ORIGINAL ARTICLE

Childhood Adversities, Interpersonal Difficulties, and Risk for Suicide Attempts During Late Adolescence and Early Adulthood

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Background: Data from a community-based longitudinal study were used to investigate the association between childhood adversities, interpersonal difficulties during adolescence, and suicide attempts during late adolescence or early adulthood.

Methods: A community sample of 659 families from Upstate New York was interviewed in 1975, 1983, 1985 to 1986, and 1991 to 1993. During the 1991-1993 interview, the mean age of the offspring was 22 years.

Results: Maladaptive parenting and childhood maltreatment were associated with an elevated risk for interpersonal difficulties during middle adolescence and for suicide attempts during late adolescence or early adulthood after age, sex, psychiatric symptoms during childhood and early adolescence, and parental psychiatric symptoms were controlled statistically. A wide range of interpersonal difficulties during middle adolescence were associated with risk for suicidal behavior after the covariates were controlled. Profound interpersonal difficulties during middle adolescence mediated the association between maladaptive parenting or childhood maltreatment and suicide attempts during late adolescence or early adulthood.

Conclusions: Maladaptive parenting and childhood maltreatment may be associated with a risk for severe interpersonal difficulties during adolescence. These interpersonal difficulties may play a pivotal role in the development of suicidal behavior. Youths who are at an elevated risk for suicide may tend to be in need of mental health services that can help them to cope with an extensive history of profound interpersonal difficulties, beginning in childhood and continuing through adolescence.

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CONSIDERABLE EFFORT has been devoted to the investigation of factors that increase risk for suicide, a leading cause of death among adolescents and young adults. Much of this research has focused on the role of psychiatric disorders, prior suicide attempts, and familial psychiatric symptoms in the development of suicidal behavior.[1-3] Fewer studies have investigated the role that childhood adversities, negative life events, and interpersonal difficulties may play in the development of suicidal behavior. Research[4-15] has suggested that many kinds of adversities may be associated with risk for suicide. However, few of the studies that have examined potential risk factors for suicide have assessed risk factors systematically before the onset of suicidal behavior. Thus, many questions about the role of adverse life experiences in the development of suicidal ideation and behavior remain unanswered.[15,16]

Because many types of adversities have been reported to be associated with suicidal behavior, it has become increasingly important to develop and test theoretical models regarding the role that such experiences may play in the development of suicidal behavior. In recent years, researchers have begun to test hypotheses regarding combinations of adversities that may play a particularly important role in the development of suicidal ideation and behavior. Case-control and longitudinal studies[9,17,18] have indicated that adversities such as poor family relationships and stressful life events remain associated with suicidal behavior after other risk factors are taken into account. Certain combinations of maladaptive parental behaviors, such as affectionless and overprotective parenting, have been reported to be associated with risk for suicide.[19-21] Research has indicated that suicidal behavior tends to be

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PARTICIPANTS AND METHODS

SAMPLE AND PROCEDURE

Participants were 659 families with children between the ages of 1 and 11 years from 2 counties in northern New York, randomly sampled and interviewed in 1975, 1983, 1985 to 1986, and 1991 to 1993.[27,28] The original sample, interviewed in 1975, included 976 families. Because of sample attrition, information regarding parental psychiatric disorders and maladaptive parenting behavior through the 1985-1986 interview and suicidal behavior through the 1991-1993 interview was available for the 659 families in the present study. There were no significant differences between these 659 families and the original 976 families for demographic characteristics, maladaptive parental behavior, maternal psychiatric symptoms, offspring temperament, or the overall prevalence of paternal psychiatric symptoms, although paternal substance abuse in 1975 was less prevalent among the 659 families in the present sample than among the 976 families in the original sample. In addition, the families in the present sample were generally representative of families in the northeastern United States for socioeconomic status and a wide range of demographic variables, but reflected the sampled region in the high proportions of Catholic (54%) and white (91%) participants.[27]

The mean age of the youths, who were randomly selected from the participating families, was 5 (SD, 3) years in 1975, 14 (SD, 3) years in 1983, 16 (SD, 3) years in 1985-1986, and 22 (SD, 3) years in 1991-1993. Study procedures were approved according to appropriate institutional guidelines. Written informed consent was obtained after the interview procedures were fully explained. Youths and their mothers were interviewed separately by extensively trained and supervised lay interviewers. Both interviewers were blind to the responses of the other informant. Additional information regarding the study methods is available from previous reports.[27,28]

