Psychological assessment of cancer patients with chronic pain

Miroslava Petkova\textsuperscript{a,}*, Valeri Nikolov\textsuperscript{b}, Maya Galabova\textsuperscript{a}, Biliana Petrova\textsuperscript{a}

\textsuperscript{a}Trakia University, Medical Faculty, 11 Armetska Str., Stara Zagora 6000, Bulgaria
\textsuperscript{b}Medical University, 1 Sv. Kliment Ohridski Str., Pleven 5800, Bulgaria

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Abstract

This study examined assessment of pain and psychological status in patients with cancer. Pain measure developed to determine psychological factors which make an impact on pain intensity among cancer patients. Methods: Pain intensity Questionnaire, Life Satisfaction scale, Anxiety Scale, Beck Depression Inventory, Anger Scale. The Pain Questionnaire was administered to 48 cancer patients with pain. To elucidate the relationship between pain and psychosocial variables, several domains have been identified: life satisfaction; anxiety, depression and anger. The occurrence of anger in cancer patients with chronic pain was assessed, and the association with socio-demographic variables, pain variables, and affective components was investigated.

Keywords: Depression; anger; anxiety; pain intensity; life satisfaction.

1. Introduction

Pain is said to be one of the most feared and distressing symptoms of cancer (Bruera & Kim, 2003; Foley, 1999). Pain is the end product of a complex process that may involve emotional, cognitive, and sensory components (Chapman, 1998). Gerbershagen et al. (2008) measured quality of life in prostate cancer patients with and without pain. They found that depressive symptoms are significantly more frequent in pain patients than in patient without pain. Another study compared patients with and without pain who were matched by site and progression of disease (Ahles et al. 1983). Patients with pain scored higher on measures of depression as well as anxiety, hostility, and somatization.

Cancer pain is best described as a multidimensional model. Pain, and especially cancer pain, is not only a physical experience, but involves affective, cognitive, behavioral, and socio-cultural dimensions. Cancer pain has characteristics of chronic and of acute pain. Acute cancer pain is directly associated with tissue damage. When cancer pain persists it can serve as a sign of the progression of disease, and can produce feelings of hopelessness and emotional distress, and might have a negative impact on coping techniques. The cognitive dimension refers to the way patients think of their pain and what the pain means for them, in terms of thoughts, beliefs, attitudes, and self-efficacy expectations. Beliefs and emotions about pain are assumed to play an important role in the process of coping by influencing both the initiation of coping strategies and a person’s level of adjustment. The way a patient copes with pain is influenced by the thoughts about their pain and what the pain means for them. Although the role
of cognitions and emotions in clinical pain experience is not fully understood, pain cognitions may partly be responsible for dysfunction, and may influence the outcome of treatment. Judgments of self efficacy, perceived pain control, and catastrophizing with respect to pain seem to constitute pain appraisals that are important in the adjustment to chronic pain. Although a considerable body of knowledge exists on the role of pain cognitions in non cancer patients, only a few studies in cancer pain patients have shown that pain beliefs and emotions are associated with pain intensity. (Arathuzik, 1994). Arathuzik found that cognitive and emotional factors appeared to play a central role in the response to pain and in the coping methods used to deal with pain. Arathuzik found that a cognitive behavioral intervention can change the ability to decrease pain. (Arathuzik, 1991). Zimmermann found a relationship between pain intensity and psychological status. (Zimmerman et al., 1994) Cancer patients with pain were more anxious, depressed, and hostile, and had more somatic complaints than patients who were not in pain. Turk and associates found that patients with cancer-related pain reported significantly higher levels of cognitive and behavioral fear-responses to pain than did patients without pain (Turk et al., 1998).

As far as the relationship of anger to perceptions of pain, researchers have claimed that anger is a critical concomitant of the chronic pain experience (Wade, 1990). In addition, Fernandez and Turk (Fernandez & Turk, 1995) state that chronic pain patients may underreport anger because of denial. In fact, anger is one of the most salient emotional correlates of pain, even though past research has been primarily confined to the study of depression and anxiety. This notion is further supported by a recent study of chronic pain, in which anger toward oneself was significantly associated with pain intensity, and overall anger was significantly related to perceived disability.

Comprehensive assessment of the cancer patients, including pain, symptoms, and psychological status, provides potentially important information for the researcher and for the clinician. From clinical trials for drug therapy to bedside patient care, this information can be used to direct the interventions and their subsequent modifications. This article discusses assessment of pain and psychological status in patients with cancer. The use of the appropriate tools to capture this information is also addressed.

