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Interventions for Suicidal Youth: A Review of the Literature and Developmental Considerations

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Abstract

Suicidal behavior is developmentally mediated, but the degree to which interventions for suicidal behaviors have been developmentally tailored has varied widely. Published controlled studies of psychosocial treatment interventions for reducing adolescent suicidal behavior are reviewed, with a particular emphasis on the developmental nuances of these interventions. In addition, developmental considerations important in the treatment of suicidal adolescents are discussed. There are insufficient data available from controlled trials to recommend one intervention over another for the treatment of suicidal youth, but interventions that are sensitive to the multiple developmental contexts have potential for greater effectiveness in reducing adolescent suicidal behavior.

Suicidal behavior is clearly developmentally mediated. For example, according to the Centers for Disease Control and Prevention (CDC) data for 1999 to 2005, there were no suicides among children ages 4 and younger (Centers for Disease Control and Prevention, 2008a). The rate of suicide for children ages 5 to 9 was quite low, 0.02 deaths per 100,000. In contrast, the rate of death by suicide for 10- to 14-year-olds, 15- to 19-year-olds, and 20- to 24-year-olds was 1.28, 7.79, and 12.27 per 100,000, respectively (Centers for Disease Control and Prevention, 2008a). The rates were higher through adulthood (e.g., 13.76 and 14.61 per 100,000 for 25- to 44-, and 45- to 64-year-olds, respectively) and were particularly high for men over the age of 65 (28.64 and 4.03 per 100,000 for 65-to 84-year-old men and women, and 50.32 and 3.76 per 100,000 for 85+ year-old men and women, respectively; CDC, 2008a). Likewise, rates of suicide attempts change as a function of age. In studies of both clinical and community-based samples, youth show increased rates of suicide attempts from early-to mid-adolescence (Angle, O'Brien, & McIntire, 1983; Kovacs, Goldston, & Gatsonis, 1993; Lewinsohn, Rohde, Seeley, & Baldwin, 2001). Results of at least one epidemiologic study have suggested that rates of suicide attempts may then decline after adolescence, especially among females (Lewinsohn et al., 2001). Among older adults, the rates of nonlethal suicide attempts to death by suicide are much lower than they are for younger populations (Conwell & Thompson, 2008; Friedmann & Kohn, 2008).

Suicidal behaviors may have different characteristics and pose different burdens as individuals develop across the lifespan. Nonetheless, nonlethal suicidal behavior in adolescence is a particular public health problem because of the high rates of suicide attempts during this developmental period (Centers for Disease Control and Prevention, 2008b), and because nonlethal suicidal behavior is one of the primary reasons for child psychiatric emergency room

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visits and hospitalizations (Goldstein, Frosch, Davarya, & Leaf, 2008; Peterson, Zhang, Saint Lucia, King, & Lewis, 1996) and one of the best predictors of future attempts and deaths by suicide (e.g., Joiner et al., 2005). In addition, despite the fact that deaths by suicide are relatively low during this period compared to the rates for older men in particular, suicide is nonetheless the third leading cause of death in this age group (Centers for Disease Control and Prevention, 2008a). While an extensive discussion of the developmental nuances and considerations for interventions for suicidal behavior across the lifespan is beyond the scope of the current review and paper, it could be argued that interventions for mental health problems at different points in the lifespan should be developmentally tailored, and yet they often are not. For example, interventions for suicidal behaviors and risk among elders need to consider the fact that older individuals, especially older males, do not as readily disclose mental health difficulties or seek mental health services relative to individuals at other ages (Conwell & Thompson, 2008). It particularly is the case that interventions for the mental health problems of youths, including suicidality, are not developmentally tailored (Weisz & Hawley, 2002). Rather, it is often the case that adolescents are treated with variations of interventions originally developed for adults (Weisz & Hawley, 2002).

Developmentally, adolescents differ from younger youth and from adults in ways that may increase their risk for suicidal behaviors. For example, adolescents may be more impulsive and may have a different time perspective than adults, and may focus more on proximal consequences of behavior than more distant goals when making decisions (Nurmi, 1991; Reyna & Farley, 2006). Suicidal behavior of adolescents also occurs in different contexts than the suicidal behavior of older individuals. For example, adolescent suicidal behavior often occurs in the context of family conflict, including strivings for autonomy, in the context of academic and disciplinary difficulties, or as a consequence of disruptions in peer relationships that are increasing in importance as youth get older.

In sum, suicidal behavior is increasingly prevalent during adolescence and needs to be considered in a developmental context. Likewise, intervention efforts for adolescent suicidal behavior need to be appropriate to the developmental level, and to the peer, family, and school contexts within which suicidal behavior of adolescents occurs. The purposes of this paper are therefore twofold. First, we review the literature regarding controlled studies of psychosocial treatment interventions for reducing or preventing the recurrence of adolescent suicidal behavior. Although there have been other reviews of some of the studies described (e.g., Macgowan, 2004), this particular review is focused primarily on the developmental nuances of these interventions. Second, for future intervention development and refinement, we discuss developmental considerations important in the treatment of suicidal adolescents.