ASSESSMENT OF CHILDHOOD ADVERSITIES

The Disorganizing Poverty Interview (DPI)[28] was used to assess the following childhood adversities: death of a parent, disabling parental injury or illness, living in an unsafe neighborhood, low maternal age, low parental educational level, parental separation or divorce, peer aggression, low family income, school violence, the presence of an individual who experienced a crime in the household, and upbringing by a single parent. Family income was transformed to percentage of US poverty levels. Poverty was defined as a mean income below 100% of the US poverty level. Low parental educational level was defined as less than a high school education for one or both parents. Much research has supported the reliability and validity of the DPI.[27]

ASSESSMENT OF MALADAPTIVE PARENTAL BEHAVIOR

Information obtained during the maternal and offspring interviews assessed a wide range of maternal and paternal behaviors. Scales used to assess inconsistent maternal enforcement of rules, loud arguments between the parents, low maternal educational aspirations for the child, maternal possessiveness, maternal use of guilt to control the child, maternal anger toward the child, parental cigarette smoking, parental supervision of the child, paternal assistance to the child's mother, paternal role fulfillment, and maternal verbal abuse were obtained from the DPI and instruments assessing maternal child-rearing attitudes and behaviors that were administered during the maternal interviews.[28-31] Measures of maternal punishment, parental affection toward the child, parental time spent with the child, and poor parental communication with the child were administered during the maternal and offspring interviews using scales assessing parental warmth, parent-child communication, and parental support and availability.[28,29,31] Data regarding parental home maintenance and maternal behavior during the interview were provided by interviewer observations. Research[21,27-35] has provided support for the validity of the measures that were used to assess maternal and paternal behavior. Scales and items assessing each type of parental behavior were dichotomized at the maladaptive end of the scale, to identify specific types of statistically deviant parental behavior that were associated with parental and offspring psychiatric symptoms. To identify youths who experienced a high level of maladaptive parenting, an index of the total number of maladaptive parenting behaviors was computed (range, 0-20; $\alpha = .71$).

ASSESSMENT OF CHILDHOOD PHYSICAL AND SEXUAL ABUSE

Data regarding cases of childhood physical and sexual abuse that had been investigated, confirmed, and verified were obtained from New York State records. To ensure confidentiality, participants were identified by numeric code and data were entered by individuals with no access to information identifying the participant. Self-reports of childhood maltreatment were obtained from the offspring during the 1991-1993 interview. Childhood maltreatment data were not obtained from 36 individuals whose families had relocated from New York and who did not provide responses to these interview items. Detailed information regarding the perpetrator, dates, and frequency of abuse was available only from the official records. Additional information regarding the assessment of childhood maltreatment is available from a previous report.[7]

ASSESSMENT OF NEGATIVE LIFE EVENTS AND SEVERE INTERPERSONAL DIFFICULTIES

An inventory of life events was administered during the 1985-1986 maternal and offspring interviews to assess life events that the youths had experienced during the past 2 years: death of a loved one, failure to achieve an important goal, high risk of being fired or laid off from one's job, parental separation or divorce, the end of a romantic relationship or rejection by a romantic partner, serious injury or illness, serious fights with family members, serious financial problems, serious problems at school or work,

multidetermined[2] and that individuals who are exposed to a series of adversities during childhood and adolescence are at a particularly elevated risk for suicide.[19,22]

Developmental theorists have hypothesized that negative life events and interpersonal difficulties may play an important role in determining whether childhood

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trouble with the law, and having experienced a crime or an assault. The following types of severe offspring interpersonal difficulties were assessed during the maternal and offspring interviews: cruelty toward peers, difficulty making new friends, frequent arguments with adults or peers, loneliness and interpersonal isolation, lack of close friends, poor relationships with friends and peers, and refusal to share with others. Life events and interpersonal difficulties were considered present if reported by either informant.

ASSESSMENT OF PSYCHIATRIC SYMPTOMS AND SUICIDAL BEHAVIOR

Symptoms of anxiety and depression and disruptive behavior problems were assessed in 1975 using the DPI.[28] Three different age-appropriate versions of the DPI were administered, corresponding to the age of the offspring. Anxiety, disruptive, eating, mood, and substance use disorders were assessed during adolescence and early adulthood using the Diagnostic Interview Schedule for Children.[36] The parent and offspring versions of the Diagnostic Interview Schedule for Children were administered during the adolescent interviews because the use of multiple informants increases the reliability and validity of psychiatric diagnoses among adolescents.[37,38] Symptoms were considered present if reported by either informant. The Diagnostic Interview Schedule for Children also assessed suicidal ideation and behavior. Respondents were asked if they wished they were dead, if they thought that life was not worth living, if they thought that their family would be better off without them, and if they had thought about killing themselves in the past year. They were then asked if, during their lifetime, they had ever tried to kill themselves. If they answered yes, they were asked whether they had attempted suicide in the past year, whether they had been taken to a hospital or seen a physician following their most recent suicide attempt, whether they had injured themselves or become ill as a result of the suicide attempt, and how many times they had attempted suicide. The reliability and validity of the Diagnostic Interview Schedule for Children as used in the present study are comparable to those of other structured interviews.[39]

