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Impact of Life Skills Training (LST) in Allegany County Schools: Prevalence of Substance Use

Longitudinal Analysis of 2011 Sixth Grade Cohort and Learning Objectives 2015 2016 (Fall 2017)

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Summary

The current analysis supports the long-term effects of Life Skills Training on reducing substance use among students in Allegany County schools. Students in schools who completed LST demonstrated smaller increases in substance use between sixth and twelfth grade compared to students from similar schools who did not complete LST.

Background

Life Skills Training (LST) is one of the most widely used universal substance abuse prevention strategy. LST has been evaluated extensively in controlled settings and is listed on the Substance Abuse Mental Health Services Administration (SAMHSA) National Registry of Evidence-based Prevention Programs (NREPP) and is a designated Model Program on the Center for the Study of Violence Blueprint Projects list. LST is a classroom curriculum program that addresses substance abuse knowledge, perception of risk of harm from use of substances, refusal skills, communication skills and other skills needed to resist the use of substances. LST begins with 15 classroom sessions in 6th grade followed by 10 refresher sessions in 7th and nine sessions in 8th grade.

In 2001, 6th, 8th and 10th grade students in schools in Allegany County completed the Risk and Protective Factor Survey. This survey provides scale scores representing one of 28 risk or protective factors. Significant proportions of students scored above the risk level on perceived availability of drugs, as well as on friends who use drugs and perceived peer-individual rewards for anti-social behavior. Significant proportions scored at the risk level for lack of protective factors such as social skills and belief in moral order.

Life Skills Training was selected as a model prevention program for Allegany County because of its potential effects on all of these factors. For example, LST is designed to change students' perception of norms related to use of alcohol, tobacco and other substances. This should result in a reduction of students' positive attitudes towards anti-social behavior. Life Skills Training is a universal prevention measure in the individual domain and is also designed to increase protective factors.

The Life Skills program developed by Gilbert Botvin is one the most extensively documented prevention programs in use today. ACASA staff currently provide LST in nine districts.

Method

In order to determine the impact of LST on substance use, the cohort of Allegany County sixth graders in 2011 was followed longitudinally through their twelfth-grade year in 2017. The Evalumetrics Student Risk and Protective Factor Survey has been completed by all students in grades six, eight and ten in 11 Allegany County Schools in every odd numbered year since 2001. Since 2011, twelfth grade students also completed the survey. The survey includes multiple items asking about use of alcohol, tobacco, marijuana and other drugs. Rates of self-reported

recent (past 30 day) use of each substance was measured for the cohort in 2011 as sixth graders and compared to the same cohort in 2017 as twelfth graders.

As students age and move from one grade level to another, the probability that they will use alcohol, tobacco or other substances generally increases due to increased exposure to substances, increased acceptance by peers, adults and parents and decreased exposure to prevention strategies. In order to determine if LST results in any change in proportion of students using substances in twelfth grade compared to sixth grade, it is necessary to compare those changes to changes in a sample of students in similar schools who were not exposed to LST. The 2011 sixth grade cohort from Allegany County schools in which LST was not offered was selected to serve as the comparison group. These schools have also participated in the Risk and Protective Factor Survey every odd numbered year since 2001.

Results

The proportions of students reporting recent (past 30 days) use of substances were calculated for the LST exposure group and for the non-exposure group. Previous longitudinal analysis found dramatic differences between LST and non-LST schools between 2005 and 2011. However, by 2011 rates of use of many substances had reach very low levels and in several cases, no use was reported. As a result, longitudinal analysis of many substances is not possible as the baseline is 0.

Table 1 shows the proportions of students reporting use of alcohol. Though the proportion of sixth grade students reporting recent use of alcohol prior to the intervention of LST were generally low, rates of reported use were slightly higher for the LST schools sixth grade students with 5.9% reporting lifetime use of alcohol compared to 2.6% in the comparison group.

Between 2011, as 6th graders, and 2017, as 12th graders, the proportion of the non-LST cohort who had initiated alcohol use increased from 2.6% to 61.0%, a 23.5-fold increase. By comparison, the increase for the LST cohort was from 5.9% to 56.5%, a 9.5-fold increase. Thus, students who completed LST were two and a half times less likely to initiate use of alcohol by 12th grade.

Table 1.
Risk and Protective Factor
Survey
Reported Substance Use

	2011	2017		2011	2017	
	Non-LST	Non-LST		LST	LST	
	Schools	Schools		Schools	Schools	
	6th Grade	12th Grade		6th Grade	12th Grade	
Alcohol Use (except as part of religion) N=	154	105		269	214	
Ever Used	2.6%	61.0%	23.5	5.9%	56.5%	9.5
Used in Past 12 Months	2.6%	48.6%	18.7	4.5%	57.5%	12.9
Used in Past 30 Days	1.3%	32.4%	24.9	0.7%	27.6%	37.1
>5 Drinks at Least Once in Past 30 Days	0.0%	22.9%	n/a	0.0%	14.0%	n/a

Table 2 shows results for smoking cigarettes. Between 2011, as 6th graders, and 2017, as 12th graders, the proportion of the non-LST cohort who had initiated cigarette smoking increased from 3.2% to 39.0% 12-fold increase. By comparison, the increase for the LST cohort was from 7.1% to 30.8%, a 4.4-fold increase. Thus, students who completed LST were three times less likely to initiate use of alcohol by 12th grade.

