

White Paper

THE EFFECT OF MULTIDISCIPLINARY SUPERVISED WEIGHT LOSS ON QUALITY OF LIFE

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INTRODUCTION

Very Low Calorie Diets (VLCD) may lead to significant and rapid weight loss, which often results in many metabolic improvements associated with obesity.² Physician-supervised weight loss programs, involving multiple specialties, provide an important option in the medical management of obesity. Surgical treatments of obesity are often recommended as treatment for obesity because of the low quality of life in morbidly obese patients and some studies show improvements after surgery.

OBJECTIVES

The objective of this study is to prospectively evaluate the changes in quality of life in obese individuals utilizing a VLCD with multidisciplinary supervision, behavior therapy and nutrition counseling.

METHODS

- ◆ Consecutive obese individuals (n=65) enrolling in a weight loss program were asked to complete the SF-36 version 2™ Health Survey form at baseline prior to weight loss and at 4 weeks and 12 weeks after starting the VLCD to evaluate health-related quality of life. Weight reduction was supervised weekly by physicians, dietitians, and behaviorists in both a clinic setting and group classes. The diet was an individually prescribed protein-sparing VLCD (average 800 kcal) with meal replacement products (Robard Corporation). No supplements or medications were prescribed and participants were advised to begin physical activity (less than 45 minutes weekly) after 4 weeks. Patients and the investigator were not aware of the scores during active weight loss and completion of surveys. All patients signed informed consent approved by local IRB prior to participation in the study.
- ◆ Statistical analyses were performed with use of Microsoft Excel (version Office 2003). Norm-based scores (mean = 50, standard deviation = 10 for general US population) were calculated using QualityMetric Health Outcomes™ scoring software.³ Paired t-tests were used to compare the eight domains of the SF-36, as well as mental (MCS) and physical (PCS) composite summaries, from baseline to 4 and 12 weeks.
- ◆ The SF-36 is a short-form patient administered health-survey with an extensive utilization in the literature in many disease states including obesity, and is the most frequently utilized survey to evaluate health status.³
- ◆ Diet: The team evaluates each patient to determine an individualized diet program: New Direction® System VLCD or LCD, or Individual Diet Counseling. The New Direction System is a protein sparing, VLCD, with a total intake of 600-1,000 kcal per day. Participants are given an individualized dietary prescription, consisting of liquid beverages (Robard Corporation: one serving is 200 kcal, 6 grams of fat, 26 grams of protein, 10 grams of carbohydrate) and allowable low-calorie, low-carbohydrate items. Daily protein intake is calculated as 1.2-1.5 grams per kilogram of adjusted body weight. Total daily fluid intake is a minimum of two liters per day. Participants remain in the reducing phase of active weight loss until they achieve the predetermined weight loss goal and then proceed to the adapting (weeks) and sustaining (recommendation of six months) phases of the program. The New Direction LCD program uses 1-2 meal

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replacement products with a low calorie meal selected by the dietitian, similar to the adapting phase of New Direction. Individuals also have the option to counsel with a dietitian on an individual basis for diet review. Typically resting metabolic rate is measured to aid in nutritional assessment as calorie needs are determined for weight maintenance and regular exercise.

- ◆ Only New Direction System patients were enrolled in this study.