Interview items used to assess current maternal psychiatric symptoms were obtained from the DPI, subscales from the California Psychological Inventory,[40] the Hopkins Symptom Checklist,[41] and instruments that assessed maternal alienation[42] and other personality traits.[43-45] *DSM-IV*–based[46] diagnostic algorithms were developed using items that assessed diagnostic criteria for maternal anxiety, depressive, disruptive, personality, and substance use disorders. Current paternal alcohol abuse, other drug abuse, and antisocial behavior were assessed during the maternal interviews using the DPI. In addition, lifetime histories of maternal and paternal anxiety, depressive, disruptive, personality, and substance use disorders were assessed during the 1991-1993 maternal interview using items adapted from the New York High Risk Study Family Interview.[47] Data regarding the onset of maternal and paternal disorders permitted identification of psychiatric disorders that were evident by the 1985-1986 interview. Research[34] has supported the reliability and validity of the items used to assess parental psychiatric symptoms.

DATA ANALYTIC PROCEDURE

Analyses of contingency tables were conducted to investigate associations between childhood adversities, negative life events, severe interpersonal difficulties, and suicide attempts during late adolescence or early adulthood. Logistic regression analyses were conducted to investigate whether these associations were significant after offspring age, sex, and psychiatric symptoms during childhood and early adolescence and parental psychiatric symptoms were controlled statistically. Because few suicide attempts were reported, the covariates were controlled sequentially in a series of analyses, rather than simultaneously, to reduce the probability of type II errors.

Logistic regression analyses were conducted to investigate the mediation hypotheses, using an established 3-step procedure.[48] First, we investigated whether there was a significant bivariate association between a high level of maladaptive parenting (operationally defined as ≥3 maladaptive parenting behaviors) or abuse during childhood or early adolescence (by a mean age of 14 years) and risk for suicide attempts during late adolescence or early adulthood (reported at a mean age of 22 years) and whether the magnitude of this association was reduced when interpersonal difficulties during middle adolescence (reported at a mean age of 16 years) were controlled statistically. Second, we investigated whether a high level of maladaptive parenting or abuse during childhood or early adolescence was associated with a high number of interpersonal difficulties (operationally defined as ≥4 severe or episodic interpersonal difficulties) during middle adolescence. Third, we investigated whether interpersonal difficulties during middle adolescence were associated with risk for suicide attempts during late adolescence or early adulthood after maladaptive parenting or abuse during childhood or early adolescence was controlled statistically. If all 3 of these conditions were met, it would be appropriate to infer that interpersonal difficulties during middle adolescence mediated the association between maladaptive parenting or abuse during childhood or early adolescence and subsequent suicide attempts. Logistic regression analyses were also conducted to investigate whether interpersonal difficulties during adolescence moderated the association between maladaptive parenting or abuse and subsequent offspring suicide attempts. Unlike a mediation hypothesis, which postulates a specific causal sequence involving 3 temporally distinct stages, a moderation hypothesis simply postulates that the association between an independent variable and a dependent variable is influenced by a moderating variable. Moderation hypotheses were tested by investigating whether the statistical interaction of maladaptive parenting or abuse during childhood or early adolescence and interpersonal difficulties during middle adolescence predicted suicide attempts during late adolescence or early adulthood.

adversities contribute to the onset of suicidal behavior. Case-control research[23] has suggested that interpersonal conflict or separation during adulthood may play a role in determining whether neglectful and overprotective parenting during childhood predicts suicidal behavior during adulthood. Longitudinal studies have suggested

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that low family cohesion, low family expressiveness, and high family conflict may mediate the association between maternal depression and adolescent suicidality,[24] that adolescents' relationships with their parents may moderate the association between stressful life events and depressive symptoms,[25] and that stressful life events may mediate the association between certain types of childhood adversity and risk for suicidal behavior during adolescence or early adulthood.[8] These findings, and research[10,13] indicating that disruption of interpersonal relationships is a predominant risk factor for suicide, suggest that suicide attempts may often be attributable to severe long-term or episodic interpersonal difficulties among individuals who had particularly problematic relationships with their parents during childhood.[26]

