

Title: COPING STYLES, MEDICATION USE, AND PAIN SCORE IN PATIENTS USING PATIENT CONTROLLED ANALGESIA FOR POSTOPERATIVE PAIN

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**Introduction.** The treatment of postoperative pain has traditionally consisted of intermittent intramuscular injection of narcotic analgesics. It has been demonstrated that stress coping style is a predictor of the amount of analgesic medication consumed under p.r.n. dosing regimens.<sup>1</sup> Recent investigations of patient controlled analgesia (PCA) therapy have suggested that PCA regimens provide an analgesic outcome superior to traditional dosing regimens while minimizing the sedative side effect of narcotic analgesia therapy.<sup>2</sup> The purpose of this study is to determine whether measures of coping style are related to medication requirements and pain scores observed with the PCA dosing technique.

**Methods.** Fifty patients employing PCA for the treatment of postoperative pain were studied (with informed consent and approval by the Human Investigations Committee, University of Kentucky, Lexington). Patients were interviewed daily by trained interviewers for the duration of the postoperative course. Four patients whose PCA therapy was interrupted by postoperative complications unrelated to PCA therapy were excluded from analysis. The resulting sample consisted of 11 abdominal hysterectomy, 6 cholecystectomy, 7 laparotomy, 6 hip replacement, 7 gastric bypass, 3 donor nephrectomy, 2 laminectomy, 2 colectomy, and 2 abdominal hernia patients. Pain scores and medication use were recorded for the first 48 hours following surgery. Pain was assessed each day with visual analogue scales of pain sensations and distress. A summary pain score was constructed from the first two daily scores with a reliability (coefficient Alpha) of 0.78. Questionnaire measures of coping style consisted of three and four item scales of a Likert-type format that assessed coping styles of avoidance, independence, emotional arousability, emotional controllability, and displacement. An aggressiveness scale was also administered that assessed the aggressive coping of patients' responses to hypothetical situations such as being splashed with mud by a passing car. Measures of internal consistency for these scales were all at an acceptable level and ranged from 0.54 to 0.84.

**Results.** A correlational analysis of coping style, medication use, pain data, and sample items from coping scales are displayed in Table 1. Patients who were independent and reported high levels of emotional control consumed significantly less medication than did patients who were more tolerant of dependency and who had low levels of emotional control. Patients whose coping responses

to the hypothetical scenarios were highly aggressive also consumed significantly more medication than did patients whose coping styles were more passive. Patients who scored higher on the measure of arousability reported significantly more pain than patients who were characterized by lower levels of emotional reaction to stress.

**Discussion.** This study suggests that previously documented correlation of coping styles with medication consumption in patients receiving traditional p.r.n. analgesic dosing are also present in patients given intimate control of medication use with a PCA dosing technique. Coping styles thus appear to be an important mediating variable in determining individual differences in analgesic medication use in a variety of administration strategies. Coping styles also correlated with subjective analgesic outcome in these PCA-dosed patients. Control for individual coping styles may facilitate analysis of clinical investigations which employ analgesic dose requirement and subjective analgesic outcome observations.

**References.**

1. Wilson JF: Behavioral preparation for surgery; benefit or harm. *Journal of Behavioral Medicine* 4: 79-102, 1981
2. Bennett RL, Batenhorst RL, Graves D, et al: Patient-controlled analgesia: a new concept of postoperative pain relief. *Annals of Surgery* 195: 700-705, 1982

Coping scale	Medication consumption	Pain
Avoidance	.07	.00
Independence	-.36*	-.33*
Arousability	.28	.31*
Emotional control	-.33*	.03
Displacement	.13	.48*
Aggressiveness	.37*	.25

\* p<0.05

**Sample items:**

**Avoidance:** "When I can't make up my mind about something I think how nice it would be to forget all about it."

**Independence:** "I don't like it when other people have to do things for me."

**Emotional arousability:** "When something upsetting happens to me, I will have trouble falling asleep that night."

**Emotional control:** "Even if I feel nervous or afraid on the inside people don't notice it because I act calm on the outside."

**Displacement:** "When things don't go right during the day I may get angry at people over little things."