

Original Research Article**Patient-Related Barriers to Cancer Pain Management – A Prospective Cross Sectional Study in a Tertiary Hospital**

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Abstract

Effective management of cancer pain is often hampered by patients' lack of knowledge regarding cancer pain management and other barriers related to ethnicity and religious beliefs. This cross sectional study was performed to determine the patient-related barriers to effective cancer pain management. One hundred patients receiving cancer pain management were studied. Inclusion criteria were: patients over the age of 18 years, able to communicate, with known diagnosis of cancer, experiencing persistent pain for the past two weeks. A modified version of the Barriers Questionnaire II (BQ-II) was used and a modified Brief Pain Inventory was used to assess the pain profile. Barriers such as, patient's attitude and beliefs, communication skills and fear of side effects of pain medication were determined, given a score and the summation was recorded as the total patient related barriers score. Overall, 85% of respondents achieved more than 40% pain relief and the 72 of 100 patients reported low patient related barrier scores of 6 or less. Nevertheless, the main patient related barriers were: fear of tolerance to opioids (51%), ethnicity ($p=0.003$) and religious beliefs ($p=0.002$) which constituted the major components of the patient-related barriers score. Ethnicity and religious beliefs had significant influence on patient-related barriers score suggesting the need of further investigation into this area. In order to achieve a comprehensive view, other barriers to effective cancer pain management such as those related to the health systems and healthcare providers need to be assessed together.

Keywords: Cancer pain management, opioid, patient-related barriers, tertiary hospital, tolerance.

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Introduction

Cancer pain relief is achieved by the use of a team approach, careful monitoring of pain, adjustment of treatment strategy and continued assessment of treatment effectiveness (1,2,3). Patients and their families are units of care and issues affecting caregivers can also affect patients' care (4,5). Adherence to guidelines for cancer pain management has shown to improve pain treatment efficacy ($p<0.02$) compared to standard care (6).

Sub-optimal management of cancer pain has been reported worldwide (7). Various studies have suggested that poor management of cancer pain may be attributed to the attitudes of patients and

healthcare providers, rather than the lack of effective pain treatment (8,9,10). Ward et al. (1993) developed a Barriers Questionnaire (BQ) which was updated to Barriers Questionnaire II (BQ-II) in 2002 with an aim to examine patient-related barriers to effective cancer pain management (11,12,13,14). WHO in 1996 reported that satisfactory cancer pain relief could be achieved in 90% of patients using pharmacological therapy (15). Unfortunately, reports of better cancer pain relief in different clinical settings have been found to be lacking.

The present study aimed to determine patient related barriers to cancer pain management and to identify factors important in a local setting. Factors that were assessed included: socio-demographic profile, type of cancer diagnosis, pain profile, patients'

knowledge on cancer pain management (CPM), and usage of complementary medication. The present paper aims to make contribution towards improving cancer pain management in South East Asian region

Materials and Methods

This cross-sectional study was conducted during 29/10/2009-25/4/2010 on cancer patients admitted to the Surgery, Oncology, Obstetric & Gynaecology wards and Oncology clinics with approval from the ethics committee.

A universal sample consisting of 100 cancer patients were recruited for this study. The inclusion criteria were:- patients over the age of 18 years with known diagnosis of cancer, who had persistent pain for the past two weeks, being prescribed pain medication (oral, topical, parenteral) and able to communicate. Exclusion criteria were: patients who have major psychiatric disorders and terminally ill cancer patients.

A structured questionnaire was developed which incorporated items from the Barriers Questionnaire-II (BQ-II) (Internal reliability: alpha Cronbach's score of 0.89) by Wards et al. (2002) to act as a tool which enabled determination of patient-related barriers to cancer pain management (12). Barriers such as, patient's attitude and beliefs, communication, fear of side effects, addiction and tolerance to pain medication were determined and given a score, the summation of which was recorded as the patient related barrier (PRB) score which consists of 14 items (Figure 3) each given one point while the item on side effects of medications (11 types: 1. Nausea and vomiting; 2. Drowsiness; 3. Constipation; 4. Problems with urination; 5. Nightmares; 6. Lack of appetite; 7. Difficulty in sleeping; 8. Tiredness; 9. Diarrhea; 10. Itchiness; 11. Sweating) given 11 points amount to a maximum of 24 points. A modified version of the "Brief Pain Inventory" (BPI) was used to determine patient's pain profile, usage of analgesics and adverse effects from pain (16).

Data was entered and analyzed using the Statistical Package for Social Science (SPSS) version 19. The relation between ethnicity, religious beliefs, education level and PRB scores were tested for statistical significance by the ANOVA test. Non parametric test was used to analyze the relationship between age, gender and PRB scores. All statistical tests were interpreted at 5% significance for alpha error (two-tailed).

