Comparison of Adolescent Weight Control Programs

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Epidemiology

- Obesity is defined as BMI $\geq 95^{\text{th}}$ %tile for age and gender.
- At risk for obesity are children with BMI between 85-95$^{\text{th}}$ %tile for age and gender.
- Prevalence for children 5-20 is 15% (9 million).
- Relationship between obesity and socioeconomic status is weak and inconsistent.
Acute Complications

- Dyslipidemia
- Insulin resistance
- Hypertension
- Hepatic disease
- Cholecystitis
- PCOS
- Orthopedic complications
- Sleep apnea
- Psychosocial complications
Long Term Complications

- Type 2 Diabetes
- Atherosclerosis/CHD
- Arthritis
- Liver fibrosis/cirrhosis
- Colorectal cancer
- Obese adolescent girls tend to have lower household income and less education when they are adults
- A doubling of the relative risk of mortality in adults who had childhood obesity
Contributing Factors

- Family meal patterns and food choices
- Food availability
- Portion control
- Fat intake
- School food service
- Sugar beverages
- Nutrition products
- Decreased physical activity and increased inactivity
- Genetic
Treatment Options

- Medical (Genetic Syndrome, endocrine disorder)
- Behavioral
- Surgical and Pharmacological
- Intervention Programs
Behavioral Treatment

• Different levels of behavioral treatment (individual, interpersonal, organizational, societal)

• Most important treatment option: *early age appropriate modifications of eating and activity*
Effective Behavioral Treatment Program Characteristics

- Parent involvement
- Frequent meetings or sessions
- Sustained treatment duration
- Group format with individual behavior counseling
- Simple diet
- Physical activity intervention
Effective Behavioral Treatment

Program Characteristics

• Reducing sedentary behavior
• Home and family environmental change that increases cues for physical activity and reduces cues for calorie intake and inactivity
• Self monitoring, goal setting, and behavior contracts
• Education regarding skills for behavior maintenance and relapse

• Robinson, TN. Behavioural treatment of childhood and adolescent obesity. Int J Obes Relat Metab Disord 1999;23;S52-57
Surgical and Pharmacological Treatment

- Gastric Bypass/Gastroplasty
- Pharmacological
  - Phentermine
  - Meridia
  - Xenical
  - Phenylpropanolamine (Acutrim and Dexatrim)
  - Leptin and Leptin receptors
Intervention Programs

Characteristics of programs resulting in long term results

• **Dietary Modifications**
  – Reduced intake of high energy dense foods
  – Discourage use of food as rewards
  – Plan for small, single changes

  **Increased Exercise**
  – Reductions in physical inactivity
  – Limit TV

• **Behavior Modification**
  – Self monitoring
  – Goal setting
  – Behavior reinforcement
  – Personal or Environmental cues as prompts to induce behavior change
Interventions

- Health Care Settings
- School Settings
- Community Settings
Key Findings in Successful Intervention

• Most youth weight loss programs result in sustained weight loss
• Range of weight loss varies greatly
• Longer treatment programs result in greater weight loss
• Role of parents are more influential in modifying younger children’s behavior vs adolescents
• Behavior modification vs education only result in greatest change in weight
• Calorie intake ranges from 900-1500 kcals

Health Care Setting Interventions

KidShape®

- “Increase awareness and promote adoption of a healthy lifestyle”
- Includes healthy eating, physical activity, and building positive self-esteem for entire families
KidShape

• Program Objectives
  – Increase awareness and adoption of healthy eating habits
  – Increase physical activity to 3x/week for 30 minutes
  – Increase awareness of and self-appreciation of positive aspects of each participant
  – Set realistic goals and be rewarded for achieving them within the family
KidShape

- Licensed program to organizations which have RD, MHP, and PA
- Ages 6-14
- 8 week program divided into two four week modules
- Classes might include; nutrition for families, active play, behavior modification for adults, cooking demonstrations, arts and crafts and family activity
- No evaluation data has been published although website reports positive results
SHAPEDOWN™

