COPE TEEN (Thinking, Emotions, Exercise and Nutrition): An Intervention to Promote Cognitive Behavioral Skills and Healthy Lifestyle Behaviors in Overweight Adolescents

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**Funding Support**
NIH/The National Institute of Nursing Research
R01NR012171
Disclosures

• I am the co-editor of two books on Evidence-based Practice and I am the co-editor of two books on Evidence-based Practice

• I have lectured across the country and the globe at universities and healthcare organizations on Evidence-based Practice

• I am the co-editor of a book on Intervention Research

• I have two companies that provide training to clinicians on various COPE programs and that disseminate the programs
Significance of the Problem

- Currently, 17% of adolescents are overweight (gender and age specific BMI at or above the 85th %) or obese (BMI at or above the 95th %); as high as 34% in Hispanic teens.

One in 3 people will have diabetes by 2050.
Significance of the Problem

• One in 4 adolescents has a mental health problem and less than 25% receive any treatment

• Hispanic and White teens are more likely to report depression and feelings of worthlessness

• There is a higher incidence of mental health disorders in overweight/obese teens

• Our research has shown that the higher level of depressive and anxiety symptoms and the lower self-esteem, the less teens believe they can engage in healthy behaviors
Significance of the Problem

- Few intervention studies have been conducted with teens to improve both their healthy lifestyle behaviors and mental health outcomes.
- Most intervention studies with adolescents have not produced long-term sustainable effects on health outcomes, including BMI.
- Prior interventions with overweight/obese teens typically do not address the adverse mental health outcomes that are commonly associated with overweight/obesity.
Significance of the Problem

• Of those intervention studies conducted, they tend to combine nutrition education, activity and behavior modification, which have not tended to produce long-term positive outcomes.

• Major flaws exist in prior intervention studies.

• Knowledge alone usually does not change behaviors!
The COPE Healthy Lifestyles
TEEN Program

• A 15 session cognitive-behavioral skills building program that includes physical activity in each session

• All sessions are manualized and interactive, with an emphasis on the practice of cognitive-behavioral skills building activities and role playing

• Includes many case-based examples
Cognitive Theory Guides COPE, which Emphasizes Cognitive Restructuring, Problem Solving and Behavior Change

The thinking/feeling/behaving triangle
Key Components of Cognitive-Behavioral Therapy

- Teens learn the ABCs in CBT
  - Antecedent event: A friend made fun of me
  - Belief: I’m an idiot
  - Consequence of the belief: Feelings of depression and worthlessness; difficulty functioning

- Positive reappraisal, positive self talk and homework are all important pieces of CBT
COPE Conceptual Model

COPE/TEEN Intervention

Knowledge
Personal Beliefs
Perceived Difficulty

↓ Depression
↓ Anxiety
↓ BMI
↑ Healthy Lifestyle Behaviors
↑ Self-esteem
↑ Social Skills
↑ Academic Performance
Components of the 15-Session COPE Healthy Lifestyles TEEN Program

- 7 Sessions of cognitive-behavioral skills building
- Nutrition and physical activity education
- 20 minutes of physical activity in each session
<table>
<thead>
<tr>
<th>Session #</th>
<th>Session Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction &amp; goals of the program; Healthy Lifestyles: The thinking, feeling, behaving triangle</td>
</tr>
<tr>
<td>2</td>
<td>Self-esteem; Positive thinking/self-talk</td>
</tr>
<tr>
<td>3</td>
<td>Goal setting; Problem-solving</td>
</tr>
<tr>
<td>4</td>
<td>Stress and coping</td>
</tr>
<tr>
<td>5</td>
<td>Emotional/behavioral regulation</td>
</tr>
<tr>
<td>Session #</td>
<td>Session Content</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
</tr>
<tr>
<td>6</td>
<td>Effective communication</td>
</tr>
<tr>
<td>7</td>
<td>Physical Activity</td>
</tr>
<tr>
<td>8</td>
<td>Heart rate; Stretching</td>
</tr>
<tr>
<td>9</td>
<td>Food groups and a healthy body; Stoplight diet; Red, yellow &amp; green</td>
</tr>
<tr>
<td>10</td>
<td>Reading labels; Effects of the media on food choices</td>
</tr>
</tbody>
</table>
### The COPE Healthy Lifestyles TEEN Program

