Emotional Intelligence Is a Protective Factor for Suicidal Behavior

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ABSTRACT

Objective: Little is known about what factors protect against the occurrence of suicidal ideation and attempts. We tested whether emotional intelligence (EI)—the ability to perceive, integrate into thoughts, understand, and manage one's emotions—decreases the likelihood of suicidal ideation and attempts among those at risk. **Method:** Adolescents ($N = 54$) aged 12 to 19 years were recruited from local psychiatric clinics and the community to participate in this cross-sectional laboratory-based study. Analyses examined whether the relations between childhood sexual abuse and suicidal ideation and attempts were moderated by adolescents' EI. These constructs were assessed using self-report, structured interviews, and performance-based tests, respectively. **Results:** Analyses revealed that EI is a protective factor for both suicidal ideation and attempts. Specifically, childhood sexual abuse was strongly predictive of these outcomes among those with low EI, weakly predictive among those with medium EI, and completely unrelated among those with high EI. Follow-up analyses revealed that the protective effect of EI was driven primarily by differences in strategic EI (i.e., ability to understand and manage emotions) but not experiential EI (i.e., ability to perceive emotions and integrate emotions into thoughts). **Conclusions:** This study provides preliminary evidence that EI is a protective factor for suicidal ideation and attempts. Important next steps include testing the moderating influence of EI on a wider range of stressful life events and self-injurious behaviors, as well as conducting experimental studies to determine whether enhancing EI decreases the subsequent occurrence of these behavior problems. *J. Am. Acad. Child Adolesc Psychiatry,* 2009;48(4):422–430.
Key Words: suicide, suicidal ideation, emotional intelligence, sexual abuse, suicide attempt, protective.

Suicidal behaviors, which include suicidal ideation and attempts, are prevalent and dangerous behavior problems around the world, particularly among adolescents.[1–3] Although service use among those experiencing suicidal behaviors has increased significantly over the past decade, the rates of nonfatal suicidal behaviors have not decreased.[4] These findings underscore the importance of identifying factors that decrease the risk for suicidal behaviors and provide the motivation for the current study.

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Research on suicidal behaviors has primarily aimed at identifying risk factors, such as the experience of childhood maltreatment and other adverse life events (e.g., interpersonal loss, school or work problems).[5–7] However, most people who experience stressful life events never engage in suicidal behaviors. This raises the important question of what factors might protect against the occurrence of these outcomes. Protective factors are those that decrease the probability of a negative outcome among those at risk.[8] It is important to note that a protective factor is not merely defined by the absence of a risk factor. Rather, it is a third variable that modifies the strength or direction of the relation between a risk factor and outcome. For instance, several recent studies suggest that genetic and neurobiological factors can buffer the influence of stressful life events on the likelihood of suicide attempts.[9–11] Other research suggests that environmental factors such as reduced accessibility to firearms,[12,13] religious affiliation,[14,15] and social support[16–18] may moderate the influence of stressful

life events on suicide risk. The study of psychological protective factors for suicidal behaviors represents an important research direction given that such factors are likely to be more easily modified than other moderators identified by previous work (e.g., genetic polymorphisms, presence of social support).

Psychological theories of suicide suggest that people engage in suicidal behaviors due to an inability to tolerate or modulate the experience of negative affect.[19,20] It is therefore possible that those who are especially adept at perceiving, integrating into thoughts, understanding, and managing their emotions would be at reduced risk for suicidal behaviors in response to stressful life events. Accordingly, the current study was designed to test whether stronger abilities in each of these domains are protective against suicidal behaviors in the presence of significant stressful life events.

In the current study, stressful life events were operationalized as the experience of childhood sexual abuse (CSA). This decision was based on several factors. First, previous studies testing potential moderators of the relation between life stressors and suicide attempts and related forms of psychopathology (e.g., depression) have used childhood maltreatment[21] and CSA in particular[11] as a measure of stressful life events. The assessment of CSA in the current study therefore facilitates comparisons across studies. Second, the association between CSA and suicidal behaviors has been replicated across many studies.[22,23] Childhood sexual abuse is a stronger risk factor for suicidal behaviors than other forms of childhood maltreatment[24] or childhood adversities (e.g., loss of caregiver, family violence, parental psychopathology).[25,26] Third, past work has reported that history of CSA affects the transmission of suicide risk from parents to offspring,[27,28] further highlighting need to better understand this risk factor.