METHODS

Treatment studies in which youth suicidal thoughts, suicide attempts, combined suicidal and nonsuicidal self-harm behaviors, or participation in treatment for suicidal behaviors were identified via a search of the PSYCHINFO and MEDLINE data bases for articles published through July, 2008. For inclusion in the review, studies did not need to provide documentation of physical injuries associated with self-injury. This decision was made because recommended operational definitions of suicide attempts emphasize intent but do not require the presence of injury (O'Carroll et al., 1996), and because medical lethality and stated intent of suicidal behaviors have not always been consistently related across studies among youths (Goldston, 2003). To keep the focus of this review on youths, we chose not to include studies with combined samples of adults and older adolescents, or studies of college students, whom we considered to be young adults. Only studies for which comparison group data were available were included. In the Results section, we first review the developmental nuances of these interventions including study modifications or design characteristics that were based on

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assumptions about the "developmental level" of youths, or which considered the environmental context—family, peer, school—of youth suicidal behavior. We then review evidence regarding the efficacy of these interventions.

RESULTS

Overview of Intervention Research for Suicidal Youth

Studies evaluating the impact of interventions for suicidal youth can broadly be divided into two groups—those in which suicidal youth (and families) are randomly assigned to the intervention under study or a comparison group, and those in which the assignment to experimental or comparison condition is not random (quasi-experimental studies). The descriptions of participants and design of studies are noted in Table 1.

Quasi-experimental Studies—Five quasi-experimental studies examining the utility of interventions for suicidal youth were located. Nonrandom assignment to experimental and comparison conditions in these studies was based on convenience factors such as time of presentation and bed availability in three studies (Greenfield, Larson, Hechtman, Rousseau, & Platt, 2002; Katz, Cox, Gunasekara, & Miller, 2004; Rotheram-Borus et al., 1996; Rotheram-Borus, Piacentini, Cantwell, Belin, & Song, 2000), on site location in one study (Deykin, Hsieh, Joshi, & McNamara, 1986), and on symptom presentation in another study (Rathus & Miller, 2002).

Three of the studies (Deykin et al., 1986; Greenfield et al., 2002; Rotheram-Borus et al., 1996, 2000) focused on interventions that were developed to foster help-seeking and/or to improve follow-up with aftercare and rapidity with which aftercare services are provided. These efforts were predicated in part by the observation that suicidal youth tend to keep fewer outpatient aftercare appointments than nonsuicidal youth, and tend to drop out of treatment earlier than other youth receiving psychiatric treatment (Trautman, Stewart, & Morishima, 1993). It is not clear whether adolescents actually drop out of treatment at higher rates than adults, but it has been assumed by some that many adolescents do not have the tolerance for prolonged therapy (Rathus & Miller, 2002) or the continued capacity to focus on "verbalization or examination of feelings" (p. 90) in therapy (Deykin et al., 1986).

In the first of these studies (Rotheram-Borus et al., 1996, 2000), female suicide attempters presenting in the emergency department were assigned to a motivational-educational emergency room (ED) intervention or to standard emergency room care. The brief ED intervention consisted of education to staff and a videotaped presentation for families describing the dangers of suicidal behavior and benefits of treatment, and a family therapy session. The ED intervention was designed to engage the family and to initiate steps to mend the parent-child relationship. In the second study (Greenfield et al., 2002), youth in the ED were assigned to a rapid-response outpatient team to facilitate post-ED care, or were treated as they normally would (e.g., hospitalized, seen by the psychiatrist on call in outpatient treatment, or referred to providers in the community). The rapid response team contacted families immediately after ED visits to arrange aftercare service provision. The third study evaluated the relative effectiveness of a two-part intervention for youth presenting in the ED compared to treatment as usual (Deykin et al., 1986). In this program, community out-reach social workers directly provided services such as general emotional support, facilitation of follow-through with aftercare, and advocacy for suicidal adolescents with family, schools, or the legal system. Direct services did not focus on discussion of feelings because of adolescents' presumed difficulties in participating in such activities. In recognition of the context within which adolescent suicidal behavior occurs, both adult providers of the services (e.g., teachers, court personnel) and peer leaders in schools were provided education about depression and suicidality.

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The ED intervention by Rotheram-Borus et al. (1996, 2000) was associated with an increase in therapy appointments attended by adolescents, and a decrease in suicidal ideation relative to routine care at the end of treatment, but no significant differences in suicidal ideation or attempts at an 18-month follow-up. The supportive and educational intervention described by Deykin and colleagues (1986) similarly did not result in differences in presentations in the ED for suicidal ideation, suicide attempts, life-threatening behavior, or self-harm without suicidal intent, but did result in increases in compliance with medical recommendations. The rapid response intervention of Greenfield et al. (2002) resulted in shorter time to aftercare and lower rates of hospitalization, but no differences on a scale assessing a spectrum of suicidal behavior from suicide ideation to serious suicide attempts.

The last two of the quasi-experimental studies focused on adaptations of dialectical behavior therapy (DBT; Katz et al., 2004; Rathus & Miller, 2002). DBT is a variation of individual and group cognitive-behavioral therapy that has been shown to be effective in reducing self-harm behaviors for adults with borderline personality disorder (Linehan, 1993; Linehan et al., 2006). In both of the studies with youth, adaptations were made to DBT to increase its relevance for adolescents. In the Rathus and Miller (2002) study, parents were involved in the skills training group so they could serve as coaches, family members were involved in the individual therapy sessions when family issues were perceived as paramount, efforts were made to target dysfunctional or invalidating family environments, and the length of therapy was reduced and skills-training simplified relative to what is provided to adults. Secondary treatment targets also focused on developmental themes such as the balance between adolescent strivings for self-determination versus parental need for monitoring and discipline, and issues regarding individuation versus dependence on the family (Rathus & Miller, 2000). Similar changes were made in the Katz et al. (2004) study. However, because these youth were psychiatrically hospitalized, a DBT inpatient milieu was also developed to foster further generalization of skills.

