

**Title****Author**

Psychological disorder, symptom severity and weight loss in inpatient adolescent obesity treatment

Van Vlierberghe, L., Braet, C.,  
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Lifestyle interventions for youth who are overweight: A meta-analytic review

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The Effect of Reinforcement or Stimulus Control to Reduce Sedentary Behavior in the Treatment of Pediatric Obesity.

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Family-based interventions for pediatric obesity: Methodological and conceptual challenges for family psychology

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1975 Analysis 8 269-278

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34 1050

1994 Addictive Behaviors 19 135-145

1995 Health Psychology 14 109-115

Journal of Consulting and  
1981 Clinical Psychology 49 674-685

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1984 Clinical Psychology 52 429-437

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1986 Clinical Psychology 54 400-401

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Child Care, Health and  
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**Population****Method****Analysis**

\*Adolescence (14-19 yrs)  
\*Possessing psychological symptoms or disorders  
\*66 Participants

Empirical Study;  
Quantitative Study

\* t -tests conducted for YSR and EDE-Q subscales  
\*R - software for statistical computing of graphics was used to account for missing data  
\*3 Regression analysis run (1 month, 4 months, end of treatment)

\*Overweight (~20%)  
\*6- 18 years old

Empirical Study;  
Meta Analysis;  
Quantitative Study

\*Effect Size Analysis  
Software  
\*SPSS

\*Obese Children (5-17 yrs)

Empirical Study

\*Between-groups comparisons of previously collected data

\*Obese 8-12 year old children  
\*child in 85th BMI percentile

Empirical Study;  
Quantitative Study

\*Graphs and charts of data comparing pre and post treatment outcomes for both groups  
\*Graphs of changes of BMI overtime

\*Overweight children from 1-18 years of age

Meta Analysis

Data Based Comparisons

\*56 overweight girls (10-18 years)

Qualitative Study

\*Data comparison

\*obese adolescents (age 5-16 years)

\*evaluated studies psychological interventions combined with dietary and physical activity components

\*pediatric obesity (12 years and younger)

\*compare studies

\*obese children (2-18 years)

\*between-study comparison

\*Overweight children (0-13 years)

Experimental Design

\*weekly sessions

\*15 girls

\*Ages 5-10

\*overweight

\*no medical, psychological, or psychiatric treatment and not in another weight control program

\*Experimental Design

\*Randomized group

\*2 week baseline

\*12 weekly sessions

\*Parent only sessions

\*info about exercise, calisthenics, nutrition, and stimulus control

\*explained response cost and

reinforcement,

reponse cost, and

waitlist control

\*43 participants

\*ages 8-9 years

\*overweight child

\*Experimental Design

\*Randomized group

\*physical activity 2

times a week for 4

months

\*no treatment control

\* 21 participants

\*Average percent overweight 48.36%

\*Age 7-13 years

\*Experimental Design

\*Randomized group

\*8 weekly, 90-minute

group sessions

\* 44 participants

\*74% female, 26% male

\*Age 8-12 years

\*Experimental Design

\*Randomized group

\*26 weekly meetings

followed by 6 monthly

meetings

\* 61 subjects  
\*Age 8-12 years

\*Experimental Design  
\*Randomized group

\*weekly session for 4  
months then 2 month  
meetings

\* 44 participants  
\*74% female, 26% male  
\*Age 8-12 years

\*Experimental Design  
\*Randomized group

\*14 sessions (8 weekly  
sessions followed by 6  
monthly sessions)

\* 51 participants  
\*children 20-80% overweight  
\*Age 8-12 years  
\*no existing  
psychological/psychiatric  
condition

\*Experimental Design  
\*Randomized group

\*8 weekly sessions  
then 5 maintenance  
sessions over 4 months

\* 53 participants  
\*children 20-80% overweight  
\*Age 8-12 years  
\*no existing  
psychological/psychiatric  
condition  
\*no contra-indications for  
exercise

\*Experimental Design  
\*Randomized group

\* 8 weekly sessions  
then 7 sessions over 20  
weeks

\* 44 participants  
\*children > 20 overweight  
\*Age 8-12 years

\*Experimental Design  
\*Randomized group

\* 8 weekly sessions,  
then 10 monthly  
sessions

\* 41 participants  
\*children 20-80% overweight  
\*Age 8-12 years  
\*children not receiving  
psychological/psychiatric  
treatment

\*Experimental Design  
\*Randomized group  
\*crossed with parent  
overweight status

\*8 weekly sessions,  
then 10 monthly  
meetings

\* 23 participants  
\*children 20-80% overweight  
\*Age 8-12 years  
\*no contra-indications for  
exercise

\*Experimental Design  
\*Randomized group  
after stratification on  
age, percent overweight,  
and physical work  
capacity

