Collaborative Approaches to Addressing Wellness at School: The Role of Related Service Providers in addressing the National Mandates

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Topics

- What are the Federal Mandates?
- Implementation and Outcome of Mandates
- Components of Health and Wellness
- Opportunities for related service providers
Objectives

- Identify the health and wellness mandates as they relate to your:
  - School
  - Discipline
- Compare the literature about the factors contributing to success and barriers of meeting H&W mandates with your school in identifying opportunities and barriers
- Brainstorm ideas for how related services can contribute to improved H&W for students and staff
Questions?

- What are the components of health and wellness?
- Does Obesity affect school performance?
- Does Physical activity affect school performance?
- Does Nutrition affect school performance?
- What roles exist for OT, SLP and PT to encourage Health and Wellness in the school system?
From the CDC: Centers for Disease Control and Prevention’s School Health Guidelines to Promote Healthy Eating and Physical Activity Presentation

CDC: www.cdc.gov/healthyyouth/npao/strategies.htm accessed on 4.25.13
School Health Guidelines

- Policies and Practices
- School Environments
- Nutrition Services
- Physical Education/ Physical Activity
- Health Education
- School Health Services
- Family and Community
- School Employee Wellness
- Professional Development
Physical Education/ Activity

- Walk to Bike to School programs
- Classroom-Based Physical Activity Breaks
- Daily Recess for Elementary Schools
- Quality Physical Education
- Interscholastic Sports
- Intramural and Physical Activity Clubs
So, How are we doing?

- **Nutrition**
  - Education, guidelines (meals), environment
- **Physical Activity**
  - National/ State PE Standards
- **Other**
  - Marketing of Food/ Beverages
  - Access to Physical Activity
  - Staff Wellness
  - Counseling: Psychological/ Social Health services
Results/ Conclusions

- All had federally mandated components present
- Physical Activities guidance less specific than nutrition
- Implementation of Mandates
  - Vending
  - School nutrition availability and education
  - Special events and fund raising
  - Wellness for employees

- **Students:**
  - access to healthy foods at school
  - Physical activity level
  - Healthy eating habits
  - Health Status
  - Academic achievement
  - Prevalence of obesity
  - Satisfaction in the school environment

- **Staff**
  - Support for School Wellness
Results/ Conclusion

• Capacity to get the job done: School board, state association leaders, wellness advocates and state public health.

• Challenges/ Barriers:
  • Funding
  • Competing priorities/ lack of time
  • Staff training/ education needs
  • Adequate tools
What does the research tell us?

- 2 most common components address:
  - Nutrition
  - Physical Education

- Least addressed policy components:
  - Responsible parties for evaluation
  - Nutrition/ Physical activity education for staff, especially teachers.

What programs are you aware of in your schools?
Obesity
Obesity Trends Among U.S. Adults between 1985 and 2007

**Definitions:**

- **Obesity:** Having a very high amount of body fat in relation to lean body mass, or Body Mass Index (BMI) of 30 or higher.

- **Body Mass Index (BMI):** A measure of an adult’s weight in relation to his or her height, specifically the adult’s weight in kilograms divided by the square of his or her height in meters.
Measurement of BMI

- \( \text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m}^2\text{)}} \)
- Sex-specific
- Age-specific (2 to 20 years)*
- Defines body weight status
- Screening tool
- *More reliable after the age of 3
BMI-for-Age Cutoffs

- ≥ 95th %tile: Overweight
- 85th %tile to > 95th %tile: Risk of Overweight
- > 95th %tile: Overweight
- < 5th %tile: Underweight
Obesity Trends Among U.S. Adults between 1985 and 2007

Source of the data:

- The data shown in these maps were collected through CDC’s Behavioral Risk Factor Surveillance System (BRFSS). Each year, state health departments use standard procedures to collect data through a series of monthly telephone interviews with U.S. adults.

- Prevalence estimates generated for the maps may vary slightly from those generated for the states by BRFSS (http://aps.nccd.cdc.gov/brfss) as slightly different analytic methods are used.
Prevalence

- In 1990, among states participating in the Behavioral Risk Factor Surveillance System, 10 states had a prevalence of obesity less than 10% and no states had prevalence equal to or greater than 15%.

- By 1998, no state had prevalence less than 10%, seven states had a prevalence of obesity between 20-24%, and no state had prevalence equal to or greater than 25%.

