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Pain and health-related quality of life among cancer patients in final stage of life: a comparison between two palliative care teams

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Pain and health-related quality of life among cancer patients in final stage of life: a comparison between two palliative care teams

A two-centred descriptive study was performed in order to describe and compare pain and health-related quality of life (HRQOL) among cancer patients, in their final stage of life. The patients were cared for by either a nurse-led palliative care team I (PCT I) or a physician-led palliative care team II (PCT II). Forty-six consecutive, stratified patients (PCT I, $n = 21$ and PCT II, $n = 25$) participated. The medical outcomes study short form 36 (SF-36) was used for evaluating HRQOL and the Pain-O-Meter for assessing pain. Patients' pain intensity, pain quality and HRQOL showed no significant difference between the two groups PCT I and PCT II. The patients from PCT I had significantly longer survival time ($P = 0.017$) than those from PCT II. The different composition of the teams being led by nurses or physicians is worth further research; both from the patient's and staff's viewpoint, there may also be cost-benefits worth examining.

Keywords: cancer pain, final stage of life, health-related quality of life, Pain-o-Meter, palliative care, SF-36

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Introduction

Pain related to cancer is a complex, multidimensional phenomenon composed of sensory, affective, cognitive, and behavioural components (Ahles *et al.* 1983), which constantly remind patients of the life-threatening nature of their disorder. Over 80% of terminally ill patients with widely disseminated cancer, experience pain (Vainio & Auvinen 1996). Cancer is a complex disease, characterized by both acute and chronic episodes (Aaronson *et al.* 1993). Treatment for cancer is the primary goal for both patients and care providers, together with a return to

normal life, as far as possible. When cancer resists or recurs, goals may change to prolonging life and palliating symptoms, while maintaining as normal a life-style as possible (Kaasa *et al.* 1999, Given *et al.* 2000). Therefore health-related quality of life (HRQOL) assessment, as a supplement to documentation of symptom rates and adverse effects of treatment, has become more important in evaluating the consequences of care (Bowling 1995, Tamburini *et al.* 1996). The main goal is to achieve the best HRQOL for both the patient and his or her family (WHO 1990, Doyle *et al.* 1993). Pain control plays a key role in determining HRQOL and pain is experienced by

60% of all patients referred to palliative care programmes (Vainio & Auvinen 1996). Therefore pain relief and improved HRQOL should be the goal for the majority of patients entering the programmes (Ahmedzai 1990). Palliative care means taking active and total care of patients whose disease is not responsive to curative treatment, so caring for patients with cancer-related pain is a team effort. Palliative care teams vary widely because of intervention programmes and the individual team members as well as being affected by patients' admission criteria and stage of cancer (Vainio & Auvinen 1996). A crucial member of the treatment team is the nurse. Although drug prescription is a medical responsibility, the nurse has a major role in forming the overall treatment plan and for seeing to it that the plan is executed (Bassett 1995). Pain relief can be achieved by following the established WHO guidelines (WHO 1990) for analgesic treatment, such medical interventions are important as they can have a great affect on HRQOL. As HRQOL is characterized by multidimensionality and subjectivity, nurses need to assess data and design interventions in order to improve HRQOL for cancer patients in their final stage of life (McMillan 1996). When examining management, staffing and organizational policies of palliative day care, Higginson *et al.* (2000) found, that the majority of centres were managed by nurses. At nurse-led clinics the physician's role was one of a medical resource (Hopkins & Tookman 2000). The introduction of a nurse-led acute pain service was found to improve the quality of patient care and significantly reduce levels of postoperative pain (Mackintosh & Bowles 1997), it was also found to be a low-cost model (Rawal & Berggren 1994). No studies focusing on nurse-led palliative care were found, the aim of this study was therefore to describe and compare pain and HRQOL among cancer patients in their final stage of life, cared for, by either nurse or physician-led palliative teams.

