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Review

Humor and Laughter May Influence Health: II. Complementary Therapies and Humor in a Clinical Population

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Our results support a connection between sense of humor and self-reported physical health, however, it is difficult to determine the relationship to any specific disease process. Whereas relationships between sense of humor and self-reported measures of physical well-being appear to be supported, more research is required to determine interrelationships between sense of humor and well-being.

Keywords: Humor – laughter – complementary therapy

Use of Complementary Therapies and Humor in a Clinical Population

Introduction to a Range of Studies

In the first part of this article, the theoretical background supporting the connection between stress and physiological functioning was reviewed (1). Unfortunately, we know much more about how stress affects psychological and physiological functioning than we know about which interventions best help us to decrease or moderate negative effects of stressors. Many complementary and alternative interventions have been developed to help improve quality of life and moderate the effect of stressors on psychological and physiological functioning. According to the American Cancer Society, 'Complementary methods are defined as supportive methods used to complement evidence-based treatment. Complementary therapies do not replace mainstream cancer treatment and are not promoted to cure disease. Rather, they control symptoms and improve well-being and quality of life' (2). Alternative therapies or alternative medicine, by contrast involves non-mainstream treatments that are sometimes used by patients in place of orthodox treatments. Taken together, these therapies are known as Complementary and Alternative Medicine or CAM.

Analysis of Cancer Patients in Variable Studies

Recently, there has been an increase in the availability of, interest in and use of CAM therapies; however, many of the CAM therapies in use today have been used for years. There is also more information available now concerning the patterns of use, participant ratings of effectiveness and cost of various CAM therapies. Reviewing literature reveals that many early examinations of CAM use were conducted in various European countries. Later analyses were conducted in the US urban areas, and then rural areas were included in the research (3). However, there was also some concern that the studies were not capturing the true level of CAM usage, due to the limited numbers of persons with low income or of minority heritage included in the earlier studies (4). Now, research on CAM use is available from several countries and is starting to include people from a wide variety of ethnic backgrounds, age ranges and medical diagnoses.

While there has been substantial research on using CAM, primarily conducted in cancer patients, many early studies were rather limited in the types of therapies they investigated. This is particularly true of therapies that could be considered more "complementary", such as use of humor. In fact, despite several articles and reports that indicate widespread interest in the use of humor by various clinical populations, most published reviews of CAM use did not include humor as a CAM therapy prior to 1995 (3). This omission makes it difficult to judge how many people have been using humor as a complementary therapy (CT). Given this limitation, results from survey studies that did include use of humor are reported below.

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Complementary Therapy in a Small Group

According to a small study of cancer patients in the rural Midwest (3), over 87% were currently using at least one complementary intervention to cope with the stress of cancer. Most patients were using prayer that was not surprising given the conservative nature of many in the rural Midwest. Use of humor was the next most popular intervention, with 50% of the sample already using humor and an additional 13% stating they would definitely try it. Women, younger clients, support group members and those who lived closer to town reported significantly more interest in and use of CT.

A Larger Analysis of Breast Cancer Patients

A second and larger study by the same researchers included 105 women (mean age = 59 years), who were predominantly Caucasian with a diagnosis of breast cancer. The sample was recruited from the Tampa Bay area and a rural Midwestern area. According to the findings, 64% of all participants reported regular use of vitamins and minerals and 33% regularly used antioxidants, herbs and health foods. Among stress-reducing techniques, 49% of all participants regularly used prayer and spiritual healing, followed by support groups (37%), and humor or laughter therapy (21%). Traditional and ethnic medicine therapies rarely were used with the exception of massage, which 27% of all participants used at least once after diagnosis (Fig. 1). More frequent CAM use was observed among participants who had undergone previous chemotherapy treatment and those with more than a high school education. Additionally, being less satisfied with their primary physician was associated with patients' more frequent CAM use (5).

Initial Attempts at Humor

A third study used a small qualitative design to examine cancer patient's use of humor as a coping skill. Here, open-ended

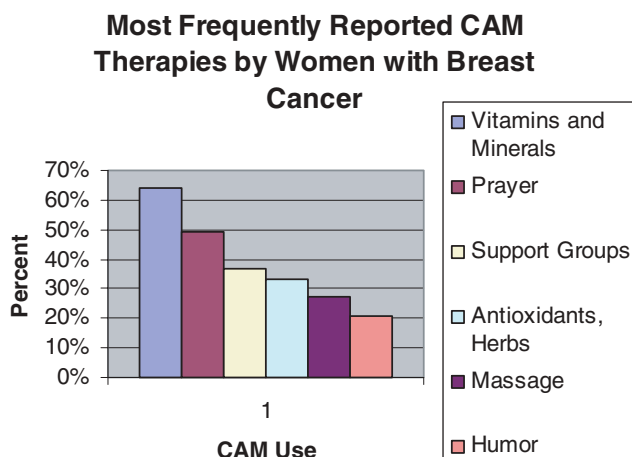


Figure 1. Histogram represents use of various CAM therapies by women with breast cancer. Bars indicate percentage of subjects who reported use of each therapy (4).

interviews were used to document both patient and nurse use of humor while the patient was undergoing treatment for breast cancer. The participants identified humor as an important factor for coping with cancer and cancer treatment. They also believed that the use of humor played a role in their spirituality and their perception of the meaning of life (6) A recent long-term (5+ years) use of CT in breast cancer survivors indicates that humor is one of the more popular therapies in this population. According to Hann, the most commonly used CT were exercise, vitamins, prayer/spiritual practice, support groups, humor, self-help books and relaxation. The subjects reported that they used CT in order to have a more active role in their cancer recovery, to manage stress and to maintain hope (7).

