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Improving Cancer Pain Management through Different Cognitive-Behavioral Interventions – Instruments Validation and Effects Comparison

Background:

Since cancer pain is a multidimensional experience with physical, sensory, affective, cognitive, and behavioral dimensions, unrelieved cancer pain may lead to more complicated and negative pain experiences that interfere with patients' daily life, function, and also is related to patients' cognition. Cognitive-behavioral pain interventions have been suggested for cancer pain treatment as adjuvant interventions to pharmacological treatment. However, very few studies have evaluated the effects of these interventions, including pain education, relaxation, and cognitive-reframing, on patients' experiences of cancer pain.

Research purposes:

The primary purpose of this study is to examine and compare the effects of (1) pain education, (2) pain education + relaxation, (3) pain education + cognitive-reframing and (4) control as usual care group on pain-related experiences of Taiwanese cancer patients with pain over a week period. The three-year study includes two phases.

Methods:

The first phase, which includes the year of this three-year study, aims to translate and validate these instruments. The aim of second phase is to compare the effects (immediate, short, and medium effects) across the above-mentioned different CBT pain interventions on cancer patients' pain experience. Three pain interventions groups and one standardized care control groups were developed to test the continuous 5-day interventions. Patients in pain education group (experimental group I) received 10-15 minutes maximum of structured pain education for five day;. Patients in pain education + relaxation group received the 10-15 minutes pain education with 12-15 minutes relaxation training (experimental group II); Patients in pain education + cognitive-reframing group received the 10-15 minutes pain education with 12-15 minute cognitive reframing training. A master's-prepared oncology nurse with pain control training delivered the intervention each time, using a 16-page pain education booklet and developed by the authors for the purpose of this

study.

Procedures:

After receiving patients agreement to participate this study, the research assistant delivered our baseline pain assessment before a continuous 5 days pain intervention described in the above. After completing the interventions, a post-test for evaluating the pain experienced was conducted. Pain experiences assessed in this study included: pain intensity, pain interferences, depression, anxiety, patients' knowledge regarding opioids, patients' sense of control over pain, and pain catastrophizing thoughts.

Results I:

In the first phase study, a total of 150 subjects were recruited for the instrument testing. The results showed that translate pain instruments had acceptable psychometric characteristics and feasibility to be used for measuring cancer related pain experiences. However, considering patients' loading for answering the set of pain related questionnaire, we finally dropped the Multi-dimensional Pain Inventory –short form (MPI), and used the Brief Pain Inventory – short form Taiwanese version (BPI-T) in the second phase of study.

Results II:

In the second phase intervention study, a total of 132 subjects with cancer related pain were recruited; these included 33 in control group, 32 in pain education group, 33 in pain education + relaxation training group, and 34 in pain education + cognitive-reframing group.

The results showed that there were significant improvement in pain intensity across the three pain intervention groups. There were significant improvements in pain interferences across the four study groups, however, the pain education + cognitive-reframing group had the best improvements compared the other three groups ($F=4.077$, $P=.008$). There was a significant improvement in patients' beliefs regarding opioids across the three experimental groups but not in control group, and patients in education had the greatest improvement compared than the other two intervention group. There was a significant improvement in patients' perceived control over pain across the three intervention groups but not in control group; patients in education + relaxation group had the greatest improvement. Patients in the experimental groups had lowered anxiety and depression after the interventions; however, the changes did not reach the significant across the four groups.

Discussion and Conclusions:

Our results suggested that the pain interventions designed in the current study had the effects on improving cancer patients' pain experiences. Pain education intervention itself had the most effects in improving many aspects of pain; furthermore, patients received pain education and cognitive-reframing can have the best effects in improving patients' pain interferences part; and education + relaxation can have the most effects on increasing patients' overall sense of control over pain. We conclude that the 5-days pain education program can improve cancer patients pain experiences, and the further added relaxation and cognitive-reframing program can further enhance the positive cognitive of pain experience and decreasing the pain interferences on daily life.

We suggest: (1) further testing of the long-term effects of these interventions; and (2) clinical application of these pain interventions.