The outpatient DBT of Rathus and Miller (2002) resulted in lower rates of hospitalization and higher rates of treatment completion, but no group differences in clinician-recorded suicide attempts. The inpatient DBT intervention resulted in fewer behavioral incidents on the inpatient unit, but no significant differences in severity of depression, severity of suicidal thoughts, or number of parasuicidal (suicidal and nonsuicidal self harm behavior; Katz et al., 2004).

Randomized Controlled Trial Studies—Seven randomized controlled trials evaluated interventions for suicidal adolescents. Two of the studies (Harrington et al., 1998; Huey et al., 2004) examined in-home family interventions. Other studies included a social support intervention (King et al., 2006), cognitive-behavioral treatment (Donaldson, Spirito, & Esposito-Smythers, 2005), and group therapy for suicidal adolescents (Wood, Trainor, Rothwell, Moore, & Harrington, 2001). Two studies focused on service utilization for suicidal youth (Cotgrove, Zirinsky Black, & Weston, 1995; Spirito, Boergers, Donaldson, Bishop, & Lewander, 2002).

In the first randomized controlled study (Harrington et al., 1998), the effectiveness of an in-home family intervention in addition to routine care for children and adolescents who had attempted suicide via overdose was evaluated. The intervention (one assessment and four treatment sessions) was brief in recognition of the risk of early treatment drop-out or discontinuation of treatment by suicidal adolescents (Trautman et al., 1993), and home-based, because of the frequently observed relationship between adolescent suicidal behaviors and family difficulties. Sessions included a focus on family problem-solving and communication and “the developmental issues of adolescence and their impact on the family” (p. 513). In the second family study, Huey and colleagues (2004) evaluated the efficacy of a multisystemic family therapy intervention (MST) compared to psychiatric hospitalization in reducing suicide

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attempts among youth referred for emergency psychiatric hospitalization. MST is a home-based intervention developed for families of youth with behavioral and emotional difficulties that emphasizes intervention at the point of performance (e.g., in the school, home, or community). The intervention utilizes evidence-based (often behavioral) interventions to improve parenting ability and communication with youths, to promote prosocial activity among youths, and to address systemic factors that may be contributing to difficulties.

The in-home family intervention of Harrington et al. (1998) did not result in overall treatment group differences in severity of suicidal ideation. However, subgroup analyses did reveal that there were significant reductions in suicidal thoughts among youth who were not depressed. MST resulted in a greater decrease in the occurrence of youth-reported suicide attempts over the one-year follow-up than hospitalization (Huey et al., 2004). However, the youth assigned to MST also had higher rates of attempts at study entry, and the rates of attempts at one year were comparable for youth with and without MST. There were no differences in parent-reports of self-harm behavior or suicidal ideation.

Donaldson and colleagues (2005) compared a skills-based (cognitive-behavioral) intervention to supportive therapy for suicidal adolescents. The skills-based intervention emphasized problem solving and affect management skills and routinely included parents in providing collateral information at each treatment session. Two optional family sessions were allowed in the treatment protocol in situations where the family difficulties appeared to be interfering with treatment progress. The treatment was kept brief because of rates of treatment drop-out by suicidal youths. The intervention did not result in differences in severity of suicide ideation or in rates of suicide attempts over the follow-up.

King and colleagues (2006) examined the effectiveness of assistance provided by a Youth-Nominated Support Team (YST) in addition to routine care for formerly hospitalized adolescents. Weekly contact between the youth and the YST members nominated by the youth was encouraged, and psychoeducation and training was provided to the support team. In 62% of cases, a parent was nominated as one of the support persons. However, the YST approach also recognized that outside-the-family supports (e.g., individuals in the schools, extended family, or religious community) can be useful for suicidal adolescents because some parents of suicidal teenagers have significant difficulties of their own that interfere with their ability to be supportive of youths, and because teenagers begin to reach beyond their immediate family for support as they grow older. The YST intervention did not result in significantly reduced suicide attempts, but girls in the YST group showed greater reductions in severity of suicidal ideation and functional impairment relative to those assigned to TAU.

Wood and colleagues (2001) examined the combination of “developmental group psychotherapy” and routine care for adolescents who had engaged in suicidal and non-suicidal self harm behavior at least twice in the year prior to treatment referral. The intervention was designed to be sensitive to the developmental needs of adolescents and included approaches from cognitive-behavioral therapy, dialectical behavior therapy, and psychodynamic group psychotherapy. The intervention consisted of an initial assessment, six *acute* group sessions, and a *long-term group* therapy continuing until the youth considered themselves ready to leave. The acute group sessions were focused on six main themes considered to be relevant to self-harming adolescents including “relationships, school problems and peer relationships, family problems, anger management, depression and self-harm, and hopelessness and feelings about the future” (p. 1247). The long term group primarily focused on group processes. Although no differences were found between groups in severity of depression and severity of suicidal thoughts, the group therapy intervention resulted in significantly reduced rates of repeat occurrences of combined suicidal and nonsuicidal self-harm behavior (6% vs. 32%) by the end of the study.

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Two studies evaluated aspects of service utilization in the context of interventions for suicidal youth (Cotgrove et al., 1995; Spirito et al., 2002). Cotgrove and colleagues (1995) examined the impact of providing youth who had been hospitalized with suicide attempts a token allowing readmission to the hospital on demand. The token/hospitalization intervention was developed as an alternative way to escape temporarily from their environment and accordingly, the pressures from the family or home circumstances that might become intolerable. The intervention also recognized the need for youth to be active participants and decision makers in their psychiatric treatment and care. There were no significant differences between groups in suicide attempts recorded in treatment records, although a trend was apparent for lower rate of attempts in the token condition compared to routine care (6% reattempts vs. 12%).

