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## Social and Interpersonal Factors Relating to Adolescent Suicidality: A Review of the Literature

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### Abstract

This article reviews the empirical literature concerning social and interpersonal variables as risk factors for adolescent suicidality (suicidal ideation, suicidal behavior, death by suicide). It also describes major social constructs in theories of suicide and the extent to which studies support their importance to adolescent suicidality. PsychINFO and PubMed searches were conducted for empirical studies focused on family and friend support, social isolation, peer victimization, physical/sexual abuse, or emotional neglect as these relate to adolescent suicidality. Empirical findings converge in documenting the importance of multiple social and interpersonal factors to adolescent suicidality. Research support for the social constructs in several major theories of suicide is summarized and research challenges are discussed.

### Keywords

adolescence; family; peer; risk factors; suicide

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Our understanding of risk factors for youth suicidality—suicidal thoughts, suicide attempts, and death by suicide—has burgeoned during the past twenty years. Converging evidence from psychological autopsy studies (Brent, Baugher, Bridge et al., 1999; Marttunen, Aro, & Lonnqvist, 1992; Shaffer, Gould, Fisher et al., 1996), community-based prospective studies (Lewinsohn, Rohde, & Seeley, 1996; Reinherz, Giaconia, Silverman et al., 1995), and clinical studies (Brent, Kolko, Wartella et al., 1993; Kotila, 1992) points to the importance of psychiatric or mental disorders in the pathogenesis of suicidal behavior and suicide. These factors, together with a past history of suicidal behavior, are our strongest predictors of suicidal behavior and death by suicide in adolescents (Brent, Perper, Moritz et al., 1993; Lewinsohn, Rohde, & Seeley, 1996).

Despite the strength of these individual psychiatric and psychological predictors, the role of social and interpersonal factors in our understanding of suicidal behavior continues to be debated, studied, and a topic of much theoretical interest. An ecological model that considers multiple spheres of influence has the potential to enrich our understanding (Bronfenbrenner, 1977), and there is substantial evidence—across health conditions and medical illnesses—to indicate that social contextual factors can significantly impact well-being (Heaney & Israel, 1997). As such, it is not surprising that a biopsychosocial model or formulation is standard practice in healthcare settings and is often used to conceptualize risk for suicidal behavior.

This report presents theory and research pertinent to our understanding of social and interpersonal influences on youth suicidality. We begin with a discussion of several of the major theoretical models of suicide that emphasize social factors, then review empirical research focused on relationships between social factors and youth suicidal thoughts, behaviors, and suicide. The review encompasses family and peer relationship characteristics (e.g., parent—child attachment, perceived support, social integration), peer bullying and victimization, and childhood physical and sexual abuse. Each review considers population-based longitudinal studies, community-based longitudinal studies based on more selective or convenience samples, and community-based cross-sectional studies. Pertinent studies conducted with clinic- or hospital-based samples and psychological autopsy studies are also noted.

A search of the *PsychINFO* and *PubMed* databases was conducted for pertinent literature published in the past ten years (1998–2008; some earlier studies are cited if particularly relevant). The specific search terms are listed in specific review sections. Each was a Boolean search with the specific search terms in conjunction with “adolescent” and “suicide.” Reference sections of articles were also reviewed to ensure that no relevant studies were missed. The age range targeted was adolescence (ages 12 to 17 years); however, some studies including young adults (18 to mid-20s) and children (younger than 12) were incorporated if they also yielded information regarding predictors of adolescent suicidality. The studies focused on any behavior along the continuum of suicidality (e.g., ideation, attempts, death). Studies that focused primarily on self-injury or deliberate self-harm with no stated suicidal intent were excluded.

Given the scope of empirical research related to social factors and adolescent suicidality, research pertaining to life stress, including interpersonal losses and disciplinary problems, is not included in this review. Similarly, although relevant to broad social considerations, a discussion of suicide contagion and broader community and cultural influences is beyond the scope of this report. Following a review of the most pertinent research studies, the extent of empirical support for key theoretical constructs is summarized and several research challenges are highlighted.

An exhaustive listing and review of studies is not possible within this report due to space limitations; however, a chart incorporating all empirical studies pertinent to each review section is available from the corresponding author.