The way that emotions are experienced and their influence on thoughts and behaviors have become the focus of increasing interest and study in psychology and psychiatry.[29,30] Most research in this area has focused on the construct of emotion regulation, although this construct has been defined and measured in different ways across studies.[31] In the current study, we sought to examine the moderating effect of a broad range of emotional processes or abilities, including (but not limited to) the way in which people manage their emotional experiences. To do so, we examined the moderating effect of emotional intelligence (EI)—a multidimensional construct that refers to the ability to reason about emotions, as well as the ability to use emotions in guiding one's reasoning and behavior.[32–35] Emotional intelligence, which has been the focus of a substantial body of research over the past two decades, can be decomposed into two main abilities (each composed of two branches). *Strategic EI* is defined as the ability to understand and manage emotions (e.g., understanding what feelings are expected to emerge in response to different events and knowing how to regulate emotions to help attain one's goals). In contrast, *experiential EI* is defined as the ability to perceive emotions and use them to facilitate thought (e.g., accurately reading facial expressions and integrating emotions into thoughts). Strategic EI is considered to be a more developmentally complex ability that is involved in managing one's emotions to facilitate problem solving and decision making, whereas experiential EI is considered to represent lower level abilities.[32–35]

Some previous research has linked problems with EI and the experience of clinical behavior problems. For instance, several aspects of self-reported EI has been reported to moderate the relation between stress and the outcomes of hopelessness, depression, and suicidal ideation.[36] The current study extends this earlier work by using a more comprehensive and rigorous measure of EI and by examining the relation between EI and suicidal behaviors. The goal of the current study was to test the primary hypothesis that EI moderates the relation between CSA and the experience of suicidal behaviors such that higher EI will be associated with lower levels of suicidal ideation and suicide attempts. Given that previous studies suggest that suicidal behavior may result from problems regulating one's negative emotions,[19,20] a secondary hypothesis was that strategic EI would be a particularly important moderator of the relation between CSA and suicidal behavior.

METHOD

Participants

Fifty-four (46 female) adolescents (age in years: mean 17.30, SD 1.92, range 12–19), 31 with a recent (i.e., past year) history of suicidal ideation (57.4%) and/or attempts (14.8%) and 23 with no recent history, participated in the current study. Suicidal and nonsuicidal groups were matched on age, sex, and race/ethnicity to rule out the possibility that any observed effects are due to these

factors. They were recruited using study advertisements placed in local psychiatric clinics, newspapers, community bulletin boards, and the Internet. We focused on adolescence because of the increased risk for self-injurious behavior during this developmental period.[2,3] These 54 participants were drawn from a larger sample of 94 adolescents who participated in a laboratory-based study of nonsuicidal self-injury.[37–39] This study is reported separately because of the novel hypothesis and constructs (i.e., EI, suicidal ideation, suicide attempts) that were the focus of current analyses and because the EI measure was added to the study after it had begun, and so, it was administered only to these 54 adolescents. Adolescents in the current sample did not differ from the 40 excluded on any of the study variables measured. The current sample size provides adequate statistical power to detect large effects (power = 0.95) and some medium effects (power = 0.62) using two-tailed tests with α set at .05. Ethnicity of the participants was self-identified as European American (79.6%), Hispanic (5.6%), Asian American (3.7%), African American (1.9%), and other (9.2%).

Measures

Childhood Trauma Questionnaire. The Childhood Trauma Questionnaire (CTQ)[40] is a 28-item (<5 minutes) self-report measure of childhood and adolescent maltreatment, including physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect. For the purposes of this article, we focus on CSA alone—calculated by adding up responses to its five corresponding items. Items are rated on a five-point scale (0 = never true, 5 = very often true). The CTQ has demonstrated high internal consistency, convergent and discriminant validity, as well as good sensitivity and specificity for all forms of maltreatment among a clinical sample of adolescents.[40] The CSA subscale demonstrated excellent internal consistency (α = .89) in the current sample. Overall, 20.4% of the current sample endorsed at least one item from the CSA subscale.

