Social Science & Medicine 166 (2016) 1–8

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

When life gives you lemons: The effectiveness of culinary group intervention among cancer patients

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ARTICLE INFO

Article history:
Received 27 December 2015
Received in revised form
23 July 2016
Accepted 31 July 2016
Available online 2 August 2016

Keywords:
Cancer
Culinary group intervention
Eating behaviors
Intuitive eating
Quality of life

ABSTRACT

Rationale: Previous studies have shown that the dietary habits of cancer patients and survivors have significant implications for their recovery and quality of life. The current study examined the effectiveness of an innovative culinary group intervention on cancer patients' quality of life through changes in their eating behaviors, as manifested by an increase in their tendency towards intuitive eating and healthy food choices.
Methods: In total, 190 cancer patients participated in this study, and were allocated to an intervention or a wait-list control group. A battery of self-report questionnaires assessing food choices, intuitive eating, health-related quality of life, and subjective well-being was administered at two time points: Before the intervention (T1) and at the end of the three month intervention (T2).
Results: Analyses revealed an increase in health-related quality of life and well-being among the intervention group. Intuitive eating and healthy food choices also increased among the intervention but not wait-list control group. Finally, results indicated that participation in the culinary group intervention and improvements in health-related quality of life and well-being were mediated by changes in eating behaviors.
Conclusions: Our findings demonstrate that nutrition and eating behaviors have a significant effect on cancer patients' physical and emotional adjustment. A culinary group intervention seems to target patients' physical and emotional needs and promote their adjustment.

1. Introduction

Early detection and advances in treatment have contributed to the steady trend of increasing survival rates among cancer patients (Siegel et al., 2015). This trend, a growing number of cancer patients surviving their illness, has led to an increased interest in their quality of life, that is, their ability to live an *effective* life and preserve their functioning and well-being (e.g., Howard-Anderson et al., 2012). When individuals are ill or recovering from major illnesses, almost all aspects of their life are affected, directly or indirectly, by these illnesses. Evaluating one's *health-related quality of life,* therefore, refers to the individual's perception of their present level of physical, social, and emotional functioning, and the limitations they experience in fulfilling their physical, social, and emotional roles as a result of their illness (see Guyatt et al., 1993; Ware and Sherbourne, 1992). Studies that assess health-related quality of life among cancer survivors have demonstrated that many survivors continue to suffer from declining health-related quality of life up to two (Baker et al., 2009), three (Arndt et al., 2005), even five years (Gotay and Muraoka, 1998; Holzner et al., 2001), after diagnosis.

Dietary habits have recently been recognized as a major factor in cancer patients' recovery and quality of life (Demark-Wahnefried et al., 2004; Gupta et al., 2006). Wayne et al. (2006) prospectively studied the association between diet quality and quality of life among a group of breast cancer survivors and found that survivors who consumed a diet of "excellent quality" at baseline (i.e., a diet that was consistent with the National Academy of Sciences recommendations), reported higher quality of life 10-months later compared to survivors who reported a diet of poor quality. There is growing evidence to support that changes to cancer patients' dietary habits is effective at improving their health-related quality of life (please see Kassianos et al., 2015, for a review on this topic).

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http://dx.doi.org/10.1016/j.socscimed.2016.07.046
0277-9536/

Therefore, the American Cancer Society regularly publishes dietary guidelines for cancer patients and survivors that mainly focuses on recommended food choices and stressing the importance of weight management (Doyle et al., 2006; Rock et al., 2012).

In accordance with these guidelines, a few interventions have been designed with the intent of promoting desirable changes in cancer patients' and survivors' dietary habits. Of the existing interventions, most aimed to increase participants' nutritional knowledge via lectures, telephone counseling or written materials (Reynolds et al., 2004; Tong et al., 2008). However, a closer examination of their effectiveness in changing *dietary habits* – measured as energy intake in kilocalories and food choices (e.g., fruit and vegetable consumption) – revealed inconclusive results (Kassianos et al., 2015; Stacey et al., 2015). For example, Parsons et al. (2008) reported an increase in the consumption of some (e.g., vegetables) but not all of the recommended foods (e.g., fruits, whole grains). Some studies reported significant weight loss among participants (von Gruenigen et al., 2008), while others found that calorie intake did not change (Demark-Wahnefried et al., 2008).

