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Family-Based Preventive Interventions: Can the Onset of Suicide Ideation and Behavior Be Prevented?

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Abstract

Suicide is the 2nd leading cause of death for youth aged 10 to 24. Research informed prevention efforts have the opportunity to decrease risk for suicidal ideation and behavior before it is manifested. Indeed, there is a small body of research findings demonstrating both proximal and distal effects of preventive interventions delivered in childhood and adolescence on suicidal ideation and/or behavior. These efforts build off of other secondary analyses of prevention research that has demonstrated benefits for multiple types of youth outcomes. This supplement provides ‘proof of concept’ that family-based preventive interventions aimed at reducing a number of risk factors for suicide (e.g., substance use, externalizing and internalizing behavior) can prevent suicidal ideation and behaviors.

Introduction to Family-Based Preventive Interventions: Can the Onset of Suicide Ideation and Behavior Be Prevented?

Suicide was the second leading cause of death for youth ages 10 to 24 in 2014, resulting in 5,504 deaths (WISQARS, 2016). Many more young people think about suicide, and/or attempt suicide. According to the national Youth Risk Behavior Survey (YRBS), which reports on 9th through 12th grade students in public and private schools throughout the United States, 17% of the students seriously considered attempting suicide during the 12 months before the survey, 13.6% made a plan about how they would attempt suicide, 8.0% attempted suicide one or more times during the 12 months before the survey, and 2.7% attempted suicide that resulted in an injury, poisoning or overdose that had to be treated by a nurse or doctor (Centers for Disease Control and Prevention, 2013). Rates of youth suicide have not decreased in the past decade, with calls for early prevention efforts by the National Action Alliance for Suicide Prevention Research Prioritization Task Force (National Action Alliance for Suicide Prevention: Research Prioritization Task Force, 2014), as well as other public health reports (e.g., Sullivan, Annet, Simon et al., 2015). One of the aspirational goals identified in the research agenda set forth by the Research Prioritization Task Force is

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to “Prevent the emergence of suicidal behavior by developing and delivering the most effective prevention programs to build resilience and reduce risk in broad-based populations.” Prevention programs targeted to youth provide an opportunity to examine this goal.

There is a growing body of literature reporting on the long-term outcomes of studies of mental health and drug abuse preventive interventions delivered in childhood. Investigators are now following these youth into late adolescence and, in some cases, early adulthood. Indeed, there is a small body of findings demonstrating proximal (immediate) (Lynn, Acri, Goldstein, Bannon, Beharie, & McKay, 2014) and distal (long-term) (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2005; Kerr, DeGarmo, Leve, & Chamberlain, 2014; Wilcox et al., 2008) ‘cross-over’ effects (i.e., unanticipated beneficial effects) of drug abuse prevention interventions delivered in childhood and adolescence on suicidal ideation and/or behavior in childhood, adolescence and young adulthood. These effects have been found for both universal (Hawkins et al., 2005; Wilcox et al., 2008) and selective (Lynn et al., 2014; Kerr et al., 2014) levels of intervention. Findings from this research demonstrate that (1) intervening early in development, targeting proximal risk and protective factors can have an impact on a broad array of distal outcomes; (2) preventive interventions can have effects on outcomes not specifically targeted by the intervention (cross-over effects); and (3) preventive interventions typically have the strongest impact on those at greatest risk (Reider, Robertson, & Sims, 2014; Robertson, Sims, & Reider, 2016).

Because many problem behaviors in youth have common antecedents, it is not surprising that intervening on risk factors common for drug abuse and mental health problems can have effects on a wide array of associated outcomes. This concept of cross-over effects is gaining increasing attention in the literature. A 2014 Supplemental Issue of *Prevention Science* featured papers exploring the question of whether intervention efforts early in childhood, aimed at preventing or delaying substance use, can have long-term and cross-over effects on preventing health-risking sexual behaviors (HRSB) related to HIV/AIDS. A summary of the findings across this range of studies concluded that “despite the fact that these interventions were delivered prior to adolescence and did not focus on sexual behaviors or HRSB, there are results to support the conclusion that interventions delivered in childhood can prevent risk behaviors associated with the acquisition of HIV infection (Reider, Robertson, & Sims, 2014, p. S4).” In particular, childhood interventions focused on aspects of family functioning (e.g., family communication, parental warmth, consistency, and monitoring) had significant effects on HRSB related to HIV/AIDS during adolescence and adulthood.