## **SOCIAL/INTERPERSONAL CONSTRUCTS IN THEORIES OF SUICIDE**

Several major theorists in the field of suicidology have emphasized the importance of social or interpersonal variables to our understanding of suicide. Durkheim, who is considered the founder of empirical research in the fields of sociology and suicidology (Maris, Berman, & Silverman, 2000, pp. 26–61), focused primarily on economic and social factors. His book *Suicide* (1897) emphasized the concept of social integration, which was conceptualized as the opposite of anomic, isolated, and egoistic. He hypothesized that suicide rates would vary negatively with the level of social integration of the individuals' groups and presented data to show that married individuals had proportionately lower suicide rates than unmarried individuals of the same age. He also highlighted the roles of religious integration and varying family circumstances to an understanding of suicide.

Linehan offers a biosocial theory for understanding personality functioning and the development of borderline personality disorder and its associated self-harmful behavior (Linehan, 1993). This theory posits that borderline personality disorder is primarily a disorder involving emotion regulation. Some individuals are biologically predisposed to be more emotionally vulnerable and to have poorer emotion regulation skills. These challenges to the emotion regulation system can be exacerbated by certain environmental circumstances,

including invalidating emotional environments. It is posited that such environments lead to inadequate learning of how to tolerate, label and regulate strong emotions. It is a transactional model that includes an emphasis on the importance of interpersonal relationships and validating emotional environments.

Putting forth a new theoretical model, Joiner (2006) argues that three factors characterize individuals at elevated risk for suicide. These include the feeling of burdensomeness on loved ones, a sense of isolation, and a learned ability to engage in self-harmful behavior. In his recent book, Joiner presents evidence from scientific studies to support the theory's constructs and highlights segments from literature and popular culture that are consistent with a widespread belief in the importance of these factors. Joiner and his colleagues are conducting systematic empirical studies to examine specific components of the theory, including the social variables of perceived burdensomeness (2002) and a sense of isolation (1999).

Other models of suicide, such as developmental probabilistic models that consider multiple predictors of suicidal behavior or more focused models that consider specific topics such as the influence of family processes, also consider the multiple ways in which social variables may impact suicidal behavior. These include direct effects on well-being, indirect effects through conditions associated with suicide (e.g., making depression and substance use more or less likely), and buffering effects (facilitating well-being in the face of adverse circumstances). Cohen and Wills (1985) put forth the "stress-buffer" hypothesis that social support functioned as a protective factor in the presence of adversity, suggesting that risk factors are more likely to relate to poor outcomes among those with an impoverished social support network.

## PARENT/FAMILY AND PEER RELATIONSHIPS

The studies reviewed in this section address relations between parent/family relationship characteristics (e.g., family attachment, perceived family or parental support, parent-adolescent communication, parent-child conflict) and peer relationship characteristics (e.g., perceived support from peers, social isolation) and adolescent suicidality. The search terms for this section were: "pees support," "peer relationship," "family support," "family relationship," "friendship," "loneliness," "social support," and "social isolation."

### Community-Based Epidemiologic Studies

Few population-based, longitudinal studies have examined family and peer risk factors associated with suicidal ideation and suicidal attempts among adolescents. As such, findings from the longitudinal birth cohort study of children born in New Zealand (Christchurch Health and Development Study; CHDS) and the National Longitudinal Study of Adolescent Health (ADD Health) in the United States are of substantial importance.

Using CHDS data spanning a 21-year period, Fergusson, Woodward, & Horwood (2000) examined relationships between childhood circumstances (social background, family functioning, parental and child adjustment), mental health and stressful life events, and suicidal ideation and behavior in adolescence and young adulthood (15–21 years). Their analyses were based on 965 CHDS participants with data about suicidal ideation and behavior. They found that childhood sexual abuse, poor parent-child attachment, and problems of parental adjustment were associated with suicide attempts. However, several of these variables (e.g., parent-child attachment, childhood sexual abuse) did not predict suicidal behavior after adolescent stressful life events and mental health were included in models. The researchers suggest that the effects of these childhood variables were largely mediated by later occurring mental health problems and exposure to stressful life events.