It may be possible to develop improved interventions for individuals who are at high risk for suicide by identifying combinations of risk factors that are associated with the onset of suicidal behavior.[2] Prospective epidemiological research can facilitate the identification of such patterns by assessing a wide range of childhood adversities, interpersonal difficulties during middle adolescence, and suicidal behavior during late adolescence and adulthood. Because our review of the literature indicated that this set of risk factors and outcomes had not previously been investigated in a thoroughly comprehensive and systematic manner with longitudinal data, data from the Children in the Community Study,[27] a prospective longitudinal investigation, were used to investigate whether negative life events or severe interpersonal difficulties during adolescence mediate the association between childhood adversities and suicide attempts during late adolescence or early adulthood. We also investigated whether maladaptive parenting mediated the association between parental psychiatric symptoms and offspring suicide attempts. In addition, we investigated whether adolescent psychiatric symptoms mediate the association between childhood adversities and suicide attempts during late adolescence or early adulthood, as recent research[8] has suggested.

RESULTS

PREVALENCE OF SUICIDE ATTEMPTS DURING LATE ADOLESCENCE OR EARLY ADULTHOOD

Twenty-three individuals (3%) for whom there was no evidence of previous suicide attempts reported that they had attempted suicide when they were interviewed at a mean age of 22 years. Of these 23 individuals, 7 reported 2 or more attempts, 16 reported that they had injured themselves or become sick as a result of their suicide attempt, and 7 reported that they had visited a physician or been taken to a hospital following their suicide attempt. Overall, 37 individuals (6%) reported that they had attempted suicide during adolescence or early adulthood. Sixteen individuals (2%) reported that they had attempted suicide more than once during adolescence or early adulthood.

ASSOCIATIONS BETWEEN COVARIATES, INTERPERSONAL DIFFICULTIES, AND SUICIDAL BEHAVIOR

The study offspring who were younger ($r = -0.13$, $P = .001$), who had psychiatric disorders during childhood or early adolescence (odds ratio [OR], 3.06; 95% confidence interval [CI], 2.02-4.65) or middle adolescence (OR, 7.76; 95% CI, 4.93-12.19), and whose parents had psychiatric disorders (OR, 2.78; 95% CI, 1.83-4.22) were at an elevated risk for a high level of interpersonal difficulties during middle adolescence. The offspring who were younger ($r = -0.08$, $P = .05$), who were female (OR, 2.73; 95% CI, 1.06-7.01), who had psychiatric disorders during middle adolescence (OR, 2.98; 95% CI, 1.28-6.92), and whose parents had psychiatric disorders (OR, 4.55; 95% CI, 1.77-11.70) were also at an elevated risk for suicide attempts during late adolescence or early adulthood. However, age, psychiatric disorder during adolescence, and parental psychiatric symptoms were not significantly associated with suicidal behavior during late adolescence or early adulthood after maladaptive parental behavior was controlled statistically.

CHILDHOOD ADVERSITIES AND SUICIDE ATTEMPTS DURING LATE ADOLESCENCE OR EARLY ADULTHOOD

A high level of school violence during childhood or early adolescence was associated with risk for suicide attempts during late adolescence or early adulthood after all of the covariates were controlled (**Table 1**). Harsh parental punishment, low maternal educational aspirations for the youth, maternal possessiveness, maternal verbal abuse, and childhood physical and sexual abuse were associated with increased offspring risk for suicide attempts during late adolescence or early adulthood after all of the covariates were controlled (**Table 2**).

NEGATIVE LIFE EVENTS, SEVERE INTERPERSONAL DIFFICULTIES, AND SUBSEQUENT SUICIDE ATTEMPTS

Serious fights with family members were the only negative life events that were significantly associated with increased offspring risk for suicide attempts during late adolescence or early adulthood after all of the covariates were controlled (**Table 3**). Eight types of severe interpersonal difficulties, including difficulty making new friends, frequent arguments with adults in authority, frequent cruelty toward peers, frequent refusal to share with others, frequent arguments or anger with friends or peers, loneliness and interpersonal isolation, lack of close friends, and poor relationships with friends and peers, were significantly associated with risk for suicide attempts during late adolescence or early adulthood after the covariates were controlled (**Table 4**).