\*8 weekly sessions  
then 10 monthly  
maintenance sessions

\* 13 participants  
\*children > 20% overweight  
\*Age 6-12 years  
\*child not receiving medical,  
psychological/psychiatric  
treatment

\*Experimental Design  
\*Randomized group  
after stratification by  
percentage overweight  
and age

\*7 weekly groups, then  
3 monthly group  
sessions

- \* 41 participants
- \*children 20% -80 % overweight
- \*Age 8-12 years
- \*child not receiving medical, psychological/psychiatric treatment
- \*Experimental Design
- \*Randomized groups
- crossed with parent overweight status (yes/no)
- \*8 weekly sessions, then 10 monthly sessions
  
- \* 19 participants
- \*children 20% -80 % overweight
- \*Age 5-8 years
- \*obese girls referred by school nurse or physician
- \*Experimental Design
- \*Randomized group
- \*5 week camp, then 9 monthly maintenance sessions
  
- \* 19 participants
- \*children 20% -80 % overweight
- \*Age 5-8 years
- \*Experimental Design
- \*Randomized group
- \*5 weeks of 2 days/week of camp
  
- \* 20 participants
- \*children > 20% overweight
- \*Age 8 years, 11 months - 13 years, 0 months
- \*Experimental Design
- \*Randomized group
- \*8 90-minute group sessions, then 9 biweekly sessions
  
- \* 38 participants
- \*average percent overweight = 55.7%
- \*Age 12-16 years
- \*Experimental Design
- \*Randomized group
- \* 45 to 60 minute group sessions for 1 year (16 weekly sessions, then 1 session every 2 months)

\* 19 participants

\*average percent overweight =  
80.4 %

\*Age 7.5 - 16.9 years

\*Experimental Design

\*Randomized group

\*ten outpatient  
sessions, followed by  
monthly sessions for 1  
year

\* 20 participants

\*child above 95th percentile for  
percent overweight

\*average BMI > 25

\*Age: prepubertal

\*Experimental Design

\*Randomized group

\*food recording

\*dietitian consult

## Measures

## Results

*Eating Disorder Examination	*Severly overweight children are sucessful in loosing weight
*Structured Clinical Interview for DSM-IV	*After 4 months, boys had lost more weight than girls
*Youth Self-Report	*psychopathology not found to significantly predict weight loss
*BMI	*those with eating disorders decreased binge eating episodes
*Percent Overweight	*~50% of adolescents entering treatment with at least one psychological disorder kept atleast one psychiatric diagnosis at the end of the program
	*Girls and severley obese adolescents require long-term care
*Between-groups differences in weight-related outcomes	*Interventions for overweight adolescents are effective under a wide range of conditions
*Between-groups differences in health related behaviors at end of treatment	*Improved eating habits
*BMI	*Parents showed better weight management themselves
*Percent Overweight	*key component - parent involvement in program
	*weight management bettered
	*Most successful programs include multidisciplinary design with diet, exercise, and application of behavior modification principles
	*exercise interventions alone do not have impact on weight change
	*exercise combined with diet enhances weight loss and improves long-term maintenance
	*less structured, more flexible lifestyle exercise may be more effective than higher intensity aerobic exercise
	*Reduce sedentary activity with use of structured eating plan
	*Including parents in family-based behavioral intervention strengthens short and long-term weight loss
*Percent Overweight	*Percent overweight decreases as duration of treatment increases
*Different treatment outcomes	
*BMI	

- \*Daily food intake recorded
- \*Habits book - recorded target sedentary behavior times
- \*BMI calculated and compared to CDC growth charts
- \* Weight and Height
- \*METs calculated daily
- \*Decrease in percent overweight
- \*Decrease in sedentary behavior/ intake of high density foods
- \*Increase in servings of fruits and vegetables
- \*Increase in percent of time above 3 METs
- \*Increase in moderate to vigorous physical activity
- \*Content of intervention
- \*Weight/Height
- \*BMI
- \*Nutrition Measurement in logs
- \*Exercise Logs
- \*Therapy sessions
- \*Most programs include parents in behavioral or cognitive-behavioral approaches to behavior management in order to change child's eating habits
- \*Some research states that the more a parent is involved doesn't always mean the outcome will be better
- \*Family-based research can be more effective if aspects such as variability in parent and family function is taken into account
- \*Percent Overweight
- \*Exercise
- \*BMI
- \*Eating Habits
- \*~6% weightloss of initial body weight for 6 weeks of attendance
- \*changes in obesity-related comorbidities (hypertension, insulin resistance, sleep apnea)
- \*Change of weight and BMI
- \*Percentage overweight
- \*dietary intake
- \*physical activity
- \*fitness
- \*screen time (tv/computer, etc.)
- \*firm conclusions about the effectiveness of psychological interventions for childhood obesity can not be made
- \*interventions aimed at reducing sedentary activities/increasing physical activity level effective
- \*multi-component family-based behavioral interventions are effective
- \*well-established treatments for intervening with pediatric obesity in children between the ages of 8 to 12 years
- \*compared weight loss interventions of several studies.
- \*current definitions of childhood and adolescent overweight and obesity
- \*demography of obesity in U.S.
- \*psychosocial correlations of childhood and adolescent obesity
- \*several studies were found the reduced BMI with pharmaceutical, physical activity, reduce sedentary, and lifestyle interventions.