In the United States, Bearman and Moody (2004) used ADD Health data to examine patterns of risk for suicidal thoughts and behaviors separately for 13,465 adolescent boys and girls across a 1-year period. They reported that social isolation from peers and intransitive friendships (friendship circle spans multiple disconnected individuals) significantly increased the odds of suicidal ideation for girls only. Nevertheless, being part of a tightly networked school community (high relative density of friendship ties) was protective against suicide attempts for boys. In sum, social network variables had relevance to suicidality for boys and girls, albeit in somewhat differing ways. It should also be noted that Kidd et al. (2006) examined ADD Health data and found only limited evidence to support their hypothesis that interactions among social factors would be important as predictors of suicide attempts.

Taking a sociological approach theoretically framed by Durkheim's emphasis on social integration, Haynie, South, and Bose (2006) examined the effect of residential mobility on attempted suicide among 9,594 ADD Health participants. Their results indicated that adolescent girls who had moved recently were approximately 60% more likely than others to report a suicide attempt during the following year. Examining possible explanatory factors, Haynie, South, and Bose found support for higher levels of victimization and delinquency, less school attachment, social isolation, and a greater likelihood of associating with peers who had attempted suicide and exhibited delinquent behaviors. Residential mobility was not associated with suicide attempts among adolescent males, suggesting an important gender difference.

Although more regional or selected in terms of sample representativeness, several other longitudinal, community-based studies have examined relations between adolescent suicidality and variables such as family support, peer support, and social integration. McKeown et al. (1998), for example, examined predictors of suicidal behaviors and 1-year transition probabilities for movement across suicidal behavior categories (attempt, plan, ideation, none) in a sample of 247 adolescents in southeastern United States. They found a negative association between family cohesion and suicide attempts. They also found that decreasing family cohesion was associated with risk for more severe suicidal behavior.

Other longitudinal community-based studies have also found evidence for family and peer relationship factors as significant predictors of suicidal ideation and behavior (e.g., Connor & Rueter, 2006; Garber, Little, Hilsman, & Weaver, 1998; Garrison, Addy, Jackson, & McKeown, 1991; Johnson, Cohen, Gould et al., 2002; Lewinsohn, Rohde, & Seeley, 1994; Lewinsohn, Rohde, Seeley et al., 2001; Mazza & Reynolds, 1998; Reifman & Windle, 1995). Four of these will be described here.

In a longitudinal study of 659 families from northern New York, Johnson et al. found that eight types of interpersonal difficulties were associated with risk for subsequent suicide attempts after covariates (age, sex, psychiatric symptoms, parental psychiatric symptoms) were taken into account. These were difficulty making friends, frequent arguments with adult authority figures, frequent cruelty toward peers, frequent refusal to share, frequent arguments or anger with peers, social isolation, lack of close friends, and poor relationships with friends and peers. Moreover, interpersonal difficulties were found to mediate the association between earlier maladaptive parenting and later suicide attempts.

The Connor and Rueter (2006) study made use of a regionally representative sample of 451 participants from the Iowa Youth and Families Project. This study is notable because it addressed an understudied rural population, used multiple assessment methods and informants, and was guided by a family process conceptual model. Connor and Rueter found that adolescent emotional distress mediated a relationship between paternal warmth and adolescent suicidality. Maternal warmth was also associated with adolescent suicidality, albeit not mediated by adolescent emotional distress.

O'Donnell, Stueve, Wardlaw et al. (2003) surveyed 879 adolescent participants in the Research for Health (RFH) longitudinal study. These adolescents, initially surveyed during the 11th grade, were recruited from economically disadvantaged communities in Brooklyn, New York and primarily consisted of African American and Latino youth. The investigators explored relationships between dichotomously coded indices of adult support (e.g., perceived support, support network availability) and adolescent suicidality, and found that those who reported suicidal ideation and those who reported a suicide attempt were more likely to indicate low levels of perceived support. Furthermore, those who reported suicide attempts were more likely to report lack of family network availability. This study is of unique significance as it is among the few to use a primarily minority sample.

Lewinsohn and colleagues (1994) reported findings from the Oregon Adolescent Depression Project (OADP), which assessed 1,508 adolescents at two points in time across a 1-year period. They found that perceptions of low family support predicted future suicide attempts even after controlling for depression. Peer support, however, was not a significant predictor. At a 3rd assessment point (mean age = 24.2 years), Lewinsohn and colleagues (2001) found that, for both males and females, low family support predicted suicide attempts into young adulthood. These results underscore the persistent effect of low family support on youth suicidality.