Mayer-Salovey-Caruso Emotional Intelligence Test: Youth Version, Research Version 1.0. The Mayer-Salovey-Caruso Emotional Intelligence Test: Youth Version, Research Version 1.0 (MSCEIT:YV-R)[41] is a 180-item (15–20 minutes) performance-based measure that assesses the two areas (strategic versus experiential) and four branches of EI, including understanding and managing emotions, which together define strategic EI, as well as perceiving emotions and facilitating thought, which together define experiential EI. The Understanding Emotions section requires the participant to read a description of a blend of emotions (e.g., "When you have something really nice, and then you lose it, you end up feeling…") and to select the answer choice representing the most accurate complex feeling (e.g., jealous, disgusted). The Managing Emotions section requires the participant to read brief scenarios (e.g., "A boy received some very sad news. He wants to feel happy before going to a fun party. How helpful would each of the following be in getting the boy to feel happy?") and to rank along a standardized scale the degree of constructiveness of each presented possible solution. The Perceiving Emotions section requires the participant to rank along a standardized scale the extent to which photographed facial expressions suggest certain emotions (e.g., surprise, disgust). Finally, the Facilitating Thought section requires the participant to rank along a standardized scale the extent to which a particular emotion (e.g., "feeling sad") is similar to various tactile, color, and taste sensations (e.g., warm, heavy, dark, cold). Completed MSCEIT:YV-R packets were sent to Multi-Health Systems Inc. to be scored using the expert scoring criteria, where points were awarded according to a scoring key agreed on by the authors of the MSCEIT:YV-R. Specifically, the MSCEIT:YV-R items were scored according to the preset scale ranging from 0 (less correct) to 2 (more correct), and the sum of the respective items yielded branch, area, and total MSCEIT:YV-R scores. Although other psychometric properties of the MSCEIT:YV-R have not yet been published, the original MSCEIT has demonstrated excellent split-half and test-retest reliability, content and structural validity, as well as discriminant validity in relation to other cognitive abilities and personality traits.[42–44]

Self-Injurious Thoughts and Behaviors Interview. The Self-Injurious Thoughts and Behaviors Interview (SITBI)[45] is a structured interview (3–15 minutes) that assesses presence, frequency, and other characteristics of a broad range of self-injurious thoughts and behaviors, including suicidal ideation ("Did you ever have thoughts of killing yourself?") and attempt ("Did you ever make an actual attempt to kill yourself?"). In the current study, we focused on items measuring the frequency of suicidal ideation and attempts in the past year. The SITBI has demonstrated strong interrater reliability, test-retest reliability, and concurrent validity.[45] The SITBI was administered by trained master's- and doctoral–level researchers, as well as by closely supervised bachelor's degree–level research assistants. At the conclusion of each interview, each participant underwent a risk assessment and received a referral for clinical services when indicated.

Procedures

Participants who responded to the study advertisements were invited to the laboratory and provided with a complete description of the study. Written informed consent was obtained, with parental consent obtained for participants younger than 18 years. Assessments were completed during a baseline laboratory assessment, for which participants received $100. Because the MSCEIT:YV-R was incorporated into the larger study shortly after it had begun, MSCEIT:YV-R data were obtained from the first 11 participants (paid an extra $10) by sending them this measure via postal mail with a return-postage envelope. The MSCEIT:YV-R scores did not significantly differ between these 11 participants and the 43 who completed this measure in the laboratory. All procedures were approved by the university's institutional review board.

Data Analysis

Before conducting analyses, suicidal ideation and attempt variables were adjusted to reduce the influence of outliers. Following the recommendations of Tabachnick and Fidell,[46] we reassigned outliers less extreme values (i.e., within 2 SDs of the mean) that retained their relative standing in the distribution (i.e., still the highest scores on each variable), and variables that were not normally distributed were transformed to more closely approximate normality.[46] Next, we tested the magnitude of the relations between CSA, EI, and suicidal ideation and attempts using correlations. We then tested whether the relations between CSA and suicidal behaviors were moderated by EI following the recommendations for testing moderation and conducting post hoc probing.[47,48] Specifically, the CSA and EI variables were centered before computing the interaction variable. The moderation models were then examined through hierarchical linear regression analyses, entering the centered CSA and EI variables in the first step and the interaction variable in the second step. Significant interactions were plotted and probed through simple slope analyses[47,48] using conditional variables computed based on high (+1 SD), medium, and low (−1 SD) moderator (i.e., EI) values.

