PERGAMON

International Journal of Nursing Studies 39 (2002) 539–548

INTERNATIONAL JOURNAL OF NURSING STUDIES

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The effect of an integrated stress management program on the psychologic and physiologic stress reactions of peptic ulcer in Korea

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Received 26 April 2001; accepted 28 September 2001

Abstract

The purpose of this study was to identify the effects of an integrated stress management program on symptoms of stress and ulcer healing in a sample of Koreans at a major medical center in Seoul, Korea. The study employed an experimental design with two treatment groups. One treatment group ($n = 23$) participated in an integrated stress management program that consisted of seven 1 h sessions over a 4-week period. A second treatment group ($n = 24$) was only given a tape on progressive muscle relaxation. Data were collected over a 4-month period on 47 subjects. Participants were randomly assigned to the two treatment groups. Symptoms of stress were measured by the symptoms of stress scale (Kogan, Self-regulation on Stress Reaction by Biofeedback, Korean Psychiatric Academic Society, Korea) translated into Korean. Stage of ulcer healing was evaluated by a physician using an endoscope. Physiologic stress reactions were measured by biofeedback equipment. The integrated stress management program treatment group reported significantly lower stress symptom scores than the progressive muscle relaxation-only group ($t = 3.66$, $P < 0.001$). The integrated stress management group also demonstrated a greater improvement in ulcer healing than the progressive muscle relaxation group ($t = 1.95$, $P < 0.05$).

The integrated stress management program was more effective in decreasing self-reported stress symptoms and resulted in a more significant ulcer healing than the progressive muscle relaxation treatment. © 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Integrated stress management program; Psychologic stress reaction; Physiologic stress reaction; Peptic ulcer

1. Introduction

The main purpose of this study was to identify the effects of an integrated stress management program (ISMP) on the stress symptoms of a psychophysiological disorder, especially patients with peptic ulcer disease (PUD). Nursing has long recognized that integrating stress management in nursing practice is important for holistic care, but has not consistently tested the effect. It has been reported that there is a relationship between stress and disease states that depends upon a person's ability to cope with stress, their social support structure, and the disease behavior (Lazarus and Folkman, 1984; Cohen et al., 1993; Ehlert and Straub, 1998; Dancey et al., 1998).

Stress is an inevitable component in human life. Some stress is essential and it promotes personal growth, but excessive stress or an inappropriate way of coping with stress brings about negative results. The responses to stress have a great effect on the process of cognitive appraisal of stress. Current theory and research on the relationship between stressful events and indicators of adaptation status such as somatic health and

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PII: S0020-7489(01)00059-1

psychological symptoms show that this relationship is mediated by coping processes, social support, cognitive appraisal, and health status (Go Kyoung Bong and Lee Sang In, 1992; Leclerc et al., 1997; Roger, 1998). How individuals cope with traumatic and highly stressful experiences has been shown to be an important factor in their subsequent psychological and physical well-being.

Traditionally, PUD has been considered to be a stress-associated psychosomatic disease. The importance of emotional disturbances due to stress has long been shown to be a consideration in the pathogenesis of PUD and in other 'psychosomatic' illnesses (Weiner, 1983; McGrae, 1984; Kim Mi Young and Hwang Ik Gun, 1987). Psychosomatic factors in the etiology of peptic ulcer have become unfashionable since the discovery of *Helicobactor pylori* (*H. pylori*). *H. pylori* is a spiral-shaped bacterium found in stomach, which damages stomach and duodenal tissues along with acid secretion, causing inflammation, and peptic ulcers. But psychological stress has an impact on the onset and course of ulcer disease. There is solid evidence that psychological stress induces many ulcers and impairs response to treatment, while *helicobactor* is inadequate as a mono-causal explanation as most infected people do not develop ulcers. Psychological stress probably functions most often as a cofactor with *H. pylori*. It may act by stimulating the production of gastric acid or by promoting behavior that causes a risk to health (Leventein, 1998). Also, there are some researches that signify the importance of emotional disturbance due to stress in the pathogenesis of PUD which cannot be ignored (Bleich and Ratan, 1996; Sullivan and Gratton, 1999). Among patients with frequent recurrences of these, a positive relationship between psychological stress and bleeding, erosive upper gastro-intestinal lesions is reported (Fukunishi et al., 1996; Wittrock and Myers, 1998).

Gastro-intestinal disease is the number one morbidity medical problem in Korea, and the incidence of gastro-intestinal cancer is even higher than the incidence of cardiovascular disease. Epidemiological studies show that the incidence of ulcers in Koreans is related to the stress level and diet habits, particularly the spicy Korean food, and alcohol consumption (Korean Health and Welfare, 1998). The inability to properly manage stress, perceived stress, and ways of coping are shown to be important in the development of PUD (Go Kyoung Bong et al., 1994).

A number of researchers have examined the effectiveness of stress management for psychophysiological patients (Shapiro and Lehrer, 1980; Scandrette et al., 1986; Blanchard et al., 1986; Bosley and Allen, 1989; Lehrer et al., 1994; Hostick et al., 1997), but the research on stress management has been focused only on physiological outcomes. The effects of stress management programs have been reported for cardiovascular disease and other disorders, but there is little on PUD patients. The interaction approach to the study of stress, as exemplified by the work of Lazarus and colleagues, focused on cognitive appraisal, evaluation of potentially stressful stimuli and the coping processes that consequentially occur (Lazarus and Folkman, 1984; Epstein, 1992; Lehrer et al., 1993).

In this research, the purpose is for developing an intervention for the alleviation and management of stress of patients with PUD. An ISMP as an intervention considers physiological, cognitive, behavioral, and emotional aspects associated with changes in the healing status of the ulcer.

2. Literature review

2.1. The symptoms of stress in peptic ulcers

Life stressors increase susceptibility to various diseases (Smith, 1993). When a demand imposed by events exceeds the ability to cope, a psychological stress response is elicited (Lazarus and Folkman, 1984). This response is composed of a negative cognitive and emotional state.

The interface of personality characteristics in the pathogenesis of PUD and in other 'psychosomatic' illnesses was once widely accepted. For example, at one time it was believed that patients with PUD had a distinct and predictable personality, which is characterized by a hard-driving, 'go-getter' stereotype. Furthermore, psychoanalytic studies suggested that patients with PUD consistently have an internal conflict resulting from strong dependency needs. Felderman et al. (1986) reported multiple factors: personality attributes, stressful life events, coping ability, social support, and emotional state are related to peptic ulcer. Also, they reported that ulcer patients had more anxiety, fear, and frustration than healthy persons. Other personality characteristics such as immaturity, impulsivity, and feelings of social isolation and alienation were also more common in ulcer patients. Several studies provide evidence that stress increases the risk for disease, and especially, peptic ulcers (Holtmann et al., 1992; Bleich and Ratan, 1996; Leventein and Kaplane, 1998). Psychological stress is not only empirically associated with ulcers, but is a very plausible risk factor for ulcer disease. Gastric acid output is correlated with psychological distress in patients with and without ulcers. In addition, gastric acid output increased enormously during intense military training (Oektedalen et al., 1984). Compared with healthy people, patients with duodenal ulcers are particularly likely to respond to laboratory stressors by secreting more acid (Bresnick et al., 1993).

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