Evaluation of a Targeted Violence Prevention Program in Los Angeles County, California

Stevan Weine, Department of Psychiatry, College of Medicine, University of Illinois at Chicago

David Eisenman, Division of General Internal Medicine and Health Services Research, Department of Medicine, David Geffen School of Medicine at University of California, Los Angeles (UCLA), Fielding School of Public Health, UCLA

Maria Martinez, Los Angeles County Department of Mental Health

Linda Boyd, Los Angeles County Department of Mental Health

Miriam Brown, Los Angeles County Department of Mental Health

The research in this presentation was conducted with the U.S. Department of Homeland Security (DHS) Science and Technology Directorate (S&T) under contract 18STFRG00005-01-01. Any opinions contained herein are those of the author and do not necessarily reflect those of DHS S&T.

Version 1.0, June 9, 2021

SUMMARY

Background: Threat prevention and management programs are used throughout the U.S. to address threats related to violence. These programs have not been rigorously evaluated.

Method: Using a chart review tool we developed and extracted relevant data from the case records of 76 clients consecutively enrolled in the Los Angeles County Department of Mental Health's School Threat Assessment Response Team (START) from July to December 2017. Data was collected from the client's intake and the latest evaluation within these six months. Four clients were dropped due to missing data.

Results: START participants with initially moderate or high risk had significant decreases in violence risk (86%) and suicide risk (93%). Regarding violence risk, 28 (41%) had no change, 26 (38%) decreased by one level (high to moderate or moderate to low), and 14 (21%) decreased by two levels (high to low). Regarding suicide risk, 34 (53%) had no change, 11 (17%) decreased by one level, and 19 (30%) decreased by two levels. Clients who had the most reductions in violence risk were on an individualized education plan , had a family history of alcoholism, had no history of prior abuse, and no current abuse. Clients who had the highest reduction in suicide risk had a higher number of children in the house, had substance abuse, and had no family history of mental illness. Clients who had ideological involvement were more likely male, employed, living in group home, had a history of being a bullying perpetrator, and had a lower initial suicide risk.

Conclusions: Nearly 9/10 participants with initial moderate or high risk experienced decreased violence risk, and more than 9/10 participants with initial moderate or high risk experienced decreased suicide risk within six months in the START program. The high overlap between violence risk and psychiatric diagnoses among START clients likely reflects both the referral pathways from mental health service organizations and an underlying association of violence and suicide with mental health problems in a sub-set of persons. Although threat assessment programs like START were not designed to focus on ideologically motivated violence, they may be able to do so. Threat assessment programs can and should be evaluated. Programs should routinely collect metrics on violence and suicide risk, demographics, services received, behavioral outcomes, and family and social conditions.

BACKGROUND

The Los Angeles County Department of Mental Health's (LACDMH) School Threat Assessment Response Team (START) was designed to address the need for a comprehensive threat prevention and management program in school settings.

This is achieved by utilizing LACDMH's staff to provide threat prevention and management assistance to threats arising from educational institutions throughout the county. START staff, in collaboration with Los Angeles County schools and law enforcement partners, responds to critical incidents and service requests in elementary, middle, high school, college and trade school campuses— preventing stated or perceived threats from escalating into more serious and potentially violent situations.

Key Components of START include:

- **Training and program consultation:** START provides educational and training programs for select audiences, including school faculty, administrators, campus security, first responders, parents and students, mental health professionals, criminal justice professionals, and the general community. These training programs are designed to improve understanding about the dynamics, behaviors and characteristics of school shooters, as well as improving situational awareness and timely responses to boost campus safety and wellbeing.
- **Early identification:** START provides case-by-case consultations for individuals or situations of concern. Educational institutions are supported in adopting a multidisciplinary approach to help prevent potentially volatile situations.
- **Assessment:** START can assist schools in creating or completing a comprehensive assessment of individual, familial, situational and social factors relevant to the perceived, implied or stated threat.
- **Intervention:** In collaboration with educational institutions and law enforcement agencies, START provides appropriate responses to threats of violence. These include outreach and engagement, screening, suicidal and violent threat assessment, psychiatric assessment, case monitoring, psychoeducation, coping-skill building, and linkage to support services, such as outpatient mental health providers.
- **Case Management:** START staff also provides post-intervention services, such as case consultation and management, linkages to relevant support services, and periodic follow- ups and reviews.
- **Case Monitoring:** START clinicians evaluate threat levels of consented clients at least every six months or earlier as needed.

