LifeSkills Training (LST)

LifeSkills Training (LST) is a school-based program that aims to prevent alcohol, tobacco, and marijuana use and violence by targeting the major social and psychological factors that promote the initiation of substance use and other risky behaviors. LST is based on both the social influence and competence enhancement models of prevention. Consistent with this theoretical framework, LST addresses multiple risk and protective factors and teaches personal and social skills that build resilience and help youth navigate developmental tasks, including the skills necessary to understand and resist prodrug influences. LST is designed to provide information relevant to the important life transitions that adolescents and young teens face, using culturally sensitive and developmentally and age-appropriate language and content. Facilitated discussion, structured small group activities, and role-playing scenarios are used to stimulate participation and promote the acquisition of skills. Separate LST programs are offered for elementary school (grades 3-6), middle school (grades 6-9), and high school (grades 9-12); the research studies and outcomes reviewed for this summary involved middle school students.

Descriptive Information

<table>
<thead>
<tr>
<th>Areas of Interest</th>
<th>Substance abuse prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes</td>
<td>Review Date: September 2008</td>
</tr>
<tr>
<td></td>
<td>1: Substance use (alcohol, tobacco, inhalants, marijuana, and polydrug)</td>
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<tr>
<td></td>
<td>2: Normative beliefs about substance use and substance use refusal skills</td>
</tr>
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<td></td>
<td>3: Violence and delinquency</td>
</tr>
<tr>
<td>Outcome Categories</td>
<td>Alcohol</td>
</tr>
<tr>
<td></td>
<td>Crime/delinquency</td>
</tr>
<tr>
<td></td>
<td>Drugs</td>
</tr>
<tr>
<td></td>
<td>Tobacco</td>
</tr>
<tr>
<td></td>
<td>Violence</td>
</tr>
<tr>
<td>Ages</td>
<td>13-17 (Adolescent)</td>
</tr>
<tr>
<td>Genders</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>Races/Ethnicities</td>
<td>American Indian or Alaska Native</td>
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<tr>
<td></td>
<td>Asian</td>
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<tr>
<td></td>
<td>Black or African American</td>
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<td>Hispanic or Latino</td>
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<tr>
<td></td>
<td>White</td>
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<tr>
<td></td>
<td>Race/ethnicity unspecified</td>
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<tr>
<td>Settings</td>
<td>School</td>
</tr>
<tr>
<td>Geographic Locations</td>
<td>Urban</td>
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<td></td>
<td>Suburban</td>
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<td></td>
<td>Rural and/or frontier</td>
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<tr>
<td>Implementation History</td>
<td>Broad dissemination of LST began in 1995. Since then, an estimated 50,000 teachers, 10,000 schools/sites, and 3 million students have participated in the program. The duration of implementation varies; some sites have implemented LST for 5 years or longer. LST has been extensively evaluated in more than 30 scientific studies involving more than 330 schools/sites and 26,000 students in suburban, urban, and rural settings. Most of these studies were conducted by Dr. Gil Botvin and colleagues at Weill Medical College of Cornell University. To date, at least seven independent evaluation studies have been conducted by external research groups.</td>
</tr>
</tbody>
</table>
LST has been used with youth in all 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands. Outside the United States, it has been used in 32 countries including Australia, Canada, Croatia, Denmark, England, France, Germany, Greece, Honduras, Hong Kong, Ireland, Italy, Japan, Kenya, Malaysia, Mexico, New Zealand, Nicaragua, Norway, Panama, Portugal, Qatar, Russia, Saudi Arabia, South Africa, South Korea, Spain, Sweden, Taiwan, Thailand, Turkey, and Venezuela.

<table>
<thead>
<tr>
<th>NIH Funding/CER Studies</th>
<th>Partially/fully funded by National Institutes of Health: Yes</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Evaluated in comparative effectiveness research studies: Yes</td>
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<tr>
<td>Adaptations</td>
<td>LST curriculum materials are available in Spanish.</td>
</tr>
<tr>
<td>Adverse Effects</td>
<td>No adverse effects, concerns, or unintended consequences were identified by the developer.</td>
</tr>
<tr>
<td>IOM Prevention Categories</td>
<td>Universal</td>
</tr>
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</table>

Quality of Research

Review Date: September 2008

Documents Reviewed

The documents below were reviewed for Quality of Research. The research point of contact can provide information regarding the studies reviewed and the availability of additional materials, including those from more recent studies that may have been conducted.