In the second service utilization study, Spirito and colleagues (2002) examined the effectiveness of a compliance enhancement and problem-solving intervention developed to increase adherence to outpatient treatment. In the ED intervention, clinicians fostered appropriate expectations for treatment among both parents and adolescents, reviewed or identified factors that might interfere with treatment adherence, and elicited a contract for attendance for at least four outpatient sessions. At three months, the ED intervention did not result in an overall change in number of treatment sessions attended. However, after controlling for barriers to treatment, the intervention was associated with increased treatment attendance. The effects of the intervention on suicidal behavior were not assessed.

DISCUSSION

Despite public health concern, there are insufficient data available from controlled trials to recommend one intervention over another for the treatment of suicidal youths. To date, however, it appears that interventions for suicidal youth have been in general more successful at affecting aspects of service utilization and delivery (e.g., compliance with medical recommendations, aftercare utilization, reduced hospitalization, decreased time to outpatient appointments) than in reducing rates of suicide attempts per se. That observation notwithstanding, most studies have focused on suicidal youth with heterogeneous clinical presentations, and have been underpowered to detect differences in low base rate outcomes such as suicide attempts.

Mirroring the heterogeneity in clinical presentations of youths, there were marked differences in how outcomes were defined, making it difficult to draw inferences across studies (O'Carroll et al., 1996). For example, outcomes ranged from emergency room admissions for suicidal thoughts and suicidal, life-threatening, or nonsuicidal self-injurious behaviors (Deykin et al., 1986), to the number of suicidal and nonsuicidal self-harm behaviors combined (Katz et al., 2004; Wood et al., 2001), to severity of suicide ideation only (Harrington et al., 1998), to both suicide attempts (operationally defined with at least some intent to die) and severity of suicidal ideation (Donaldson et al., 2005; King et al., 2006; Rotheram-Borus et al., 2000). This diversity of defined outcomes of interest can lead to markedly different inferences both about the prevalence rates of suicide-related behaviors (e.g., Meehan, Lamb, Saltzman, & O'Carroll, 2002) and effectiveness of intervention approaches in reducing these rates or the severity of suicidal outcomes.

Weisz and Hawley (2002) have highlighted the importance of creating developmentally appropriate interventions for adolescents with emotional and behavioral problems. The developmental features in the treatment studies reviewed range from involvement of family or efforts to engage families in the treatment process, to the length of treatment itself, to in-home interventions so that youth can be treated in their natural environments, to incorporation of developmental themes in group and individual therapy. The majority of the interventions attended to individual psychological needs of teenagers by providing support and/or skills

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training, although it appears that few interventions have focused on the motivation of teenagers to participate in treatment, and modifications made for the cognitive level of adolescents are often not described. In addition, most interventions included family involvement or intervention, although the degree of family involvement in treatment protocols varied dramatically. Although details of interventions are often not well-described, it appears that it has been less common for interventions to explicitly address issues with peers, or to include some attention to the school environment or the school-based setting.

It remains an empirical question as to whether developmental modifications in treatment approach or considerations of developmental context in interventions are directly related to increased effectiveness. Weisz and Hawley (2002), however, have argued that developmentally appropriate therapeutic approaches for adolescents are important for treatment effectiveness because risk and resilience factors, as well as the nature and context of dysfunction, differ in adolescence relative to other developmental periods. The lack of compelling data regarding the relative effectiveness or efficacy of youth suicide interventions raises questions about whether developmental considerations in most interventions to date are adequate. Certainly, developmental appropriateness of interventions may not be sufficient for reducing suicidality, but developmental sensitivity or appropriateness may be an important factor related to increased effectiveness, sustainability, and generalizability of positive therapeutic changes, as well as treatment engagement. In the section that follows, we discuss developmental considerations in interventions for suicidal youths, and suggest future directions for research.

Developmental Trajectories

Most interventions that have been developed for suicidal teenagers have not focused on differences among suicidal youths, but rather have been predicated on the notion that a single approach might be useful for all such youths. Nonetheless, adolescent suicide attempters are a heterogeneous group (Esposito, Spirito, Boergers, & Donaldson, 2003; Goldston et al., 1998; Mandell, Walrath, & Goldston, 2006). The importance of considering the differences among suicidal youth is underscored by patterns of differential response to interventions. For example, in Harrington et al. (1998), youth without depressive disorders showed greater reductions in suicidal thoughts following an in-home family-based intervention relative to routine care. Additionally, in King et al. (2006), girls had greater reductions in suicidal thoughts than boys in response to an adjunctive social support intervention relative to treatment as usual.

Different developmental trajectories also are evident in patterns of suicidal behavior over time among youths. Some youth attempt suicide only once and never think seriously about suicide again. Other youth appear to be more chronically suicidal with persistent morbid ideation and repeated suicide attempts. By definition, youth with different histories of suicidal thoughts and behaviors have different developmental trajectories, and by implication, they likely also have many differences in clinical presentation and history (Esposito et al., 2003; Goldston et al., 1998; Mandell et al., 2006). Other than the Wood et al. (2001) study for youth with repeat self-harm behavior, most interventions have not been tailored for youth with different histories of suicidal behaviors. Different interventions may be needed for youth at greater risk for recurrent suicidal behavior than for youth whose suicidal behavior did not occur in the context of multiple and persistent risk factors.

