients. Younger patients were also more concerned about vomiting (54.0% vs. 32.0%) and constipation (58.7% vs 34.0%) than older patients.

Although not significant, there was a trend for older patients to more strongly believe that pain has an organic or physical basis, and for them to be more willing to tolerate pain. Moreover, older patients were significantly less knowledgeable about pain relieving medication than younger patients ( $Z = 16.9, P < 0.01$ ). About half the older patients (52.0%) identified that they knew nothing at all about pain relieving medication, compared with sixteen percent (15.9%) of younger patients.

#### Communication Regarding Pain

For this sample, possibly due to the small sub-groups, there were no significant differences between older and younger patients, or males and females, in whether they chose to either speak to no one, or to ask a doctor or nurse for pain relieving medication.

#### Relationship Between Beliefs/Attitudes to Pain Management and Pain

Results of these bivariate analyses assessing relationships between pain beliefs and attitudes, and pain experiences are presented in Table 9. The only significant difference in beliefs/attitudes between patients reporting pain and those not reporting pain was in perceptions about control over pain. Patients who reported they were in pain in the previous 24 hours perceived a lower level of control over pain than patients with no pain. Around half the patients reporting pain believed it was impossible to control pain on your own and 34.5% also agreed that it is impossible to do much for oneself to relieve pain.

Table 9. Differences in Beliefs/Attitudes About Pain and Pain Management Between Oncology Patients Who Did/Did Not Report Pain During the Previous 24 hours (n = 114)

Belief/Attitude About Pain and Pain Management	Group with Pain (n = 55) Mean (SD)	Group with No Pain (n = 59) Mean (SD)	P
Willingness to Tolerate Pain	25.3(6.9)	25.7(6.0)	0.70
Physical Dimensions of Pain	38.8(6.5)	37.2(4.6)	0.16
Psychological Dimensions of Pain	37.8(4.8)	37.9(4.5)	0.88
Concern About Addiction to Pain-Relieving Medication	35.5(9.2)	35.8(7.5)	0.83
Perceived Control Over Pain	33.0(8.3)	36.0(7.9)	0.05
Concern About Side-Effects of Pain-Relieving Medication	14.9(8.4)	16.4(8.6)	0.34

## Discussion

### Scope of the Cancer Pain Problem

The purpose of this study was to provide an overview of beliefs, attitudes and pain experiences among a consecutively recruited cohort of 114 hospitalized cancer patients, and to examine how these beliefs and attitudes may influence responses to and experiences of pain. Importantly, our findings suggest that the problem of cancer pain remains substantial, with almost one-half of our sample reporting having experienced pain in the past 24 hours, and more than 56% of these reporting such pain to be at a level that was "distressing, horrible, or excruciating." Moreover, patients' responses indicate that for many people with cancer, pain continues to negatively affect their ability to sleep and move, as well as their emotional well-being. Almost 40% of patients in this study who had experienced pain in the past 24 hours reported that their average pain in the past 24 hours was 5 or above on a scale from 0 (no pain) to 10 (pain as bad as you can imagine). Studies have reported that pain of this intensity can substantially affect an individual's physical and emotional well-being.[10 and 35] These results are consistent with pain prevalence studies conducted over a number of decades, and across a number of countries and settings, [7, 36 and 37] suggesting that efforts to better understand factors contributing to the pain problem should continue to be priority actions in efforts to reduce the burden of cancer.

### What Factors Are Contributing to the Pain Problem?

This study has provided data that suggest that deficiencies in communication between patients and health care professionals and family members may be an important factor contributing to inadequate pain management. More than one-half of the patients in this study who had experienced pain in the past 24 hours had not spoken to any one about this pain. Responses to attitudinal items highlighting the reluctance of many patients to report pain, and their willingness to wait until the pain was bad before reporting this pain, further emphasize the barriers that exist to effective communication regarding pain. As this study has also found that 60% of our sample wanted to know more about pain relieving medication, some fundamental issues relating to communication between health care professionals and patients require urgent attention, if more effective pain management is to be achieved.

Moreover, this study has also highlighted that communication barriers regarding pain may also extend to interactions with family and friends. Of those patients in pain, only 9.1% indicated they had spoken with a relative or friend about their pain in the past 24 hours. A number of recent studies have noted that family members play an increasingly important role in pain management.[38 and 39] They assess pain, make decisions regarding the type and amount of medication, and determine when the dose of medication is to be taken. [40] At the same time, family members report extreme fears of the patient becoming addicted, fear respiratory depression, and drug tolerance, and may under medicate the patient in response to these concerns. [40 and 41] Given the importance of social interactions in responses to pain, inadequate communication between patients and family is also likely to compromise an effective pain management program.

Cancer patients and their family members are often reluctant to ask health professionals about pain management leading health professionals to believe them satisfied with the information they receive. Patients and family members often do not

know which questions to ask or do not want to seem to be complaining[42] and when they do receive pain management information they may not process, correctly interpret or accurately retain it. [43] However, when pain is accurately reported, physicians understand the cancer patient's pain, and significantly alter analgesic regimes. [44] This highlights the importance of open communication between patients, family members and health professionals in effective pain management.

