School Nurse-Delivered Intervention for Overweight and Obese Adolescents: Lessons Learned

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School Health Settings: School Nurses Administrators

Children’s Hospital Boston
Feasible, accessible weight loss treatment approaches for OW/OB adolescents are needed

Systematic review for USPSTF (Whitlock et al, 2010) found moderate/high intensity interventions can ↓ weight, BUT GAPS:

- targeted younger children
- conducted in specialty health care settings with limited reach (accessibility, cost) and public health impact

12-19 y.o OW/OB

34%
School nurses in the school health setting have tremendous potential for public health impact on adolescent obesity.

- Primary health professional in school setting
- Accessible and continuous care
- Professional organization (NASN) cites role of school nurse is to assist regarding diet, physical activity and weight and provide obesity treatment.
Methods to test feasibility of 6-session school nurse-delivered intervention

Pair-matched cluster RCT
(6 high-schools, n=84 OW/OB teens)

Counseling Intervention (LGFG)
5-3-2-1-0; SCT

Information and Contact Control

2-month follow-up
(100% retention)

6-month follow-up
(100% retention)
The intervention was feasible for nurses to deliver

- Protocol content covered: 97%
- Not at all difficult to incorporate into daily work: 75%
- Protocol and materials very helpful: 100%
- Ability to Counsel:
  - Effectiveness: 3.5
  - Confidence: 3.5
The intervention engaged teens and had high acceptability

- Very Helpful: 98% (Intervention), 71% (Control)
- Very Comfortable: 88% (Intervention), 62% (Control)
- Nurse perceived teens very receptive: 75% (Intervention), 75% (Control)

- Graph with bars showing percentages for Intervention and Control groups.
The 6-session intervention improved selected self-reported behaviors but not BMI
Lessons learned.....
Establishing and nurturing personal relationships, trust, and shared goals with community partners is key.

- Identified their adolescent health concerns/priorities:
  - ↓ OW/OB among teens
    - Fit their mission and responsibilities
- Engaged administrators to support nurse in this role
Adaptation of intervention to setting and population requires close collaboration and mutual respect of unique contributions.

**School Health Unit/School nurses**
- Experience caring for OW/OB teens
- Understand work flow, feasibility in school setting
- Current practice/style
- Skills and credibility to deliver health-related counseling

**UMMS researchers and nutritionists**
- Empirical evidence, treatment recommendations (CDC)
- Theoretical frameworks
- Intervention design expertise
- Evaluation skills

**Focus groups** with OW/OB teens, their parents, school nurses, school staff and administrators

**JOINT INTERVENTION DESIGN WORKING GROUP: LGFG**

Pilot testing – work out kinks
Train community interventionists based on core competencies needed; conduct with community partners

Knowledge
- Scope of problem
- Recommendations (diet, PA, SB)
- Theoretical framework, counseling approach

Skills/confidence
- Protocol review and demonstration
- Practice with feedback
- Implementation “tips from the field” (barriers and tested strategies), brainstorm

Motivation
- Compatibility with mission, job responsibilities
- Evidence underlying protocol
Factors facilitating implementation and sustainability occur at multiple levels

School Administration
Fit mission (education/health of students)
Did not interfere with academic classes
See as school nurse role/job

School Nurse
Compatible with role/mission
Confident in ability to conduct intervention
Intervention protocol and materials clear, easy to use (high fidelity)
Teen comfort/acceptability reinforced delivery

OW/OB Teens
High acceptability- very comfortable talking with nurse re: weight
Perceived helpfulness
Non-interference with academic classes facilitated session adherence
Easily access nurse without parental involvement, transportation or cost
<table>
<thead>
<tr>
<th>BARRIER</th>
<th>SOLUTIONS/RESEARCH DIRECTIONS</th>
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<tbody>
<tr>
<td><strong>School</strong></td>
<td>• Reinforce benefits (improved health → academics), address concerns</td>
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<td>Sustaining institutional support</td>
<td>• Engage school staff to support efforts</td>
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<td><strong>Lack of PA opportunities</strong></td>
<td>• After school exercise program – <strong>LGFG-E</strong></td>
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<td><strong>School Nurse</strong></td>
<td>• Resources to protect time for intervention delivery (e.g., floating nurse)</td>
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<td>Time/conflict with other duties</td>
<td>• Group format, maximize nurse time – <strong>LGFG-G</strong></td>
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<td><strong>Ongoing delivery</strong></td>
<td>• Incorporate into performance evaluation</td>
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<td><strong>OW/OB Adolescent</strong></td>
<td>• Process to let students know of program</td>
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<td>Participation</td>
<td>• Identify and address barriers to participation</td>
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<td><strong>Lack of social support for weight loss efforts</strong></td>
<td>• Group format – <strong>LGFG-G</strong></td>
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<td>• Social networking technology – <strong>LGFG-G</strong></td>
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“Snow White was poisoned by an apple, Jack found a giant in his beanstalk, and look what happened to Alice when she ate the mushroom! And you wonder why I won’t eat fruit and vegetables?!!”
Theoretical Framework for Intervention

Counseling Intervention
- 1:1 Sessions

Instruction and Guidance
- Dietary, PA and SB recommendations
- Strategies for self control

Social Support
- Encouragement from school nurse

Social Modeling
- Strategies used by other teens in Student Booklet

SCT Constructs Fostering Behavior Change
- Self-Efficacy
- Knowledge
- Behavioral Capability
- Self-Control
- Outcome Expectations

Weight -Related Behavior Changes
- Improved dietary quality
- Increased PA
- Decreased sedentary behavior

Decreased BMI/Weight