Conner and Goldston (2007) have suggested that some youth may evidence traits such as impulsivity and aggression that put them at higher risk for developmental failures such as difficulties in interpersonal relationships, school problems, and legal difficulties. Such developmental failures may have a cascading effect wherein they set the stage for subsequent difficulties, increase the likelihood of distal risk factors for suicide such as depression and substance use, or even serve as proximal risk factors or triggers for suicidal behavior. To reduce the likelihood of suicidal behavior, interventions that target the pattern of difficulties that have

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emerged over time, and/or try to reduce the likelihood of developmental failures may be useful in reducing recurrent suicidal behavior. In this regard, multisystemic family therapy is an intervention that explicitly focuses on multiple areas of difficulties and the contexts vrithin which behavioral and emotional problems, including suicidal behavior occur (Huey et al., 2004).

Furthermore, most clinicians would readily admit that working with a suicidal 13-year-old is usually a considerably different task than working with a suicidal 19-year-old. However, most interventions have not explicitly acknowledged developmental differences or different levels of maturity, or the different developmental milestones faced by youth at different ages. As such, it is not clear if interventions developed to prevent or deter suicidal behavior among adolescents are always appropriate for use across the entire age span of adolescence.

Relapse Prevention in a Developmental Context

The goals of interventions for suicidal adolescents can be broadly conceived of as reducing current distress (or resolving a current crisis) and preventing episodes of future suicidal behaviors. To the extent that interventions focus on reducing future suicidal behaviors, they are in essence relapse prevention interventions (Esposito-Smythers & Goldston, 2008). For example, the YST intervention (King et al., 2006) is designed to prevent a recurrence of suicidality after hospitalization via the provision of support and encouragement of adherence to treatment. Nonetheless, it is striking that no interventions for suicidal adolescents have been explicitly framed in the language of established relapse prevention approaches for other problems such as alcohol and substance abuse (e.g., Witkiewitz & Marlatt, 2004).

Developmentally, an implication of a relapse prevention approach is that experience with a specific behavior and the outcomes of the behavior need to be taken into account when planning for the future. For example, in therapy, it often is useful for adolescents to focus on identifying triggers of suicidal thoughts or behavior so they can plan how they will cope more effectively with such situations in the future. The treatments that included a focus on problem-solving skills (Donaldson et al., 2005; Harrington et al, 1998; Katz et al., 2004; Radius & Miller, 2002; Wood et al, 2001) may facilitate the ability to identify high-risk situations and consideration of behavioral alternatives to suicidal behaviors when youth are faced with difficult or upsetting situations.

Nonetheless, learning is often context-dependent. As such, skills learned when patients are not acutely distressed or suicidal may not generalize to those situations when they are more distressed or at higher risk. For this reason, cognitive therapy approaches developed for adults (Berk, Henriques, Warman, Brown, & Beck, 2004; Brown et al., 2005), but also used with adolescents in the recently completed Treatment of Adolescent Suicide Attempters study (Stanley, 2007) have included exposure tasks to facilitate relapse prevention. In such tasks, patients are asked to reimagine the situations that culminated in their suicide attempts, and then to describe, or imagine how they might deal with such situations differently to avoid suicidality. Such exposures, which could also occur via role playing, might be especially useful for teenagers because they present more “concrete” or specific situations to discuss than more abstract discussions of how to cope with difficulties.

Relapse prevention in the framework of Marlatt and Donovan (2005) is a self-control model. However, younger adolescents in particular often do not have appreciable autonomy. Indeed, at these ages and younger, there is a degree of role captivity (Pearlin, 1983) in which there may be little opportunity to escape sources of distress, particularly when those stresses are associated with family dynamics or family systems issues (Haggerty, Sherrod, Garmezy, & Rutter, 1994). Hence, efforts at fostering self-control, while meshing with adolescents’ straggle for autonomy, need to be tempered with the reality that these youth do not have control over many

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aspects of their lives. A resulting challenge of therapy is to identify opportunities for enhancing self-esteem and self-control given these constraints. The green card intervention of Cotgrove et al. (1995) provided adolescents a degree of control over rehospitalization, just as the YST intervention provided adolescents with control over the intervention by allowing them to nominate social supports (King et al., 2006). In addition to control over the therapeutic environment, future exploration in intervention development should address ways of establishing or reinforcing adolescents' sense of control and decision making over other aspects of their environment that are appropriate to their developmental level.

Need for Engagement

Suicidal individuals commonly experience ambivalence about participation in treatment and discussions of suicidal behavior. The Rotheram-Borus et al. (2000) and Spirito et al. (2002) studies highlight the potential for brief interventions (e.g., that address mending of the parent-child relationships, or the importance of aftercare, or helping families problem-solve barriers to care) to impact or increase treatment adherence. Nevertheless, these interventions did not specifically address the motivational issues of adolescents that are often associated with treatment drop out. There are a variety of reasons that suicidal adolescents drop out of therapy prematurely. For example, they may experience shame or embarrassment associated with participating in treatment, may have a desire to put the suicidal crisis behind them, may be uncomfortable discussing past suicidal crises or prevention of future difficulties, or may simply believe that a suicidal crisis cannot possibly recur (Goldston, 2003). From a developmental perspective, adolescents may not want to be in therapy because participation underscores the fact that they are different from their peers. In addition, adolescents may fear the reactions of peers if they find out about the attempt. Furthermore, teenagers may be uncomfortable with parental involvement in treatment, particularly when there is conflict between parent and teen or the teen does not want to discuss matters with parents.