RESULTS

Relations Between EI, CSA, and Suicidal Behaviors

Descriptive statistics and correlations between EI, CSA, and suicidal behaviors are presented in Table 1. As expected, CSA was significantly correlated with both suicidal ideation and attempts. Emotional intelligence was not significantly associated with CSA or with suicidal behaviors, with the correlations among these constructs representing mostly small effects. This means that EI is not merely a correlate of, or risk factor for, CSA and suicidal behaviors. Although the absence of significant associations between EI and these other variables was not hypothesized, this pattern of findings strengthens the potential argument for moderation.[49]

Is EI a Protective Factor for Suicidal Behaviors?

Consistent with our primary hypothesis, overall EI significantly moderated the relations between CSA and both suicidal ideation and attempts (Table 2). As presented in Figure 1A, CSA was strongly associated with suicidal ideation for participants with low EI, whereas this relation was weaker for those with medium scores on EI and completely absent for those with high EI. The same pattern was revealed for suicide attempts.

To better understand which aspects of EI were protective for suicidal behavior, we separately tested the moderating effects of strategic and experiential EI. In support of our secondary hypothesis, analyses revealed that strategic EI significantly moderated the relations between CSA and both suicidal ideation and attempts (Table 2). As presented in Figure 1B, CSA was strongly associated with suicidal ideation for participants with low strategic EI, whereas this relation was weaker for those with medium scores on strategic EI and completely absent for those with high strategic EI. The same pattern was again revealed for suicide attempts. Experiential EI did not significantly moderate the relations between CSA and suicidal ideation or attempts (Table 2; Figure 1C).

DISCUSSION

The goal of this study was to determine whether EI is a protective factor for suicidal behaviors among adolescents who have experienced significant life stressors. Consistent with our hypotheses, results revealed that EI moderates the relation between retrospectively reported CSA and past year suicidal ideation and attempt, such that there is a strong relation between CSA and these suicidal behaviors among adolescents with low EI, a weaker relation among those with medium EI, and no significant relation among those with high EI. Further analyses revealed that strategic EI drove the overall protective effect, and experiential EI did not emerge as a significant protective factor for either suicidal ideation or attempts. Several aspects of these findings warrant additional comment.

The specificity of the observed protective effect of strategic EI (but not experiential EI) for suicidal behaviors is an important strength of this study. The fact that effects were replicated across both suicidal ideation and attempts increases confidence in the reliability of these findings. These results are consistent with those from randomized controlled trials of cognitive therapy and dialectical behavior therapy (both

TABLE 1
Correlations Among Suicidal Behaviors, CSA, and EI Subscales

Variable	1	2	3	4	5	6
Suicidal behaviors (frequency, y)						
1. Suicide ideation	—					
2. Suicide attempt	0.62**	—				
Environmental stressor						
3. CSA	0.35**	0.35**	—			
Protective factors						
4. Total EI	−0.19	−0.12	−0.13	—		
5. Strategic EI	−0.19	−0.19	−0.15	0.89**	—	
6. Experiential EI	−0.13	−0.02	−0.08	0.86**	0.52**	—
Mean (SD)	26.07 (54.45)	0.46 (1.19)	6.26 (3.08)	1.27 (0.15)	1.25 (0.62)	1.30 (0.16)
Range	0–202	0–5	5–19	0.76–1.47	0.40–1.39	1.06–1.64

Note: Means and SDs for EI scores represent item (i.e., not subscale) averages. CSA = childhood sexual abuse; EI = emotional intelligence.
*$p < .05$; **$p < .01$.

