Research Brief

Effects of Group Counseling Transmitted Through Videoconferencing on Changes in Eating Behaviors

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ABSTRACT

Objective: To compare the effects of constructivism-based dietary group counseling transmitted through videoconferencing (VC) and face-to-face (FF) counseling on changes in eating behaviors.

Methods: Altogether, 74 participants with high risk of type 2 diabetes were divided into FF and VC groups based on their place of residence in northern Finland. Constructivism-based dietary group counseling, a nonrandomized intervention, was performed (evaluations at 0, 6, and 21 months). The Three-Factor Eating Questionnaire-18 was used to evaluate cognitive restraint eating (CR), emotional eating (EE), and uncontrolled eating (UE). Data were analyzed using ANOVA and ANCOVA (significance level of 0.05).

Results: Cognitive restraint eating increased and UE decreased between baseline and 6 months in both groups, but between baseline and 21 months only in the FF group ($P = .005$ and $P = .021$, respectively). Emotional eating decreased only in the VC group ($P = .016$). There were no differences between groups at 6 or 21 months.

Conclusions and Implications: Constructivism-based counseling delivered through videoconferencing was effective at improving eating behaviors.

Key Words: cognitive restraint, emotional eating, uncontrolled eating, constructivism-based group counseling, videoconferencing (*J Nutr Educ Behav*. 2015;■:1-5.)

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INTRODUCTION

Increasing cognitive restraint (ie, restricting eating with the intention to lose or maintain weight, CR) and decreasing emotional eating (ie, eating due to negative mood states, EE) and uncontrolled eating (ie, not being able to control the amount of food eaten, and eating due to external triggers, UE) are associated with better results in weight loss and maintenance.[1-4] Furthermore, high CR has been associated with smaller energy intake and eating food that is low in fat and high in fiber.[5] Obesity and weight gain are associated with high levels of EE and UE.[6-8] Effective counseling methods to improve eating behaviors are needed. Although participants have reported that dietary group counseling delivered via videoconferencing is equal to or even better than face-to-face group counseling, there is a lack of evidence on the effectiveness of videoconferencing in group counseling targeted at improving eating behaviors.[9-10] An earlier review reported that telephone-based counseling for individuals increased fruit and vegetable intake and decreased fat intake to a greater extent than usual care.[10] However, in 1 study, those who had participated in group counseling through conference calls lost more weight and reported greater agreement on goals compared with those who received individual counseling through conference calls.[11] Similar results have been found in comparing face-to-face group counseling and individual counseling.[12-13] In 1 study, cognitive behavioral treatment for obesity was found to be equally effective in groups and individuals.[14]

The literature reviewed for this study did not show earlier studies reporting effects of dietary group counseling interventions based on constructivist learning theories.[2,10,15-17] Constructivist methods represent later phases of cognitive behavioral therapy, which is often used in dietary counseling.[18] Both theories include methods such as self-monitoring, problem solving, demonstration, goal-setting, and social support. Counseling based on cognitive behavioral therapy emphasizes changes in thinking, and

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the basic idea is that thoughts, emotions, and behavior interact. Cognitive behavioral therapy starts with analyzing thoughts and behavior, and the counseling includes practicing situations in which the participant can learn alternative ways to think and behave. In constructivist theory, construction of new knowledge is based on former knowledge and experiences and their reflection on social interaction.[18] The way in which an individual learns is by constructing his or her own meaning, rather than merely memorizing the "right" answers and regurgitating someone else's meaning. When a group processes the information together, they have to confront different conceptions of the subjects handled, which may help create new perceptions of these subjects.[18]

In sparsely inhabited areas, there may be a lack of access to health care providers and it may be difficult to obtain counseling by a nutritionist specialized in eating behaviors. In this case, counseling via videoconferencing should be considered. Counseling based on constructivist learning theory may provide methods for this. For example, if there are technical problems in videoconferencing, promoting participants' and other group members' own activity makes the counseling less dependent on the counselor.