Community-based cross-sectional studies also suggest that social support can be linked with suicidal thoughts and behaviors among adolescents. A large-scale community based study of 5,423 middle school adolescents showed that feelings of loneliness and isolation predicted suicidal thinking (Roberts, Roberts, & Chen, 1998). Similarly, an epidemiologic study of 1,285 youth between the ages of 9 and 17 (King, Schwab-Stone, Flisher et al., 2001) revealed numerous social/interpersonal risk factors for suicidal ideation and attempts. Poor family environment (low satisfaction with support, communication, leisure time), low parental monitoring, and poor instrumental and social competence significantly differentiated youth with a history of ideation or attempts from others. Additionally, this study revealed that, when controlling for the presence of a mood, anxiety, or disruptive disorder, there was still an association between suicide attempts/ideation and family variables. Finally, Perkins, and Hartless's (2002) ecological study of 3,895 African American and 11,027 Caucasian adolescents sought to identify individual-level, familial-level, and extrafamilial level factors related to suicidal ideation and behavior. Low family support predicted severe suicidal ideation and suicidal behaviors across ethnicity and gender.

### **Clinic- and Hospital-Based Studies**

Research has also pointed to the importance of the family environment as a predictor of current severity of suicidality and subsequent suicidality among psychiatrically hospitalized adolescents. Infrequent support from parents is a known risk factor for suicide attempts among hospitalized youth (Groholt, Ekeberg, Wichstrom et al., 2000). King and colleagues found that suicidal adolescent inpatients with mood disorders perceived lower levels of support from family compared to non-suicidal inpatients with mood disorders and a non-patient comparison group (King, Segal, Naylor et al., 1993); suicidal adolescents with lower levels of family support were also more likely to attempt suicide in the sixth months following psychiatric hospitalization (King, Segal, Kaminski et al., 1995). Further supporting these relationships, Prinstein, Boergers, Spirito et al., (2000) found that global family dysfunction was related to severity of suicidal thoughts. This relationship between family dysfunction and suicidal ideation was mediated by the adolescents' psychopathology (depressive symptoms and substance use).

Of interest in terms of the stress-buffering hypothesis, Esposito and Clum (2003) found that suicidal ideation was predicted by gender (girls), internalizing disorder, and social support in a sample of 73 clinically referred high school adolescents. Analyses revealed a significant



interaction between social support and comorbid psychiatric disorder in the prediction of suicidal ideation. There was a more negative association between social support and suicidal ideation among adolescents with comorbid disorders.

Studies of psychiatrically hospitalized adolescents have yielded inconsistent findings concerning the relations between peer support and suicidality. In a sample of 96 hospitalized and suicidal adolescents, Prinstein and colleagues (2000) found that low levels of peer closeness and high levels of peer rejection were both associated with more severe suicidal ideation. Additionally, a study of Norwegian adolescents who were hospitalized after a suicide attempt also showed that infrequent peer support placed a child at higher risk for a suicide attempt (Groholt, Ekeberg, Wichstrom et al., 2000). However, more recently, in a large inpatient sample, Kerr, Preuss, and King (2006) found that, among boys only, greater suicidal ideation was predicted by higher peer support. These findings underscore the significance of considering gender when examining social support and predictors of suicidality.

### **Psychological Autopsy Studies**

Psychological autopsy studies of youth suicides have generally focused on psychiatric risk factors—the presence of mental disorders. Nevertheless, findings from these studies also provide evidence for the contribution of social factors to risk for suicide. In a case-control, psychological autopsy study of 120 suicides among children and adolescents and 147 community age-, sex-, and ethnically matched comparison participants, Gould, Fisher, Parides et al. (1996) examined the independent impact of various psychosocial factors after taking into account risk due to psychiatric disorder. Youths who died by suicide had significantly less frequent and satisfying communication with their mothers and fathers, with no evidence of more negative interactions with parents. Moreover, psychosocial risk factors had a predictive impact that was comparable with that of psychiatric disorder. Gould, Fisher, Parides et al. argue that the effects are consistent with an additive model of incremental effects. Brent, Perper, Moritz et al. (1994) reported similar findings from their case-controlled, psychological autopsy study of 67 adolescent suicide victims. As compared to demographically matched controls, suicide victims had higher parent—child discord, and a greater prevalence of physical abuse and residential instability.