The present study represents an effort to validate a questionnaire measuring pain intensity and psychological status in cancer patients with chronic pain. The occurrence of anger in cancer patients with chronic pain was assessed, and the association with sociodemographic variables, pain variables, and affective component was investigated.

2. Methods

2.1. Participants

Patients who provided informed consent were involved in the study if they met the following criteria: 1) pain related to cancer, or cancer therapy; 2) pain duration of at least one month; 3) not residing in nursing home. During the interview, participants completed a series of questionnaires (e.g. demographic, anxiety, pain intensity, anger and depression). At the beginning of each interview, the purpose of the study was explained to each respondent, and all questions regarding the study were answered by the research assistant. Written informed consent was obtained prior to each interview. The interviews were conducted between July 2009 and November 2009. Each interview lasted approximately 2.5 hours.

2.2. Measures

2.2.1. Pain intensity

Pain intensity was assessed on an 11-point Numerical Rating Scale ranging from 0 to 10 in which 0 represents “no pain” and 10 “pain as bad as you can imagine.” Patients were asked to indicate Present Pain Intensity, Average Pain Intensity in the past 24 hours, and Worst Pain Intensity. The Numeric Rating Scale has been demonstrated to be a reliable and valid measure of pain intensity (Jensen et al., 1986).
2.2.2. State-Trait Anxiety Inventory

The inventory is based on the distinction between state anxiety and trait anxiety. State anxiety is defined as a transitory, emotional condition characterized by subjective feelings of tension and apprehension. Trait anxiety is defined as anxiety-proneness - that is an individual’s tendency to respond to stressful situations with raised state anxiety. The STAI consists of two questionnaires, each of 20 items, designed for the self-reported assessment of the intensity of feelings (Cox & Furgerson, 1991).

2.2.3. Beck Depression Inventory

The Beck Depression Inventory is a 21-item instrument with emphasis on cognitive symptoms of depression (Beck, 1961). The response format is from 0 to 3, giving a theoretical range of 0 to 63 points. Its reliability and validity have been studied, and strong support for the psychometric quality of the questionnaire has been provided (Beck et al., 1988).

2.2.4. Life Satisfaction Scale

This scale was developed to measure satisfaction with life based on the fit between personal goals and achievements (Koivumaa-Honkanen et al., 2001). It includes four items: (1) interest in life, (2) happiness in life, (3) general ease of living, and (4) loneliness. The items were rated on a four/five-point scale in terms of intensity (e.g. 1-very interested in life, 2-fairly interested in life, 3-cannot say, 4-fairly bored with life, 5-very bored with life). The life satisfaction score was calculated as the overall sum of the four items (possible range 4–20, increasing score indicating decreasing life satisfaction). Correlation coefficients of the individual scale items 1–4 to the total score were 0.55, 0.60, 0.50, and 0.44, respectively. Cronbach’s alpha was 0.74 (Korkeila, 1998). The convergent validity of the life satisfaction score was tested by examining its correlation with the score on the Beck Depression Inventory, a measure of depressive symptoms, among those members of the study cohort who responded to the questionnaire. The Pearson correlation coefficient between the scores was 0.63 (Koivumaa-Honkanen et al., 2000).

2.2.5. Anger

The 34-item State-Trait Anger Expression Inventory (Spielberger, 1991) was administered to assess dispositional (trait) anger and habitual modes of anger expression (Anger-Out, Anger-In, and Anger-Control). On a 4-point scale, participants rated the intensity or frequency with which they experience and express anger (1 = never; 2 = sometimes; 3 = often; and 4 = almost always). Responses were summed to yield a score for each anger dimension. Reliabilities of the several trait anger and anger expression scales were all satisfactory, with alpha coefficients of 0.72 to 0.85 across samples (Spielberger, 1991).

2.2.6. Demographics

Age was scored in a continuous format. Sex was treated as a dichotomous variable. Education was assessed as a continuous variable reflecting the total number of years of completed formal schooling.

3. Results

A total of 133 cancer patients were examined. 48 of them were identified as a patient with cancer related pain and completed study questionnaire. Table 1 presents a demographic and pain profile of study participants. Compared to patients without pain, those with pain were more likely to be male, their disease was more likely to have metastasized, and they were more likely to be recruited from inpatient units (Table 1). Cancer sites in patients with pain included colorectal (19%), lung (18%), breast (13%), nasopharyngeal (9%), liver (9%), oral (8%), cervical (8%), gastric (6%), prostate (5%), lymphoma (5%).