Methods

Design and setting

A two-centred comparative descriptive study design was performed in a council of south-west Sweden with a catchment area of 370 000 inhabitants. The study was approved by the Committee for Ethics in Medical Investigations, University of Lund and Göteborg, Sweden.

Palliative care teams

Palliative care was performed by two different teams, both hospital-based. The palliative care teams were

organized differently and each associated with a different hospital. They provided home-care service and service to inpatients, and were also available on a consultancy basis to staff at the hospital and in the community. They received their patients after consultation from either the patient's own physician or from a nurse caring for the patient. Patients themselves or relatives were also able to initiate contact with one of the palliative care teams. The most common reason for contacting the care team was a pain-associated problem. Palliative care team I (PCT I) was associated with a 350-bed district county hospital. The PCT I included two full-time nurses, one part-time (50%) nurse, one part-time (50%) social worker, and access to the pain clinic at the hospital. This team was nurse-led and a part of the rehabilitation clinic. The first objective for PCT I was to make an assessment of the patients' problems and needs. Secondly, they were to suggest and initiate interventions for pain relief, preventing negative side-effects of medication and controlling symptoms. Thirdly, the team were to continuously support the nurses and physicians who were caring for the patients accordingly. The PCT I also provided a link between patients, their families and the other care-providers. Palliative care team II (PCT II) was associated with a 410-bed county hospital. The PCT II included one full-time nurse, one part-time (50%) nurse, one part-time (80%) anaesthetist, one part-time (50%) social worker and one part-time (25%) priest. This team was led by the anaesthetist and was a part of the pain clinic. The objective for PCT II was to control symptoms for both patients and their families, while reconciling the gaps between the care-providers and the patients. And finally to educate, support and counsel patients, families and care-providers accordingly.

Patients

A stratified sample of 46 patients with a survival time of 6 months or less was derived from a consecutive sample of 75 patients. The patient inclusion criteria were as follows: be orientated to person and place, without major sensorial defects, able to speak Swedish, over 35 years of age, in need of analgesic treatment and with one of the following diagnoses: lung cancer, colorectal cancer, breast cancer or prostate cancer and estimated to be in the final stage of life. The patients also needed to be aware that they had been diagnosed of cancer and that they would receive palliative care, not primarily curative care. The 46 patients in the stratified sample were the ones that had died within 6 months of being

Table 1Quality of life dimensions of the medical outcomes study short form 36 (SF-36) (Ware *et al.* 1993)

Dimensions	No. of items	Meanings of measure
Physical functioning (PF)	10	Limitations in performing concrete physical activities because of health
Role-physical (RF)	4	Problems with work or daily activities because of physical health
Bodily pain (BP)	2	Extent of pain or limitations because of pain
General health (GH)	6	Perception of health/health outlook
Vitality (VT)	4	Level of energy
Role-emotional (RE)	3	Problems with work or other daily activities because of emotional problems
Social functioning (SF)	2	Extent and frequency of interference with social activities because of physical and emotional problems
Mental health (MH)	5	Feelings of nervousness and depression

included in the study. The remaining 29 patients are not presented in the study.

Instruments

Socio-demographic and clinical care treatment data

A demographic sheet was used to gather data from the patients regarding the variables; gender, age, civil-status, education, diagnosis, help with daily life, time with PCT, place of care, prescribed analgesic and prescribed laxative medication.

Quality of life assessment

Medical outcomes study short form 36 (SF-36) is a general health questionnaire for evaluating the physical, social and mental aspects of HRQOL, designed for use with both the general population and groups with chronic diseases. The SF-36 is composed of 36 items including eight dimensions: physical functioning (PF), role functioning-physical (RF), bodily pain (BP), social functioning (SF), mental health (MF), role functioning-emotional (RE), vitality (VT) and general health (GH) (Table 1). The SF-36 can be either self-administered or administered by an interviewer with help from a special interview guide. The SF-36 has been validated extensively on general populations and different diseases, demonstrating high reliability and good construct validity (Ware *et al.* 1993, McHorney *et al.* 1994).