Results

A total of 100 subjects consented to participate in this study. Subject's socio-demographic and health characteristics were shown in Table 1. It may be

mentioned that the ethnic population of Malaysia comprises of Malays, Chinese and Indians and the majority belong to the Islamic religion followed by Christians, Buddhists and Hindus. The age distribution reflected involvement of the older age group, of whom 54% were 60 years or more. The malignancies studied included: gastrointestinal (26%), gynaecological (23%), breast (10%), head and neck (8%), prostate (6%), lung (5%) and other cancers (21%).

In terms of age difference, older patients (60 years old or more) tend to perceive less control over their cancer pain (48.1 %) than younger patients (34.8%), as well as more willing to tolerate pain (70.4%) compared to younger patients (65.2%), although this was not statistically significant. A total of 39.7% and 50% of all women preferred to tolerate pain and preferred to "save" the medication to be used when the pain got worse, respectively. In the case of male patients, the corresponding figures were 21.4% and 33.3% respectively. There was no significant correlation of total pain score to patient related barriers, including each subcategory: current pain ($p = 0.804$), and worst pain in 24 hours ($p = 0.346$). (Fig. 1). 85% of patients reported satisfactory pain relief (at least 40% of pain relief) (Fig. 2). There were no significant differences in terms of current pain, worst pain, average pain in 1 week and reported

Table 1: Table showing demographic data of respondents

N =100	
Age (yr)	
≤18	0
19-28	0
29-38	2
39-48	22
49-58	19
59-68	39
69-78	14
79-88	4
≥89	0
Gender	
Male / Female	42/ 58
Race	
Malay	49
Chinese	41
Indian	5
Others	5
Religion	
Islam	53
Buddhist	41
Others	6
Educational level	
Primary	47
Secondary	46
Tertiary	7

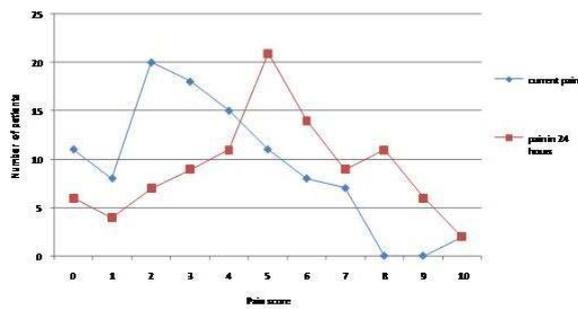


Figure 1: Line graph showing pain profile

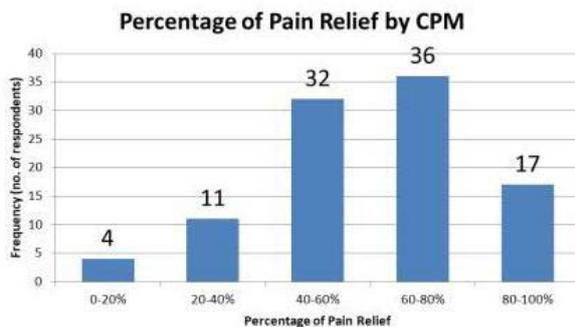


Figure 2: Bar chart showing percentage of pain relief by CPM.

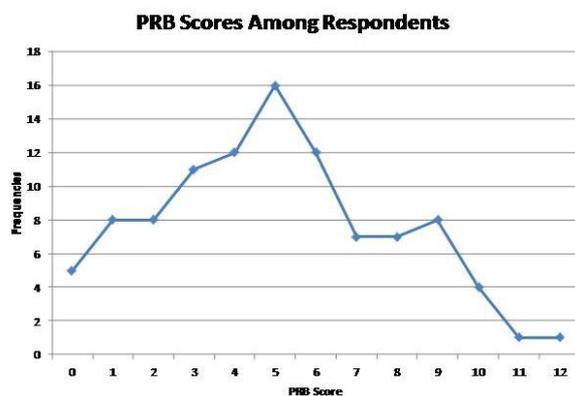


Figure 3: PRB Scores among respondents

reported satisfactory pain relief with respect to the different types of cancers.

The PRB scores amongst the respondents were low which ranged between 3 and 6 (51%) whereby the maximum possible score is 24 (Fig. 3). Significant differences were found in the PRB scores. There were significant differences amongst the different races with respect to the PRB score. Tukey HSD's post-hoc test revealed significant difference between Malay and Chinese ($p = 0.003$). Malays had the highest PRB score. (6.10 ± 2.77). In terms of religion, there was a significant difference between groups; Tukey HSD's post-hoc test revealed significant difference between Muslims and Buddhists ($p = 0.002$) with Muslims having the highest PRB score (5.80 ± 2.74). Other factors such as: gender, age group (60 years and above or lower than 60 years), education level and knowledge

regarding cancer pain management, were not significantly related to the PRB scores, in any way.