Study 1

Study 2


Study 3


Study 4

Supplementary Materials


LifeSkills Training: Quality of Research Overview and Summary


Outcomes

Outcome 1: Substance use (alcohol, tobacco, inhalants, marijuana, and polydrug)

Description of Measures

Substance use (alcohol, cigarettes, inhalants, and marijuana) was assessed using self-report items from the LifeSkills Training questionnaire. Students were asked about the frequency and amount of substance use. Lifetime smoking, drinking, and marijuana use were assessed with items that asked if the respondent had ever used the substances (yes or no). Frequency of smoking, drinking, and marijuana use was assessed on a scale with responses ranging from "never" to "more than once a day." The amount of cigarette smoking was assessed on a scale with responses ranging from "never" to "more than a pack a day," and the amount of alcohol use was assessed on a scale with responses ranging from "don't drink" to "more than 6 drinks" per occasion. Frequency of getting drunk was assessed on a scale with responses ranging from "don't drink" to "more than once a day."

In addition, a substance use initiation scale/index was constructed by combining three dichotomous items regarding the use of tobacco, alcohol, and marijuana. Students were asked if they had ever "smoked a cigarette," "had a drink of alcohol," or "smoked marijuana." Responses were coded 0 for no and 1 for yes and summed. For each wave of data, responses were corrected for consistency, so that if an individual answered "yes" at any point in time, the subsequent response to the same question was also coded "yes."

Key Findings

In one study, junior high schools were assigned to one of three conditions: LST with annual provider training workshops and ongoing consultation, LST with videotaped training and no consultation, or a usual care control group. Follow-up data were collected 6 years after the intervention. This study found a significant decrease in cigarette smoking, alcohol use (drunkenness), and polydrug use (concurrent tobacco, alcohol, and marijuana use) at follow-up for the two groups of students who received LST (all p values < .05). The strongest intervention effects were observed among students exposed to at least 60% of the LST program (operationally defined as the "fidelity sample"). At follow-up, the LST fidelity sample had significantly lower rates than controls on nearly every measure of tobacco, alcohol, marijuana, and polydrug use (all p values < .05).

In another study, middle school students receiving LST were compared with a control group of students who received a program that was normally in place in New York City schools. Results at posttest and 1-year follow-up indicated that students who received LST reported less smoking, less alcohol use, less inhalant use, and less polydrug use relative to those in the control group (p values ranging from < .001 to < .05). The LST group had a 50% smaller proportion of binge drinkers relative to the control group at both the 1- and 2-year follow-up assessments (p < .05 and p < .01, respectively). In addition, among a subsample of youth at high risk for substance use initiation (participants with poor grades and friends who engage in substance use), those who received LST were found to engage in less smoking (p < .01), less drinking (p < .01), less inhalant use (p < .05), and less polydrug use (p < .01) compared with similarly matched controls who did not receive the intervention.

In a third study, 7th-grade students who received LST had a significantly slower rate of increase in substance initiation (tobacco, alcohol, and marijuana) from pretest to posttest and 1-year follow-up compared with students from a minimal contact control condition (p < .01). Five and a half years past baseline (i.e., when the participants were in 12th grade), LST participants reported significantly lower scores on the overall substance use initiation index (p < .01) as well as less cigarette use initiation (p < .05) and less marijuana use initiation (p < .05) relative to controls. When growth over time was examined in the higher risk subsample, the LST group had slower increases in the rates of frequency of marijuana use (p < .01) and monthly and advanced polydrug use (all p values < .01) compared with the control group.

Studies Measuring Outcome

Study 1, Study 2, Study 3

Study Designs

Experimental

Quality of Research Rating

3.9 (0.0-4.0 scale)

Outcome 2: Normative beliefs about substance use and substance use refusal skills
Description of Measures

Normative beliefs about substance use and substance use refusal skills were assessed using self-report items from the LifeSkills Training Questionnaire. For normative beliefs, students were asked about the perceived prevalence of drug use among peers and adults, with separate items for specific substances (cigarettes, beer/wine, marijuana, cocaine or other "hard" drugs, and inhalants). Responses were on a 5-point scale ranging from 1 (none) to 5 (all or almost all).

For refusal skills, 10 items from the questionnaire were used. Five items adapted from the Gambrill-Richey Assertion Inventory assessed refusal intentions; students were asked how likely they would be to say no if someone asked them to try a specific substance (tobacco, alcohol, marijuana, inhalants, and cocaine/other drugs). Another five items assessed students’ anticipated likelihood of using various refusal strategies (e.g., "tell them not now," "change the subject," “make up an excuse and leave"). For all 10 items, responses were on a 5-point Likert scale ranging from 1 (definitely would) to 5 (definitely would not).