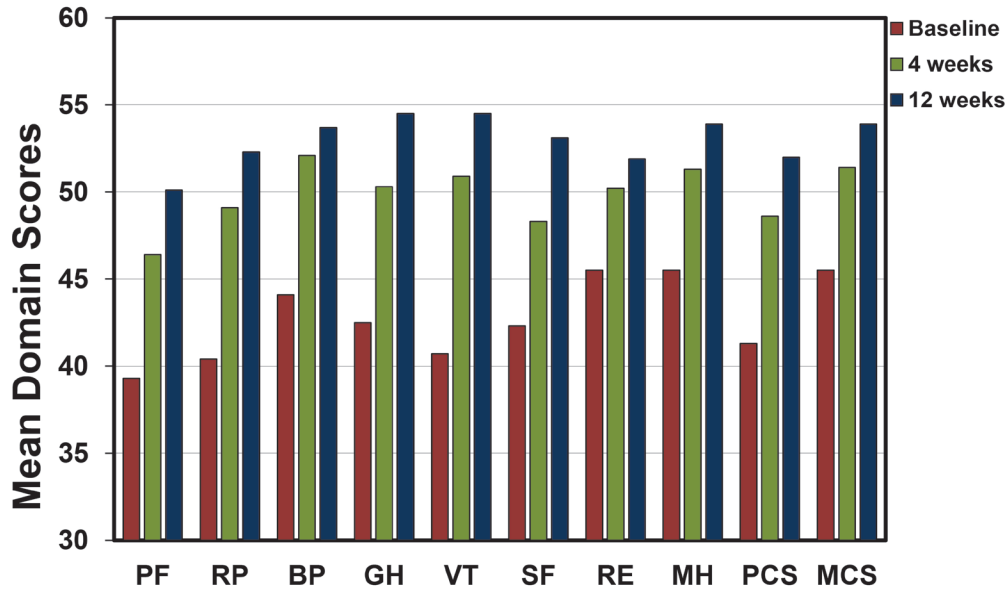


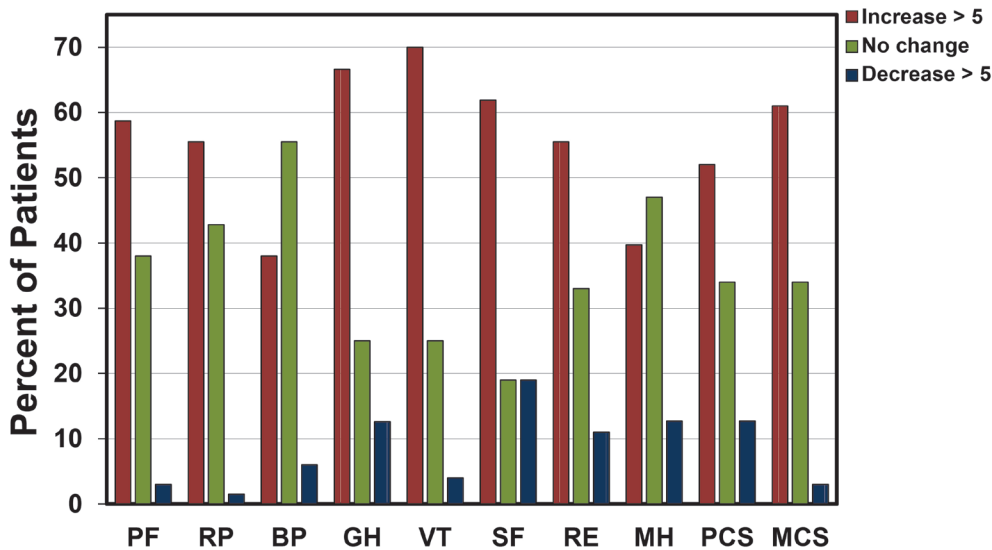
Figure 1. SF-36 scores at baseline, 4 and 12 weeks.

Key:

- PF: Physical Function
- RP: Role Physical
- BP: Bodily Pain
- GH: General Health
- VT: Vitality
- SF: Social Function
- RE: Role Emotional
- MH: Mental Health
- PCS: Physical Component Summary
- MCS: Mental Component Summary

RESULTS

- ◆ At baseline, participants (n=65) had SF-36 mean scores in all domains below the adult United States mean (50, norm based scoring). (Figure 1)
- ◆ Health-related quality of life scores measured by SF-36 improved in all eight domains at 4 and 12 weeks compared to baseline (all p < 0.001).
- ◆ Mean scores increased to above the mean (50) in all domains at 12 weeks.



- ◆ Most individuals had changes in individual SF-36 scores of more than 5. (Figure 2)

Figure 2. Percent of patients from baseline of SF-36 scores.

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CONCLUSIONS

- ◆ Multidisciplinary supervised weight loss results in robust improvement in health-related quality of life, in both the physical and mental components as measured by the SF-36 survey.
- ◆ The improvement in quality of life is seen as early as 4 weeks with additional improvements at 12 weeks during active weight loss.
- ◆ The improvement in health-related quality of life at 4 weeks is an important finding as these individuals at this time still have a BMI in the obese category.
- ◆ Individuals enrolling in medically supervised programs have baseline low health-related quality of life.
- ◆ The treatment of obesity with an intensive medical weight program may have similar improvements in health related quality of life as reported in the surgical literature.

DISCUSSION

- ◆ This prospective study shows that treatment of obesity with a VLCD in a multidisciplinary clinic can improve a low health-related quality of life. Diet-induced weight loss with a VLCD is associated with approximately a 2-5 lb weight loss per week, similar to post-surgical patients.^{2,4} This diet is associated with significant reductions in cholesterol, glucose, triglycerides, blood pressure and often a complete resolution of the components of the metabolic syndrome.² The VLCD, with a multidisciplinary approach, can be utilized by practicing endocrinologists as an effective office based strategy that may offer an alternative to surgery or be utilized in a preoperative or postoperative treatment plan.
- ◆ The SF-36 form can be used in practice to identify patients that may have remaining low-health related quality of life independent of weight or weight loss who may benefit from additional behavior treatments.⁵ There is improvement in health-related quality of life at 4 weeks, at a time in which participants still have a BMI > 30. Prior studies have suggested that individuals at longer follow-up may have durable improvement in HR-QOL.⁶ These findings suggest that participation in the supervised program may independently improve HR-QOL and long term prevention of type 2 diabetes mellitus.^{6,7}
- ◆ Preventive medicine is a critical component of healthcare but many patients and payers may not appreciate its value. The interventions in preventive medicine are often not recognized as having an immediate benefit on quality of life. Given the impact of obesity on morbidity and mortality^{8,9,10} useful programs and strategies are needed.

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