Pain assessment

The Pain-O-Meter (POM) is a plastic tool 8 inches long, 2 inches wide and 1 inch thick (Gaston-Johansson 1996). The POM has two methods for assessing pain. The first is a vertical 10 cm visual analogue scale (VAS). It represents a pain intensity continuum and has anchors on each end, representing no pain at the lower end of the scale and worst possible pain at the upper end. Pain intensity can be evaluated by asking the patients to indicate their pain intensity by moving an

adjustable marker along the front. A centimetre scale is located on the back of POM numbered from 0 to 10. The second method for assessing pain is a list of 12 sensory and 11 affective word descriptors located on the back of POM. These descriptors represent common pain words. Each word has an assigned intensity value (range 1–5) (Table 2). The POM and VAS have been tested on a variety of patients with different diagnoses; sufficient reliability and validity has been demonstrated for both of the assessment methods (Grossman *et al.* 1992, Herr & Mobily 1993, Gaston-Johansson 1996, Calvin *et al.* 1999). For this study six items were answered with the help of POM: – Please describe your pain (sensory component), – Please describe your feelings toward your pain (affective component), – How much pain are you in right now? – Please indicate the worst pain you have had in the past 24 hours, – Please indicate the average pain you have had in the past 24 hours, – Please indicate the pain interfering with your sleep. Three further items were asked: – Has a physician or nurse made it clear to you that we consider treatment of pain very important and why we consider

Table 2

Pain-O-Meter's (POM) sensory and affective words (Gaston-Johansson 1996)

Twelve words reflecting the sensory aspect of the pain

Prickling [1], sore [1]
Pinching [2], nagging [2], teasing [2]
Aching [3], gnawing [3]
Cramping [4], pressing [4], burning [4]
Tearing [5], cutting [5]

Eleven words reflecting the affective aspect of the pain

Worrying [1]
Irritating [2]
Troublesome [3], tiring [3]
Terrifying [4], unbearable [4]
Torturing [5], killing [5], suffocating [5], dreadful [5],
excruciating [5]

Assigned values from [1] = mild experience of pain to [5] = strong experience of pain.

it very important? – Have you been told to inform the nurse or the physician when you are in pain? – Have you been asked before, to evaluate your pain by using a VAS? All items were selected and modified from the patient outcome questionnaire performed by the American Pain Society Quality of Care Committee (1995).

Procedure

Patients were asked to participate either by one of the nurses in PCT I, or in PCT II by the physician or a nurse. Once the patients had given their consent they were contacted for an interview. Patients were informed that participation in the study was voluntary and that their answers would be treated in confidence. They were also informed that they could interrupt whenever they liked. The data was collected by the main author, an intensive-care nurse and nurse-teacher, competent in the assessment and management of pain. First, the patients were given a careful explanation of the purpose, content, and layout of the questionnaire SF-36 as well as the POM. Then they were asked to complete the SF-36, which most were able to do in full and without assistance. Sometimes the questionnaire was administered in interview form because the patient was particularly weak, or had expressed a preference for an interview. Three patients declined to complete the questionnaire because of confusing or upsetting questions. All three were in an extremely weak condition and died shortly after. After that, patients were asked for socio-demographic and clinical care treatment data. These areas were completed in interview form. Supplementary information about prescribed analgesic medication were derived from patients' charts. The patients were asked to carefully describe their pain, using POM, by choosing from each group of sensory and affective words matching their pain. They were also asked to indicate their pain intensity by moving an adjustable marker along the 10-cm line between 0 indicating 'no pain' to 10 indicating 'worst pain'.

