

# Assessing the Impact of a School-Based Suicide Prevention Intervention on Student Self-Referral Patterns: The LifeAct Study

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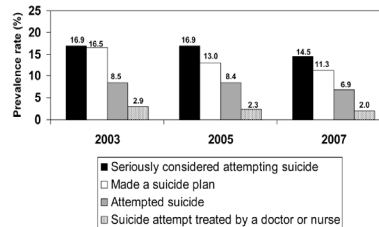
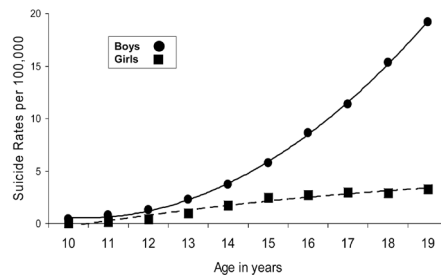


## Background

Accidents, homicide, and suicide are the three leading causes of mortality in U.S. teens. In 2015 suicide accounted for 18% of deaths among 15 to 24 year-olds<sup>1</sup>. The rate of suicide increases for boys and girls throughout adolescence. Among teens that report suicidal ideation, within one year 33% go on to make a plan, and 86% of those youths will attempt suicide<sup>2</sup>.

School-based interventions remain one response to mitigating suicide risk among adolescents<sup>3,4,5</sup>. However, to date few school-based suicide prevention programs have undergone systematic evaluation for their efficacy, and no U.S. program has been evaluated for safety. Further, how these interventions affect student self-referral patterns on the day of the intervention have not been documented.

Self-referral rates may be an indicator of the burden of suicidal ideation, and represents a potential benefit of intervention, and a need that must be met. Although self-referral may occur any day prior or subsequent to intervention, referrals on the day of delivery offers a measurable period when self-referral rates may be concentrated. Thus, this research seeks to measure student self-referral rates on the day of a school-based suicide prevention intervention.



## Objectives

To assess the resultant frequency of student self-referral during or immediately after the LifeAct school-based suicide prevention intervention, thus estimating the numbers of students requiring activation of the school's suicide risk response protocol.

To analyze rates of student self-referral for both internal and interschool variance. This project represents a portion of the overall data acquired both retrospectively, and during a prospective interventional trial with the purpose of assessing the safety and efficacy of the LifeAct intervention, which will be published elsewhere.



## The LifeAct Intervention

The LifeAct Suicide Prevention Intervention consists of 2 classroom sessions led by trained LifeAct instructors lasting approximately 90 minutes. During the sessions, the instructors answer student questions and present audiovisual content depicting the basic program components: **Aware, Care, Tell.**

- **Aware** teaches the warning signs and symptoms of depression and suicidal behavior.
- **Care** teaches how to approach a distressed peer.
- **Tell** teaches what to do if the peer does not respond positively or cannot be approached, and encourages peers to tell an adult who can get them connected with a professional.

By the end of the session, students are given pens with the suicide crisis help line number and the Crisis Text Line for them to keep.

## Methods: Instructors, Population, and Sampling

**LifeAct Instructors:** All instructors delivering the intervention had at least two years of experience delivering the program by 2016-2017. All instructors participated in monthly review and evaluation meetings intended to monitor for adverse events and maintain procedural and content fidelity of the LifeAct program.

**Schools:** The 92 high schools (grades 9-12) included in this report were selected from more than 200 schools and communities receiving the LifeAct intervention since 2013 in a three county area in northeast Ohio. A total of 70998 attendees received these assemblies. Inclusion: Only high schools with three or more years of hosting LifeAct were eligible for selection. Non-Public included a combination of parochial schools, private schools, and charter schools.

**Students:** To be eligible, students had to attend health class at the time of the intervention. Students were requested to fill out a short survey at the end of the program. Students self-referring on the day of the intervention were tallied by LifeAct instructors and reported to school officials for necessary response. Self-Referral occurred directly when students communicated with LifeAct instructors verbally, or via a written post-intervention survey. Students may also be self-referred indirectly if their behavior became identified as concerning to instructors during the intervention. The study sample was derived from a geographic mixture of urban, suburban, and rural schools.