TESTS OF MEDIATION AND MODERATION HYPOTHESES

Interpersonal difficulties during middle adolescence mediated the association between maladaptive parenting or

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Table 1. Childhood Adversities and Suicide Attempts Reported at a Mean Age of 22 Years*

Type of Childhood Adversity	Experienced Childhood Adversity†		Odds Ratio (95% Confidence Interval)
	No	Yes	
Born when mother was <20 years old	3 (17/588)	8 (6/71)	3.10 (1.18-8.14)‡
Childhood injury or illness	4 (21/570)	2 (2/89)	0.60 (0.14-2.61)
Death of a parent	4 (23/626)	0 (0/33)	. . .
Disabling parental injury or illness	3 (21/610)	4 (2/49)	1.19 (0.27-5.25)
Family income below the poverty level	3 (18/604)	9 (5/55)	3.26 (1.16-9.14)‡
High level of violence in school	2 (12/517)	8 (11/142)	3.53 (1.52-8.19)‡§
High level of peer aggression	3 (20/613)	7 (3/46)	2.07 (0.59-7.24)
Person in the household who experienced a crime	3 (19/553)	4 (4/106)	1.10 (0.37-3.31)
Lived in an unsafe neighborhood	4 (20/543)	3 (3/116)	0.69 (0.20-2.38)
Low parental educational level	3 (15/489)	5 (8/170)	1.56 (0.65-3.75)
Parental separation or divorce	3 (16/482)	4 (7/177)	1.20 (0.48-2.97)
Raised by a single parent	3 (18/543)	4 (5/116)	1.31 (0.48-3.61)

*The covariates were controlled in a sequence of analyses, rather than simultaneously, to reduce the likelihood of a type II error associated with the small number of suicide attempts. Ellipses indicate that it was not possible to compute the odds ratio due to an empty cell in the contingency table.
†Data are given as percentage (number of individuals who reported a suicide attempt/total number of individuals in that group).
‡Significant after controlling for offspring age, sex, and psychiatric symptoms during childhood and early adolescence.
§Significant after controlling for parental psychiatric disorders.

Table 2. Maladaptive Parenting or Childhood Maltreatment and Suicide Attempts Reported at a Mean Age of 22 Years*

Type of Maladaptive Parental Behavior or Childhood Maltreatment	Experienced Maladaptive Parenting or Childhood Maltreatment†		Odds Ratio (95% Confidence Interval)
	No	Yes	
Harsh parental punishment	3 (16/579)	9 (7/80)	3.37 (1.34-8.48)‡§
Low maternal educational aspirations for the youth	2 (13/520)	7 (10/139)	3.02 (1.30-7.05)‡§
Maternal possessiveness	3 (19/625)	12 (4/34)	4.25 (1.36-13.28)‡§
Maternal use of guilt to control the youth's behavior	3 (17/585)	8 (6/74)	2.95 (1.12-7.73)‡
Maternal verbal abuse	3 (17/597)	10 (6/62)	3.66 (1.39-9.65)‡§
Low paternal assistance to the youth's mother	3 (15/541)	7 (8/118)	2.55 (1.06-6.16)‡
Poor paternal communication with the youth	3 (14/528)	7 (9/131)	2.71 (1.15-6.40)‡
Poor paternal fulfillment of the role of father in the family	3 (16/568)	8 (7/91)	2.88 (1.15-7.20)‡
Childhood abuse∥			
Physical	3 (16/587)	14 (5/36)	5.10 (1.78-14.64)‡§
Sexual	3 (19/602)	19 (4/21)	7.22 (2.22-23.53)‡§
≥3 Types of maladaptive parental behavior or childhood abuse	2 (7/407)	6 (16/252)	3.87 (1.57-9.55)‡§

*The covariates were controlled in a sequence of analyses, rather than simultaneously, to reduce the likelihood of a type II error associated with the small number of suicide attempts.
†Data are given as percentage (number of individuals who reported a suicide attempt/total number of individuals in that group).
‡Significant after controlling for offspring age, sex, and psychiatric symptoms during childhood and early adolescence.
§Significant after controlling for parental psychiatric disorders.
∥Some, but not all, cases of physical and sexual abuse were perpetrated by the parents.

abuse during childhood or early adolescence and suicide attempts during adolescence or early adulthood. All 3 of the conditions required for mediation were met.[48] First, there was a significant bivariate association between maladaptive parenting or abuse during childhood or early adolescence and risk for suicide attempts during adolescence or early adulthood (Table 2), although this association did not remain significant when interpersonal difficulties during middle adolescence were controlled statistically (**Figure**). Second, maladaptive parenting or abuse during childhood or early adolescence was significantly associated with elevated interpersonal difficulties during middle adolescence (**Table 5** and Figure). Third, a high level of interpersonal difficulties during middle adolescence was significantly associated with risk for suicide attempts during late adolescence or early adulthood after maladaptive parenting or abuse during childhood or early adolescence was controlled statistically (Table 4 and Figure). Interpersonal difficulties accounted for 51% of the association between maladaptive parenting or abuse during childhood or early adolescence and suicide attempts during late adolescence or early adulthood. Supplemental analyses indicated that the same pattern of findings was obtained when prior suicide attempts were controlled statistically. Supplemental analyses also indicated that interpersonal difficulties mediated the association between school violence during childhood or early adolescence and suicide attempts during late adolescence or early adulthood.