Statistical analyses

Descriptive statistics were used to describe demographic characteristics of the sample, type of medication and pain intensity. For SF-36 raw scores for each question were transformed into a scale from 0 to 100, with higher scores representing better levels of functioning and state of health (Sullivan *et al.* 1995). Mean scores and standard deviations were calculated for the SF-36 dimensions of all patient subgroups. As a result of variables on ordinal scale level and with skewed

distributions, non-parametric methods were used. Mann–Whitney *U*-test was used to test for statistical differences between PCT I and PCT II. A *P*-value <0.05 was denoted statistically significant.

Results

Patient demographic and clinical characteristics

Forty-six patients fulfilled the criteria of up to 6 months' survival and were included in this study. All 46 patients were able to answer the demographic questions and those connected with their pain and its treatment. Forty-three patients answered the SF-36 questionnaire. Twenty-one patients (15 men, six women) with the diagnoses of lung cancer, breast cancer, colorectal cancer or prostate cancer were included in PCT I and 25 patients (16 men, nine women) with the diagnoses of lung cancer, breast cancer, colorectal cancer or prostate cancer were included in PCT II (Table 3). Sixteen PCT I patients were at home for the interview and five were in hospital. Ten PCT II patients were at home, nine in hospital and six patients alter-

Table 3

Demographic and clinical characteristics of cancer patients cared for in palliative care team I (PCT I) and palliative care team II (PCT II)

Characteristics	PCT I (n = 21)	PCT II (n = 25)
<i>Gender</i>		
Men	15	16
Women	6	9
<i>Age, years</i>		
Mean/median	70.6/70.0	66.6/70.0
Range	57–84	35–83
<i>Civil status</i>		
Cohabiting	15	16
Single	6	9
<i>Education</i>		
Graduate school	12	17
High school	8	5
College	1	3
<i>Diagnosis</i>		
Lung cancer	5	7
Breast cancer	3	6
Prostate cancer	7	6
Colon cancer	6	6
<i>Time with PCT in month before included in the study</i>		
Mean/median	2.9/2.0	3.0/2.0
Range	1–6	1–6
<i>Survival time in month after the interview</i>		
Mean/median	3.3/4.0*	2.1/2.0*
Range	0.5–6	0.5–6

**P* < 0.05.

nated care at hospital and home. Eight PCT I patients and six PCT II patients received help from a relative only, while the other patients were also helped by the home-care service. A strong Opioid together with paracetamol was prescribed to 17 of 21 PCT I patients while 22 patients (of 25) in PCT II were prescribed the same combination. Three PCT II patients received strong Opioid by intrathecal administration. Fifteen PCT I patients and 18 PCT II patients were prescribed a strong Opioid to be taken in case of breakthrough pain. Laxiantia was prescribed for 11 PCT I patients and for 17 PCT II patients. After participating in the study, patients from PCT I had a significantly longer survival time compared with PCT II patients ($P = 0.017$). There were no further statistical differences either between the PCT groups or between the subgroups, gender and diagnose.

Health-related quality of life

As presented in Table 4 of the SF-36, PCT I patients reached the highest scores for the dimensions: physical functioning, role-physical, bodily pain, social functioning and mental health. The PCT II patients reached the highest scores for: general health, vitality and role-emotional. No significant differences were found.

Pain intensity level and pain quality description

The ranges of rated pain intensity levels were wide (VAS 0 to VAS 9) and skewed for all items, which explain the use of both median and mean values, presented in Table 5. The PCT I patients rated pain intensity levels with VAS, from 2.7 to 4.6 mean values and from 2.0 to 4.0 median values. The PCT II patients rated pain intensity levels with VAS, from 2.6 to 5.0 mean values and from 2.0 to 5.0 median values.