Table 2.
Risk and Protective Factor
Survey
Reported Substance Use

	2011	2017		2011	2017	
	Non-LST	Non-LST		LST	LST	
	Schools	Schools		Schools	Schools	
	6th Grade	12th Grade		6th Grade	12th Grade	
Cigarette Use	154	105		269	214	
Ever Used	3.2%	39.0%	12.0	7.1%	30.8%	4.4
Used in Past 12 Months	1.3%	22.9%	17.6	2.6%	33.2%	12.7
Used in Past 30 Days	1.3%	11.4%	8.8	0.7%	8.9%	11.9

Table 3 shows that the results for marijuana use did not show a positive relation to LST. Between 2011, as 6th graders, and 2017, as 12th graders, the proportion of the non-LST cohort who had initiated cigarette smoking increased from 1.9% to 35.2% 18.1-fold increase. By comparison, the increase for the LST cohort was from .07% to 36.0%, a 48.4-fold increase.

Table 3.
Evalumetrics Youth Survey
Reported Substance Use

	2011 Non-LST Schools	2017 Non-LST Schools		2011 LST Schools	2017 LST Schools	
	6th Grade	12th Grade		6th Grade	12th Grade	
Marijuana Use	154	105		269	214	
Ever Used	1.9%	35.2%	18.1	0.7%	36.0%	48.4
Used in Past 12 Months	0.6%	37.1%	57.2	0.0%	23.4%	n/a
Used in Past 30 Days	0.6%	16.2%	24.9	0.0%	16.4%	n/a

Table 4 shows results for use of drugs other than alcohol, tobacco, or marijuana. Between 2011, as 6th graders, and 2017, as 12th graders, the proportion of the non-LST cohort who had initiated other drug use increased from 0.6% to 6.7% 10.3-fold increase. By comparison, the increase for the LST cohort was from 2.2% to 8.9%, a 4-fold increase. Thus, students who completed LST were two and a half times less likely to initiate use of other drugs by 12th grade.

Table 4.
Evalumetrics Youth Survey
Reported Substance Use
Reported Substance Use
Other Drug Use

	2011 Non-LST Schools	2017 Non-LST Schools		2011 LST Schools	2017 LST Schools	
	6th Grade	12th Grade		6th Grade	12th Grade	
Other Drug Use	154	105		269	214	
Ever Used Other Drug	0.6%	6.7%	10.3	2.2%	8.9%	4.0

Analysis of specific drugs was not possible as virtually every drug had a baseline use rate of 0%.

Learning Objectives-

In order to attribute any change to LST, it would be logical that LST learning objective must be met. The LST Health Survey was completed by 6th, 7th, and 8th grade students each fall. Sixth grade students completed the survey prior to participating in LST. Thus, the fall 2015 survey of 6th graders serves as the baseline and the fall 2016 survey of 7th graders serves as the post-LST measure. Survey items are reduced to 10 scales representing areas of emphasis in the LST curriculum.

Table 5 shows the pre-LST and post-LST scores on each scale for the 2015 6th grade cohort. Mean score on seven scales increased. There was almost no change in ATOD Image and larger decreases in Self Efficacy, Relaxation Skills, and Perseverance.

Table 5

LST Health Survey	Mean Score	Mean Score
Pre-LST vs. Post-LST	2015	2016
Mean Scores	(gr6)	(gr7)
	N=271	N=246
ATOD Norms	61.1%	70.0%
Self-efficacy	79.9%	76.1%
ATOD Knowledge	65.1%	69.9%
Media Literacy	56.7%	61.0%
Relaxation Technique	61.6%	66.1%
Social Skills	61.1%	68.9%
ATOD Image	93.2%	92.5%
Resistance	69.7%	92.1%
Assertiveness	49.7%	52.9%
Relaxation Skills	55.9%	43.7%
Perseverance	61.1%	56.9%

Discussion

Results of this longitudinal cohort analysis indicate that students who attend Allegany County schools who were exposed to Life Skills Training (LST) demonstrated significantly smaller increases in the proportion of students who initiated use of alcohol and cigarettes. Previous longitudinal analysis found dramatic differences between LST and non-LST schools between 2005 and 2011. However, by 2011 rates of use of many substances had reached very low levels and in several cases, no use was reported. As a result, longitudinal analysis of many substances is not possible as the baseline is 0.

This analysis is limited to a quasi-experimental design, that is, neither students nor schools could be randomly assigned to receive the LST intervention. However, the comparison schools have student- enrollment, demographics and low transiency rates very similar to the schools with LST.

Separate analysis indicated that most learning objectives were met based on increased mean scores on 7 of 10 scales in the LST Health Survey.

Thus, it is likely that LST was a significant factor in reducing substance use among twelfth grade students.