TABLE 2
EI Moderates the Relation Between CSA and Suicidal Behaviors

	B	*SE*	β	*p*	R^2	ΔR^2	ΔF
Total emotional intelligence							
Suicidal ideation							
Step 1					0.136	0.136	4.030*
CSA	0.403	0.164	.325	.018			
Total EI	−0.035	0.019	−.245	.070			
Step 2					0.233	0.096	6.270**
CSA	0.713	0.200	.574	.001			
Total EI	−0.049	0.019	−.346	.012			
CSA × total EI	−0.021	0.008	−.399	.016			
Suicide attempts							
Step 1					0.106	0.106	3.012
CSA	0.037	0.016	.306	.028			
Total EI	−0.002	0.002	−.180	.187			
Step 2					0.177	0.071	4.334*
CSA	0.062	0.020	.520	.003			
Total EI	−0.004	0.002	−.267	.057			
CSA × total EI	−0.002	0.001	−.344	.043			
Strategic emotional intelligence							
Suicidal ideation							
Step 1					0.123	0.123	3.560*
CSA	0.369	0.163	.297	.028			
Strat EI	−.050	0.031	−.221	.115			
Step 2					0.203	0.080	5.042**
CSA	0.474	0.164	.382	.006			
Strat EI	−0.062	0.030	−.263	.046			
CSA × strat EI	−0.028	0.012	−.299	.029			
Suicide attempts							
Step 1					0.121	0.121	3.495*
CSA	0.035	0.016	.290	.032			
Strat EI	−0.005	0.003	−.216	.108			
Step 2					0.250	0.130	8.663**
CSA	0.048	0.015	.398	.003			
Strat EI	−0.006	0.003	−.282	.028			
CSA × strat EI	−0.003	0.001	−.380	.005			
Experiential emotional intelligence							
Suicidal ideation							
Step 1					0.122	0.122	3.555*
CSA	0.414	0.168	.333	.017			
Exp EI	−0.057	0.036	−.217	.116			
Step 2					0.162	0.039	2.336*
CSA	0.703	0.252	.566	.007			
Exp EI	−0.074	0.037	−.282	.050			
CSA × exp EI	−0.026	0.017	−.301	.133			
Suicide attempts							
Step 1					0.081	0.081	2.259
CSA	0.035	0.017	.294	.039			
Exp EI	−0.002	0.004	−.087	.532			
Step 2					0.081	0.000	0.005
CSA	0.037	0.025	.305	.157			
Exp EI	−0.002	0.004	−.090	.542			
CSA × exp EI	0.000	0.002	−.014	.946			

Note: CSA = childhood sexual abuse; EI = emotional intelligence; exp EI = experiential emotional intelligence; strat EI = strategic emotional intelligence.

*$p < .05$; **$p < .01$.