Innovative perspectives that address the complexity of dietary habits and related issues, emphasize the need to expand our definition of eating behaviors. The choice of food and amount consumed only represents a narrow facet of eating behaviors; a broader approach would also include the motivation that underlies these choices. An *intuitive eating approach* suggests that eating behaviors should be based on three principles: (1) eating for physical rather than emotional reasons; (2) reliance on hunger and satiety cues; and (3) unconditional permission to allow oneself to eat according to hunger without labeling foods as either “healthy” or “unhealthy” (Tylka, 2006; Tylka & Kron Van Diest, 2013). Studies have shown that intuitive eating is associated with improved dietary intake (Van Dyke and Drinkwater, 2014) and positive nutritional-related health indicators (Hawks et al., 2005; Madden et al., 2012; Tylka, 2006), in addition to positive body image and well-being (Tylka, 2006; Tylka & Kron Van Diest, 2013). Thus, interventions that aim to improve dietary habits among cancer patients should promote changes in eating behaviors that align with intuitive eating principles.

1.1. Culinary group intervention

Culinary interventions have been studied previously among patients with various medical conditions, such as diabetes (Chapman-Novakofski and Karduck, 2005), rheumatoid arthritis (McKellar et al., 2007), and cancer (Carmody et al., 2008; Newman et al., 2005). In general, these studies found that culinary interventions were effective in changing participants' *dietary habits*, indicated by participants' increased knowledge of nutrition (Chapman-Novakofski and Karduck, 2005), healthier dietary intake (Carmody et al., 2008; Newman et al., 2005), and improved nutrition-related health indicators (e.g., blood pressure, serum cholesterol, McKellar et al., 2007; for a review see Reicks et al., 2014). Previous studies have also shown that psychosocial group interventions that address emotional processes of coping with cancer were effective in improving participants' *quality of life* (e.g., Meyer and Mark, 1995; Spiegel et al., 1981). Yet, to the best of our knowledge, there has yet to be an intervention based on a holistic perspective that addresses eating behaviors, quality of life, and the relationship between them.

Therefore, the purpose of this study was to examine the effectiveness of an innovative culinary group intervention in increasing cancer patients' health-related quality of life and subjective well-being through changing their eating behaviors. More specifically, we hypothesized that (1) participation in the culinary group intervention would increase cancer survivors' health-related quality of life and subjective well-being, and (2) increases in the participants' health-related quality of life and subjective well-being would be mediated by changes in their eating behaviors, indicated by an increase in their tendency towards intuitive eating and healthy food choices.

2. Methods

2.1. Study sample and procedures

This intervention was conducted as part of a number of services offered by the Israel Cancer Association, a large multisite non-profit support center, between October 2010 and December 2013. Cancer patients and survivors who had been diagnosed three to 36 months before the start of the study were recruited through advertisements at medical clinics, on the center's website, and in newspapers. Data were collected at two time points: Before the intervention (T1), and 10 weeks following the end of the intervention (T2). Researchers contacted interested participants by telephone and provided them with an explanation regarding the intervention and the research. After signing an informed consent form, each participant received a questionnaire with a stamped envelope, which he or she was asked to complete and mail back to the researchers (T1). A similar procedure was employed at the second assessment (T2). The study protocol was approved by the Institutional Review Board of Tel Aviv University.

2.2. Intervention groups

Participants were allocated, in blocks of 10, to the intervention or wait-list control group, depending on the timing of their referral (i.e., the first 10 referrals were enrolled into the intervention group, the next 10 referrals were enrolled in the wait-list group, etc.). The participants in the intervention group were assembled into ten groups, each comprised of ten individuals. Cancer patients and survivors who were allocated into the wait-list control group underwent the intervention after the T2 assessment. Data collection occurred at parallel intervals for both the intervention and wait-list groups.

2.2.1. Culinary intervention group

The culinary group intervention was the focus of the current study and involved 10-weeks of structured, psycho-education that was co-led by a mental health professional and nutritionist. Each 2-h meeting addressed a particular nutrition topic, involved a “hands-on” cooking session, followed by group discussion. Nutritional topics and recipes were based on the American Cancer Association's guidelines for healthy eating (Doyle et al., 2006; Rock et al., 2012).

The core ingredient of the intervention was the cooking itself. Cooking is a creative act that involves all of the senses (Nawate et al., 2007) and requires the use of both gross and fine motor skills (Gamito et al., 2015). It also provides a link to primal relationships and cultural roots (Winnicott, 1960). The active nature of cooking encourages participants to improve their improvisational skills, engage in trial and error, and pursue a sense of mastery (Cook, 2008). It combines both the concrete and the symbolic, and transforms knowledge into action. While cooking, participants were encouraged to work creatively with all of the ingredients at hand, process them in accordance with their own unique sensibility, and combine them in a way that made them easier to digest, tastier, and more compatible with their needs and preferences.

Cooking and eating sessions were followed by group discussions. These discussions aimed to inspire deeper inquiry from the participants in regard to the individual and collective meaning of