Table 4

Health-related quality of life for cancer patients cared for in palliative care team I (PCT I) and in palliative care team II (PCT II)

<i>SF-36 dimensions</i>	<i>PCT I (n = 21)</i> Mean (SD)	<i>PCT II (n = 22)*</i> Mean (SD)
Physical functioning (PF)	27.7 (18.3)	23.4 (20.3)
Role-physical (RP)	11.9 (24.5)	7.9 (17.9)
Bodily pain (BP)	54.3 (26.1)	46.9 (19.6)
General health (GH)	36.1 (13.9)	40.1 (12.3)
Vitality (VT)	34.2 (18.2)	40.0 (16.1)
Social functioning (SF)	59.5 (28.2)	55.6 (27.7)
Role-emotional (RE)	46.0 (45.3)	63.6 (41.0)
Mental health (MH)	61.3 (17.5)	58.0 (17.5)

*3 missing.

No significant differences were found.

Table 5

Levels of pain rated with visual analogue scale (VAS) among cancer patients cared for in palliative care team I (PCT I) and in palliative care team II (PCT II)

<i>Items of pain intensity</i>	<i>PCT I (n = 21)</i>	<i>PCT II (n = 25)</i>
<i>At time of interview</i>		
Mean/median	2.9/3.0	3.1/3.0
Range	0–6	1–8
<i>Worst pain past 24 hours</i>		
Mean/median	4.6/4.0	5.0/5.0
Range	1–8	1–9
<i>Average pain during past 24 hours</i>		
Mean/median	3.3/3.0	3.5/3.0
Range	1–8	1–8
<i>Pain disturbing sleep</i>		
Mean/median	2.7/2.0	2.6/2.0
Range	0–9	0–7

No significant differences were found.

Table 6

Cancer patients in palliative care team I (PCT I) or palliative care team II (PCT II) and words used in order to describe their quality of pain

<i>Quality of pain items</i>	<i>PCT I (n = 21)</i> Number of patients	<i>PCT II (n = 25)</i> Number of patients
<i>Affective words</i>		
Worrying	7	2
Irritating	2	3
Troublesome, tiring	10	3
Terrifying, unbearable	1	4
Torturing, killing, dreadful	1	3
suffocating, excruciating		
Own words	0	5
Could not express it	0	5
<i>Sensory words</i>		
Prickling, sore	7	3
Pinching, nagging, teasing	2	6
Aching, gnawing	4	5
Cramping, burning, pressing	2	2
Cutting, tearing	1	1
Own words	3	5
Could not express it	2	3

No significant differences were found.

The affective and sensory words presented in Table 6 represent the first word each patient used when asked to describe their pain quality. Some patients even gave one or two more words, usually in the same intensity range as POM or a word of his or her own.

Troublesome and tiring were the affective words most frequently chosen by the PCT I patients. Terrifying and unbearable were used by four PCT II patients, while five did not agree with any of the POM words. Instead they used words such as; terrible, agony or severe. Five PCT II patients could not find an affective word to express

their pain. Among words chosen for the sensory dimension of pain, prickling or sore appeared to be the most common, expressed by seven PCT I patients. Six PCT II patients expressed their pain as pinching, nagging, or teasing. Eight patients, three from PCT I and five from PCT II preferred to express the sensory dimension of pain in their own words, for example, sleeping. None of the patients had previously seen POM. Two PCT I patients and 20 PCT II patients recognized VAS as a tool for rating pain intensity. This was a significant difference ($P < 0.001$). All patients had been requested to say when they were in pain, and seven PCT I patients and eight PCT II patients had received an explanation regarding the importance of treating pain. There were no further significant differences found between any groups of patients regarding pain, the intensity level of pain or the quality of pain.