- In 2007, only one state (Colorado) had a prevalence of obesity less than 20%. Thirty states had a prevalence equal to or greater than 25%; three of these states (Alabama, Mississippi and Tennessee) had a prevalence of obesity equal to or greater than 30%.
Obesity Trends* Among U.S. Adults
(*BMI ≥30, or about 30 lbs. overweight for 5’4” person)

1990

1998

2007

<table>
<thead>
<tr>
<th>No Data</th>
<th>&lt;10%</th>
<th>10%-14%</th>
<th>15%-19%</th>
<th>20%-24%</th>
<th>25%-29%</th>
<th>≥30%</th>
</tr>
</thead>
</table>
Percentage of Adults Who Are Obese,* by State, 2009

* Body mass index (BMI) ≥30, or about 30 lbs. overweight for a 5’4” person, based on self-reported weight and height.
Source: CDC, Behavioral Risk Factor Surveillance System.
Prevalence of Self-Reported Obesity Among U.S. Adults

BRFSS, 2011
Childhood Obesity

- 1998 – 2003: prevalence of obesity increased from 13.05% to 15.21%, and the prevalence of extreme obesity increased from 1.75% to 2.22.
- 2003 – 2010: prevalence of obesity decreased slightly from 15.21% to 14.94%. Similarly, the prevalence of extreme obesity decreased from 2.22% to 2.07%.

CDC: Overweight and Obesity statistics

Obesity prevalence among low income pre-school children 2009-2011
Obesity

- One in three children is obese or overweight by their 5th Birthday.

- Children obese in kindergarten are likely to be obese as teenagers.
<table>
<thead>
<tr>
<th>Obesity is Associated with an Increased Risk of:</th>
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</thead>
<tbody>
<tr>
<td>• premature death</td>
<td>• high blood cholesterol</td>
</tr>
<tr>
<td>• type 2 diabetes</td>
<td>• complications of pregnancy</td>
</tr>
<tr>
<td>• heart disease</td>
<td>• menstrual irregularities</td>
</tr>
<tr>
<td>• stroke</td>
<td>• hirsutism (presence of excess body and facial hair)</td>
</tr>
<tr>
<td>• hypertension</td>
<td>• stress incontinence (urine leakage caused by weak pelvic floor muscles)</td>
</tr>
<tr>
<td>• gallbladder disease</td>
<td>• increased surgical risk</td>
</tr>
<tr>
<td>• osteoarthritis (degeneration of cartilage and bone in joints)</td>
<td>• psychological disorders such as depression</td>
</tr>
<tr>
<td>• sleep apnea</td>
<td>• psychological difficulties due to social stigmatization</td>
</tr>
<tr>
<td>• asthma</td>
<td></td>
</tr>
<tr>
<td>• breathing problems</td>
<td></td>
</tr>
<tr>
<td>• cancer (endometrial, colon, kidney, esophageal, and postmenopausal breast cancer)</td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: Surgeon General’s Call to Action to Prevent and Decrease Overweight and Obesity, 2001
Etiology

- Specific cause not yet been determined.

- Complex interaction of factors: genetic, behavioral, environmental, physiologic, metabolic, social, and cultural.

- Weight gain: combination of excess calorie consumption and inadequate physical activity
Behavioral & Environmental Factors

- Cultural Norms
- Parent attitudes
- Food Industry (e.g. portion sizes, product placement)
- Healthy choices can be expensive and/or time consuming

- Modernization of society
- Urbanization
- Safety
- Self esteem, self efficacy
Barriers That Affect Participation in Physical Activity Among Our Youth

Social barriers
- Gender stereotypes: boys vs. girls

Economic barriers
- Families of color who are disproportionately poor often cannot pay transportation costs between home and school, lessons, and equipment
- Dual worker parents or single parent sometimes depend other children in the family to take on household tasks
- May need to work part time to help family make ends meet

Institutional barriers
- Lack athletic resources, effective coaching and expert training
- Athletic programs depend on tax dollars, this undermines opportunities for both minority girls and boys
Obesity Intervention

- Need to incorporate multiple approaches
- Need to individualize treatment options
  - Reduced-energy diets
  - Physical activity/exercise
  - Behavior modification
  - Pharmacotherapy
  - Surgery
Diets

- Various dietary strategies:

- No single treatment approach has been shown to be effective for all individuals who are obese
Exercise/Physical activity

- Adjunct to weight-reducing diet
- Reduces the incidence of several diseases associated with obesity: cardiovascular disease, type 2 DM, depression, and premature death.
- Evidence for physically active individuals who are obese have a lower risk for morbidity and mortality than sedentary individuals of normal weight.
Benefits of Exercise

- Enhanced bone formation
- Greater strength and endurance
- Weight management
- Reduced anxiety and stress
- Improved self-esteem/fun
- Social interaction
- Skill development
Behavior Modification

- Components include: goal setting, self-monitoring, frequent contact, feedback, continuous motivation and support.