Key Findings

In one study, middle school students receiving LST were compared with a control group of students receiving a program that was normally in place in New York City schools. At the 3-month posttest, LST participants reported lower normative expectations than control students for peer smoking and drinking (both \( p < .05 \)) and for adult smoking (\( p < .05 \)), drinking (\( p < .05 \)), cocaine/hard drug use (\( p < .01 \)), and inhalant use (\( p < .05 \)). Similarly, at the 1-year follow-up, LST participants reported lower normative expectations than control students for peer smoking (\( p < .001 \)) and drinking (\( p < .01 \)) and for adult smoking (\( p < .01 \)) and drinking (\( p < .05 \)). LST participants also scored higher than control students on drug refusal skills at 1-year follow-up (\( p < .05 \)). Significant effects on normative expectations for peer drinking were seen at 2-year follow-up, with LST participants reporting lower normative expectations than controls (\( p < .05 \)).

Another study found that the rate of decrease in drug refusal skills was significantly slower from pretest to posttest and 1-year follow-up for 7th-grade students who received LST program compared with students from a minimal contact control condition (\( p < .01 \)).

Studies Measuring Outcome

Study 2, Study 3

Study Designs

Experimental

Quality of Research Rating

3.9 (0.0-4.0 scale)

Outcome 3: Violence and delinquency

Description of Measures

Violent and delinquent behaviors were assessed using 20 self-report items from the LifeSkills Training Questionnaire. Items related to verbal and physical aggression were adapted from Elliott, Huizinga, and Menard. Verbal aggression was measured using 7 items asking students the number of times in the past month they committed acts such as name-calling, yelling, cursing, or telling someone off. Mild physical aggression was measured using 3 items asking students the number of times in the past month they had pushed or shoved, tripped, or hit someone. Items related to fighting and delinquent behaviors were adapted from Hawkins and associates. Fighting was measured using 4 items asking students the number of times in the past year they engaged in behaviors such as picking a fight with someone or hitting someone to hurt the person seriously. Delinquency was measured using 6 items asking students the number of times in the past year they committed acts such as destroying others' property, throwing objects at people or cars, or shoplifting.

Key Findings

Results of a study among middle school students demonstrated significant reductions in violence and delinquency at 3-month follow-up for LST participants relative to the control group of students who received a standard health education curriculum (all \( p \) values < .05). Stronger effects were found for students who received at least half of the LST program. These effects included decreased verbal aggression (\( p < .01 \)), physical aggression (\( p < .01 \)), fighting (\( p < .001 \)), and delinquency (\( p < .05 \)).

Studies Measuring Outcome

Study 4

Study Designs

Experimental

Quality of Research Rating

4.0 (0.0-4.0 scale)
The following populations were identified in the studies reviewed for Quality of Research.

<table>
<thead>
<tr>
<th>Study</th>
<th>Age</th>
<th>Gender</th>
<th>Race/Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1</td>
<td>13-17 (Adolescent)</td>
<td>52% Male 48% Female</td>
<td>91% White 2% Asian 2% Black or African American 2% Hispanic or Latino 2% Race/ethnicity unspecified 1% American Indian or Alaska Native</td>
</tr>
<tr>
<td>Study 2</td>
<td>13-17 (Adolescent)</td>
<td>53% Female 47% Male</td>
<td>61% Black or African American 22% Hispanic or Latino 6% Asian 6% White 5% Race/ethnicity unspecified</td>
</tr>
<tr>
<td>Study 3</td>
<td>13-17 (Adolescent)</td>
<td>52% Male 48% Female</td>
<td>97% White 3% Race/ethnicity unspecified</td>
</tr>
<tr>
<td>Study 4</td>
<td>13-17 (Adolescent)</td>
<td>51% Male 49% Female</td>
<td>39% Black or African American 33% Hispanic or Latino 10% Race/ethnicity unspecified 10% White 6% Asian 2% American Indian or Alaska Native</td>
</tr>
</tbody>
</table>

**Quality of Research Ratings by Criteria (0.0-4.0 scale)**

External reviewers independently evaluate the Quality of Research for an intervention’s reported results using six criteria:

1. Reliability of measures
2. Validity of measures
3. Intervention fidelity
4. Missing data and attrition
5. Potential confounding variables
6. Appropriateness of analysis

For more information about these criteria and the meaning of the ratings, see [Quality of Research](#).