There is reason to believe that substance abuse and mental health preventive interventions delivered in childhood could impact onset of suicidal ideation and behaviors, and demonstrate long-term effects into adolescence and young adulthood. As part of the suicide research prioritization efforts, Wyman (2014) argued that: 1) childhood and early adolescence are important periods for preventing the onset of suicidal behaviors, 2) scientific evidence suggests that the potential for large population reductions in suicide may be as great or greater for approaches that target more common, lower-risk conditions (e.g., substance abuse) compared to rarer, high-risk conditions, and 3) interventions that modify multiple, rather than single risk factors have the potential for largest population impact on

reducing suicide rates. Interventions that strengthen self-regulation of behavior and emotions in children, enhance coping with stress, increase youth-adult connections, and reduce substance use and bullying, are viable targets that are likely to reduce later suicidal behavior. Indeed, these targets are the focus of many preventive interventions that incorporate developmental theory.

This supplement expands the knowledge base on prevention of suicidal ideation and behaviors in childhood, adolescence and early adulthood by examining the short- and long-term effects of four family-based preventive interventions delivered during childhood. The questions that inspired this supplement are the following:

- 1) Do family-based drug abuse and mental health preventive interventions delivered in childhood have positive effects on concurrent suicide ideation and behaviors? For those studies with long-term data, do these effects occur in adolescence and young adulthood?
- 2) If an intervention demonstrates an impact on suicide ideation and/or behavior, what is the nature of the effect (e.g., direct, indirect effect), and for whom (e.g., gender) and under what conditions (e.g., level of risk and level of intervention) are these effects found?
- 3) What are the mechanisms of action of these childhood interventions on proximal and distal mediators that protect children, adolescents and young adults at risk for suicidal ideations and behaviors?

To answer these questions, researchers associated with four family-based prevention intervention trials delivered in childhood that had data related to suicidal ideation and behaviors were invited to submit papers (Connell, McKillop, & Dishion, 2016; Gewirtz, DeGarmo, & Zamir, 2016; Sandler, Tein, Wolchik, & Ayers, 2016; Vidot, Huang, Poma, Estrada, Lee & Prado, 2016; *this issue*). The studies varied as to stage of development when the intervention was administered (kindergarten through high school), level of intervention (e.g., universal, selective, tiered), ethnicity of the sample (Caucasian, Hispanic, other) and age at follow-up. Each paper proposes their theory of why their preventive intervention approach affected suicide ideation and behavior, contributing to the etiologic understanding of suicide risk. This body of work demonstrates that interventions delivered early in life can change children's trajectories in a positive manner, on a wide array of behaviors, including suicidal ideation and behaviors, and in some cases into adolescence and adulthood.

A final commentary on these papers by David Brent concludes that these family resiliency building preventive interventions do indeed have beneficial, often long-term effects on suicide ideation and behavior. The commentary places these findings in the context of current youth suicide prevention efforts, suggesting that cost benefit analyses of various efforts is likely to find early prevention efforts with multiple, beneficial outcomes—many of which are durable. It is this exact question that many suicide prevention advocates have raised: What community prevention efforts hold promise for efficiently reducing suicide risk in the long run?

As noted by each of the study authors, none of the studies was designed to examine whether family-based preventive interventions reduce suicidal ideation and behaviors in youth, in the short- or long-term. While some of the authors had previously analyzed their data to look at depression outcomes, due to measurement limitations they had not considered examining outcomes in the domains of suicide ideation and behaviors. While these measurement limitations still exist, there is knowledge to be gained in examining the data for potential signals and possible benefit of early intervention for later suicidal behavior. As with previous efforts to reanalyze prevention trials for later cross-over effects (Reider et al., 2014), the impact on suicide ideation and behavior may have varied because of the nature of the sample (selected for risk versus a universal approach), age range, and power to detect small but important differences (i.e., sample size). The absence of strong effects should not be interpreted to mean that intervening early is not effective. But, rather, a weak effect should be seen as a signal for later benefit worth pursuing in future studies.

A goal of publishing this special supplement is to inspire other researchers to re-analyze their prevention trials to examine possible benefits for reducing suicide risk. While these papers represent a compelling start, efforts in this area would be strengthened by integrating better measures of suicidal ideation and behavior in preventive interventions across development, levels of intervention (universal, selective, indicated, tiered), and in different contexts (e.g., family, school, community, systems level). Because suicidal ideation and suicidal behaviors are relatively low base rate events, one opportunity for future research is to pool data across prevention studies in order to increase the statistical power available to examine the impact of prevention interventions on these behaviors. Pooling data across studies would also allow for analyses of specific populations of interest (e.g., sexual minority youth, American Indian youth).

The authors of the studies included here have invested decades of effort to obtain critical long-term outcomes and were willing to explore proximal- and distal- cross over effects of their interventions. Their efforts have resulted in this unprecedented collection of studies that show promise for preventing the onset of suicide ideation and attempts. We hope the readers of this supplement are inspired by these intervention approaches that hold promise for building positive trajectories and create opportunities to prevent negative outcomes such as suicide ideation and behavior.

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