- Developed by UC San Francisco
- Shown to be effective in 10 yr follow up
- Ages 6-18
- 10 weekly sessions
- Licensed to qualified health care systems
- Classes designed to enhance self-esteem and peer relationships while adopting healthier habits
Committed to Kids

- Individualized approach to weight management conducted in an outpatient, group setting
- Developed by Louisiana State University Medical Center Department of Pediatrics
- Team based approach including a physician, registered dietitian, exercise physiologist, and behavior specialist
Committed to Kids

- One year program with four phases
- Comprehensive physical, exercise, and nutritional evaluation
- Exercise program: Moderate Intensity Progressive Exercise Program
- Each phase has 10 week exercise Rx and record keeping cards as well as a video
- Children and families attend weekly group meetings
Committed to Kids

- Program has been thoroughly evaluated (more than 15 studies)
- Significant decrease in body weight, body fat, and BMI has been found in 62.5% of individuals
- *Trim KIDS: The Proven 12-week Plan that Has Helped Thousands of Children Achieve a Healthier Weight*
Healthworks!™

- Ages 5-19
- Team Based Tx approach with MD, RD, psychologist, RN, exercise physiologist, exercise instructor, the child and the family
- Includes diet modification and individualized counseling
- Lifestyle physical activity promotion and group exercise sessions
Healthworks!™

- Behavioral intervention strategies
- Parental involvement
- Clinical evaluation
- Group education for adult family members
- 12 week initial phase followed by ongoing treatment and f/u on a monthly basis
SCHOOL BASED PROGRAMS

- Take 10@
- Healthy Start – preschool program
- CATCH@ - A Coordinated Approach To Child Health for grades three to five
- The SPARK@ Programs (Sports, Play and Active Recreation in Kids) – preschool through middle school
- Planet Health@ - 6-8th grade
Take 10@

• Developed by Life Sciences Institute Center for Health Promotion
• Classroom based curriculum tool
• Integrates 10 minutes of moderate to vigorous physical activity
• Teacher video, resources, posters, stickers
SPARK®

• Developed by San Diego State University to improve the quality of PE
• PE materials, lifelong wellness tool, nutrition behaviors
• Trained teachers results were superior to control teachers on language, reading, and basic battery.
School based health behavior intervention for 6-8\textsuperscript{th} grade developed by Harvard University researchers

Focused on decreased TV, decrease consumption of high fat foods, increased fruit and vegetable intake, and increased moderate and vigorous physical activity.
Community Setting Programs

- Includes worksites, homes, internet
- Allow large number of overweight persons to seek assistance
- Produce only modest weight lost
- Adults have preference for self-help education over group activities
- Little information about children’s preferences
Community Setting Programs

- Slim Kids
  - 10 week healthy eating program designed to help teens lose weight easily and safely
  - Emphasizes health education, long-term lifestyle changes, activities, moderate eating, self-acceptance, a positive approach,
Community Setting Programs

• Colorado on the Move™
  – Statewide lifestyle program designed to improve healthy by increasing walking as measured by the number of steps taken each day
  – 100,000+ pedometers have been distributed
  – Participants in schools, worksites, etc., have been able to increase steps by 2000/day
Community Setting Programs

- **10,000 Steps@ Program**
  - Developed by Healthpartners, a large managed care organization in Minnesota
  - Participants received a pedometer, a personal action planner, a log, and biweekly motivational cards for the first eight weeks
  - Bimonthly mailings were sent for the next 6 months
Stanford Adolescent Heart Health Program

- 15,000 10\textsuperscript{th} graders
- Delivered in classroom over 20 sessions
- Targets improved aerobic activity, dietary fat, body fatness and smoking were targets of intervention
Future Directions

• Combination of weight loss treatment, weight gain prevention, and health promotion strategies
• Support breastfeeding
• Limit TV and remove TV from bedrooms
• Prevention efforts should focus on anticipatory guidance with parents and children addressing knowledge, attitudes, values, and beliefs about eating and activity
Issue Paper

Childhood Obesity – Advancing Effective Prevention and Treatment: An Overview for Health Professionals

Prepared for the National Institute for Health Care Management Foundation Forum, 2003

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