- Delivered through individual or group meetings.

- No single theoretical framework for behavioral intervention has been shown to be superior. Success is dependent on consistency, support, and long-term modification of lifestyle.
Pharmacologic Agents

- Used in conjunction with diet, exercise, and behavioral strategies

- 1 drug approved for adolescents for long-term treatment of obesity:
  - Orlistat (Xenical) Kelly et al (2013)
Surgery

- Gastric bypass
  - Reserved for cases of extreme obesity

- Long term success is dependent on drastic dietary modifications
Roles
What roles do parents have?

- Set good example
- Offer praise, interest, and encouragement
- Get involved in school and/or community activity programs
- Encourage activity in home – limit sedentary activities
- Encourage healthy nutritional habits
What are the roles of the community?

- Require daily, quality physical education for all children, pre-K through 12th grade.
- Ban the use of physical education waivers
- Provide adapted physical education for students with disabilities.
- Support state and national standards and developmentally appropriate practices in physical education.
What are the roles for schools?

- Increase physical activity time
- Eliminate exemptions
- Health benefit education
- Daily structured/unstructured play
- Diverse ethnic/gender activities
- Provide for all skill levels
- Provide for persons of all abilities
Impact on School performance

• Does Obesity effect school performance?
• Does Physical activity effect school performance?
• Does Nutrition effect school performance?
Does obesity affect school performance?
Maybe not...


Does physical activity affect School Performance?
Probably...

- Physical Activity improves:
  - Academic achievement
  - Cognitive skills
  - Attitudes
  - Academic Behavior
  - Enhanced concentration, attention and behavior

Increased their physical activity from 3 to 5 days a week showed:

- 20% improvement in school attendance
- 20% improvement in school grades
- 50% reduction in smoking
- 60% reduction in drug and alcohol use

Source: Collingwood, 2001
Children and youth who participate in quality physical education programs are more likely to participate in physical activity as adults (American Sports Data, Inc.).
Does nutrition affect school performance?
You betcha...

- Breakfast, Milk, ↓ fruit juice, ↓ sweetened beverages and vigorous physical activity (Less TV) = higher academic scores.

- Breakfast programs may increase attendance and decrease lateness
Nutrition and Physical Activity

- Nutrition/ Physical activity, ability to pay full price for school meals (SES) strongly related to improved school performance.
How to incorporate findings-

- Physical activity breaks between standard classroom instruction.
- Recess: helps with cognitive function
- Extracurricular sports may help with GPA
Not just for students: What does this mean for all of us?

- Physical activity breaks (break) during the day.
- “I don’t have time.”
  - Take the stairs
  - Park further away
  - Pedometer competition
  - Walk at lunch (cumulative time counts)
  - Model for the students
Collaboration
What are the roles for related service providers?

<table>
<thead>
<tr>
<th>SLP</th>
<th>OT</th>
<th>PT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening: Audiology, Speech, Language,</td>
<td>Evaluate: Gross/ Fine motor deficits,</td>
<td>Activity for all ages and abilities</td>
</tr>
<tr>
<td>Swallowing</td>
<td>Teach Skills: Strategies for healthy behaviors, balance of relaxation, socialization, stress/anger management Parenting skills</td>
<td>Injury prevention Annual wellness screenings: Body composition, Flexibility, Strength, Posture, Balance, Cardiovascular fitness, Function</td>
</tr>
</tbody>
</table>

How are you involved in Wellness in schools?

- Are there related service mandates for health and wellness or obesity management?
- Are children already overscheduled?
- Are there enough resources to address the issue in the schools?
Movement Education Concepts

- Body Awareness
- Space Awareness
- Effort Awareness
- Quality of Movement
- Sports Skills
Questions?

- What are the components of health and wellness?
- Does Obesity effect school performance?
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Summary

- Health and Wellness mandates are comprehensive and require the talents and skills of multiple services and disciplines in the home, community and school.
- Barriers to providing Health and Wellness include inadequate education/ training and financial support for key stakeholders.
- Related service providers have roles in health and wellness, but require a comprehensive team for successful interventions.
Thank you!