Twenty (87%) of the young adults who reported suicide attempts had experienced a high level of

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Table 3. Negative Life Events Reported at a Mean Age of 16 Years and Suicide Attempts Reported at a Mean Age of 22 Years*

Negative Life Event Reported at a Mean Age of 16 y	Experienced a Negative Life Event†		Odds Ratio (95% Confidence Interval)
	No	Yes	
Death of a loved one	3 (12/393)	4 (11/266)	1.37 (0.59-3.15)
Failure to achieve an important goal	4 (18/500)	3 (5/159)	0.87 (0.32-2.38)
Parental separation or divorce	3 (21/619)	5 (2/40)	1.50 (0.34-6.63)
Relationship breakup or rejection	2 (10/436)	6 (13/223)	2.64 (1.14-6.11)‡
Serious fights with family members	2 (13/522)	7 (10/137)	3.08 (1.32-7.19)‡§
Serious fights between other family members	3 (18/554)	5 (5/105)	1.49 (0.54-4.10)
Serious financial problems	3 (16/567)	8 (7/92)	2.83 (1.13-7.10)‡
Serious problems at school or work	3 (17/550)	6 (6/109)	1.83 (0.70-4.74)
Severe injury or illness	4 (21/558)	2 (2/101)	0.52 (0.11-2.24)
Trouble with the law	3 (19/603)	7 (4/56)	2.36 (0.77-7.21)
Experienced a crime or an assault	3 (22/631)	4 (1/28)	1.03 (0.13-7.89)

*The covariates were controlled in a sequence of analyses, rather than simultaneously, to reduce the likelihood of a type II error associated with the small number of suicide attempts.
†Data are given as percentage (number of individuals who reported a suicide attempt/total number of individuals in that group).
‡Significant after controlling for offspring age, sex, and psychiatric symptoms during childhood and early adolescence.
§Significant after controlling for parental psychiatric disorders.

Table 4. Long-term Interpersonal Difficulties Reported at a Mean Age of 16 Years and Suicide Attempts Reported at a Mean Age of 22 Years*

Long-term Interpersonal Difficulty Reported at a Mean Age of 16 y	Experienced an Interpersonal Difficulty†		Odds Ratio (95% Confidence Interval)
	No	Yes	
Difficulty making new friends	2 (9/437)	6 (14/222)	3.20 (1.36-7.52)‡
Frequent arguments with adults in authority	2 (11/526)	9 (12/133)	4.64 (2.00-10.77)‡
Frequent cruel behavior toward peers	2 (11/483)	7 (12/176)	3.14 (1.36-7.25)‡
Frequent refusal to share with others	2 (12/506)	7 (11/153)	3.19 (1.38-7.38)‡
Frequent arguments or expression of anger against friends or peers	3 (15/559)	8 (8/100)	3.15 (1.30-7.65)‡
Loneliness and interpersonal isolation	3 (15/568)	9 (8/91)	3.55 (1.46-8.64)‡
No close friends	3 (17/601)	10 (6/58)	3.96 (1.50-10.49)‡
Poor relationships with friends and peers	3 (18/620)	13 (5/39)	4.92 (1.72-14.05)‡
≥4 Types of interpersonal difficulty§	2 (9/548)	13 (14/111)	8.64 (3.64-20.53)‡

*The covariates were controlled in a sequence of analyses, rather than simultaneously, to reduce the likelihood of a type II error associated with the small number of suicide attempts.
†Data are given as percentage (number of individuals who reported a suicide attempt/total number of individuals in that group).
‡Significant after controlling for offspring age, sex, and psychiatric symptoms during childhood and early adolescence and parental psychiatric disorders.
§Two types of episodic interpersonal difficulties, rejection by a romantic partner and serious fights with family members, were included in this index.