This study did not identify significant relationships between beliefs/attitudes and pain experiences, with the exception of perceived control over pain, whereby those patients with pain reported lower control over pain. Given the small sample size, it is important to consider that the lack of significant relationships in this study may be a result of insufficient power to detect differences. Indeed, previous studies have reported that the types of concerns about pain and pain relieving medication that were common amongst the sample in this study can act as barriers to effective pain management.[29] Given the extent to which these potential barriers persist amongst the sample in this study, further research that uses concepts from broader social and behavioral models to examine the problem of cancer pain is likely to be useful in identifying strategies for improving pain management. For example, Green's PRECEDE (Predisposing, Reinforcing and Enabling Causes in Educational Diagnosis and Evaluation) model of health behavior [45] identifies three categories of factors that may potentially influence a health behavior such as the use of effective strategies to minimize pain. These three categories include predisposing factors, such as beliefs and attitudes and perceptions that might facilitate or hinder a person's motivation to perform a desired behavior, enabling factors, or the skills and resources necessary to perform the behavior, and reinforcing factors, such as feedback provided by family or health professionals that might influence continuance or discontinuance of the behavior. Despite the potential usefulness of such health behavior models in gaining a better understanding of patients' responses to cancer related symptoms such as pain, few studies to date have undertaken theoretically based investigations of pain management behaviors using social and behavioral concepts drawn from such models.

Furthermore, while the small sample size in this study prohibits any definitive conclusions being drawn about relationships between beliefs, attitudes and pain experiences, our results highlight some additional issues that are worthy of further investigation. In particular, our results indicate that older persons with cancer may experience pain of higher severity than younger persons. Findings from similar studies on age related differences in pain experiences are inconsistent, with some studies suggesting older persons report higher levels of pain,[46 and 47] other studies indicating no difference, [48] and yet other studies reporting lower levels of pain amongst older persons. Nonetheless, the presence of age related differences in the present study emphasizes the importance for clinicians to consider the particular medical, social or psychological issues for people of different age groups that may influence pain experiences. For example, in the present study, the differing pain experiences observed amongst various age groups may be due to disease or treatment related factors, or the presence of other co-morbidities. Physiological changes associated with aging make it quite plausible for clinicians to consider that older persons may have a range of other painful conditions, and thus require pain management interventions tailored to these more complex pain experiences.

However, it is also possible that the age related differences in attitudes and perceptions regarding pain may be an important factor contributing to higher levels of pain observed in the older population. That is, while the finding was not statistically significant, there was a trend for older patients to report being more willing to tolerate pain, and to perceive they have less control over pain management in the hospital setting. As suggested by other studies of elderly patients' perceptions and responses to pain, such findings support the view that older persons may more commonly hold attitudes of stoicism, fatalism and resignation, thus making them less willing to report pain and take action to relieve pain.[49 and 50] It may be that older patients who appear more willing to tolerate their pain, and are more reluctant to express their pain, may be experiencing unnecessary levels of pain.

Our results suggest that older patients know significantly less about pain relieving medication than younger patients. Such lower levels of knowledge may further compound the problem for older persons, as they harbor misconceptions or may be unaware of effective pain management strategies. It is also possible to speculate from this finding that the higher levels of pain amongst older patients may be because health care professionals use differing pain management practices for different age groups. That is, health care professionals may unknowingly provide less information to older patients, based on the belief that older persons desire less information. This is supported by findings of studies by Stein and Meich,[51] who reported that nurses were twice as likely to incorrectly leave pain off a problem list for older patients than for younger patients.

Recent Australian studies have identified that nurses' may lack knowledge and have attitudes and practices toward pain management that may compromise pain management for older patients. Sloman et al.[52] found although nurses were aware that pain is commonly under treated in the elderly (70%) and believed the goal of pain management was to maintain older patients in a pain free state (86%) they were concerned about addiction (34%) and respiratory depression (59%) and thought that analgesics had a longer duration of effectiveness in older people than in younger people (47%). Courtney et al. [53] reported that most acute care nurses (86%) rarely asked older patients about their pain, compared with their practice with younger patients. These age related differences in attitudes and perceptions regarding pain and pain management highlight at the very least that pain assessment and education strategies need to be individualized, as particular barriers to effective pain management may be more common among different age groups.

## Conclusions

The present study reports on pain beliefs, attitudes and experiences of a consecutively recruited cohort of 114 hospitalized cancer patients. While the small sample size limits the conclusions that can be drawn, the descriptive data presented in this study highlights some important issues for consideration by practitioners and researchers. Our results confirm that some of the patient-related barriers to effective pain management reported in the literature for more than a decade may be continuing to create problems for effective pain management. Continuing efforts to improve patient and health care professional education in these areas are required. The management of cancer pain is a critical issue in the care of patients with cancer. All health professionals must ensure their knowledge is current and that patients receive timely

and appropriate education.[38 and 54] Importantly, our results suggest that educational efforts need to take account of a broader range of social and attitudinal factors that are likely to be contributing to the pain problem. Technological advances in pain management may only have limited value if societal attitudes that create barriers to effectively using these therapies are not addressed.

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