Parents likewise may not want their youth to continue in therapy because it implies that their adolescent has a problem, or they may question the necessity of adolescents continuing in treatment after the immediate crisis is over. Parents may reinforce tendencies toward dropping out of therapy when they do not acknowledge the seriousness of what has happened (e.g., labeling the behavior as not serious and/or as manipulative), when they evidence behaviors consistent with shame such as trying to keep the incident a secret, or when their schedules or transportation difficulties make it difficult to consistently bring adolescents to treatment sessions. Therefore, both suicidal adolescents and their parents or guardians need to be engaged in or motivated by the treatment process.

In the treatment of adolescent alcohol and substance use behaviors, brief motivational enhancement therapy approaches have been shown to affect readiness to change and commitment to participation in treatment (Monti, Barnett, O'Leary & Colby, 2001). Motivational approaches may be well-suited for suicidal adolescents because of the reflective and nonconfrontational stances of therapists which provide validation for adolescents' feelings, but underscore adolescents' sense of control over the process. Moreover, such approaches might help resolve ambivalence regarding the need to be in treatment or the need to make changes in the life circumstances in which the suicide attempt occurred, and may be useful in eliciting directions for treatment directly from the adolescent, and thus, more effectively establishing commitment to change. Motivational approaches also may be useful in increasing the likelihood of follow-through in practicing skills or participating in therapeutic endeavors between and following therapy sessions.

In this regard, in a recent analysis of process variables from a randomized controlled trial of cognitive behavior therapy and nondirective supportive therapy for depressed and suicidal teens (Donaldson et al., 2005), Karver and colleages (2008) found that there was a strong

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relationship between therapist alliance with the adolescent and adolescent involvement in treatments. There was a trend for client involvement in treatment, in turn, to be related to the outcome of level of depressive symptoms in CBT but not the nondirective supportive therapy. Variables such as lack of response to or validation of the youths' expression of emotion, in turn, were related to therapist alliance. Although the results of this study should be interpreted with caution given the small sample size, the findings highlight the importance of the therapist-client relationship in maintaining motivation and involvement in treatment, and the need to be especially sensitive to the emotional state of adolescents who have made suicide attempts.

Family Considerations

As mentioned, many interventions for suicidal youth include a focus on family issues, ranging from the home-based interventions (e.g., Harrington et al, 1998; Huey et al., 2004), to the interventions in which parents are enlisted to help as coaches (e.g., Rathus & Miller, 2002), to interventions to facilitate parental follow-through with aftercare recommendations (Rotheram-Borus et al. 2000; Spirito et al., 2002). Family support and involvement is vital to the success of treatment with suicidal youth (Logan & King, 2001). Parents or caregivers are responsible for accessing and mamtaining services for youth. Parents are also crucial in establishing and mamtaining a viable safety plan including parental or caregiver monitoring of the youth and securing of all potential lethal means of harm to self. Family involvement also provides valuable opportunities to educate families about suicidal behavior and psychiatric disorders and to process family conflict (which may be related to the suicidal behavior) with a mental health professional. Family involvement in treatment likewise provides an avenue for family members to develop a plan for how to process or manage future suicidal and risk behaviors.

The issue of validation also can be considered within a family context. A common complaint among adolescents attempting suicide is that "no one understands me" or "no one understands how I feel." As adolescents often are pushing away from their parents as they strive for autonomy, they may be reluctant to share their feelings or experiences with parents. When adolescents share less with parents, it may be difficult for parents to offer support or for their support to be well received. Even among parents who are aware of what is going on in the life of their adolescent, parents may be unsympathetic due to frustration with adolescents' testing of limits, or due to a belief that the adolescent should not even be in certain situations. As described in Linehan's (1993) developmental model, individuals who do not feel validated, particularly if they are temperamentally prone to emotion dysregulation, may be more likely to escalate problem behaviors such as recurrent suicidal behavior. Hence, approaches that help adolescents develop ways of eliciting validation from others or help the parents of adolescents to provide such validation might be useful.

Social Context of Adolescent Suicidal Behavior

Socially, adolescence is a period of transition. Adolescents are learning to negotiate conflicts with their peers with less input and supervision from the adults around them. Teens likewise are relying less on parents for support and relying more on their peers as they grow older (Kerr, Preuss, & King, 2006). In the quest for fitting in and entering relationships beyond the family, adolescents may be especially sensitive to their perceptions of how peers are viewing them. This may put pressure on the adolescents to enter into situations that increase the level of stress, or increase the possibility of rejection, and therein increase the risk of suicidal behavior. In addition, adolescents' emerging sense of self-identify is often rooted in the norms of the chosen peer group. Indeed, many of the peers in a chosen peer group may be troubled themselves or may have engaged in behaviors that may increase the chances of behavioral and emotional difficulties, including suicidal behaviors. For example, peers may imitate or model behaviors that they are exposed to within their peer group or circle of influence. In this regard, Insel and Gould (2008) have noted that youths who are exposed to suicidal behaviors among their peers

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may be at increased risk for imitating suicidal behaviors. Furthermore, adolescents also are exploring and learning to negotiate romantic and dating relationships. Particularly if they do not have perceived support elsewhere in their lives, the loss of such relationships may be devastating and increase risk for suicidal behaviors.

