Bridging the Gap Between the Dream and the Reality of Evidence-Based Prevention:

The Importance of Implementation

Linda Dusenbury
Goals:

• Measures to understand implementation and adaptation
• Methods to enhance implementation
Key Elements of Evidence-Based Substance Abuse Prevention Programs

Theoretically valid content
- Norm setting
- Resistance skills
- Broader social and emotional competencies

Interactive
Comprehensive
Developmentally appropriate
Culturally sensitive
Sufficient dose and follow-up
High quality implementation
Continuing evaluation
High Quality Implementation
---as intended by program developers, completely and in sequence
---well-delivered by teachers
---engaged students
---adaptations (when necessary) enhance program effectiveness
Predictors of Implementation

Program characteristics
Provider characteristics
  Professional experience
  Personal characteristics
Provider training
School and community characteristics
  Environment
  Administrative support
Quality of Implementation is Highly Variable

Project SMART (Rohrbach et al., 1993): 20% of teachers do not implement in the second year following training

Project STAR (Pentz et al., 1990): teachers omit 25% of program on average

Know Your Body (Resnicow et al., 1993): 37% of teachers were rated as low implementers

Teenage Health Teaching Modules (Tappe et al., 1995): 84% of teachers omitted at least one module

Life Skills Training (Tortu & Botvin, 1989): teachers implement 44%-83% of curriculum on average – 65% on average
High Quality Implementation is Associated with Outcomes for Smoking

![Bar Chart]

High Quality Implementation is Associated with Outcomes for Alcohol

High Quality Implementation is Associated with Outcomes for Marijuana

Out of 213 studies, 122 monitored fidelity of implementation. Of these, 48 reported significant problems with fidelity (48/122=39%).

For studies where implementation was not mentioned, or where there were no problems, there were significant findings on all six outcomes (skills, attitudes, social behavior, conduct problems, emotional distress, and academic performance).

For studies where implementation was a problem, there were significant findings on only two of six outcomes (attitudes and conduct problems).
Adaptation

Deliberate or accidental modifications to a program

All teachers adapt

Adaptations can be positive or negative
Implementation is Variable in Practice

Life Skills Training

11 teachers in urban schools

Varying Degrees of Experience

Observation and Interview Data

Measures

Adherence

Quality of Process

Quality of Adaptations

Teachers’ Attitudes

Teachers’ Understanding
Teacher Characteristics

Experienced with LST (Mean = 3.2 years, range = 1 to 6 years)

Experienced with Prevention (Mean = 6.3 years, range = 1 to 15 years)
Results for Adherence

Teachers implemented 65% of objectives (Range = 45-100%)

Teachers implemented 58% of main points (Range = 38-93%)

All teachers were well prepared to teach:
45% demonstrated a lot of planning
55% demonstrated some planning
Results for Quality of Process

82% of sessions were rated as very interactive
73% of teachers were rated as delivering the curriculum with great enthusiasm
81% of sessions were rated as having a high or moderate level of student engagement
Results for Adaptation

All teachers made adaptations (but did they know it?)
3.5 definable adaptations, on average, per observed session (range 1-7)
Overall, 63% of adaptations were judged to be negative
Common Types of Adaptations

Additions (reading material, videos, testimonials from addicts, puppets)

Changed examples for cultural relevance or interest (10 of 11 teachers)

Varied order of activities or sessions
Strong Correlates of Adherence

Teacher’s Understanding of LST  
(r=.784; p<.01)

Quality of Process  
(r=.663; p=.03)

Level of Experience  
(r=.756; p<.01)
Measuring Adaptation (Hansen)

Methods
Messages
Valence
Method Adaptations

Changing activity structure or instructions, adding steps, questions, or examples and stories.
Message Adaptations

New or uncalled for messages about norms, importance, concepts, or to promote skills development
Methods

9 teachers
3 consistently positive on student outcomes over 3 years
3 consistently negative on student outcomes over 3 years
3 consistently mid range on student outcomes over 3 years

Public and parochial
45% Caucasian
78% Female
Procedures

All sessions videotaped and observed over 3 years

$9 \times 13 \times 3 = 325$ videos

4 coders

Average agreement of coders = 81%
Adaptations

Average Number of adaptations per session: 5.8

Range: 2 to 10

Average Number of method adaptations per session: 4.9

Average Number of message adaptations per session: 0.95

Average valence: 0.11
Types of Adaptations

Method = 83.9%
• these included additions or modifications of questions, changes to structure or added steps – more rarely did they add examples or stories

Message = 16.1%
• these included messages to motivate students – more rarely did they add new concepts or uncalled for normative messages
Preliminary Findings from Exploratory Analyses

Method adaptations:

- **Added steps** ($r= .465, p<.05$) and **added examples** ($r= .437, p<.05$) significantly correlated with student lifetime cigarette use.