The objectives of this study were to compare the effectiveness of constructivism-based group counseling via videoconferencing (VC) and face-to-face counseling (FF) for changing eating behavior.

METHODS

Participants

A study was conducted in northern Finland on the effectiveness and feasibility of activating counseling methods and videoconferences in the dietary group counseling of subjects with high risk of type 2 diabetes. The overall aims of the dietary counseling were to increase skills for losing 5 kg of weight permanently in the following year; to follow a diet high in fiber, moderate in unsaturated fats, and low in saturated fats; to improve cognitive restraint eating; and to exercise regularly for at least 4 hours per week.[19,20]

Nurses working in basic health care and occupational health care recruited 74 participants (33 men and 41 women, mean age 49 years) at high risk of type 2 diabetes. The Finnish Diabetes Risk Score was used in selecting participants,[21] and those scoring 12 points or more in the type 2 diabetes risk test were suitable if a change in lifestyle was considered important for their ability to work. Those with elevated fasting blood glucose (6.1 to 6.9 mmol/L) or impaired glucose tolerance in an oral glucose tolerance test (2-hour glucose 7.8 to 11 mmol/L) in the last 12 months were also suitable.[22] Nurses recruited the participants and evaluated whether or not they were motivated and willing to participate in group counseling. Those with ongoing serious illnesses (cancer, stroke, poor control of depression, or other severe mental diseases) or using weight loss medication or very low calorie diets were excluded.

Five videoconferencing (VC) groups and 6 face-to-face (FF) groups were formed. Participants in and near the city of Oulu participated in FF groups, and participants in municipalities that were situated 40 to 91 kilometers from Oulu participated in VC groups. During recruitment, the study participants were informed of the study by the nurses. They were given both oral and written information about the study, and written consent was requested in order to collect and use data for research purposes. They were then sent a questionnaire, a timetable of laboratory tests and group sessions, and instructions to prepare for the laboratory test. They returned the completed questionnaires during the first group session. The counselor repeated the information at the beginning of the counseling. The study was approved by the Ethics Committees of the Hospital Districts of Helsinki and Uusimaa in 2007.

When participants were not able to attend a group session (eg, for work-related reasons), they usually informed the counselor beforehand. Two women became pregnant during the 6-month period. Only 1 person did not participate in any of the 6-month follow-up measurements or group session. Therefore, at the 6-month follow-up, 73 participants were measured and completed the questionnaires. At the 21-month follow-up, 29 participants were measured and 54 answered the questionnaires. There were no differences between the eating behaviors, anthropometric measures, gender, and group of those who did and did not answer the questionnaires and participate in measurements at 21 months (data not shown). At baseline, the mean body mass index was over 33 kg/m^2, and no significant differences between the body mass index or body weight of the counseling groups were observed.[3]

Intervention

The dietary group counseling included five 90-minute group sessions (5 to 9 participants in each group), which were led by a registered nutritionist. Four group sessions were at 2-week intervals and 1 was at 6 months. The VC and FF groups received the same counseling. When the counseling was delivered via videoconferencing, the participants in the VC group were in the same place and only the counselor was in another location.

The main framework for the counseling was constructivist learning theory, but other learning theories (ie, experiential learning and collaborative learning) and the transtheoretical model of change were also used in the intervention.[23] These theories guided the counselors to develop, choose, and use counseling methods and contents and to promote the participants' process of lifestyle change. The methods activated participants and supported their own reflections of attitudes, knowledge, and behavior (eg, pictures were used as vignettes), and construction of new knowledge as a group (eg, pair discussion on problem solving and a dice game). Therefore, the methods promoted the process of behavior change. Information was provided (eg, food labels and the transtheoretical model of change) and support was given for applying the new knowledge to real-life situations (eg, bring healthy snack). Methods also included self-monitoring (eg, food, exercise, and sleep diaries), demonstrations (eg, plate model), social support, and goals (group goals and personal goals). Motivation to make changes was enhanced, for example, by

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