The Wood et al. (2001) study depended upon a group therapy approach to provide peer support to adolescents, but also included a focus on negotiating conflicts with peers. The YST intervention recognized the importance of social support offered in various contexts (peers, school, religious settings) as a potential buffer to suicidality and a factor affecting treatment utilization (King et al., 2006). As part of a very comprehensive intervention, MST also included a focus on disengaging from problematic peer groups when that is considered relevant to a teen's behavioral and emotional difficulties (Huey et al., 2004). The Deykin et al. (1986) intervention included a focus on education to peer leaders in schools, in recognition of their potential importance in recognizing the difficulties other adolescents are experiencing. Given the importance of peer influences both as supports and risk factors for suicidal behavior, researchers should continue to explore ways of shaping and intervening when appropriate with peer influences, and helping the adolescent to cope with difficult peer situations.

Developmental Strategies for Coping

Several of the interventions described used cognitive behavioral or problem-solving approaches to teach or reinforce adaptive coping skills, and to challenge the negative thinking associated with suicidality. The potential for such approaches is underscored by a study with adults indicating that a brief cognitive behavioral intervention reduced suicide attempts by half (Brown et al., 2005), and from recent results from the Treatment of Adolescents with Depression study (TADS) that indicated that cognitive behavioral approaches were comparable in long-term effectiveness to pharmacotherapy, but reduced the rates of significant suicide ideation and behavior associated with medication (Treatment of Adolescents with Depression study Team, 2007).

Theoretically, most youth should have entered Piaget's cognitive stage of formal operations by early to mid-adolescence (Gruber & Voneche, 1995). This implies that they should be able to think abstractly about issues, reason, and consider the consequences of different courses of action (Gruber & Voneche, 1995). Individuals who are distressed, however, may be particularly prone to more rigid or egocentric thought, and constricted problem-solving ability. In this vein, more concrete aids or coping methods in therapy may be particularly useful with distressed adolescents. One example of a concrete aid is that of coping cards, wherein suicidal adolescents may literally write down on index cards or the inside of a school notebook the coping strategies or coping thoughts that they have discussed and practiced in therapy sessions (Berk et al., 2004). When in difficult situations or becoming distressed, the adolescents may then pull out the written coping statements that remind them of specific strategies or thoughts they may find useful.

Although there are no data available of which we are aware to indicate that the suicide attempts of adolescents are more impulsive than those of adults, many studies have described impulsive suicides or suicidal behavior by adolescents (e.g., Hoberman & Garfinkel, 1988). In addition, teens may engage in impulsive behaviors that precipitate difficulties that then become the occasion for distress or suicidal behaviors. Developmentally, it is worth noting that this impulsivity may occur in the context of general tendencies among some adolescents toward greater risk-taking or reckless behavior and increased arousal that may be related to biological changes during this developmental period (Dahl, 2004). Dahl (2004), for example, cited the sports car metaphor of adolescents sometimes having "strong 'turbo-charged' feelings with a relatively unskilled set of 'driving skills' or cognitive abilities to modulate strong emotions and motivations" (p. 17). Interventions developed for youth to reduce patterns of impulsivity

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or impulsive problem-solving style may be useful to draw upon in the treatment of suicidal teenagers (D'Zurilla & Nezu, 1999; Kendall & Braswell, 1993). In particular, interventions that support youths' development of abilities to make decisions during periods of high arousal (Dahl, 2004) may be especially useful in reducing impulsivity and risk for suicidal and related behaviors.

Additionally, hopelessness is a predictor of repeat suicidal behavior among adolescents (Goldston et al., 2001), but it is important to realize that adolescents have a different perspective on the future than adults. For example, understandably, when adolescents look to the future, they often are considering the attainment of developmental milestones such as obtaining autonomy from parents, moving away from home, pursuit of post-secondary education, dating relationships, and marriage (Nurmi, 1991). Moreover, adolescents often focus more on short-term rewards than long-term goals in decision-making (Reyna & Farley, 2006). Hence, when working with adolescents, it may be useful to focus on shorter rather than longer-term goals, and/or to focus on developmental milestones as reasons for continuing to live.

One of the major tasks of adolescence is identity development. In this regard, many young people (and even adults) have not yet discovered activities that provide them with a sense of purpose in life. This may be especially important for suicidal individuals, who often experience "tunnel-vision" or profound difficulty stepping back from a single-minded focus on their psychic pain or inability to deal with a difficult situation (Shneidman, 1996). To counter such tendencies, it may be useful for therapists to encourage adolescents to participate in activities that involve helping other people (e.g., volunteerism) in an effort to help adolescents to gain perspective on their problems, develop their assets or strengths, and to foster "meaning" in their lives (Ellis & Newman, 1996). In addition, helping others allows the adolescent to expand their social network and supports. Research has shown that volunteerism in adolescents is associated with a number of positive outcomes including higher self-esteem, higher educational aspirations, and higher academic motivation (Johnson, Beebe, Mortimer, & Snyder, 1998).

Lastly, youth spend much of their lives in school or involved in school-related activities, and indeed, academic difficulties may increase risk for suicidal behaviors (Daniel et al., 2006). Provision of treatment for suicidal youth in school settings (e.g., through school-based clinics) may be helpful in expanding positive social support networks for at-risk youths, fostering school connectedness and addressing sources of stress within the school, overcoming barriers to treatment, and providing a natural environment or setting in which strategies for coping can be practiced, with more immediate feedback from mental health professionals than might be available otherwise. Future intervention research should more fully explore ways of addressing the school context of adolescent suicidal behaviors.