Message adaptations:

- Higher frequency of **message adaptations** was associated with higher lifetime use of cigarettes ($r= .614, p<.01$) and past 30 day alcohol use ($r= .425, p<.05$). “**New concepts**” adaptations significantly correlated with student lifetime cigarette use ($r= .528, p<.01$). Frequency of “**importance messages**” were associated with lifetime cigarette use ($r= .438, p<.01$), lifetime use of alcohol ($r= .438, p<.01$) and frequency of alcohol use ($r= .407, p<.05$).
Findings for Valence of Adaptations

There was a significant inverse correlation between average message valence and lifetime marijuana use ($r = -0.392, p < 0.05$). Significant correlation between average message valence and idealism ($r = 0.388, p < 0.05$), normative beliefs ($r = 0.467, p < 0.05$) and commitment ($r = 0.506, p < 0.01$).
Findings for Omissions

Omissions were associated with lower posttest scores for normative beliefs ($r=-.41$, df=24, $p<.05$)
Analysis on Low and High Adapters

Low frequency adapters whose adaptations were positive had significantly more of their students remain non-users than all three other groups (F=11.79, p=.002)
Methods for Enhancing Quality of Implementation
Can videos improve depth of understanding about critical prevention content?
Video Study

99 Participants
Teachers in 2 Schools (n=35)
Students in a University
Health Education Class (n=64)

Random Assignment

Standard (live instruction) vs.
Video-Enhanced Instruction
Levels of Teacher Skill Development

1. Fundamental Teaching Skills
2. Mechanics of Program Delivery
3. Development of an Interactive Teaching Style
4. Effective Response to Student Input
5. Effective Tailoring and Adaptation
Methods

16 teachers from a large Midwestern, urban school district

- Mean age: 40.4 years.
- 74% female
- 52% African American, 34% were White, and 9% were Hispanic

Two coaches

Data came from a series of interviews conducted by members of the research team with the two coaches, as well as teacher and student (n=408) measures.
What happens in coaching sessions?

- General classroom management.
- Omissions of session introduction or conclusion.
- Patience and understanding of the students.
- Time management.
- Correcting activities done incorrectly.
- Showing enthusiasm during teaching.
- General preparation.
- Improving depth of understanding.
- Focus on objectives and goals.
- Respect for program.
- Using humor

- Maintaining focus on task
- Avoiding skipping activities
- Using students’ questions, comments and examples to make desired points
- Reading from the curriculum.
- Avoiding the use of a monotone voice
- Asking open-ended questions
- Getting parents involved
- Building self confidence to teach
- Movement within the classroom
- The use of peer opinion leaders
- Engaging high-risk youth
- Appropriate versus inappropriate adaptation
General Findings

• The average teacher was coached on 11.7 different topics (range = 5 to 19).
• The most commonly addressed topic (omissions of session introductions or conclusions) was discussed with 84% of teachers.
• The least discussed topic (using humor) was discussed with only 11% of teachers.
• On average, coaches addressed each topic with about half the teachers (51%).
Relationship between topics covered and teacher ratings of coaching

Few of the topics coaches covered related to teachers' response (positive or negative subjective ratings) to coaching, with three exceptions:

• Teachers who were coached on their respect for the program appeared to have had a consistently negative subjective response to coaching.
• Teachers who were coached on their use of humor also appeared to have a negative response.
• Teachers who were coached on engaging high risk youth had a very positive response to coaching.
Relationship between coaching topics and student outcomes

7 out of 23 coaching topics were associated with student outcomes:

Time management
Use of humor
Skipping content
Getting parents involved
Building teacher self confidence
Movement in class
Engaging high risk youth
Can ongoing online support affect teacher understanding and fidelity?
Hypothesis

Teachers delivering programs in conjunction with ongoing online support will report greater fidelity in terms of adherence, amount of program delivered, higher quality adaptations, better knowledge of prevention concepts, and will have higher quality interaction with students.
28 agencies recruited, matched on percent free lunch and ethnicity
Random assignment, wait list control (2 cycles)
40 participants in treatment condition, 43 in wait list control
Treatment teachers received weekly messages via email, with links to video
Ongoing Online Support

117 Video Messages (teacher testimonials and classroom demonstrations)
  8 on Basics of Prevention
  14 on Essential Teaching Strategies
  7 on How to Make a Program Work
  12 on Motivational Approaches
  10 on Norm Setting
  24 on Personal Competencies
  20 on Social Competencies
  22 on Classroom Management

15 NREPP Programs
Content of 15 Standard Messages

1. Follow the instructions
2. Organization to create a positive environment
3. Creating a culture of respect
4. What are norms?
5. Norm Setting Strategies
6. Create positive norms with discussion
7. Avoid norm setting mistakes
8. Make it engaging
9. Encourage participation
10. Discussion: Ask questions and listen.
11. Discussion: Students teaching each other
12. Expect the best
13. Valid reasons to adapt
14. Adapt wisely
15. Be a hero to your students
Process Findings

85% of treatment teachers viewed video clips at least once

On average teachers viewed 20.24 video messages

The range of how many video messages each teacher watched was 2 to 66.
Results

Treatment teachers had higher norm knowledge (F=7.02, df=1, p<05).
Improved understanding, reflected in a...

.37 correlation between number of video clips viewed and the “Follow the instructions” scale (df=37, p<.05)

-.34 correlation between number of video clips viewed and the statement “I expect students to be able to answer questions quickly” (df=36, p<.05)

-.47 correlation between number of video clips viewed and the statement “students should know that most of their peers will eventually use alcohol and drugs (df=37; p<.01)
Student Effects

Students whose teachers had access to Prevention ABCs Genie had significantly higher attitudes toward the program ($F=5.78$, $df=1$, $p<.05$)

Students whose teachers viewed videos had significantly higher attitudes scales score ($F=10.43; df=1, p<.01$)
Question
What do you consider the best model for professional development, to encourage program developers and inform educators?