### **PHYSICAL AND SEXUAL ABUSE**

Abuse and neglect perpetrated by one's family can be conceived as an extreme parent-child relationship problem. This section considers empirical research related to abuse and neglect as predictors of adolescent suicidality. The search terms for this section were as follows: "physical abuse," "sexual abuse," "neglect," and "child abuse." Studies that focused specifically on dating violence or non-specific, forced sexual contact were excluded.

### **Population-Based/Community Studies**

Several longitudinal, population-based studies have been published regarding the effects of child abuse, sexual abuse, and/or neglect on adolescent suicidality (Brown, Cohen, Johnson et al., 1999; Christoffersen, Poulsen, & Nielsen, 2003; Fergusson, Woodward, & Horwood, 2000; Johnson, Cohen, Gould et al., 2002; Plunkett, Oates, Shrimpton et al., 2002; Salzinger, Ng-Mak, Rosario et al., 2007; Ystgaard, Hestetun, Loeb et al., 2004). All of the studies found that childhood physical abuse, sexual abuse, and/or neglect were predictive of suicidal thoughts and behaviors in adolescence, and in the case of Johnson, Cohen, Gould et al. (2000), into early adulthood. However, two studies are of particular note. Plunkett and colleagues (2002) examined 183 abused children and 84 case controls and found, in addition to abuse being related to increased risk for suicide attempts and ideation, that being older when the abuse was detected

and suffering abuse from multiple perpetrators were predictors of suicide. None of the other eight studies reviewed in this section report predictors of suicide.

Salzinger, Ng-Mak, Rosario et al. (2007) tested several mediation models to predict suicide attempts and ideation based on childhood physical abuse and found that the relationship was unmediated by attachment to friends or family, internalizing or externalizing pathology, or life events. This study points to the robustness of the association between abuse and adolescent suicidality. Furthermore, this study is unique as it was the only longitudinal, community-based study found to use a predominately minority sample (38% Black and 54% Hispanic), indicating the association between childhood abuse and adolescent suicidality crosses ethnic and racial lines.

The majority of the population-based studies utilized cross-sectional designs. Several of these reported data from nationally representative samples of adolescents (Darves-Bornoz, Choquet, Ledoux et al., 1998; Fotti, Katz, Afifi et al., 2006; Molnar, Berkman, & Buka, 2001; Vajani, Annest, Crosby et al., 2007; Waldrop, Kilpatrick, Naugle et al., 2007). As with the longitudinal studies, each of these studies found a positive relationship between suicidal thoughts and behaviors and physical/sexual abuse and/or emotional neglect. Results from studies with more selected samples or convenience samples converge with these. For example, Rosenberg, Jankowski, Sengupta et al. (2005) found that sexual abuse was strongly associated with multiple suicide attempts. Garnefski and Arends (1998), in an examination of 1,490 Dutch adolescents, found that sexually abused boys were at greater risk for suicide attempts than sexually abused girls; although both, were at higher risk than non-abused boys and girls. Cross-sectional studies have found that abuse and neglect are direct and independent predictors of suicidality, even after controlling for depression, hopelessness, and other childhood adversities (Martin, Bergen, Richardson et al., 2004; Molnar, Berkman, & Buka, 2001).

Two cross-sectional community surveys (Arata, Langhinrichsen-Rohling, Bowers et al., 2007; Kisiel & Lyons, 2001) documented associations between abuse and neglect and suicide risk among predominately minority adolescents. Arata, Langhinrichsen-Rohling, Bowers et al. (2007) found that neglect alone predicted higher levels of suicide risk than physical abuse or sexual abuse alone among 1452 adolescents (50.7% African American), and Kisiel and Lyons (2001), in a sample of 114 adolescents (69% African American), found that sexually abused children displayed more suicidality and self-mutilation than non-abused children. Taken together, empirical studies indicate that abuse/neglect and suicidality are associated among minority and majority adolescents.

### Clinic- and Hospital-Based Studies

One longitudinal, hospital based study of adolescents and abuse/neglect was found. Swanston and colleagues (1997) followed up with 68 Australian adolescents 5 years after they presented at the child protection units of two metropolitan hospitals. They found that sexually abused children had significantly higher levels of self-injury and suicide attempts than did 84 youth who were matched on sex and age.