CONCLUSIONS

In summary, there is limited evidence to date of the effectiveness of interventions in reducing suicide attempts. Given the heterogeneity among adolescent suicide attempters, it is unlikely that a "one size fits all" approach to treatment will prove effective for suicidal youth. In addition, given that multiple developmental contexts are associated with adolescent suicidal behavior, it may be that interventions that affect multiple contexts of at-risk behaviors (e.g., family, peer, academic) may yield more generalizable and sustainable effects than interventions that are not sensitive to the developmental contexts and nuances of adolescence. Recognition and consideration of the developmental and contextual factors associated with adolescent suicidal behavior will help researchers in developing the next generation of interventions for suicidal teens and will help clinicians in implementing developmentally sensitive care in the treatment of suicidal behaviors among adolescents. While this paper highlights the specific developmental and contextual factors important to consider in relation to adolescent suicidal

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behavior, future research is needed to explore the unique developmental and contextual considerations for treatment of suicidal behaviors specific to each stage of life (e.g., adolescence, young adulthood, middle age, late life) given that development continues across the lifespan.

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TABLE 1

Interventions for Suicidal Youth

Study	Participants	Study Design
Deykin et al. (1986)	From emergency room settings, *n* = 172 predominantly black, Protestant 13–17 year olds with suicidal or life-threatening behaviors were seen at the hospital with the experimental supportive/educational intervention, and 147 predominantly white, Catholic adolescents were seen at the comparison hospital.	Quasiexperimental: Youth at one hospital were assigned to an intervention designed to offer support to and advocacy to the adolescent, and education to individuals in the schools and service system. Youth at a comparison hospital received treatment as usual.
Greenfield et al. (2002)	From emergency room setting, *n* = 158 12–17-year-old youth were assigned to the rapid response intervention and *n* = 128 were assigned to treatment as usual.	Quasiexperimental: Assignment to rapid response outpatient services versus treatment as usual (with a wait of up to 10 days for services) depended upon the on-call psychiatrists at the time of the emergency room evaluation.
Katz et al. (2004)	In a hospital setting, *n* = 62 14–17-year-old adolescents participated in the study. One-year follow-up data were available for *n* = 26 adolescents assigned to a DBT inpatient unit and *n* = 27 from the comparison inpatient unit.	Quasiexperimental: Assignment to DBT inpatient unit and DBT individual/group therapy versus a psychodynamic inpatient unit depended upon bed availability
Rathus & Miller (2002)	*n* = 29 adolescents assigned to DBT and *n* = 82 adolescents assigned to TAU. Youth assigned to DBT were older, more likely to be female, and more symptomatic than those assigned to TAU.	Quasiexperimental: Youth who were suicidal and met at last three of the criteria for borderline personality were assigned to DBT. Other youth were assigned to TAU (supportive and/or psychodynamic individual therapy, and family therapy based on family systems model).
Rotheram-Borus et al. (1996, 2000)	*n* = 65 12–18-year-old females (primarily Latinas) were assigned to specialized ED treatment, and *n* = 75 adolescent females were referred to standard ED care.	Quasiexperimental: Assignment to specialized ED intervention (videotaped presentation to families, one crisis family therapy session, education to ED staff) versus treatment as usual depended upon the time of ED visit. All youth received brief cognitive-behavioral therapy following the ED visit/intervention.

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Study	Participants	Study Design
Cotgrove et al. (1995)	*n* = 47 12–16 year olds discharged from hospital following a suicide attempt were assigned to the intervention group, and *n* = 58 youth were assigned to routine care.	Randomized Trial: Adolescents were assigned to the experimental intervention of a "green card" allowing re-admission to hospital in addition to routine care or to routine care only.
Donaldson et al. (2005)	*n* = 15 12–17 year olds with recent suicide attempts and seeking treatment either through the general pediatric emergency department or child psychiatric inpatient unit were assigned to the skills-based intervention, and *n* = 16 adolescents to the nondirective supportive therapy.	Randomized Trial: Adolescents were assigned to a skills-based (cognitive-behavioral) intervention or to nondirective, supportive therapy.
Harrington et al. (1998)	*n* = 85 adolescents ages 16 or younger with a suicide attempt by overdose were assigned to the family intervention and *n* = 77 were assigned to routine care.	Randomized Trial: Adolescents were assigned to a brief home-based problem-focused family intervention in addition to routine care or to routine care alone.
Huey et al. (2004)	*n* = 156 10–17 year old predominately male and African-American youths, with Medicaid or no insurance, referred for emergency psychiatric hospitalization due to suicidal ideation, suicide attempts, homicidal ideation or behavior, other threats of harm to self or others, and psychosis.	Randomized Trial: Adolescents were assigned to multisystemic therapy (MST) or to hospitalization and routine aftercare.
King et al. (2006)	*n* = 151 adolescents who were hospitalized psychiatrically for suicidal behaviors were assigned to the Youth support Team (YST) intervention and 138 were assigned to treatment as usual (TAU).	Randomized Trial: Adolescents were assigned to the YST intervention in addition to TAU or to TAU alone.
Spirito et al. (2002)	*n* = 29 primarily female 12–18-year-old youth seen in an ED or pediatric inpatient service following a suicide attempt participated in this study in the experimental compliance enhancement intervention, and *n* = 34 in the standard disposition planning group.	Randomized trial: Adolescents were assigned to a compliance enhancement intervention using a problem-solving approach or to standard disposition planning.
Wood et al. (2001)	*n* = 32 12–16-year-old youth with repeated suicidal or nonsuicidal repeated self-harm behavior were assigned to group therapy and *n* = 31 adolescents were assigned to routine care.	Randomized Trial: Adolescents were assigned to developmental group therapy (cognitive-behavioral therapy, dialectical behavior therapy, psychodynamic group therapy) in addition to routine care or to routine care alone.