maladaptive parenting or abuse during childhood and/or a high level of interpersonal difficulties during middle adolescence. However, the statistical interaction of maladaptive parenting or abuse during childhood or early adolescence with interpersonal difficulties during middle adolescence did not predict subsequent suicide attempts. Psychiatric disorders during adolescence did not moderate or mediate the association between maladaptive parenting or abuse during childhood or early adolescence and suicide attempts during late adolescence or early adulthood. Conversely, a high level of maladaptive parental behavior during childhood and adolescence was associated with risk for suicide attempts during late adolescence or early adulthood after parental psychiatric disorders were controlled (OR, 2.91; 95% CI, 1.36-9.37). Considered together with our findings indicating that parental psychiatric disorders were significantly associated with offspring suicide attempts before, but not after, maladaptive parenting was controlled statistically, the present findings are consistent with the inference that maladaptive parenting mediated the association between parental psychiatric disorders and offspring suicide attempts during late adolescence or early adulthood.

COMMENT

The principal finding of the present study is that interpersonal difficulties during middle adolescence mediated the association between maladaptive parenting or abuse during childhood or early adolescence and suicide attempts during early adulthood. Although this is the first prospective longitudinal study to investigate this mediational hypothesis in a systematic manner, our findings are consistent with previous findings indicating that disruption of interpersonal relationships is a predominant risk factor for suicide[10,13,49] and that interpersonal conflict or separation during adulthood partially mediated an association between neglectful overprotective parenting and subsequent suicide attempts.[23]

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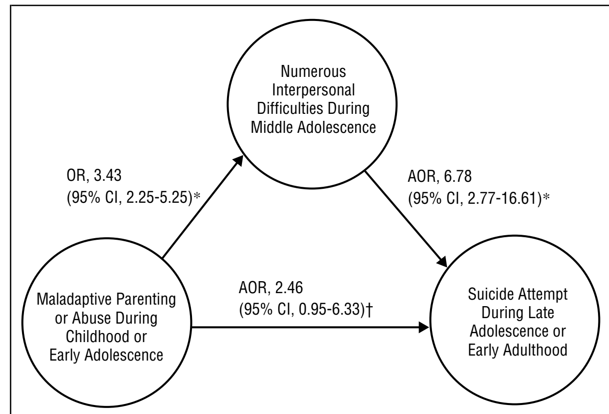
The present findings are also consistent with research indicating that stressful life events mediated the association between childhood adversities and suicidal behavior during adolescence or early adulthood,[8] that suicide is multidetermined,[2] and that youths who experience numerous adversities during childhood and adolescence are at a particularly elevated risk for suicide.[18,22,49]

Although it has long been recognized that many types of adversities may contribute to the onset of suicidal behavior, the present findings are of particular interest because they suggest that the development of suicidal behavior may often be attributable to an extensive history of profound interpersonal difficulties. Specifically, our findings suggest that children who experience high levels of maladaptive parenting or child abuse may have difficulty in developing social skills that are essential for the maintenance of healthy relationships with peers and adults. Without these skills, youths may tend to become interpersonally isolated or to relate to others in an antagonistic manner. Such maladaptive patterns of interpersonal functioning may contribute to the onset of despair, hopelessness, and suicidal behavior.



Associations between (1) elevated maladaptive parenting or abuse during childhood or early adolescence and elevated relationship difficulties during middle adolescence; (2) elevated maladaptive parenting or abuse during childhood or early adolescence and suicide attempts during late adolescence or early adulthood, controlling for elevated relationship difficulties during middle adolescence; and (3) elevated relationship difficulties during middle adolescence and suicide attempts during late adolescence or early adulthood, controlling for maladaptive parenting or abuse during childhood or early adolescence. Asterisks indicate $P<.001$ (these associations remained significant after controlling for offspring age, sex, and psychiatric disorders during childhood or early adolescence and parental psychiatric disorders); dagger, $P>.05$; OR, odds ratio; AOR, adjusted OR; and CI, confidence interval.

It is of interest to note that one of the youths in the Children in the Community Study committed suicide in 1986, at the age of 15 years. This youth had experienced several childhood adversities, including a high level of peer aggression, a high level of school violence, parental divorce, and 7 different types of maladaptive parental behavior. In addition, during the 1985-1986 interview, this youth reported having experienced 3 negative life events in the past 2 years, including the end of a romantic relationship, and 3 different types of severe interpersonal difficulties. Because this youth was not able to participate in the 1991-1993 interview, these data, which are consistent with the developmental model articulated in this report, were not included in any of the formal statistical analyses.