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Reliability of Measures</th>
<th>Validity of Measures</th>
<th>Fidelity</th>
<th>Missing Data/Attrition</th>
<th>Confounding Variables</th>
<th>Data Analysis</th>
<th>Overall Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Substance use (alcohol, tobacco, inhalants, marijuana, and polydrug)</td>
<td>4.0</td>
<td>4.0</td>
<td>3.8</td>
<td>3.9</td>
<td>4.0</td>
<td>4.0</td>
<td>3.9</td>
</tr>
<tr>
<td>2: Normative beliefs about substance use and substance use refusal skills</td>
<td>4.0</td>
<td>4.0</td>
<td>3.7</td>
<td>3.9</td>
<td>4.0</td>
<td>4.0</td>
<td>3.9</td>
</tr>
<tr>
<td>3: Violence and delinquency</td>
<td>4.0</td>
<td>4.0</td>
<td>3.8</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

**Study Strengths**

The outcome measures have excellent reliability and validity indicators and are supported by independent research. The investigators considered and controlled for confounding variables through the use of block randomization design and standardized data collections and by establishing baseline equivalence between groups. Sophisticated techniques were used to statistically account for attrition and missing data. Significant efforts were made to measure intervention fidelity, and adherence rates were high in some studies. The data analyses were appropriate for the study designs and types of data collected and support the inferences made about causal relationships.

**Study Weaknesses**

Attrition and adherence rates to fidelity were a minor concern in some studies.
Readiness for Dissemination
Review Date: September 2008

Materials Reviewed
The materials below were reviewed for Readiness for Dissemination. The implementation point of contact can provide information regarding implementation of the intervention and the availability of additional, updated, or new materials.


Research articles for the training-of-trainers/technical assistance model

Readiness for Dissemination Ratings by Criteria (0.0-4.0 scale)
External reviewers independently evaluate the intervention's Readiness for Dissemination using three criteria:
1. Availability of implementation materials
2. Availability of training and support resources
3. Availability of quality assurance procedures

For more information about these criteria and the meaning of the ratings, see Readiness for Dissemination.

<table>
<thead>
<tr>
<th>Implementation Materials</th>
<th>Training and Support Resources</th>
<th>Quality Assurance Procedures</th>
<th>Overall Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

**Dissemination Strengths**

Implementation materials are clear, concise, practical, and effectively targeted to multiple age groups. Initial core training, booster training, and train-the-trainer workshops are provided to support implementation. Training can be delivered on site or at open workshops across the country. Customized technical assistance is available. A comprehensive trainer certification process and an array of brief, easy-to-use outcome and fidelity tools are provided to support quality assurance.

**Dissemination Weaknesses**

No weaknesses were identified by reviewers.

**Costs**

The cost information below was provided by the developer. Although this cost information may have been updated by the developer since the time of review, it may not reflect the current costs or availability of items (including newly developed or discontinued items). The implementation point of contact can provide current information and discuss implementation requirements.

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Cost</th>
<th>Required by Developer</th>
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</thead>
<tbody>
<tr>
<td>Grade level curriculum set</td>
<td>$175-$275 depending on grade level</td>
<td>Yes</td>
</tr>
<tr>
<td>Additional student guides</td>
<td>$40-$60 for 10 depending on grade level</td>
<td>No</td>
</tr>
<tr>
<td>Elementary Program CD-ROM (available for some grade levels)</td>
<td>$45.95 each</td>
<td>No</td>
</tr>
<tr>
<td>Smoking and biofeedback DVD</td>
<td>$20 each</td>
<td>Yes (for middle school program only)</td>
</tr>
<tr>
<td>Stress management techniques audio CD</td>
<td>$10 each</td>
<td>Yes (for middle school program only)</td>
</tr>
<tr>
<td>1-day, on-site workshop</td>
<td>$200 per participant for up to 20 participants, plus travel expenses</td>
<td>No</td>
</tr>
<tr>
<td>2-day, on-site workshop</td>
<td>$250 per participant for up to 20 participants, plus travel expenses</td>
<td>No</td>
</tr>
<tr>
<td>Off-site and online trainings</td>
<td>$235 per participant</td>
<td>No</td>
</tr>
<tr>
<td>1-day, on-site consultation</td>
<td>$1,000 for up to 20 participants, plus travel expenses</td>
<td>No</td>
</tr>
<tr>
<td>Half-day, on-site consultation</td>
<td>$500 for up to 20 participants, plus travel expenses</td>
<td>No</td>
</tr>
<tr>
<td>Phone and online consultation</td>
<td>$75 per hour</td>
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</tr>
<tr>
<td>Email consultation</td>
<td>Free</td>
<td>No</td>
</tr>
<tr>
<td>Pre- and posttest instruments</td>
<td>Free</td>
<td>No</td>
</tr>
<tr>
<td>Fidelity checklists</td>
<td>Free</td>
<td>No</td>
</tr>
</tbody>
</table>
Additional Information
Additional resources can be accessed for free at http://www.lifeskillstraining.com. Resources include the LST Planning Workbook, grant writing support, and curriculum samples.

Replications
Selected citations are presented below. An asterisk indicates that the document was reviewed for Quality of Research.


Contact Information
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Consider these Questions to Ask (PDF, 54KB) as you explore the possible use of this intervention.

Web Site(s):
- http://www.lifeskillstraining.com

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