START is regarded as an impactful program but it has never been rigorously evaluated, nor have any other programs aiming to prevent targeted violence.

PURPOSE

The overall purpose of this project was to evaluate the START program. This study addressed the following research questions:

- Do clients experience diminished violence and suicide risk while in START?

- Which client characteristics moderate START's effect on violence and suicide risk?
- Do clients with ideological involvement differ from clients without ideological involvement in characteristics and outcomes?

METHODS

We conducted a retrospective chart review. All new clients enrolled in START from July 1, 2017 to December 2017 were included. Data was collected from the client's intake and the latest evaluation within six months to document services received and possible improvement in behavior and threat indicators. De-identified data analyzed included: demographics, threat, mental health symptoms, family and social relations, work and schooling, and services access and experiences. In addition, we described the services provided by LACDMH or other agencies or individuals.

We developed a chart review tool to extract relevant data from the START case records. Regarding ideology, the chart review tool asked reviewers to determine if the person was explicitly involved with a political or religious ideology that was motivating their potentially violent or suicidal behavior. The START team used the following risk measures: Suicide risk was measured by the Columbia-Suicide Severity Rating Scale and violence risk was measured by the SAVRY (Structured Assessment of Violence Risk in Youth) for those 17 years and under, and the WAVR-21 (21-item Workplace Assessment of Violence Risk) for those 18 years and over. Standard scale scores were used to identify whether clients were low-, moderate-, or high-risk for violence or suicide. If clients or their legal guardians did not consent to administration of above risk measures, collateral information and clinical observation were collected to determine risk levels.

The chart abstraction was conducted by a graduate student from the UCLA School of Public Health. She was trained by one of the principle investigators in chart abstraction methods. She conducted her chart abstraction on site at the LACDMH central offices. Chart abstraction questions were discussed by the team, including LACDMH staff and the investigators, and resolved by consensus.

The following hypotheses guided the evaluation:

H1: START clients will show diminished violence and suicide risk from initial to post-intervention assessment.

H2: Individual or social adversities (e.g. housing status, trauma exposure) and other sociocultural factors (e.g. education level) will moderate the impact of the START program on improvements in violence and suicide risk.

H3: START clients with ideologically motivated violence will be less likely to show risk reduction compared to clients without ideologically motivated violence.

Analyses include bivariate comparisons among sub-groups of persons (e.g. ideologically motivated v. non-ideologically motivated; referral sources).

We examined correlations between violence change, suicide change, initial violence risk, initial suicide risk, six-month violence risk, and six-month suicide risk. We conducted separate

logistic regressions with the dependent variables of involvement with ideology and weapons. We also conducted separate multivariate regressions with the dependent variables of initial violence risk and **decrease** in violence risk (from initial to six-month assessment). For all regressions, we included demographic, school, adversity, mental illness, violence and service characteristics as independent variables and used backwards stepwise regressions.

This study was reviewed and approved by the institutional review boards of LACDMH, the University of Illinois at Chicago, and the University of California, Los Angeles.

SAMPLE CHARACTERISTICS

The sample characteristics are described below and summarized in Table 1.

Sources

The subjects were 72 START clients; 48 (67%) were referred from schools, 13 (18%) from mental health professional or psychosocial settings, and 11 (15%) from law enforcement. Four participants were dropped from the analysis because they had mostly missing data. The reporters were 46 (64%) teachers, 12 (17%) mental health professionals, 9 (15%) law enforcement, 3 (4%) students, 1 (1%) neighbor, and 1 (1%) health professional.