Several other hospital-based studies used cross-sectional samples (Grilo, Sanislow, Fehon et al., 1999a; Grilo, Sanislow, Fehon et al., 1999b; Laederach, Ladame, Fischer et al., 1999; Lipschitz, Hartnick, Wolfson et al., 1999; Lyon, Benoit, O'Donnell et al., 2000). The findings from these are somewhat mixed. Grilo, Sanislow, Fehon et al. (1999a) found that adolescents who were abused showed higher levels of depression, self-criticism, hopelessness, and violence, but not suicidal thoughts or behaviors. However, Grilo, Sanislow, Fehon et al., (1999b) found that adolescent inpatients with high levels of childhood abuse *did* have higher levels of suicide risk, even when controlling for depressive symptoms. Beautrais, Joyce, and

Mulder (1996) and Laederach, Ladame, Fischer et al. (1999) both also found that childhood sexual abuse increased the risk for suicide attempts.

The Lipschitz, Hartnick, Wolfson et al. (1999) and Lyon, Benoit, O'Donnell et al. (2000) studies are of note, because they use predominately minority samples. Lipschitz and colleagues (1999), in their sample of 71 adolescent inpatients (48% Latino, 42% African American), found that childhood sexual abuse and neglect were significantly associated with suicide attempts and ideation. Similarly, in a sample of 51 African American adolescents on an inpatient ward, suicide attempters were more likely to have a history of neglect than non attempters.

In summary, results from empirical studies overwhelmingly indicate that there is an association between childhood abuse/neglect and suicidality. Although some studies indicate an indirect relationship between the two, the relationship has been found while controlling for other predictors of suicidal thoughts and behaviors, for both boys and girls, and within different ethnic/racial groups.

## PEER VICTIMIZATION AND BULLYING

This section reviews literature that relates to the association between peer victimization and adolescent suicidality. The search terms for this section were: "victimization," "bully\*," "peer rejection," "peer violence," "cyberbully\*." Studies that focused specifically on gang-related peer violence, and/or violence in conjunction with another criminal act (e.g., armed robbery, rape) were excluded.

### Population-Based/Community Studies

To our knowledge, there have been no published population- or community-based longitudinal studies reporting long-term effects of victimization and bullying on youth suicidality. However, 27 community-based, cross sectional studies have been published on the relationship between peer victimization and suicidal thoughts and behaviors. Of these, two studies used nationally representative samples of adolescents (Roland, 2002; Russell & Joyner, 2001). Roland (2002) reported findings from a study of 2,088 youth from 44 secondary schools and 38 municipalities in Norway. The results showed that students who were bullied and students who bullied others both reported higher suicidal ideation than students who were neither bullies nor victims. Russell and Joyner (2001) reported comparable findings. They analyzed cross-sectional data from the ADD Health study in the United States and found that, for both boys and girls, and after controlling for the effects of sexual orientation, hopelessness, depression, alcohol abuse, family, and friend suicidality, adolescents who reported experiences of victimization were more likely to express suicidal thoughts and attempts. These studies strongly support a conclusion that experiences of victimization, and the act of victimizing another, place adolescents at risk for suicidal thoughts and behaviors regardless of sex.

In addition to the two nationally representative studies, five studies were found that utilized large regionally representative samples (Baldry & Winkel, 2003; Delfabbro, Winefield, Trainor et al., 2006; Liang, Flisher, & Lombard, 2007; Park, Schepp, Jang et al., 2006; Toros, Bilgin, Sasmaz, Bugdayci et al., 2004). Baldry and Winkel (2003), in their study of 998 youth from schools in Rome, found that direct (physical, psychological, or verbally bullying) and relational (social exclusion, malicious rumor spreading) victimization were correlated with suicidal ideation. However, when controlling for the effects of physical harm from parents, domestic violence between parents, and demographic variables, only relational victimization predicted suicidal ideation. Both Delfabbro, Winefield, Trainor et al. (2006) in their sample of 1,284 Australian youth, and Park, Schepp, Jang et al. (2006), in their South Korean sample of 1,312 youth, found that suicidal ideation was associated with having been bullied, but only when other factors—such as life satisfaction (Delfabbro, Winefield, Trainor et al., 2006) and



suicide attempt history and depression (Park, Schepp, Jang et al., 2006), among others, were taken into account.