However, females (5.17 ± 2.61) scored higher than males (4.69 ± 3.13) for PRB (41.01 ± 7.77), while subjects who were less than 60 years scored (4.97 ± 3.17) for PRB while those who were 60 years and above scored (4.96 ± 2.54). In terms of patient related factors, a comparison of those who agree or disagree with these factors and the relation to the PRB scores were shown (Fig. 4).

Discussion

Patient-related factors found to be important were: fear of tolerance to medication, ethnicity and religious beliefs. This was in accordance with a previous study which found that fear of tolerance was one of the major patient-related barrier (17). Decreased effectiveness of pain medication can be multi-factorial, ranging from a probable increase in cancer pain with advanced disease, true physiological tolerance and psychological tolerance to pain medications.

An earlier study found that 41% of patients were adherent ($p = 0.005$) to medication and this could be explained by the fact that patients with higher pain relief scores were more adherent with their analgesic regimen (18). In agreement with findings in this study, other researchers had stated that the patients who had better pain relief were more adhered to cancer pain management (19).

According to past research, pain assessment in the elderly needs extra caution as they may have a short attention span and difficulties in comprehending the questions, particularly those with cognitive impairment and this may confound the findings in this study (20). A research study found that older patients reported higher pain severity than those of 60 years or less (21). We found no difference in variations of pain severity between those who were 60 years and above or below 60 years age groups. We found that gender had no influence on all components of the (PRB) score. It has been reported that overt pain behaviour was more acceptable to women than men (22). A past study stated that ethnicity can affect a patient's response to pain and this can impact on pain management and may be related to the reluctance to use pain medication and the believe that pain as a form of punishment from God (23). In this study, Malays had more barriers than Chinese ($p = 0.003$). Studies reported the differences in pain reporting and pain treatment between different ethnic groups as they would probably be influenced by their own different cultural views of pain and its management (24). However, another research study reported the differences in healthcare seeking behaviour of cancer

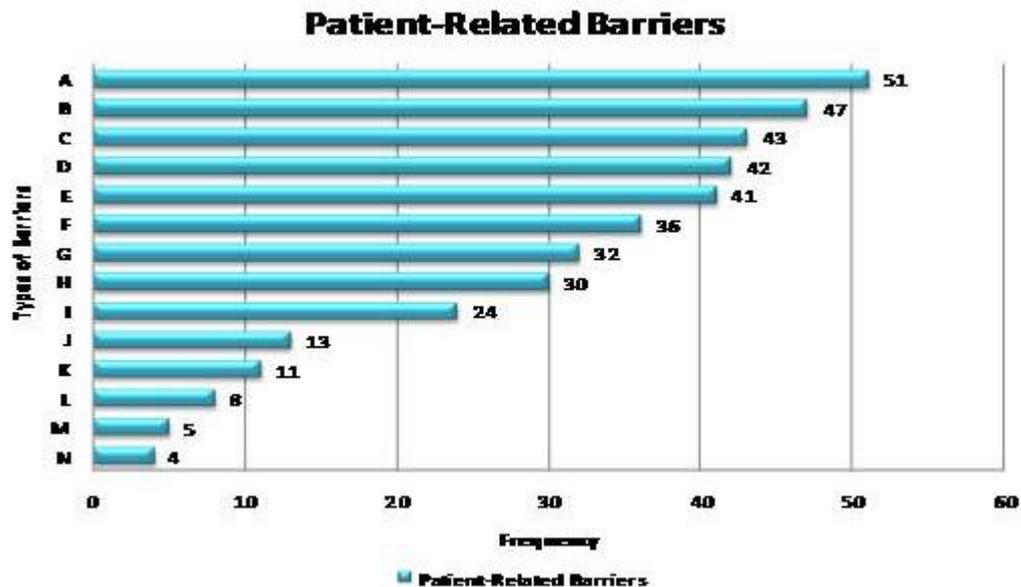


Figure 4: Bar chart showing types of Patient-Related Barriers

Legend:

Patient related barriers:	Agree (PRB score)	Disagree (PRB score)	P value
A: Prolonged usage of pain medication can cause tolerance	3.86 ±2.60	6.12±2.52	<0.05
B: Pain is a sign of progression of illness and should not be masked	5.89 ±2.76	4.15±2.67	0.002
C: Pain medication should be saved for when the pain gets worse	6.69 ±2.51	3.66±2.634	<0.05
D: Cancer pain cannot be controlled/ relieved	6.26 ±2.37	4.18 ±2.65	0.002
E: Influence from family and friends in pain management	5.54 ±2.18	4.58 ±3.17	0.076
F: Rather save pain medication in case the pain gets worse	6.70 ±2.51	3.67±2.34	<0.05
G: Rather tolerate moderate pain until it worsens before calling the nurse	6.66 ±2.50	4.18 ±2.65	<0.05
H: Believe that pain medication can lead to addiction easily	7.07±2.48	4.07±2.50	<0.05
I: Deserves to feel pain as a form of punishment from god	7.79 ±2.12	4.07±2.42	<0.05
J: Side effects of pain medication is unbearable	7.92 ±2.32	4.52±2.64	<0.05
K: Tolerates side effects of pain medication	7.92 ±2.03	4.53 ±2.65	<0.05
L: Believe that complaining about pain may distract the doctor	8.62 ±3.07	4.65 ±2.60	0.008
M: Pain medication is not helpful	4.80 ±2.78	4.98 ±2.58	0.895
N: Prefers to bear the pain instead of using pain medication	6.66 ±2.50	4.18 ±2.65	<0.05

cancer patients and found that there was no difference in terms of ethnicity (25). In the literature, there has been reported that different ethnic groups had different pain thresholds as indicated by different degrees of unpleasantness from thermal pain felt among African-Americans and Caucasians (26).

Education level had no significant effect on PRB. A higher education level would enable patients easily understand these education programmes. Admittedly, we were not able to carry out any patient education program to assess this. A research study reported the effectiveness of a pain educational program to overcome patient-related barriers. They reported an improvement of adherence, from 22 to 72% ($p < 0.05$) of patients who had completed a pain education programme. On the contrary, there was no change in the control group which accounted to 16% (27). Results of this study did not show any association between

knowledge of CPM and PRB scores. However, there were various misbeliefs regarding cancer pain which result in barriers towards effective CPM. This reflects their poor understanding on CPM.

A previous study found that patients who had many mistaken beliefs about cancer pain reported more pain at time of interview, pain scores in the upper region of the VAS pain scale, and also persistent severe pain in the preceding day (28). It has been reported that patients with higher pain intensity showed higher adherence to cancer pain management as they tend to have lower beliefs (19). Valeberg BT et al, found that 3.0% of the variance ($p = 0.018$) could be explained by the group of patients who had greater average pain severity. These patients were more adherent with their prescribed analgesic medications (18).

This study was limited by the exclusion of patients with advanced cancer. Research studies in Korea

reported that cancer pain was relatively poorly managed in patients with advanced malignancies (29). Those Korean studies were conducted on 655 cancer patients from eight university hospitals (29). Many cancer patients with significant metastases in advanced disease were not able to participate in this study, making it difficult to achieve a truly representative sample. An earlier study reported that two thirds of the patients with metastatic cancer had pain or had consumed analgesic drugs daily during the week preceding the study, and one third of them had pain severe enough to impair their ability to function (30). Okuyama T et al., by logistic regression ($p=0.009$, odds ratio = 0.18) found patients with well controlled cancer more compliant to treatment than those with advanced cancer (31).

Earlier studies had reported the usage of complementary medicine (CM) to be high (63.9%) (63.9%) amongst patients who have chronic illness (32). An earlier research study also reported that the most common reason patients used CM (69%) was a desire to feel hopeful (33). Thus, there is ample reason to believe that the usage of CM is a result of high PRB, whereby patient's negative thoughts towards conventional CPM could be a factor towards the usage of CM. However, the results showed that although there was a difference between PRB scores of CM users and non users, the results were not significant. The present study showed that majority of patients had adequate cancer pain management, contrary to reports in the literature.

Conclusion

In conclusion, important patient related barriers to cancer pain management are as follows: "fear of tolerance to pain medication", "belief that pain should not be masked as it is a sign of progression of the illness", "belief that pain should be saved for when the pain gets worse", "belief that cancer pain cannot be controlled/relieved", "belief that one rather tolerate moderate pain until it worsens before calling the nurse", "belief that to feel pain as a form of punishment from god", "belief that side effect of pain medication is unbearable" and "belief that complaining about pain may distract the doctor from treatment of underlying disease". Ethnicity and religious beliefs had significant influence on PRB score suggesting the need for further investigation into this area. CPM should be tailored to each patient's needs and patients should be educated on CPM through proper education programs. In order to achieve a comprehensive view other barriers to effective CPM such as those related to the health systems and healthcare providers need to be assessed together.

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