Demographics

The average age was 21.5 years (SD=10.0). There were 55 (76%) males and 17 (24%) females; 71 (99%) were single and 1(1%) was divorced; 29 (40%) were Asian/Pacific, 19 (26%) Latino, 7 (10%) black, 4 (6%) Native American, and 1 (1%) white.

32 (44%) lived with both parents, 19 (26%) lived with one parent, 6 (8%) lived with grandparents, and 1 (1%) with foster parents.

64 (89%) were unemployed, 6 (8%) were employed part-time and 2 (3%) were employed full-time.

42 (58%) had working parents; 7 (10%) reported they immigrated to the U.S.

57 (79%) received Medicare, 7 (10%) received Medicaid, and 4 (6%) received private insurance.

School

25 (35%) were on an individualized education plan (IEP) and 45 (63%) were not; 12 (17%) were on an IEP specifically for learning disability (IEP for LD) and 55 (76%) were not.

41 (57%) were suspended; 20 (28%) had a prior suspension; only 2 (3%) were on academic probation.

Adversity

19 (26%) had a family history of mental illness, 15 (21%) had a family history of suicide attempt, 15 (21%) had a family history of alcohol, 15 (21%) had a family history of substance abuse, and 16 (22%) had a family history of violence.

29 (40%) were past bullying victims, and 16 (22%) were a bullying perpetrator.

30 (43%) reported prior traumatic experiences, 15 (21%) reported a history of prior abuse, and 4 (6%) reported current abuse.

4 (6%) reported a recent significant loss of a family member (e.g. due to death or divorce).

Mental Illness

Among open clients, the primary diagnoses were 39 (54%) mood disorder, 10 (14%) psychotic disorder, 8 (11%) adjustment disorder, 5 (7%) bipolar disorder, 3 (4%) Post-Traumatic Stress Disorder, 2 (3%) conduct disorder, and 9 (13%) no diagnosis; 17 (24%) had made a suicide attempt; 7 (10%) had an alcohol use problem; 17 (24%) reported substance abuse.

Violence

15 (21%) were motivated by an ideology; 68 (94%) were acting alone and 4 (6%) reported a group affiliation; 21 (29%) had an on-line involvement with violence; 8 (11%) had access to weapons. Those persons with a weapon were significantly younger (14.4 v. 22.4) than those without.

Services

Regarding START services, 72 (100%) had a case manager; 46 (64%) received inpatient psychiatric treatment and 26 (36%) did not; 11 (15%) received psychiatric medications (from other providers outside the START program) and 61 (85%) did not; 6 (55%) were reported to be adhering to their outpatient medication plan and 5 (45%) were not; 1 (1%) received drug/alcohol treatment.

Regarding the Department of Child and Family Services (DCFS), 4 (6%) had an open case, 16 (22%) had a closed case, and 40 (55%) had none; 6 (8%) received legal aid; 5 (7%) were involved with law enforcement.