While the data are limited, studies that questioned the use of humor have documented that a significant number of cancer patients are either already using humor as a CAM technique to cope with stress, or are interested in trying humor. However, it should be noted that none of the survey examinations cited here defined 'use of humor' for the subjects. This may have been a deliberate omission, because what one person considers as use of humor, another person may not. Therefore, if the individual subject believed that they were using humor, it was accepted part of the research. Unfortunately, the particular type of humor and how it was used was not explored. Although extended analyses of a broad range of CAM therapies in different clinical populations are still needed, we present initial documentation that humor is one of the more frequently used CAM therapies, at least among persons with cancer.

Humor and Sense of Humor Can Affect Psychological Outcomes

Using humor to counter the stress effects seems almost intuitive to health care providers and lay people. According to one citation, 'If stress and negative emotions can suppress the immune system, why can't laughter and feelings of trust and hope promote healing, even prolong life?' (8). Laughter is believed to act as a coping mechanism to reduce stress, improve self-esteem and reduce psychological symptoms related to negative life events (9). There have been several analyses that support using humor to improve mental health. The use of humor as a coping mechanism to moderate the impact of stressful events on mood states and to improve the ability to relax have been documented and analyzed in college students (10). In addition, sense of humor is often connected to higher levels of self-esteem. In studies using the Coping Humor Scale (CHS) and/or the Situational Humor Response Questionnaire (SHRQ), higher sense of humor scores were associated with lower levels of loneliness, depression, stress and higher levels of self-esteem (11,12). Sense of humor was also related to higher scores on quality of life in undergraduates (13).

Population Analysis of Humor

While people frequently report using humor to cope with life events or stress in general, the effectiveness of humor at

reducing stress and mood disturbance related to stress have also been examined. Martin documents that sense of humor is related to improved mood status *vis-a-vis* increased life stressors (14). However, Porterfield was unable to replicate Martin and Lefcourt's results regarding humor as a moderator of life events (13,15). According to Porterfield's interpretation, life events had a negative impact on reports of psychological and physical well-being, and this relationship was not modified by sense of humor. Porterfield suggests that sense of humor may exert primary effect upon depression, rather than a buffering effect as indicated by Martin and Lefcourt. From a third study, the influence of sense of humor on depression and anxiety (15) revealed that sense of humor acts as a moderator of negative life events on depression.

The effect of sense of humor on self-esteem, perceived stress, depressive personality, dysfunctional attitudes and depression was examined in 100 college students. Kuiper concluded that sense of humor apparently has a weak direct effect on depression, but a larger and more significant direct effect on long-term depressive personality factors. Sense of humor was also positively correlated with increased self-esteem (11).

Variable Effects of humor

In summary, sense of humor, measured by several different self-report instruments, is correlated with increased self-esteem and decreased depressive personality attributes. The influence of sense of humor on clinical depression is not as clear, with some analyses finding a weak direct effect (11,16), while others find that humor acts as a moderator of life events on depression, rather than having a direct effect (14,15). And while relationships between sense of humor and depression and/or depressive personality appear to be supported by the available literature, more research is needed to determine whether this demonstrates the effect of sense of humor on depression, or the effect of depression on sense of humor; controlled, prospective research is indisputably needed.

Sense of Humor and Health

Humor and physical healing is a popular subject, but empirical data have been difficult to obtain. Although some research has attempted to determine the effect of humor upon physical health, the concept of humor is complex, and therefore remains difficult to measure. Qualitative style interviews and production of humor have problems due to the subjective nature of the test and the time required to administer it, while self-report scales suffer from social desirability contamination. Social desirability is the effect that occurs when people feel there is a particular way they are 'supposed' to respond, and therefore they respond in that fashion, which tends to invalidate the results. As most participants would like to believe that they have a good sense of humor, self-report sense of humor scales are prone to social desirability contamination. Because of these measurement problems there are several sense of humor

modalities being tested in humor research, such as interview schedules, having the subjects devise impromptu comedy routines, and several self-report scales. Each method has its benefits and drawbacks. Some approaches have tried to equate sense of humor with cheerfulness and optimism (17), while others have examined the influence of the amount televised hours of sitcoms exerts on general health of the United States (18). Clearly, the number of instruments and methods being used renders it difficult to directly compare results from different approaches.

Analytical Questionnaires and Scales

Most published research has used the self-report tests with established reliability, such as the SHRQ, CHS (14) and the Sense of Humor Questionnaire (19). Analyses examining sense of humor use one or more of the self-report scales, and may also include a qualitative creative humor test. Some of these researches have supported a connection between sense of humor and health. Sense of humor was significantly correlated ($P < 0.01$) with perceived physical health (Cornell Index) in a sample of 51 college students (20,21). In addition, sense of humor (SHRQ) and using humor as a coping mechanism (CHS) were positively correlated with measures of morale and perceived health in a sample of non-institutionalized older adults (22). However, a retrospective study of 159 college students reported that coping humor (CHS) does not moderate the influence of stressful life events upon physical health (23). According to Anderson's work, stressful life events and personal control beliefs alone predicted over 20% of the variance in the reported symptoms of illness for the previous 10 weeks. Scores on the CHS were not significantly related to reported past physical health. It should be noted that the physical health tool used to determine students' health over the previous 10 weeks was developed for this project, with no report of reliability or validity.

Sense of Humor and Well-Being

In summary, while there are results to support a connection between sense of humor and self-reported physical health, it is difficult to determine how this may relate to any specific disease process. And while relationships between sense of humor and self-reported measures of physical well-being appear to be supported by the currently limited literature, more research is needed to determine whether this demonstrates the effect of sense of humor on physical well-being or the effect of physical well-being on sense of humor. Longitudinal, prospective research is required in order to help elicit the meaning of relationships between sense of humor and physical well-being.

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