Discussion

Methodological issues

A consecutive, stratified sample was used in this study. Patients who fulfilled the inclusion criteria were asked to participate in the study at a suitable opportunity, depending on their condition. The staff on the palliative care teams selected the patients, which is a limitation that should be noted. This could explain why there were no drop-outs when the patients were contacted for their interview. Three patients however, dropped out before contact was made. The hospital staff informed the main author that these patients had become too ill to participate. One might argue that the study could have been performed with a random selection of patients, a selection for either PCT I or PCT II. This would however, be morally wrong. As this group of patients are so vulnerable it would have been unethical to refuse them the care provided by a PCT at their local hospital. Especially, as the primary factor for initiating contact with a PCT was pain associated problems, requiring immediate care regardless of geographical restrictions. The small size of the sample and the inability to control or standardize patients' symptoms on admission to the study is a limitation worth noting. The study results therefore cannot be used to generalize on other patients with advanced cancer in palliative care. The small sample size may also be a reason for the lack of significant differences (Ware *et al.* 1993). Reliability and validity of the study are deemed sufficient because of the use of well-established measuring methods, SF-36 (Sullivan *et al.* 1995) and POM (Gaston-Johansson 1996). In order to assure high

quality of data, the main author, who is well established in both interview technique and pain assessment, administered the questionnaire personally (Sullivan *et al.* 1995). The same careful instructions were given to all patients explaining how to use POM and how to fill in the SF-36. A special interview guide was used for SF-36 when the patients were not able to manage on their own (McHorney *et al.* 1994). These aspects provide the study with acceptable objectivity.

Team issues

Equal distribution between the sexes had been the aim because of the cancer diagnoses used (National Board of Health and Welfare 2000). As shown in Table 3, this balance was not obtained, instead there was a strong predominance of men, especially in PCT I, where men with prostate cancer were more highly represented than women with breast cancer, who are otherwise an equally large patient group (National Board of Health and Welfare 2000). According to Vainio and Auvinen (1996) severe pain is common for patients with prostate cancer, which may explain the predominance of men. When the patients had been included in the study, they had been in contact with their PCT group for an almost equal number of months, respectively. Despite this, PCT I patients survived significantly longer after participating in the study, compared with PCT II patients (Table 3). The PCT II patients may have been referred to the palliative care programme later in their course of illness than PCT I patients. The primary point of palliative care is to improve the patients' QOL, not extend survival time (Tamburini *et al.* 1996), a late referral however, may not allow sufficient time with which to achieve better QOL (Costantini *et al.* 1999).

Pain management and health-related quality of life

As pain is probably the most feared and distressing symptom for these patients, it needs to be treated immediately or better still prevented altogether (WHO 1990). This correlates with the objectives for both palliative care programmes, which were to control pain and other symptoms. Making the pain 'visible' is the cornerstone of pain management. This has to be done by using a valid and reliable pain assessment tool in clinical practice (American Pain Society 1995). Optimal use of VAS provides a method to continuously evaluate pain-reducing interventions. A problem caused by only letting the patient rate their pain intensity level once, as in this study, is that nothing is known about how long the pain had lasted or what level had been predeter-

mined as acceptable (Girling *et al.* 1994). A remarkable difference between the two PCT was that just two PCT I patients had seen and used VAS, while 20 PCT II patients were familiar with it. The titration of analgesics depends on feedback from the patient who should be encouraged to inform the nurse or physician when they are feeling hurt or in discomfort (Tearnan & Ward 1992). In both PCT I and PCT II, only one-third of the patients considered that the importance of pain treatment had been explained to them. This may explain why there were patients that rated high pain intensity levels at the time of the interview although the mean and median values of pain intensity levels rated with VAS were mild (≤ 3) (Table 5). By asking for the affective component of pain, the severity of the pain can become obvious (Gaston-Johansson & Fall-Dickson 1995). Almost half of the PCT I patients found their pain troublesome and/or tiring, while four PCT II patients used the words terrifying or unbearable and three patients used the words torturing, dreadful or excruciating when expressing their pain (Table 6). Breakthrough pain can be expressed as either severe or excruciating when it occurs and can increase the average pain intensity level (Portenoy & Hagen 1990). The PCT II patients seemed to rate a slightly higher worst pain intensity level compared with PCT I patients. On the other hand, the average pain intensity levels reported from all patients were almost equal, as were the pain intensity levels for pain interrupting sleep. Surprisingly, many PCT II patients could not express the sensory or affective dimension of their pain in words. Perhaps they found it difficult to understand the question never having heard it before, or had never thought of pain in these terms. Or perhaps they did not have pain at the time they were asked. Most of the patients however, found it easy to express their pain when they could choose a word from POM. Gaston-Johansson and Fall-Dickson (1995) suggest a calculation of a total score for the assigned values from 1 to 5 (Table 2) of each sensory, respectively, affective word in order to reach a numerical pain dimension level. In this study the assigned values were described only in order to assess pain severity. To successfully control pain and provide adequate pain relief the WHO analgesic ladder is strongly recommended (WHO 1990). Seventeen PCT I patients and 22 PCT II patients had reached step 3 on the WHO analgesic ladder, which means a strong Opioid together with paracetamol. Three PCT II patients received strong Opioid by intrathecal administration. As pain control often centres on medication, it can be seen primarily within the medical domain. While the prescription of drugs is a physician's