Table 1: Client Characteristics (Total and by Source of Referral)				
Variable	**Total (n=72)**	**School (n=48)**	**Mental Health/ Psychosocial (n=13)**	**Law Enforcement (n=11)**
Age	21.5 (10.0)	21.4 (9.5)	21.8 (12.9)	21.5 (9.4)
Gender	Male 55 (76 %) Female 17 (24%)	Male 35 (73%) Female 13 (27%)	Male 10 (77%) Female 3 (23%)	Male 10 (91%) Female 1 (9%)
Race/Ethnicity	A/P 29 (40%) Black 19 (26%) Latino 7 (10%) Nat. Am. 4 (6%) White 1 (1%)	A/P 19 (40%) Black 17 (35%) Latino 5 (10%) Nat. Am. 2 (4%) White 1 (2%)	A/P 7 (54%) Black 0 (0%) Latino 2 (15%) Nat. Am. 0 (0%) White 0 (0%)	A/P 3 (27%) Black 2 (18%) Latino 0 (0%) Nat. Am. 2 (18%) White 0 (0%)
Employment	8 (11%)	5 (10%)	1 (8%)	2 (18%)
Live with both parents	32 (44%)	16 (33%)	10 (77%)	6 (55%)
# Children in home	1.5 (1.3)	1.5 (1.3)	1.4 (1.3)	1.5 (1.0)
Migration history	7 (10%)	2 (4%)	2 (2%)	3 (27%)
IEP	24 (33%)	16 (33%)	5 (38%)	3 (27%)
IEP for LD	12 (17%)	5 (10%)	2 (15%)	5 (45%)
School suspension	33 (46%)	19 (40%)	8 (62%)	6 (55%)
DCFS case	Open 4 (6%) Closed 16 (22%)	Open 1 (2%) Closed 12 (25%)	Open 2 (15%) Closed 3 (23%)	Open 1 (9%) Closed 7 (64%)
Reporter	Teacher 46 (64%) Student 3 (4%) Family 0 (0%) LE 9 (13%) Neighbor 1 (1%) MHP 12 (17%) HP 1 (1%)	Teacher 44 (92%) Student 2 (4%) Family 1 (2%) LE 0 (0%) Neighbor 0 (0%) MHP 0 (0%) HP 1 2%	Teacher 0 (0%) Student 0 (0%) Family 0 (0%) LE 0 (0%) Neighbor 1 (8%) MHP 12 (92%) HP 0 (0%)	Teacher 2 (18%) Student 1 (9%) Family 0 (0%) LE 8 (73%) Neighbor 0 (0%) MHP 0 (0%) HP 0 (0%)

Presence of Ideological Motivation	15 (21%)	8 (17%)	2 (15%)	5 (45%)
Group affiliated	3 (4%)	2 (4%)	0 (0%)	1 (9%)
Weapons	8 (11%)	6 (13%)	0 (0%)	2 (18%)
Initial violence risk	1.9 (0.8)	1.9 (0.7)	2.2 (0.8)	2.1 (0.9)
Initial suicide risk	1.8 (0.9)	1.8 (0.9)	2.0 (1.0)	1.9 (1.1)
Alcohol	7 (10%)	1 (2%)	5 (38%)	1 (9%)
Substance abuse	17 (24%)	6 (13%)	7 (53%)	4 (36%)
Family history (FH) of mental illness	19 (26%)	15 (31%)	3 (23%)	1 (9%)
FH of violence	16 (22%)	11 (23%)	3 (23%)	2 (18%)
Prior abuse/neglect	15 (21%)	10 (14%)	4 (17%)	1 (9%)
Bullying victim	29 (40%)	18 (38%)	7 (53%)	4 (36%)
Bullying perpetrator	16 (22%)	10 (21%)	4 (31%)	2 (18%)
Recent loss	4 (6%)	3 (6%)	1 (8%)	0 (0%)
Suicide attempt	16 (22%)	11 (23%)	3 (23%)	2 (18%)
Legal aid	6 (8%)	5 (10%)	1 (8%)	0 (0%)
Law enforcement	5 (7%)	4 (6%)	1 (8%)	0 (0%)

RESULTS

Violence and Suicide Risk Assessments and Change Scores (Hypothesis 1)

Regarding Hypothesis 1, (START clients will show diminished violence and suicide risk from initial to post-intervention assessment); initial and six-month violence and suicide risk were as follows:

Table 2. Violence and Suicide Ratings at Initial and Six-Month Assessment (N=72)

	Violence		Suicide	
	Initial	**Six-Month**	**Initial**	**Six-Month**
Low	23 (32%)	59 (88%)	35 (51%)	58 (87%)
Moderate	30 (42%)	6 (9%)	9 (13%)	9 (13%)
High	19 (26%)	2 (3%)	24 (35%)	0 (0%)

Regarding violence risk (low/moderate/high), 28 (41%) had no change, 22 (31%) low-risk clients remained low, 4 (6%) remained moderate, and 2 (3%) remained high; 26 (38%) decreased by 1 level; 2 (3%) decreased from high to moderate risk, and 24 (33%) from moderate to low risk; 14 (21%) decreased by 2 levels (from high to low violence risk).