<table>
<thead>
<tr>
<th>Session #</th>
<th>Session Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Portion sizes; Influence of feelings on eating</td>
</tr>
<tr>
<td>12</td>
<td>Social eating; Strategies for eating during parties, holidays, vacations</td>
</tr>
<tr>
<td>13</td>
<td>Snacks; Eating out</td>
</tr>
<tr>
<td>14</td>
<td>Integration of knowledge and skills to develop a healthy lifestyle plan</td>
</tr>
<tr>
<td>15</td>
<td>Pulling it all together; Review of course content</td>
</tr>
</tbody>
</table>
When you think positively, you will be happier and have less stress. How you think affects how you feel and how you behave.
15 year old Sara has poor self-esteem.

One of her classmates called her “chubbo.” Sara believes that she is fat, ugly and that no one likes her (negative thinking).

As a result, she feels depressed (negative emotion) and isolates herself, never attending any social events with her peers (negative behavior). The trigger event here was that one of her friends called Sara “chubbo.”
COPE
Goal Setting & Self-Monitoring Log

Goal: Write Two Positive Self-Statements

Goal for Number of times per day to say the positive self statements ___________

Number of Times You Said Your Positive Self-Statements

Day #1__ Day #2___ Day #3___ Day #4___ Day #5___ Day#6___ Day #7___

Emotions (How have you felt this week?)

Rate your emotions on a scale from 0 “not at all” to 10 “a lot”

Worried ______
Stressed ______
Happy ______
Sad ______
Name three situations in the past few days of how thinking negatively affected how you felt and how you behaved. Then, write down how you could have changed your thinking to feel better and act differently.
Session 2
Self-Esteem and Positive Thinking/Self-Talk
Positive Ways to Build Self-Esteem

• Change your self-talk and talk more positively
• Look at things more positively (the cup being half full instead of half empty)
What is stress?

Stress is when you do not have the ability or skills to deal with things that you see as frightening or unpleasant (like taking a test that you didn’t study for or missing your curfew).
Emotional Signs of Stress

• Feeling anxious
• Feeling nervous
• Feeling down or depressed
• Feeling hopeless
• Feeling angry or irritable
• Feeling overwhelmed or “burned out”
Positive Ways to Deal with Stress

- Talking about how you feel
- Exercise
- Seeking out family and friends for support
- Writing your thoughts and feelings in a journal
- Turning a negative thought in response to a stressor into a positive one
- Taking one bite of the elephant at a time when you start something new
STRESSOR  

\[ \downarrow \]

NEGATIVE THOUGHT TO STOP  

\[ \downarrow \]

REPLACE THE NEGATIVE WITH A POSITIVE THOUGHT  

\[ \downarrow \]

POSITIVE EMOTION & BEHAVIOR
Help is available!
Don’t wait to ask for help

SEEK HELP FROM YOUR PARENTS, TEACHER, SCHOOL COUNSELOR OR HEALTH CARE PROVIDER IF YOU OR SOMEONE YOU KNOW IS SHOWING SIGNS OF DEPRESSION OR A LOT OF ANXIETY
Session 3
Managing Stress Homework

• What are some stressful situations you have had this week?

• What things did you do to decrease your stress?
Parent Newsletters

- Four times during the course of the program, teens are provided with a newsletter to review with their parents that covers the content in the program.
Positive Outcomes of 3 Pilot Studies with the COPE TEEN Program

- Increase in nutrition and activity knowledge
- Increase in healthy lifestyle beliefs
- Decrease in perceived difficulty
- Increase in healthy lifestyle choices and behaviors
- Increase in self-esteem
- Decrease in weight and BMI
- Increase in HDLs
- Decrease in LDLs
- Decrease in depressive and anxiety symptoms
The aim is to evaluate the efficacy of our COPE/Healthy Lifestyles TEEN (Thinking, Emotions, Exercise and Nutrition) Program on the healthy lifestyle behaviors, BMI, mental health and academic outcomes of 779 high school 14-16 year old adolescents.

Study outcomes include healthy lifestyle behaviors, BMI, depressive symptoms, anxiety, social skills, academic performance and body mass index.