Because research[2] has shown that early recognition of risk factors for suicidal behavior can play a crucial role in preventing suicide, it may be possible to prevent the onset of suicidal behavior among adolescents and young adults by promoting increased awareness among parents, educators, and health professionals of the important role that a history of severe interpersonal difficulties may play in the development of suicidal behavior among adolescents and young adults. In addition, it may be possible to prevent the development of suicidal behavior and other psychiatric symptoms by helping parents of at-risk youths to modify their child-rearing

Table 5. Association Between Maladaptive Parenting or Abuse During Childhood or Early Adolescence and Interpersonal Difficulties Reported at a Mean Age of 16 Years*

	Experienced Maladaptive Parenting or Childhood Abuse†		
Interpersonal Difficulty Reported at a Mean Age of 16 y	No (n = 407)	Yes (n = 252)	Odds Ratio (95% Confidence Interval)
Difficulty making new friends	30 (123)	39 (99)	1.49 (1.07-2.08)‡§
Frequent arguments with adults in authority	14 (59)	29 (74)	2.45 (1.67-3.61)‡§‖
Frequent cruel behavior toward peers	21 (86)	36 (90)	2.07 (1.46-2.94)‡§‖
Frequent refusal to share with others	20 (80)	29 (73)	1.67 (1.16-2.40)‡§‖
Frequent arguments or expression of anger against friends or peers	13 (52)	19 (48)	1.61 (1.05-2.47)‡
Loneliness and interpersonal isolation	13 (53)	15 (38)	1.18 (0.76-1.86)
No close friends	5 (22)	14 (36)	2.92 (1.67-5.09)‡§‖
Poor relationships with friends and peers	4 (18)	8 (21)	1.96 (1.03-3.76)‡§
Relationship breakup or rejection	30 (121)	40 (102)	1.61 (1.16-2.23)‡§
Serious fights with family members	16 (67)	28 (70)	1.95 (1.33-2.85)‡§‖
≥4 Types of interpersonal difficulty	10 (41)	28 (70)	3.43 (2.25-5.25)‡§‖

*The covariates were controlled in a sequence of analyses, rather than simultaneously, to reduce the likelihood of a type II error associated with the small number of suicide attempts.

†Data are given as percentage (number of individuals who reported an interpersonal difficulty). Youths were considered to have experienced maladaptive parenting or childhood abuse if they experienced 3 or more types of maladaptive parenting or physical, sexual, or verbal abuse during childhood or early adolescence.

‡Significant after controlling for offspring age and sex.

§Significant after controlling for parental psychiatric disorders.

‖Significant after controlling for psychiatric symptoms during childhood and early adolescence.

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behavior.[50] Because parental psychiatric disorders are associated with maladaptive parenting and offspring suicidality, it may also be possible to prevent the onset of suicidal behavior by improving the recognition and treatment of parental psychiatric disorders. Furthermore, because different combinations of factors can be associated with suicide risk, it is important for clinicians to conduct a detailed and comprehensive assessment of risk factors among patients who may be at risk for suicide.[2] Psychotherapeutic interventions are most likely to be effective in preventing suicide when they address the specific adversities experienced by each individual, and young people who are at an elevated risk for suicide may benefit most from clinical interventions that help them to overcome a prolonged history of severe interpersonal difficulties.

The limitations of the present study merit consideration. Because negative life events were not assessed during early adolescence and because offspring reports of maladaptive parenting were not obtained in 1975, it was not possible to investigate whether the model examined in the present report applies to the development of suicidal behavior during early and middle adolescence. It will be of interest for future research to investigate this hypothesis. Because the fathers were not interviewed, paternal behavior and psychiatric symptoms were assessed during the maternal and offspring interviews. However, our confidence in the paternal data was increased because maladaptive maternal and paternal behavior were both associated with offspring suicide attempts and because the prevalence of paternal disorders in the present sample was comparable with the findings of major epidemiological studies.[51,52] Paternal substance abuse was less prevalent in the present sample than in the remainder of the families originally interviewed in 1975, but supplemental analyses indicated that the findings would not have been substantively different if the prevalence of paternal substance abuse had been higher. Because data regarding the timing of childhood physical and sexual abuse were not obtained from the retrospective data, some retrospectively reported cases of abuse could not be included in the mediational analyses. However, supplemental analyses indicated that this did not have a substantive effect on the present findings. The present study also has numerous methodological strengths, including the size and composition of the sample; the use of a prospective longitudinal design; the systematic assessment of maladaptive parenting, childhood maltreatment, parental and offspring psychiatric symptoms, negative life events, and severe interpersonal difficulties based on data from multiple informants; and the use of statistical procedures to control for offspring age, sex, and offspring and parental psychiatric symptoms.

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