ONLINE APPENDIX

Teen Options for Change (TOC): An Intervention for Adolescent Emergency Patients who Screen Positive for Suicide Risk

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Previous Studies Pertinent to Adolescent Suicide Risk Screening and Intervention in the Emergency Department

Given the tragedy of suicide and the substantial morbidity associated with suicidal behavior for an adolescent and his or her family, the National Strategy for Suicide Prevention[1] emphasizes the importance of developing effective intervention strategies for adolescents at risk for suicide. Previous research has documented the feasibility and potential utility of youth suicide risk screening in the medical emergency department.[2] Approximately one-third of adolescents utilize emergency departments each year,[3] and these settings are often characterized by significant wait times.[4] They offer a unique opportunity to assess unrecognized suicide risk and intervene in an effort to lower this risk.

Few studies have empirically examined emergency department interventions for adolescents at elevated risk for suicide, and these studies have enrolled adolescents with psychiatric chief complaints. Results include reductions in adolescent girls' self-reported suicidal ideation after a suicide attempt with a brief multi-component family

intervention,[5] and improved linkage to outpatient mental health treatment with a cognitive behavioral intervention.[6] Other interventions designed for adolescents presenting to the emergency department with chief complaints of possible suicide risk have reduced emergency visits[7] or improved treatment adherence,[8] but have not impacted other clinical outcomes. These studies support the feasibility of relatively brief interventions in the emergency department setting.

Several studies have found that supportive follow-up notes, delivered over a period of time following medical discharge, are associated with reductions in self-poisoning suicide attempts[9,10] and suicides,[11,12] although findings are mixed.[13] The impact of one follow-up note has not been studied; however, we include this strategy as part of the TOC intervention. Previous research has demonstrated positive relationships between social support for behavioral change and behavioral intention for such change.[14,15]

Total Sample of Adolescents Screened

A total of 526 adolescents seeking services from a medical emergency department in an urban area (65% female), ages 14-19 years (M = 17.3±1.69), consented to participate and completed the suicide risk screen (80% of eligible adolescents). Exclusion criteria were level one trauma and severe cognitive impairment. We found no age or gender differences between those who consented and refused participation. The racial/ethnic distribution of the total screening sample was as follows: 61% (n = 320) African American, 43% (n = 224) Caucasian, 5% (n = 27) American Indian or Alaska Native, 1% (n = 2) Native Hawaiian/Pacific Islander, 3% (n = 15) Hispanic/Latino, 1% (n = 3) Asian, and 3% (n = 17) Other. Participants could identify as multiple races.

Seventy-six of these adolescents (14%) screened positive for elevated suicide risk; however, 27 of these adolescents did not meet other study inclusion criteria due to a psychiatric chief complaint (n = 15), disposition of psychiatric hospitalization (n = 9), or unknown disposition (n = 3). We recruited adolescents with non-psychiatric chief complaints because adolescents with psychiatric chief complaints at participating emergency departments received suicide risk screening as part of customary care, in addition to a mental health "intervention" or referral. Our goal was to reach those youth who did not routinely receive such services. Those with a disposition of psychiatric hospitalization were excluded because TOC focused on encouraging youth to implement community-based action plans following the emergency department visit.

Detailed Descriptions of Study Measures

Suicidal Ideation. The Suicidal Ideation Questionnaire—Junior (SIQ-JR)[16] was used to assess suicidal ideation. The SIQ-JR is rated on a 7-point scale, ranging from "I never had this thought" to "Almost every day". Sample items include "I thought about telling people I plan to kill myself" and "I wished I were dead". The SIQ-JR has excellent test-retest reliability,[16] and has demonstrated predictive validity for suicide attempts in psychiatrically hospitalized adolescents.[17]

Depression. The Reynolds Adolescent Depression Scale-2: Short Form (RADS-2:SF)[18] was used to assess depression. Sample items include "I feel I am no good" and "I feel like nothing I do helps anymore." Items are rated on a 4-point Likert scale ranging from "Almost never" to "Most of the time". The RADS-2:SF has demonstrated acceptable reliability and validity.[19]

Alcohol Use. The Alcohol Use Disorders Identification Test (AUDIT)[20] was used to assess alcohol use. The AUDIT has 10 items, each scored on a 5-point scale from 0-4 that assesses the frequency and intensity of alcohol consumption. The AUDIT has been validated for use with adolescents in the emergency department[20] and has predictive validity comparable to, or exceeding, other alcohol screens.[21]

Hopelessness. The Beck Hopelessness Scale (BHS)[22] was used to assess hopelessness. The BHS is a 20-item true-false self-report questionnaire. Sample items include "My future seems dark to me" and "I can look forward to more good times than bad". The BHS has demonstrated strong reliability and validity in adolescent samples.[23]

Adherence of TOC Therapists with Motivational Interviewing Principles

We examined the adherence of TOC therapists with motivational interviewing principles by coding their audiotaped sessions with the Motivational Interviewing Treatment Integrity (MITI)[24] system. All interviews were coded in 20-minute intervals by a MITI-trained rater using the global MITI rating scales (i.e., Evocation, Collaboration, Autonomy, Direction, and Empathy). The mean scores for each scale (1-5 point scales with 5 as fully adherent) were as follows: Evocation ($M = 4.1 \pm 0.55$), Collaboration ($M = 4.2 \pm 0.49$), Autonomy ($M = 4.2 \pm 0.60$), Direction ($M = 4.2 \pm 0.42$), and Empathy ($M = 4.1 \pm 0.42$). These data indicate that interviewers were adherent across all scales with a mean score ≥ 4.[24] Inter-rater reliability was established by having a second MITI-trained rater independently code 10 sessions that were randomly selected from the larger group. Across the five global MITI rating scales, this resulted in an intra-class correlation coefficient of .73.

Online Appendix References

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Figure 1- CONSORT Diagram of Subject Participation