Regarding suicide risk (low/moderate/high), 34 (53%) had no change, 32 (44%) remained low, and 2 (3%) remained moderate; 11 (17%) decreased by 1 level; 4 (6%) decreased from high to moderate and 7 (10%) from moderate to low; 19 (30%) decreased by 2 levels (from high to low suicidal risk).

Including only those clients that were initially moderate or high violence risk, then: 6 (13%) had no change, 26 (56%) decreased by 1 level, and 14 (30%) decreased by 2 levels.

Similarly, including only those clients that were initially moderate or high suicide risk, then: 2 (6%) had no change, 11 (34%) decreased by 1 level, and 19 (59%) decreased by 2 levels.

There were significant correlations between violence change, suicide change, initial risk, and initial suicide. In particular, the change in the level of risk of violence was directly correlated with the initial risk of violence. Similarly, the change in the level of risk of suicide was directly correlated with the initial risk of suicide. Change in suicide risk was moderately, directly correlated with change in violence risk. In contrast, the suicide risk score at Six-Month Assessment was not correlated with any of these other variables.

Table 3: Correlations of Risk and Risk Change Variables (N=72)						
	1	2	3	4	5	6
1. Initial violence risk	-					
2. Six-month violence risk	.23*	-				
3. Violence risk change	.84***	-.31**	-			
4. Initial suicide risk	.28**	-.17	.36***	-		
5. Six-month suicide risk	-.02	.17	-.12	.13	-	
6. Suicide risk change	.40***	-.09	.48***	.95***	-.03	-

Individual and Social Characteristics (Hypothesis 2)

Regarding Hypothesis 2, (Individual or social adversities and other sociocultural factors will moderate the impact of the START program on improvements in violence and suicide risk) on bi-variate analysis, greater decrease in violence risk was significantly associated with: a family history of violence, having an IEP, and receiving inpatient treatment. On bi-variate analyses, greater decrease in suicide risk was significantly associated with: males, no history of prior abuse/neglect, no family history of mental illness, no family history of substance abuse, bullying victim, and no psychiatric medications.

Table 4. Independent Variables Associated with Changes in Violence or Suicide Risk from Initial to Six-Month Assessment (N=72)	
Decrease in Violence Risk	**Decrease in Suicide Risk**
FH Violence* Inpatient treatment** IEP**	Male** No prior abuse/neglect** No FH mental illness* No FH Sub. Ab.* Bullying victim* No psych meds*

*.1<p **p<.05 ***p<.005

Ideology (Hypothesis 3)

Regarding Hypothesis 3, that START clients who had ideological involvement were more likely male, employed, living in group home, had a history of being a bullying perpetrator, and a lower initial suicide risk.

Table 5. Variables Elevated with Ideological Involvement
Bullying perpetrator*** Law enforcement source/reporter** Lower initial suicide risk** Male gender* Employed* Living in a group home*

*.1<p **p<.05 ***p<.005

Regression Models

Regarding Hypothesis 2, on regression analyses, higher decrease in violence risk was associated with being on an IEP, family history of alcoholism, no history of prior abuse, and no current abuse.

Regarding Hypothesis 2, on regression analyses, higher decrease in suicide risk was associated with the number of children in the house, substance abuse, and no family history of mental illness.