responsibility, the PCT I nurses had a vital role, not only in assessing the patients' pain and observing the medication effects, but also in initiating a physician's prescription of the necessary analgesics and controlling actual medication (Mackintosh & Bowles 1997). When evaluating nurse-led acute-pain care teams it was found that more patients received the benefit of better pain control (Mackintosh & Bowles 1997). However, the pain control and the analgesic prescription did not differ significantly between the two PCTs, neither did the patient's HRQOL. The fact that PCT II patients appeared to have the lowest scores for dimensions: physical-functioning, role-physical, bodily pain, social-functioning, and mental health may be as a result of the relationship found between poor functional status and short survival time (Vainio *et al.* 1996). The PCT II patients had the highest scores for dimensions: general health, vitality and role-emotional despite being in hospital to an increasing extent, which is more difficult to explain. If the interpretation is that patients felt more secure in hospital than at home, then improving home-based care is an urgent priority. This is reinforced by Bassett's (1995) discovery that nurses working with terminally ill patients, believe that patients prefer to be at home. Hopkins *et al.* (2000) pointed out that nurses' ability to synthesize elements of care and treatment as well as coordinate complex care, mean that they play a key role in cancer care. Unfortunately, wide ranges of pain intensity levels were shown, which probably means that too many patients from both palliative care teams suffered unrelieved pain and decreased HRQOL (McMillan 1996).

Conclusion

The aim of this study was to describe and compare pain and HRQOL among a stratified sample of patients admitted to either a nurse-led palliative care team (PCT I) or a physician-led palliative care team (PCT II), the findings were: there were no statistical significant differences in pain intensity, pain quality and HRQOL between PCT I and PCT II patients. The use of VAS was significantly more common in PCT II than PCT I. Patients in PCT I had significantly longer survival time, counted from the beginning of their study time until death, compared with PCT II patients.

Clinical and research implications

These results can be seen as a starting point for discussing different ways of organizing a palliative care team as well as performing palliative care programmes.

Both the questionnaire SF-36 and POM can be used in a clinical setting. The SF-36 questionnaire appeared to be a relevant point of departure for discussing HRQOL with the patients. The sensory and affective words on POM are an excellent basis for discussing patient's pain associated feelings and the influence of pain on HRQOL. The use of VAS separately or with POM ought to be used routinely in order to optimize the outcome of pain treatment, as well as for informing and teaching patients about the importance of treating pain.

The different composition of the teams, nurse-led or physician-led, is worth further research from both patient's and staff's viewpoints. There may also be a cost-benefit worth examining. In order to provide a fair evaluation of the differences between the two PCTs, further research exploring management of other symptoms influencing HRQOL would be necessary (fatigue, dyspnoea, nausea and constipation for example). Furthermore, a qualitative analysis covering patient perception of pain management in different palliative care teams would help interpret quantitative data.

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