Toros and colleagues (2004), however, found that problems with friends, and humiliation and physical abuse at school were both predictors of suicide attempts among 4,143 Turkish students, even when controlling for other environmental risk factors (e.g., illicit drug use, skipping school). Liang, Flisher, and Lombard (2007) found similar results among 5,074 South African students, in that victims of bullying and youth who were both victims and bullies were at increased risk for suicide ideation. Victims were also at increased risk for suicide attempts even when controlling for other risk behaviors (e.g., theft, alcohol and/or cannabis abuse). Toros and colleagues (2004) and Liang, Flisher, and Lombard (2007) did not, however, control for certain psychological risk factors (e.g., depression, hopelessness), such that findings between these and the previous studies are not directly comparable. It is possible that Baldry and Winkel (2003), Delfabbro, Winefield, Trainor et al. (2006), and Park, Schepp, Wardlaw et al. (2006) may have found comparable results had they used suicide attempts instead of ideation; however, the evidence suggests that the association between victimization and adolescent suicidality may be strongly mediated.

Numerous other studies of peer victimization and adolescent suicide have made use of more selective or convenience samples and documented associations between victimization and suicidality. For example, direct and indirect (van der Wal, de Wit, & Hirasing, 2003), relational (Baldry & Winkel, 2003) and frequent/chronic or infrequent (Brunstein-Klomek, Marrocco, Kleinman et al., 2007; Coggan, Bennett, Hooper et al., 2003) victimization have all been related to suicidal ideation and/or suicide attempts among adolescents. Additionally, being a bully has been associated with increased suicidal ideation and attempts (Brunstein-Klomek, Marrocco, Kleinman et al., 2007; Kaltiala-Heino, Rimpelä, Marttunen et al., 1999; Rigby & Slee, 1999; Roland, 2002).

A considerable proportion of research on peer victimization deals specifically with lesbian, gay, and bisexual (LGB) youth (D'Augelli, Grossman, Salter et al., 2005; D'Augelli, Pilkington, & Hershberger, 2002; Hershberger & D'Augelli, 1995; Rotheram-Borus, Hunter, & Rosario, 1994). D'Augelli, Pilkington, & Hershberger et al. (2002) found that verbal and physical victimization based on sexual orientation correlated with suicidal ideation among LGB youth, and D'Augelli and colleagues (2005) found that increased sexual orientation-based verbal victimization, as well as psychological abuse from parents predicted suicide attempts described as "gay related." The findings concerning LGB adolescents converge with those for adolescents in general.

### **Clinic- and Hospital-Based Studies**

Only two studies of peer victimization and adolescent suicide have utilized clinical samples. In sample of 124 Irish youth admitted to the hospital after a suicide attempt, Davies and Cunningham (1999) found that 22% of the youths' records contained information suggesting that bullying contributed to the suicide attempt. Prinstein and colleagues (2000) studied the peer functioning of 96 United States adolescents hospitalized due to concerns about suicidality. They reported that perceived peer rejection directly predicted suicidal ideation in a structural equation model, and that depression mediated the relationship between peer acceptance and suicidal thinking. These studies show the importance of peer victimization (both overt and relational) as predictors of suicidality, but also underscore the importance of other internal factors as mediators.

## EMPIRICAL SUPPORT FOR KEY THEORETICAL CONSTRUCTS

The empirical research provides support for several key theoretical constructs. This is most notable for the construct of *social integration*, discussed by Durkheim (1897), and its companion construct, *sense of isolation*, which is one of three factors that Joiner argues are characteristic of individuals at elevated risk for suicide (Joiner, 2006). Although much of the research reviewed can be interpreted as providing evidence for *invalidating emotional environments*, which Linehan argued would exacerbate challenges to the emotional regulation system (Linehan, 1993), and *a feeling of burdensomeness* (Joiner, 2006), these constructs have been less directly studied in relation to adolescent suicidality.

There is substantial evidence for the importance of social integration and social isolation to our understanding of adolescent suicidal behavior and suicide. In the large nationally representative ADD Health longitudinal study (Bearman & Moody, 2004), social isolation from peers and intransitive friendships were predictors of suicidal ideation for girls and a tightly networked school community was protective against suicide attempts for boys. Similarly, in a study framed by Durkheim's theory, Haynie, South and Bose (2006) reported that girls who recently moved were 60% more likely than other girls to report a suicide attempt. They experienced higher levels of victimization, less school attachment, and more social isolation. To the extent that family cohesion is conceptualized as a form of social integration, other longitudinal community-based studies also provide support. For instance, McKeown, et al. (1998) reported a negative relationship between family cohesion and suicide attempts, Johnson, Cohen, Gould et al. (2002) reported that social isolation and lack of close friends were associated with subsequent suicide attempts, and O'Donnell, Stueve, Wardlaw et al. (2003) reported that adolescents who reported suicide attempts were more likely to report lack of family network availability.

