Clinical Note

A Comparison of Two Relaxation Strategies for the Relief of Pain and Its Distress

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Abstract
This study compares the effectiveness of guided imagery and progressive muscle relaxation in reducing pain and distress. Thirty adult oncologic patients in a large military hospital listened to two taped transcripts in random order; one used guided imagery and the other progressive muscle relaxation. Patients rated their pain and distress on a 10 cm analog scale before and after listening to each tape. The results indicated that both strategies were equally effective in reducing pain and distress in this small sample. The majority of patients expressed a preference for the progressive muscle relaxation technique. Nurses are encouraged to use these strategies in helping oncologic patients reduce pain and distress. J Pain Symptom Manage 1987;2:229–231.

Key Words
Pain, relaxation techniques, oncologic nursing

Increasingly, relaxation techniques are being used to reduce pain and distress. Both guided imagery (GI) and progressive muscle relaxation (PMR) seem to be clinically effective. However, patients often express a preference for one strategy over the other. Some prefer the structured step-by-step guidance of a progressive muscle relaxation exercise, while others favor the guided imagery approach with a musical background and a minimum of direction.

Relaxation strategies are thought to counteract the sympathetic nervous system activity that may accompany, and in turn exacerbate, acute pain. Many reports have advocated these techniques to reduce pain and distress. In the few controlled studies, however, samples are usually small, and results are often contradictory. Tan's selected review of the literature noted only ten controlled studies using guided imagery to reduce pain. Six of these studies indicated that guided imagery was effective, while three did not. Studies of PMR have also yielded inconsistent results. No study has compared GI and PMR, nor has patient preference for one or the other strategy been considered.

The present study compared the use of GI and PMR exercises in reducing pain and distress in cancer patients and identified patient preferences for one of these strategies. The following hypotheses were tested:

- GI and PMR significantly reduce cancer pain and distress.
- Both strategies produce the same amount of relief.
- Patients prefer one strategy over the other.

Methods
A heterogenous group of 30 cancer patients with pain and distress was selected from the oncologic units of a large military hospital. Selection criteria included diagnosis of cancer, 18 to 80 years of age, English speaking, alert to time, place, and person, and not currently us-
ing pain/distress reduction strategies. Thirteen women and 17 men ranging in age from 22 to 67 years were included in the study. Stages of disease varied; none were considered to be terminal by the staff nurses.

There was no attempt to control analgesic medication administration. The mean times since the last dose of analgesic drug before playing the tapes was 141.33 minutes for the GI tapes and 156.00 minutes for the PMR tapes. This difference was not statistically significant ($t = -0.3053, df = 58$).

Informed consent was obtained from each patient. The patients were asked to rate their pain and distress on separate visual analog scales ranging from 0 cm ("No pain/distress") to 10 cm ("Pain/distress as bad as can be"). Thirty to 60 minutes later, the investigator asked the subjects to rate their pain/distress again. The patients were randomly assigned to either the PMR or GI group by flipping a coin. The patients listened to a tape recording of either GI or PMR. The patients then rated their pain and distress levels at the conclusion of the 15-minute tape. This procedure was repeated the next day using the other tape. Pain relief was determined by the difference in pain/distress levels before and after listening to the tapes.

Both 15-minute tapes shared a common musical background and induction instructions to assume a comfortable position, close the eyes, take a couple of deep cleansing breaths, and let tension go. The guided imagery tape then described a pleasant meadow in which to rest, while the progressive muscle relaxation tape instructed the patient to relax groups of muscles in sequence from head to toe. Both tapes injected the phrase, "Arms and legs are heavy and warm." There followed five minutes of music only. The patient was then returned to an alert, comfortable state by counting from five to one with eyes open on one. Group differences were evaluated by the t-test.

**Results**

The patients indicated a mean pain level of 4.06 cm before listening to the PMR tape and 3.47 cm before the GI tape ($P < 0.05$). The mean pain level diminished from 4.06 cm to 1.49 cm after listening to the PMR tape (range 0 to 10 cm). This difference was highly significant ($P = 0.0003$). The mean pain level after hearing the GI tape fell from 3.47 cm to 1.46 cm, with a similar range of 0 to 10 cm ($P = 0.0002$). There was no significant difference between the amount of pain relief provided by PMR and GI strategies. An analysis of covariance, which was used to adjust for the initial differences in the mean pain intensity levels, confirmed this finding.

The mean level of distress indicated by patients was 4.31 cm before and 1.56 cm after listening to the PMR tape (range 0 to 10 cm), again a highly significant difference ($P = 0.0002$). Similarly, the mean distress level fell from 3.93 cm to 1.45 cm after, with a range of 0 to 10 cm ($P < 0.0001$). There was no significant difference between the relief of distress afforded by PMR and GI strategies. An analysis of covariance confirmed this result.

Twenty patients (67%) preferred the PMR tape, while five (17%) preferred the GI tape. Five patients had no preference.

**Discussion**

Although guided imagery and progressive muscle relaxation tapes seem to be equally effective in reducing pain and distress in cancer patients, two thirds of the patients in this study preferred PMR. Some of these patients stated that it was difficult for them to clear their minds of the concerns associated with their illness so that they could visualize the peaceful scene described in the GI tape.

Several advantages to using relaxation tapes became apparent during the course of this study. The tapes were effective in spite of the traffic sounds on busy hospital units. Posting cards on the patient's door stating that a tape was being played could reduce interruptions. A minimum amount of nurses' time is required for the initial assessment of need and feasibility, instruction, and brief continuing evaluation of results. Tapes are readily available commercially. Patients enjoyed the tapes and several requested copies for their own use. Relatives expressed interest in and appreciation for the tapes, both for the patients and for themselves. One man played the tape for his wife after she became comatose. Her restlessness and groaning ceased while the tape was playing, and she appeared more comfortable.

There is need for further research using larger samples and control groups with sham
procedures. Relaxation therapy’s effectiveness in acute and chronic pain should be compared, and the use of relaxation techniques in helping the family cope with their stress should be explored. Nonetheless, the data available suggest that nurses should be educated about these procedures and their use encouraged in selected patients with pain and emotional distress due to cancer.

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References