- \*weekly sessions
- \*calorie intake log
- \*BMI measurement

- \*Males lost 3.2 kg after 4 weeks of treatment
- \*Females lost 2.9 kg after 4 weeks of treatment
- \*males lost 7.6 kg after 6 months
- \*females lost 8.1 kg

- \*Change of weight and BMI
- \*Percentage overweight
- \*dietary intake

- \*response cost and reinforcement group lost 11.3 lbs
- \*response cost group lost 9.5 lbs
- \*waitlist control gained 0.9 lbs
- \*patients still lost weight eight weeks from post-treatment

- \*Physical activity level
- \*weight loss
- \*BMI

- \*Gained 0.8 kg
- \*no follow up

- \*stimulus control
- \*monitoring food & activity
- \*goal setting and positive reinforcement
- \*relaxation training
- \*cognitive restructuring
- \*problem solving
- \*self-reinforcement

- \*Group 1 demonstrated a 0.9% decrease in percent over weight
- \*Group 2 demonstrated a 7.8% decrease in percent over weight
- \*Significant decrease in percentage of overweight individuals in both groups

- \*traffic light diet
- \*lifestyle exercise
- \*parents trained in behavior management
- \*parents and children seen in separate groups

- \*6 months from pre-treatment group 1 demonstrated 30.1% decrease in percent overweight
- \*6 months from pre-treatment group 2 demonstrated 20% decrease in percent overweight
- \*Twelve months from pre-treatment Group 1 demonstrated a 26.5% decrease in percent overweight
- \*Twelve months from pre-treatment Group 2 demonstrated a 16.7% decrease in percent overweight

<ul style="list-style-type: none"> <li>*traffic light diet</li> <li>*behavioral contracting</li> <li>*reinforce decreased sedentary activity</li> <li>* reinforced increased physical activity combined with behavioral contrast and decreased sedentary activity</li> </ul>	<ul style="list-style-type: none"> <li>*4 months from pre-months for group 1 there was approximately a 21% decrease in overweight</li> <li>*4 months from pre-months for group 2 there was approximately a 13% decrease in overweight</li> <li>*4 months from pre-months for group 3 there was approximately a % decrease in overweight</li> <li>* 12 months from pre-months for group 1 there was approximately a 19% decrease in overweight</li> <li>* 12 months from pre-months for group 2 there was approximately a 8% decrease in overweight</li> <li>* 12 months from pre-months for group 3 there was approximately a 11% decrease in overweight</li> </ul>
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<ul style="list-style-type: none"> <li>*traffic light diet</li> <li>*aerobic exercise plan</li> <li>*behavioral modification</li> <li>*parent and child targeted weight loss</li> <li>*psychiatric treatment</li> <li>*parent participation</li> </ul>	<ul style="list-style-type: none"> <li>*significant decrease in percentage of obesity for all groups (1,2,3)</li> <li>*41 % of children were less than 20% overweight</li> </ul>
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<ul style="list-style-type: none"> <li>*traffic light diet</li> <li>*behavior contracting</li> <li>*behavioral modification</li> <li>*parent and child seen in different groups</li> <li>* diet and lifestyle exercise (group 1)</li> <li>*diet and programmed exercise (group 2)</li> <li>*lifestyle exercise (group 3)</li> <li>*programmed exercise (group 4)</li> </ul>	<ul style="list-style-type: none"> <li>*at the end of maintenance group 1 was -19% overweight</li> <li>*at the end of maintenance group 2 was -10% overweight</li> <li>*at the end of maintenance group 3 was 13-% overweight</li> <li>*at the end of maintenance group 4 was -14% overweight</li> </ul>
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<ul style="list-style-type: none"> <li>*traffic light diet</li> <li>*token economy</li> <li>*parent and child seen in different groups</li> <li>* diet and lifestyle exercise (group 2)</li> <li>*diet (group 1)</li> <li>*waitlist control (group 3)</li> </ul>	<ul style="list-style-type: none"> <li>*group 1 demonstrated approximately -15% overweight</li> <li>*group 2 demonstrated approximately -16% overweight</li> <li>*group 3 demonstrated approximately + 2% overweight</li> </ul>
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	*2 months from pre-treatment group 1 was -11% overweight
*self monitoring	*2 months from pre-treatment group 2 was -13% overweight
*traffic light diet	
*modeling	*2 months from pre-treatment group 3 was -11% overweight
* parent behavioral management	
*behavioral contracting	* 6 months from pre-treatment group 1 was -17% overweight
*diet and programmed aerobic exercise (group 1)	*6 months from pre-treatment group 2 was -20% overweight
*diet and lifestyle exercise (group 2)	*6 months from pre-treatment group 3 was -16% overweight
*diet and calisthenics exercise (group 3)	
*traffic light diet	
*lifestyle exercise program	
*parent and child seen in different groups	
* parent control training, parent overweight (group 1)	
*child self-control training, parent overweight (group 2)	
*parent control training, parent not overweight (group 3)	* no differential effect of parent vs. child control *groups 1 & 2 demonstrated -7.7% overweight
*child self-control training, parent not overweight (group 4)	*groups 3 & 4 demonstrated -16.3% overweight * 3+4 > 1+2
	*2 months from pre-treatment group 1 was -17% overweight
*traffic light diet	* 2 months from pre-treatment group 2 was -12% overweight
*behavioral management	
*parent and child seen in different groups	*6 months from pre-treatment group 1 was -28% overweight
* diet and aerobic exercise (group 1)	* 6 months from pre-treatment group 1 was -19% overweight
* diet alone (group 2)	
*traffic light diet	
*exercise instruction and calisthenics or walking in sessions	
*self monitoring, stimulus control, behavioral contracting, therapist phone contact (group 1)	* percent overweight group 1 -9.7%
*nutrition and exercise education only	*percent overweight group 2 -4.7%