Comments/ Questions
References:


CDC. State-Specific Prevalence of Obesity Among Adults — United States, 2005; MMWR 2006; 55(36);985–988

CDC:www.cdc.gov/healthyyouth/npao/strategies.htm accessed on 4.25.13


World Health Organization. (June 1997). Obesity: Preventing and Managing the Global


• The Cooper Institute’s Fitnessgram/Activitygram, 3rd Edition, Human Kinetics, 2004


Addendum:

- Exercise Considerations
OBESITY

- Education regarding Risks to:
  - Health
  - Functional independence

- Therapeutic Exercise
  - Primary Goal: to increase physical activity and exercise
  - Secondary Goal: Weight loss
Goals of Therapeutic Exercises

I. Remediate or prevent impairments:
   1. Anthropometric Characteristics
      • BMI, Skin fold, Waist Circumference
   2. Aerobic Capacity
      • Vital signs, RPE
   3. Gait, Locomotion, Balance
   4. Muscle Performance
      • Strength, Power, Endurance
   5. Pain
   6. ROM
   7. Posture
      • Plumb line, Ergonomic Assessment (computer, backpack use, etc)
Goals of Therapeutic Exercises (continued)

II. Enhance Function
   • Improving the ability to perform activities related to self-care, home management, school, and play.

III. Reduce Health Risks

IV. Optimize Overall Health

V. Enhance Fitness & Well-Being
Physical Fitness

- Definition from ACSM: “set of individual physical attributes which can be improved by engaging in appropriate exercise programs”
ACSM Health and Fitness

“Children are not miniature adults, but immature adults”

- Respiratory
- Cardiac
- Temperature Regulation
- Metabolic System
- Neuromuscular - Skeletal
Fitness testing

- Health Screen
- Posture
- Body Composition
- Flexibility
- Muscle Strength/ Endurance
- Balance
- Aerobic Capacity
Additional information on guidelines for exercise and exercise prescription
Exercise Prescription

- Intensity
- Duration
- Frequency
Intensity

- Aerobic – 60 to 88 % MHR
Strengthening

Testing

- 1 Rep Max: Warm-up, close supervision, and appropriate testing.
- Handgrip
- Long jump
- Curl up
- Pull up
- Push up
Strengthening

- **Strength ex:**
- **F:** 3 days/week, non-consecutive days

<table>
<thead>
<tr>
<th></th>
<th>Novice</th>
<th>Intermediate</th>
<th>Advanced</th>
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<tbody>
<tr>
<td>F</td>
<td>2-3 d/w</td>
<td>2-3 d/w</td>
<td>3-4 d/w</td>
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<tr>
<td>D</td>
<td>1-2 sets</td>
<td>2-3 sets</td>
<td>&gt; 3 sets</td>
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<tr>
<td></td>
<td>10-15 reps</td>
<td>8-12 reps</td>
<td>6-10 reps</td>
</tr>
<tr>
<td>I</td>
<td>50-70% 1 RM</td>
<td>60-80% 1 RM</td>
<td>70-85% 1 RM</td>
</tr>
</tbody>
</table>

Mode

- Younger child: Body weight, tug of war, climbing
- Older child: Theraband
Duration

- Rest 1-2 minutes between exercises
- Caveat: Age 7 yrs reported as starting time for strength training (on set of sports activities)
- Cognitive as well as motor readiness required
Frequency

- Aerobic Exercise – 5 x/week
- Strength – 2-3x/week
Exercise Guidelines

- Exercise technique should be monitored
- Diverse play for motivation
- Multi disciplinary approach to obese, sedentary or disabled children
- Caution with fluid replacement and clothing during hot weather
- Avoid absolute muscular fatigue or fancy weight training techniques
Risk factors to Overuse Injuries

- Significant change in intensity, duration, frequency, or type of training
- Decreased muscle flexibility
- Anatomical malalignment LE
- Incorrect biomechanics
- Improper footwear
- Training on hard surfaces
- Excessive loading during growth periods
Health Screen

- Name, age, gender
- Current Medical Problems
- Past Medical/Surgical History
- Family History
- Hospitalizations
- Medications
- Activity Level
Posture

- Skeletal assessment – plume line
- Scoliosis – rib hump
- Deformities – pes planus/cavus, genu varum/valgum leg length discrepancy
Body Composition

- BMI
- Skinfolds
- Bioelectric Impedance Analysis
Flexibility

- Sit – reach
- Back Saver Modification
- Joint specific – shoulder, hamstrings, hip flexors, gastroc
Muscle Strength/Endurance

- Curl-ups
- Pullups
- Push-ups
- MMT if needed
Balance

- Single Leg Stance (eyes closed)
- Functional Reach Test
Aerobic Capacity

- The PACER
- 1 mile run/walk
- Graded exercise testing
  - Modified Balke
  - McMaster Cycle