FOCUSED QUESTION
Is occupational therapy’s promotion of lifestyle change more effective in weight loss as compared to bariatric surgery and/or pharmacotherapy?


CLINICAL BOTTOM LINE:

Although conservative treatment such as diet, exercise, and behavior modification “can result in short-term weight loss of approximately 10% body weight, this is usually not sustained in the long-term” (Martins et al., 2010, p. 842). Therefore, bariatric surgery becomes an option for sustainable treatment with individuals who have morbid obesity. Yet some individuals may not be eligible for bariatric surgery. Non-surgical interventions that assist in long-term weight loss maintenance for these individuals must be broadened.

In this study, patients with morbid obesity who were on the waiting list for bariatric surgery were given a choice to either stay on the waiting list or enroll in one of the conservative treatments available, including a residential intermittent program, a commercial weight loss camp, and a hospital outpatient program. The aim of the residential intermittent program was for patients to become capable of being in charge of their own lifestyle changes with the help of a dietitian, physical activity (PA) therapist, psychologist, public health nurse, medical doctor, and social worker. The weight loss camp was an intensive lifestyle modification program that consisted of a low-calorie diet, structured PA, and cognitive therapy. The aim of the hospital outpatient program was to maintain participants’ motivation to keep their lifestyle changes through regular meetings with health professionals. It was found that all treatments resulted in significant weight loss, but bariatric surgery led to the largest weight loss. Although bariatric surgery led to greater weight loss as compared with conservative treatment, it was found that there were similar improvements in risk factors and comorbidities and significant weight loss also can be achieved with lifestyle interventions.

Occupational therapy has the benefit of providing conservative treatment, which can involve lifestyle modifications and adaptations. Intervention focuses on prevention, remediation,
compensation, and maintenance programs with individuals. Occupational therapists can educate
individuals to build habits that would engage them in health-promoting activities that would
allow them to maintain a healthy weight after surgery. One limitation that was found in this
study is that the magnitude of weight loss was much smaller compared with other studies. Also,
itis possible to implement labor intensive approaches, but it requires a large financial budget
that not all centers can afford.

RESEARCH OBJECTIVE(S)
List study objectives.

The main objective of this study was to compare weight loss and changes in risk factors and
comorbidities at 1 year after bariatric surgery and three different conservative treatments (a
residential intermittent program, commercial weight loss camp, and a hospital outpatient
program) for patients with morbid obesity. The study aims at identifying the best non-surgical
alternative for sustained weight loss in the patient group.

DESIGN TYPE AND LEVEL OF EVIDENCE:
Level II: Non-randomized study

Limitations (appropriateness of study design):
Was the study design type appropriate for the knowledge level about this topic? Circle yes or no,
and if no, explain.

YES/NO

SAMPLE SELECTION
How were subjects selected to participate? Please describe.

154 women and 52 men who were on the waiting list for bariatric surgery were recruited for
this study.

Inclusion Criteria
The inclusion criteria were individuals between the ages of 18 and 60 years with a body mass
index greater than 40 kg/m² or more than 35 kg/m² with comorbidities.

Exclusion Criteria
Exclusion criteria included pregnancy, enrollment in another obesity treatment, previous
bariatric surgery, drug or alcohol abuse, mental disorders, and/or physical impairment.

SAMPLE CHARACTERISTICS
N= 179
% Dropouts 27 people
### #/ (%) Male and Female

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
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<tbody>
<tr>
<td>52 (25%)</td>
<td>154 (75%)</td>
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</table>

### Ethnicity

All participants were Caucasian.

### Disease/disability diagnosis

NR

### Check appropriate group:

<table>
<thead>
<tr>
<th>&lt; 20/study group</th>
<th>20–50/study group</th>
<th>51–100/study group</th>
<th>101–149/study group</th>
<th>150–200/study group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>✓</strong></td>
<td></td>
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### INTERVENTION(S) AND CONTROL GROUPS

**Add groups if necessary**

#### Group 1

**Brief Description**
Bariatric surgery. It consisted of a Roux-en Y gastric bypass.

**Setting**
Center for Obesity in St. Olav University Hospital in Norway

**Who Delivered?**
By a trained surgeon

**Frequency?**
NR

**Duration?**
NR

#### Group 2

**Brief Description**
Residential intermittent program. The aim of the residential intermittent program was for patients to become capable of being in charge of their own lifestyle changes. It included of structured PA, a nutrition education program, and dynamic group-based psychotherapy.

**Setting**
This intervention consisted of a “continuous care” weight loss program at Roros Rehabilitation Center (RRC) in Norway.

**Who Delivered?**
Each patient consulted with a team of health professionals that included dietitians, PA therapists, psychologists, public health nurses, medical doctors, and social workers.

**Frequency?**
On a regular basis

**Duration?**
8–10 weeks at RRC, 8 weeks at home, 4 weeks at RRC, 4–5 months at home, and 2 weeks at RRS. Then 2 weeks every 6 months after the first year, up to 5 years.