Table 7. Results of Multivariate Regressions of the Association of Violence Risk Outcomes Among START Clients (N=72)		
Significant Multivariate Associations	**Beta**	**P value**
Model #1: Greater decrease in violence risk		
IEP	-0.44	.06
Family history of alcohol	-0.69	.02
No history of prior abuse	0.54	.09
No current abuse	1.40	.06
$R^2 = .34$, $F(4, 34) = 4.32$, $p < .0062$		
Model #1: Greater decrease in suicide risk		
Number of children in the house	0.34	.004
Substance abuse	-.056	.008
No family history of mental illness	0.64	.004
$R^2 = .31$, $F(3, 31) = 4.63$, $p < .0087$		

Regarding Hypothesis 3, on logistic regression, the final model (#1) indicated that those involved with ideology, compared with those who were not, were more likely to be bullying perpetrators.

On logistic regression, the final model (#2) indicated that those who had weapons, compared with those who did not, were more likely to be bullying perpetrators.

Table 6. Results of Separate Multivariate Logistic Regressions*		
Significant Multivariate Associations	**OR**	**95% C.I.**
Model #1: Involved with ideology		
Bullying perpetrator	19.8	3.6, 108.9
$X^2 = 13.9$, $df = 1$, $p < .0002$, 63% concordant		
Model #2: Had weapons.		
Bullying perpetrator	10.7	1.6, 71.9
$X^2 = 6.4$, $df = 1$, $p < .01$, 56% concordant		

DISCUSSION

Who are START participants?

Most (2 of 3) clients were referred by schools, with the remainder referred by mental health professional or psychosocial settings, and law enforcement. Nearly half (4 of 10) were bullying victims or had prior trauma experiences and nearly ¼ were bullying perpetrators (either present or past). The majority (9 of 10) had a psychiatric diagnosis with half (5 of 10) having a mood disorder. Most had no group affiliation, no involvement with ideology or the internet, and no weapons.

What difference does ideology make?

A minority were involved with ideology (1 of 5) and they differed from the others in terms of being more likely: to be a (bullying perpetrator [highly significant]); (no Law Enforcement Source/Reporter and Lower Initial Suicide Risk [significant]); (Male Gender; Employed; Group Home [borderline significance]).

What is their initial violence and suicide risk?

The majority of clients have moderate to high levels of violence risk (~2 of 3) and suicide risk (~1 of 2).

Does their violence and suicide risk change with program participation?

START participants with initially moderate or high risk, had significant decreases in violence risk (86%) and suicide risk (93%).

What factors are directly associated with higher decreases in violence risk or suicide risk within six months?

Decrease in violence risk was associated with being on an IEP, family history of alcoholism, no history of prior abuse, and no current abuse. Higher decrease in suicide risk was associated with the number of children in the house, substance abuse, and no family history of mental illness.

LIMITATIONS

This chart review study had multiple limitations. One, it was limited by the type of data collected in the charts and by missing data, which could be due to persons not wanting to share information. Two, it was limited in its ability to test multiple other important theoretically-driven or policy-driven research questions. Three, because this was an uncontrolled evaluation, there is a possibility that improvement in violence and suicide risk scores represent some contribution from natural regression to the mean that can occur over time.

CONCLUSIONS

Nearly 9/10 participants with initial moderate or high risk experienced decreased violence risk, and more than 9/10 participants with initial moderate or high risk experienced decreased suicide risk within six months in the START program.

The high overlap between violence risk and psychiatric diagnoses among START clients likely reflects both the referral pathways from mental health service organizations and an underlying association of violence and suicide with mental health problems in a sub-set of persons.

This study identified some associations between individual and social characteristics and violence risk reduction. Further mixed methods research, about the factors that either were or were not associated with decreases in violence risk, suggests to better understand the relationships and possible implications for improving program practices.

Although threat assessment programs like START were not designed to focus on ideologically motivated violence, they may be able to do so.

Threat assessment programs can and should be evaluated. Programs should routinely collect metrics on violence and suicide risk, demographics, services received, behavioral outcomes, and family and social conditions.

Ongoing partnerships between threat assessment programs and academic researchers would facilitate program evaluation and the development of best practices and evidence-based intervention strategies.