The studies reviewed do not directly address feelings of burdensomeness and invalidating emotional environments. Nevertheless, it could be argued that a perception of low social support may reflect the absence of supportive validation when experiencing emotional pain and distress. Similarly, childhood sexual abuse and physical abuse are powerful indicators of invalidating emotional environments and may also relate to feelings of burdensomeness.

## RESEARCH CHALLENGES AND RECOMMENDATIONS

### Theoretical and Statistical Modeling

Many of the studies reviewed took a strong arm approach to the prediction of suicidality that was largely atheoretical. Taken together, these studies amassed a body of findings that create a clear signal for the importance of parent/family and peer relationships to our understanding of adolescent suicidality. Nevertheless, there are many separate and somewhat inconsistent findings resulting from differing samples, measurement instruments, study time spans, and conceptualizations of important constructs for assessment. At this point, theoretically driven studies are sorely needed for clear hypothesis testing, a coherent integration of findings, and a determination of next research steps. Such research may benefit from data analytic approaches that address how social factors interact with each other and established risk factors to elevate or lower risk for suicidality, addressing the potentially complex relationships among theoretically pertinent variables.

### Measurement Issues

There is marked variability across the studies reviewed in definitions of suicidal ideation and behavior. Several have called for a consistent nomenclature (O'Carroll, Berman, Maris et al., 1996; Silverman, Berman, Sanddal et al., 2007) which is highly recommended. Similarly, given the differing patterns of findings for family and peer relationship variables, and for positive

versus negative relationship characteristics, we recommend the use of psychometrically strong measures that reference particular relationship types and differentiate positive (e.g., communication, support) and negative (e.g., abuse) relationship characteristics. Moreover, it would be advantageous to map variables—and their strong measurement—more closely to key theoretical constructs.

### **Importance of Race/Ethnicity, Culture, and Gender**

The race/ethnicity of study participants was reported for many of the studies reviewed; however, analyses based on race/ethnicity were rarely reported. Because minority youth may be the victims of social isolation or peer victimization based on their minority status, and because interpersonal expectations may differ across groups defined by race/ethnicity and culture, such analyses are strongly recommended. Some researchers have suggested, for example, that Black adolescents are less likely to respond to certain types of social strain with a suicide attempt than White adolescents (Watt & Sharp, 2002), which would indicate that Black and White youth may experience and express interpersonal loss or other challenges differently.

The argument can also be made that gender should be analyzed as a separate factor in all studies of social factors and youth suicidality. There are pronounced gender differences in prevalence rates for suicide risk factors (e.g., depression, substance abuse) and all forms of suicidal behavior. Moreover, research consistently documents gender differences in boys' and girls' perceptions of their relationships with others. Adolescent girls tend to report more satisfaction than boys with the support they receive (Kuttler, La Greca, & Prinstein, 1999; Valery, O'Connor, & Jennings, 1997), they tend to spend more time sharing feelings and personal concerns with others (Mahon, Yarcheski, & Yarcheski, 1994), and at least one study suggests that they perceive emotional support as being more important (Piko, 1998). Thus, it is not surprising that several of the studies reviewed in this report found significant gender differences in relations between social constructs and adolescent suicidality.

## **CONCLUSIONS**

During the past decade, a surprisingly large number of empirical studies have been published concerning social factors and adolescent suicidality. The results of these studies put out a strong signal for the importance of social variables—social integration, perceptions of family and peer support, childhood abuse/neglect, and peer victimization—to our understanding of suicidal ideation and behavior among adolescents. These results create a collage, reflecting the diverse social constructs, sampling strategies, and study methodologies used. Further advances will most likely be realized through (1) the systematic testing of carefully delineated theoretical models that incorporate critical social constructs, and (2) the use of data analytic models that ascertain the specific nature of associations between social constructs and other hypothesized predictor and outcome variables.

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