## Methods: Statistical Methods



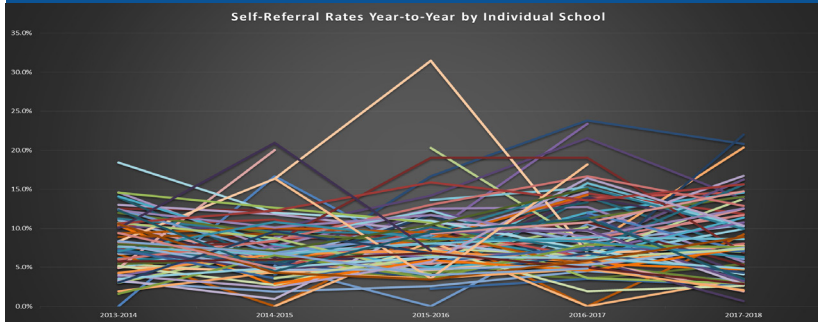
The frequency of self-referral was tallied by class within school, and time-stamped by date of the intervention. The number of students receiving the intervention was also recorded, thus allowing the rate of self-referral to be calculated. Mean rates of self-referral were calculated for each school year-to-year, and by school type, and for the sample as a whole. ANOVA was performed on the rates of self-referral by school, T-tests were performed on comparable means.

## Results: Participants

Total Students Attending	7098
Total Referrals	5543
Schools included	92
Total Public Schools	75
Total Non-Public Schools	17
3 Intervention Schools	21
4 Intervention Schools	24
5 Intervention Schools	47

92 Schools met inclusion criteria, with 47 schools receiving 5 years of intervention, 24 schools receiving 4 years, and 21 schools receiving 3 years. It was not possible to tell how many unique students attended, thus the total students may include students who received multiple interventions. Further, information about classroom-level and school-level student selection was limited. It is likely that some students were absent on the day of the intervention, and that schools may have been selective in choosing which health classes received the intervention. This was at the discretion of the school administrators. No specific gender, race, or ethnicity identifiers were collected in the sample.

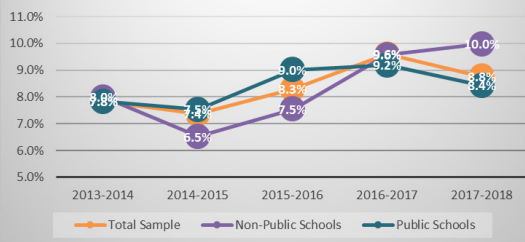
## Results: Self-Referral Rates



School Year	Number of Students	Self-Referrals	Ratio of Self-Referrals/Total Students	Mean Rate	Standard Deviation
2013-2014	7961	607	0.076	7.8%	3.7%
2014-2015	17128	1193	0.070	7.4%	4.0%
2015-2016	16691	1285	0.077	8.3%	4.4%
2016-2017	14279	1258	0.088	9.6%	5.3%
2017-2018	14939	1200	0.080	8.8%	5.0%

## Results: Analysis

### Average Rates of Self-Referral by School Type



Based on an ANOVA analysis, the rate of self-referral varied within schools year-to-year, and between schools. Non-Public Schools and Public Schools did not differ statistically from each other in mean self-referral rate year to year or in aggregate by t-test. Despite significant variance between schools, and within schools, the total sample (n=92) mean annual rates of self-referral did not differ significantly year-to-year.

### ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.331551	91	0.003643	2.24931383	1.45E-07	1.306335
Within Groups	0.489177	302	0.00162			
Total	0.820728	393				

## Discussion

The prevalence of suicidal ideation and suicide attempts in youth is high<sup>1</sup>. Measuring suicidal risk is thus very difficult at any given point in time. This preliminary evaluation of self-referral rates following school-based intervention reveals several considerations:

- Self-referrals indicate a subset of youth with depression and SI willing to reveal heretofore hidden need. This represents both a burden and a benefit of school based suicide prevention programs.
- This also implies that unmet need remains undisclosed, both at the time of intervention, and on otherwise typical days throughout the year.
- The mean self-referral rate of schools in a large metropolitan area remained relatively stable year-to-year at around 8%, despite considerable variance within schools and between schools.
- This is the first report of a mean self-referral rate for any school based intervention, and may be a comparable baseline for future study.
- Schools may benefit from being able to predict necessary resources to meet student needs following intervention. This knowledge also may allay school administration concerns that schools will be overwhelmed by self-referrals.
- This report represents a starting point for more detailed analysis. All of the schools were associated with zip codes, which provides opportunities to explore associations between referral rate and geographic, demographic statistics.
- One limitation of the study was the lack of demographic detail at the student level.
- Further, School and Classroom size was not factored into the analysis, and may be an important factor in self-referral rate. Future analyses must take this into account.
- Other factors that will be reported elsewhere include teacher factors, more detailed consideration of self-referral characteristics, and analysis of with school variance year-to-year, and dose-related differences..

## Conclusions

- ❖ This study provides needed data for establishing a predictable baseline self-referral rate following school-based suicide prevention intervention
- ❖ Despite significant within school and between school variance, mean rates of self-referral remained relatively stable.
- ❖ We found no significant difference in mean self-referral rate between public or non-public schools.
- ❖ Future studies will explore differences within school year to year and between schools, as well as associations between self-referral and other exogenous factors.

## References

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