Proposed mediators include teen healthy lifestyle beliefs and perceived difficulty to engaging in healthy behaviors.
Methods

• 11 Schools were randomly assigned to COPE or the Attention Control Healthy Teens Program

• Teachers attended a day of training on their intervention program and were supplied with all manualized materials, including power points, teen handbooks, and instructor manual

• Teachers integrated their intervention program into their health course curriculum once a week for 50 minute sessions over 15 weeks

• Observers rated the teachers on intervention fidelity four times during the course of the semester
# Findings

## Teen Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total (N = 779)</th>
<th>COPE (n = 358)</th>
<th>Healthy Teens (n = 421)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean in years (SD)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14.74 (.73)</td>
<td>14.75 (.76)</td>
<td>14.74 (.70)</td>
<td>0.89</td>
</tr>
<tr>
<td>BMI, mean (SD)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>24.43 (5.92)</td>
<td>24.93 (6.18)</td>
<td>24.01 (5.65)</td>
<td>0.03</td>
</tr>
<tr>
<td>Gender, n (%)&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>402 (51.60)</td>
<td>195 (54.50)</td>
<td>207 (49.20)</td>
<td>0.14</td>
</tr>
<tr>
<td>Male</td>
<td>377 (48.40)</td>
<td>163 (45.50)</td>
<td>214 (50.80)</td>
<td></td>
</tr>
<tr>
<td>Grade Level, n (%)&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>389 (49.94)</td>
<td>204 (56.98)</td>
<td>185 (43.94)</td>
<td>0.00</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>295 (29.89)</td>
<td>107 (29.89)</td>
<td>188 (44.66)</td>
<td></td>
</tr>
<tr>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>89 (12.57)</td>
<td>45 (12.57)</td>
<td>44 (10.45)</td>
<td></td>
</tr>
<tr>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>6 (.56)</td>
<td>2 (.56)</td>
<td>4 (.95)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity, n(%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>521 (68.30)</td>
<td>271 (77.40)</td>
<td>250 (60.50)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<sup>a</sup> T-test  
<sup>b</sup> Chi-Square
# Teen Demographics

<table>
<thead>
<tr>
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<th>Healthy Teens (n = 421)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Native</td>
<td>27 (3.50)</td>
<td>10 (2.80)</td>
<td>17 (4.0)</td>
<td>0.00</td>
</tr>
<tr>
<td>Asian</td>
<td>31 (4.0)</td>
<td>7 (2.0)</td>
<td>24 (5.70)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>77 (9.90)</td>
<td>30 (8.40)</td>
<td>47 (11.20)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>110 (14.10)</td>
<td>31 (8.70)</td>
<td>79 (18.80)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>526 (67.50)</td>
<td>275 (76.80)</td>
<td>251 (59.60)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>8 (1.0)</td>
<td>5 (1.40)</td>
<td>3 (0.70)</td>
<td></td>
</tr>
<tr>
<td><strong>CDC BMI Categories, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>14 (1.80)</td>
<td>1 (.30)</td>
<td>13 (3.10)</td>
<td>0.02</td>
</tr>
<tr>
<td>Healthy Weight</td>
<td>433 (55.60)</td>
<td>196 (54.70)</td>
<td>237 (56.30)</td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>148 (19.0)</td>
<td>72 (20.10)</td>
<td>76 (18.10)</td>
<td></td>
</tr>
<tr>
<td>Obese</td>
<td>182 (23.40)</td>
<td>88 (24.60)</td>
<td>94 (22.30)</td>
<td></td>
</tr>
<tr>
<td>Unreported</td>
<td>2 (.30)</td>
<td>1 (.30)</td>
<td>1 (.20)</td>
<td></td>
</tr>
</tbody>
</table>

*b Chi Square, c Other: Middle Eastern, Mexican/Irish/Cherokee/Caucasian, Erithrean, Mixed, Somali, Pakistani, and unreported*
## Comparison of Lipids for Overweight and Obese Teens by Lipid Parameter and Category