#### Group 3

**Brief Description**
Weight loss camp. The weight loss camp consisted of an intensive lifestyle modification program that included a low-calorie diet, structured PA, and cognitive therapy. This program consisted of a conventional low-calorie diet, structured PA, cognitive therapy, and individual meetings where weight was recorded and participants discussed their progress.
<table>
<thead>
<tr>
<th>Setting</th>
<th>This intervention took place at a private health resort, Ebeltoft Healthcenter, in Denmark. The individual meetings took place at the Center for Obesity in St. Olav University Hospital in Norway. For those who lived far away, these meetings were replaced with phone contact.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who Delivered?</td>
<td>Each patient was supervised by a multidisciplinary group that included dietitians, physical therapists, psychotherapists, PA therapists, and psychiatric nurses.</td>
</tr>
<tr>
<td>Frequency?</td>
<td>On a regular basis</td>
</tr>
<tr>
<td>Duration?</td>
<td>21 weeks of the intensive lifestyle modification program, then every 2 weeks for the individual meetings.</td>
</tr>
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</table>

**Group 4**

<table>
<thead>
<tr>
<th>Brief Description</th>
<th>Hospital outpatient program. The aim of the hospital outpatient program was to maintain participants’ motivation to keep their lifestyle changes through regular meetings with health professionals. This consisted of individualized meetings to increase PA levels and group meetings with one of three health professionals: occupational therapist (to discuss habits and plan daily activities), dietitian (to increase knowledge on nutritional composition of foods), and social worker (psychosocial interview).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>The Center for Obesity in St. Olav University Hospital in Norway</td>
</tr>
<tr>
<td>Frequency?</td>
<td>Individualized meetings with the physiotherapist three times a week in the first 2 months, two times a week in the last 4 months, along with 1 hour a week of self-training and group meetings every week on a regular basis.</td>
</tr>
<tr>
<td>Duration?</td>
<td>Participants attended a 6-month weight loss program, then a 6-month weight maintenance program.</td>
</tr>
</tbody>
</table>

**Intervention Biases:** *Circle yes or no and explain, if needed.*

**Contamination**

<table>
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<th>YES/NO</th>
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**Co-intervention**

<table>
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<th>YES/NO</th>
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**Timing**

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Site

**YES/NO** This intervention took place at various settings that included the Center for Obesity in St. Olav University Hospital in Norway; a private health resort, Ebeltoft Healthcenter, in Denmark; and through telephone contact. Different interventions were being conducted at these sites.

Use of different therapists to provide intervention

**YES/NO** There were various health professionals in this study, including physiotherapists, occupational therapists, physical therapists, dietitians, social workers, psychotherapists, PA therapists, psychiatric nurses, psychologists, public health nurses, and medical doctors.

**MEASURES AND OUTCOMES**

Complete for each relevant measure when answering the evidence-based question:

Name of measure, what outcome was measured, whether the measure is reliable and valid (as reported in article – yes/no/NR [not reported]), and how frequently the measure was used.

Body weight was assessed and reliability and validity were NR. It was measured before and after the intervention.

Fasting blood samples were taken at baseline and 1 year. Reliability and validity were NR.

Resolution of comorbidities was obtained at baseline and 1 year. Reliability and validity were NR.

Measurement Biases

Were the evaluators blind to treatment status? *Circle yes or no, and if no, explain.*

**YES/NO**

Recall or memory bias. *Circle yes or no, and if yes, explain.*

**YES/NO**

Others (list and explain):

NR
RESULTS
List results of outcomes relevant to answering the focused question
Include statistical significance where appropriate (p<0.05)
Include effect size if reported

- It was found that all treatments resulted in significant weight loss, but bariatric surgery led to the largest weight loss ($p < .0001$).
- Although bariatric surgery led to greater weight loss compared with conservative treatment, it was found that there were similar improvements in risk factors and comorbidities and significant weight loss achieved with lifestyle interventions.
- At 1-year post-intervention body weight was assessed and subjects who:
  - underwent surgery lost 40 kg (31%)
  - participated in the residential intermittent program lost 22 kg (15%), $p < .0001$
  - participated in the weight loss camp lost 22 kg (15%) $p < .0001$
  - participated in the hospital outpatient program lost 7 kg (5%) $p = .005$.
- Fasting blood samples, at 1-year follow-up, cholesterol changes among participants who:
  - underwent surgery: $p < .05$
  - residential intermittent program: $p < .01$
  - weight loss camp: $p < .01$
  - hospital outpatient program: $p < .05$.
- There were no significant differences observed between surgery and lifestyle groups in the resolution of comorbidities such as asthma, arthritis, diabetes mellitus type 2, or sleep apnea at 1 year post-intervention; however, the surgery group experienced a larger resolution in hypertension compared with the lifestyle group.

Was this study adequately powered (large enough to show a difference)? *Circle yes or no, and if no, explain.*

YES/NO

Were appropriate analytic methods used? *Circle yes or no, and if no, explain.*

YES/NO

Were statistics appropriately reported (in written or table format)? *Circle yes or no, and if no, explain.*

YES/NO

CONCLUSIONS
State the authors’ conclusions that are applicable to answering the evidence-based question.

6
This study compared weight loss and changes in risk factors and comorbidities at 1 year after bariatric surgery or three different conservative treatments that included a residential intermittent program, a weight loss camp, and a hospital outpatient program for patients who are morbidly obese. It aimed at identifying the best non-surgical alternative for weight loss over a sustained amount of time. Patients in the bariatric surgery group lost the greatest amount of weight; however, all participants in the conservative groups had a significant weight loss. There were no significant differences between treatment groups concerning changes in fasting blood samples. Regarding the resolution of comorbidities, only those with hypertension experienced a better outcome after surgery compared with after lifestyle intervention. There were no differences observed for asthma, arthritis, diabetes mellitus type 2, and sleep apnea. This study shows that clinical significant weight loss is possible with conservative treatments and can be sustained in the long term. Future research should be conducted due to limitations of this study that include non-randomization, lack of control group, and a relatively short follow-up.

This work is based on the evidence-based literature review completed by Brittany Cottrell, MOTS, and Carmela Battaglia, PhD, OTR/L, Faculty Advisor, Keuka College.


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