Cancer sites in patients without pain included breast (33%), colorectal (22%), liver (15%), cervical (10%), lung (8%), gastric (6%), nasopharyngeal (6%). Patients suffered from cancer of different sites, most frequently are in an advanced stage (54%). Although various cancer treatments were provided, no anticancer treatment was provided in 28% of the patients. Pain in the abdominal region and in the lower back region was reported most frequently. The mean pain duration was 12 months (SD=26, range 1–186 months). Patients’ Present Pain Intensity was on average 3.4 (SD=2.3), the Average Pain Intensity was 4.6 (SD=2.1), and the Worst Pain Intensity was 7.9 (SD=2.1). In
total, 86% of the patients were prescribed analgesics: 70% received non-opioids, 31% received “weak” opioids, and 26% received “strong” opioids.

Depressive symptoms are frequent in pain patients. The average level of depression among studied patients was 16.6 (SD=3.1). These result from the current study conducted in Bulgaria is consistent with prior studies conducted in other countries (Gerbershagen et al., 2008; Lin et al., 2003) where patients with cancer pain reported significantly higher levels of perceived emotional distress due to pain than did those without pain.

Our results showed that age was a significant indicator of pain intensity, which suggests that younger participants reported greater pain intensity than older participants. Several possible explanations for this finding exist. Older adults may be more likely than their younger counterparts to develop more effective coping skills when encountered with varied mental and physical health issues (Melding, 1995).

In this study, patients who experienced cancer-related pain reported high levels of anger, depression and anxiety. Also, level of pain intensity was significantly correlated with each mood state (Table 2).

The results of the study underline once again the subjective nature of the pain experience and pain perception of the patients and the close connection to anxiety. Anxiety is next to depression the most disturbing emotion in the experience of a cancer disease. Also, higher scores on pain intensity were negatively and significantly associated with life satisfaction.

Results indicated that even after controlling for the effect of sex, disease stage, and age the patient experience of pain was a significant predictor for anxiety (B=7.43, P=0.01), anger (B=1.22, P=0.01), depression (B=1.51, P=0.01), and life satisfaction (B =-1.48, P=0.01).

### Table 1. Mean (SD) of Demographic and Pain Characteristics of Cancer Patients With Pain (n=48) and Without Pain (n=85)

| Characteristics          | Patients with pain | Patients without pain | T     |
|--------------------------|--------------------|-----------------------|-------|
| Age (years) 58.50 (14.77) | 57.06 (14.52)      | 57.60                 | -0.33 |
| Education (years)        | 8.28 (5.12)        | 8.31 (5.18)           | -1.12 |
| Worst pain               | 7.9 (2.1)          | -                     | -     |
| Least pain               | 1.21 (1.52)        | -                     | -     |
| Average pain             | 4.6 (2.1)          | -                     | -     |
| Pain now                 | 3.13 (1.27)        | -                     | -     |
| Sex, n (%)               |                    |                       |       |
| male                     | 28 (59.4)          | 46 (54.1)             | 8.36  |
| female                   | 20 (41.6)          | 39 (45.9)             |       |

### Table 2. Zero-Order Correlations for Study Participants

|                       | Anxiety | Depression | Anger   |
|-----------------------|---------|------------|---------|
| Anxiety               |         |            |         |
| Depression            | 0.61**  |            |         |
| Anger                 | 0.55**  | 0.58**     |         |
| Life Satisfaction     | -0.29** | -0.33**    | -0.17   |

*p < .05; ** p < .01
4. Conclusion

The results of this study provide several important implications for understanding the impact of cancer pain on patients’ emotional state, and level of life satisfaction. The findings of this study support the multidimensional notion of the cancer pain experience and demonstrate the effect of cancer pain on the psychological aspects of Bulgarian patients’ quality of life.

The measurement of pain in patients with cancer is a complex process. The subjective and multidimensional nature of pain requires careful consideration in choosing an appropriate instrument or instruments.

The conversation about cancer itself seems to be avoided by the patient as well as by physicians, nurses and patient’s relatives. In the process of adaptation to the disease, pain often functions as some sort of body-language allowing the patient to allude to his hardship without directly referring to cancer but putting more emphasis on the pain instead.

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