<table>
<thead>
<tr>
<th>Lipid</th>
<th>Acceptable n (%)</th>
<th>Borderline n (%)</th>
<th>Abnormal n (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cholesterol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>58 (81.7)</td>
<td>10 (14.1)</td>
<td>3 (4.2)</td>
<td>.005</td>
</tr>
<tr>
<td>Obese</td>
<td>44 (57.9)</td>
<td>28 (36.8)</td>
<td>4 (5.3)</td>
<td></td>
</tr>
<tr>
<td>HDL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>30 (42.3)</td>
<td>17 (23.9)</td>
<td>24 (33.8)</td>
<td>.025</td>
</tr>
<tr>
<td>Obese</td>
<td>19 (25.0)</td>
<td>15 (19.7)</td>
<td>42 (55.3)</td>
<td></td>
</tr>
<tr>
<td>LDL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>63 (88.7)</td>
<td>5 (7.0)</td>
<td>3 (4.2)</td>
<td>.002</td>
</tr>
<tr>
<td>Obese</td>
<td>51 (67.1)</td>
<td>23 (30.3)</td>
<td>2 (2.6)</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>43 (60.6)</td>
<td>18 (25.4)</td>
<td>10 (14.1)</td>
<td>.003</td>
</tr>
<tr>
<td>Obese</td>
<td>30 (39.5)</td>
<td>17 (22.4)</td>
<td>29 (38.2)</td>
<td></td>
</tr>
</tbody>
</table>
Findings Immediately Following and 6 Months Post-Intervention

Post-intervention, COPE Teens versus Attention Control Teens had significantly:

- Greater steps per day
- Higher average scores on three social skills subscales: (a) cooperation, (b) assertion, and (c) academic competence
- Higher health course grades
- Less alcohol use
- Lower mean BMI
Proportion of Overweight Teens for COPE and Attention Control Teens Over Time

The graph shows the proportion of overweight teens over time, with time points labeled as Baseline, Post Intervention, and 6 Months. The y-axis represents the proportion of overweight teens, ranging from 0.25 to 0.60. The x-axis is labeled Time Point, showing three distinct points: Baseline, Post Intervention, and 6 Months. The data points indicate a slight decrease in the proportion of overweight teens from Baseline to Post Intervention, with a gradual increase at 6 Months.
Percentage of Healthy Weight Teens who Moved to Overweight/Obese at 6 Months

- Only 2.7% of the COPE teens who were in the healthy weight category at baseline progressed to the overweight category at 6 months and none moved to being obese whereas 7.3% of the Healthy Teen adolescents progressed to the overweight category and 1.5% moved to the obese category in the same time frame.
Teen and Parent Feedback

- Seventy-eight percent of the COPE teens reported the program was helpful on the post-intervention evaluation questionnaire with hundreds of comments regarding specifically how COPE helped them.

- Students reported the most helpful program elements in COPE were content on stress and coping, nutrition and exercise.

- Ninety-two percent of the parents indicated the program was helpful for their teens and 94% of parents reported that they would recommend the program to family or friends.
Specific Teen Feedback

- Exercising when you are sad or angry helps you not get so stressed
- I learned how to control yourself when you’re mad
- COPE helped me feel a little better about myself
- Exercise is fun and should be a part of everyday life
- I’ve actually started walking more and taking longer routes to increase my steps
- I look at food labels
- My motivation has drastically increased
- I learned how to set goals to be more active
Specific Teen Feedback

Many teens reported their families changed something as a result of COPE, including:

- They exercise with me
- We go for a walk at least 40 minutes a day after dinner
- We changed our cooking style, not as much frying
- We eat less portions of food and don’t buy as much soda
- We have more dinners together and spend time talking to each other
Specific Parent Feedback

• She learned a lot about how to handle stressful situations

• The program has made my teenager more aware of the need for physical activity to safeguard her health

• It helped me take better care of myself

• It assisted in overall communication with my child

• It helps me to prevent diabetes and overweight

• It has helped me choose better foods for my family and motivate them to exercise regularly
Implications

- COPE can be used as either a preventive or management intervention program for overweight/obesity in adolescents.

- The program is manualized and designed to be delivered in individual, group or school-based/clinic settings.

- Work is now ongoing to adapt the program for school-age children and college-age youth as well as teens in Appalachia.
Contact Information

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