

## Original

ported in this study, indicating that outcome expectancies alone predicted how much patients would in fact use these strategies.

In contrast to a commonly accepted belief, in this study use of coping was found to be significantly positively correlated with pain intensity and pain interference. Although this finding conflicts with the assumption that a greater use of coping leads to successful coping outcomes, it is consistent with the findings of Keefe and Williams<sup>26</sup> and Keefe, et al.<sup>6</sup> Patients scoring high on coping behavior measures in the CSQ reported significantly higher levels of pain intensity. However, significant relationships between these two variables were not found in a study of cancer pain.<sup>9</sup> Despite the fact that patients made multiple efforts to cope with their pain using these coping behaviors, they also reported that they continued to experience unrelieved pain. Although it is generally assumed that a causal relationship exists between greater perseverance and less pain, persons experiencing a higher intensity of pain may be motivated to persevere in their efforts to cope. Another explanation may be that effective application of the coping behavior is more essential than the quantity of use of coping.

This study was limited by the design of the study. It should be reiterated that the correlation between variables does not imply causation between variables. The significantly positive correlation between the use of coping behaviors and pain intensity could be also due to the fact that patients who experience more-severe pain may also tend to employ more coping strategies to relieve their pain. This study may also be limited by the use of the composite score for behavioral coping and cognitive coping although the construct has been confirmed by factor analysis.

This study provides important implications for clinical practice as well as for future research. There is a need for systematic training in pain coping skills, including cognitive and behavioral coping strategies for patients with chronic cancer pain. The effectiveness and appropriateness of using coping skills may be more influential than the quantity of the use of coping to achieve optimal pain control. Perceived self-efficacy is an effective predictor for coping with chronic can-

cer pain. Therefore, a comprehensive evaluation of one's self-efficacy to cope with pain should include multiple dimensions of self-efficacy, previous experiences of coping with pain, and the various sources of information from which efficacy develops. Implementation of cognitive-behavioral intervention in treatment programs for chronic cancer pain can facilitate the development of a sense of mastery which, in turn, will ultimately be beneficial for improving the success of cancer pain management.

Although a combination of pharmacological and non-pharmacological interventions has been advocated as being most effective for cancer pain relief, few clinicians have incorporated both approaches in their recommended treatment for patients with chronic cancer pain. As more research attention is given to demonstrating the impact of combining these two approaches in chronic cancer pain management, clinicians may be more likely to implement both approaches in the management of chronic cancer pain. Because current treatment does not appear to be effective in alleviating chronic cancer pain, clinicians and researchers may need to collaborate in their efforts in order to provide optimal pain relief for chronic cancer pain patients.

This study also provides important suggestions for future research. In this study, patients with chronic cancer pain used a variety of non-pharmacological strategies to cope with their pain; unfortunately, limited information about the effects of these non-pharmacological strategies exists in the current literature. Therefore, there is a tremendous need to investigate the impact of non-pharmacological approaches on the management of cancer pain in order for clinicians to better assist their patients in coping with cancer pain.

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