\*traffic light diet  
 \* parents and children seen in separate groups  
 \*behavioral modifications  
 \* parent control training, with parent overweight (group 1) \*child self-control training, with parent overweight (group 2)  
 \*parent control training, with parent not overweight (group 3)  
 \* child self-control training, with parent not overweight (group 4)

\* no differential effect of parent vs. child control  
 \* group 1 & group 2 approximately - 8% overweight  
 \*group 2 & group 3 approximately - 18% overweight  
 \* 3 + 4 > 1+ 2

\*traffic light diet  
 \*parents seen in separate groups  
 \* behavioral management and diet and exercise program (group 1)  
 \*diet and exercise program (group 2)

\* 4 months from pre-treatment group 1 showed -20% overweight  
 \* 4 months from pre-treatment group 2 showed -13% overweight

\*traffic light diet  
 \*nutritional education  
 \* experimental:baseline, treatment, reversal, treatment, reversal (group 1)  
 \*control: baseline; treatment = random reinforcement of physical activity; reversal = reinforcement of sharing (group 2)

\* Pre-post change: -4.9 lbs across groups  
 \* 1 = 2

\* parent and child seen in separate groups  
 \* monitoring, cue control, rewarding weight control behaviors, parent emphasis (group 1)  
 \*same as (1) except child-control emphasis; child self management training (group 2)

\* group 1 demonstrated -12.5%  
 \*group 2 demonstrated -15.6%  
 \*significant decrease from pre-treatment in both groups 1=2

\*adolescent in treatment alone (group 1)  
 \*adolescent and mother attended together (group 2)  
 \* adolescent and mother attended separately (group 3)

\*group 1 shows -6.8% overweight  
 \*group 2 shows -7.0% overweight  
 \*group 3 shows -17.1% overweight

*protein-sparing modified fast (group 1)	*ten weeks from pre-treatment group 1 showed -29.5% overweight
*hypocaloric diet (group 2)	*ten weeks from pre-treatment group 2 showed -13.8% overweight
*sixteen weekly, 50-minute exercise sessions (reinforcement and monitoring of home exercise; prescription of 20 minutes of exercise 3-4 X per week) (group 1)	*group 1 showed -5.5 kg
*no exercise (group 2)	*group 2 showed +2.6 kg
	*No significant change in either group

## Summary

\*Girls and severely obese require long-term care due to discouragement halfway through treatment.

\*Psychopathology not linked with predicting weight loss

\*Parents role in treatment is extremely important for adolescent

\*Combining nutrition, exercise, and application of behavior modification produces most successful outcomes

\*Parents must be included in intervention process

\* Exercise must be combined with diet to lead to weight loss

\*Boys twice as likely to substitute physical activity than girls  
\*Effects of study enhanced when participants engage in physical activity to keep busy from sedentary behaviors

\*Parents do need to be involved in intervention to some degree  
\*Variability in parent and family function must be taken in consideration for each individual case

\*Well structured diet, exercise and group therapy are successful when combined

\*family-based, multi-component behavioral interventions are effective

\*still needs more research