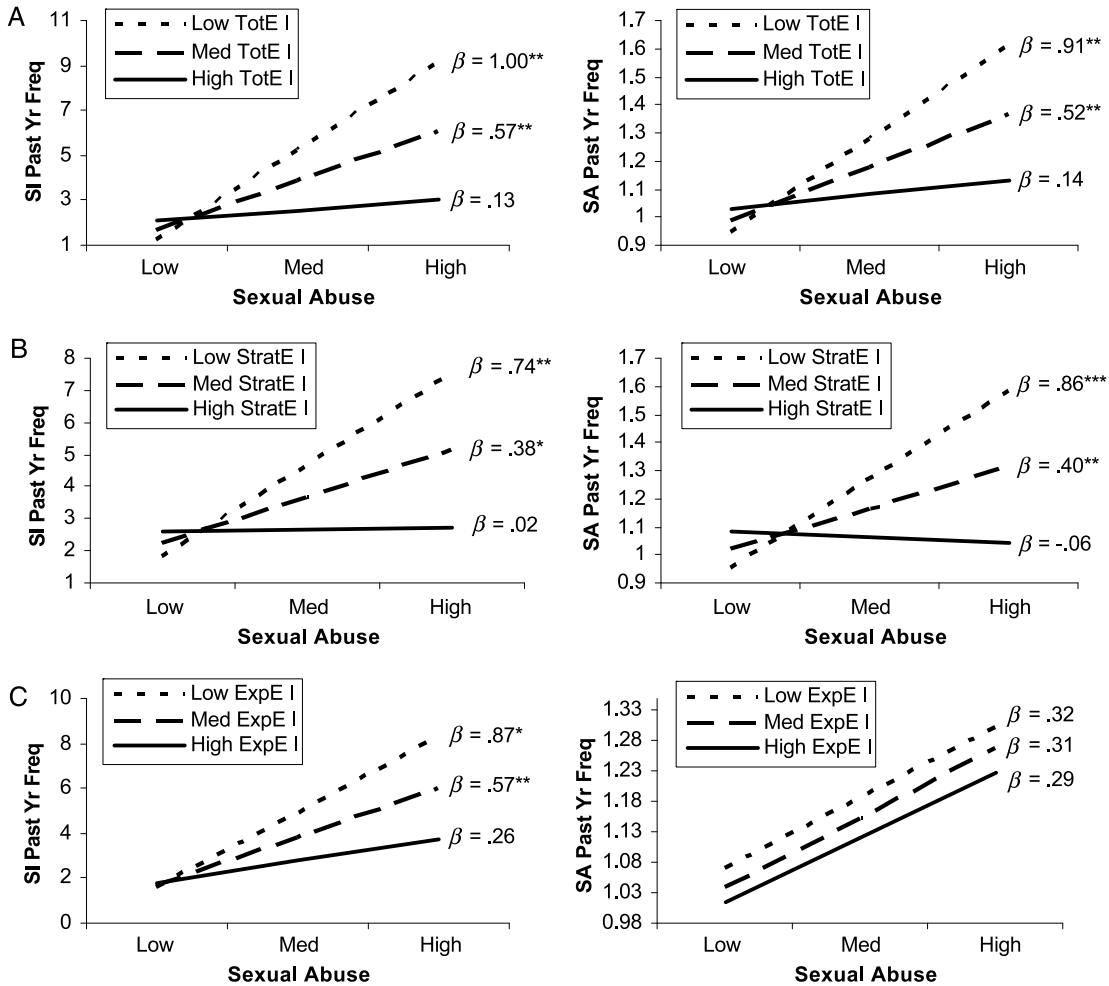

Fig. 1 A, Total EI moderates the relations between CSA and suicidal behaviors. B, Strategic EI moderates the relations between CSA and suicidal behaviors. C, Experiential EI does not moderate the relations between CSA and suicidal behaviors. Coefficients from simple slope analyses correspond to each plotted line on all panels. EI = emotional intelligence; ExpEI = experiential emotional intelligence; SA = suicide attempts; SI = suicide ideation; StratEI = strategic emotional intelligence. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

of which include components aimed at enhancing emotion understanding and management) for the treatment of self-injurious behaviors, which cause decreases in suicide attempts.[50,51] Taken together, these findings point toward the importance of abilities for understanding and managing emotions in the treatment and prevention of suicidal behaviors. Although studies on the treatment of suicide have not typically made explicit mention of EI, the constructs targeted in these treatments (e.g., emotion regulation skills, problem-solving skills) are similar to those studied by EI researchers. On balance, it is notable that we did not find a statistically significant association between strategic EI—whose managing emotions branch has been equated to emotion regulation[52]—and either CSA or suicidal behaviors, despite previous findings indicating that emotion regulation is correlated with these variables.[19,20] Two aspects of this finding are notable. First, we did observe consistent small-to-medium associations among these variables ($r = -0.15$ to -0.19), and so lack of statistical significance is partly the result of our lack of power for detecting such effects. Second, differences in associations with emotion regulation–related constructs may be due in large part to variations in the way such constructs are defined and measured. In the current study, we used the construct of strategic EI and measurement strategy provided by the MSCEIT, which assesses knowledge about effective emotion regulation strategies but not their actual use. Previous studies have found that, although self-injurers and noninjurers are equally capable of proposing effective solutions to potential interpersonal problems,

self-injurers are significantly worse at the selection and performance of solutions.[38] It is important that future work in this area attend carefully to differences in the terms, definitions, and measurement strategies used.

Nevertheless, some research suggests that EI is indeed a malleable target of change. One example of this has been demonstrated by Eack and coworkers,[53] reporting that cognitive enhancement therapy[54] improves strategic EI among patients with schizophrenia. Despite these findings, the majority of therapeutic approaches for suicide attempters emphasize improving experiential EI (e.g., clarification of emotions experienced).[55] Studies are sorely needed to test the potential benefit of targeting strategic EI in intervention and prevention programs.[35,56]

Identifying EI as a protective factor represents a unique and important contribution to research on suicidal behaviors. The identification of risk factors has allowed research, treatment, and prevention efforts to isolate at-risk (e.g., sexually abused) populations; little has been done beyond this, as such risk factors often are not malleable. Reports on protective factors would move efforts forward by specifying what factors might keep adolescents from engaging in suicidal behaviors, thus identifying potential targets for intervention and prevention efforts. The existing literature on potential protective factors primarily pertains to religious beliefs and practice,[14,15] accessibility to weapons,[12,13] and social support,[16–18] and few studies explore psychological protective factors. One psychological factor explored by Linehan and coworkers[57] was placing importance on reasons for living (i.e., adaptive beliefs and expectations), and few recent efforts have been made to explore resilience to suicide.[58,59] The current study extends knowledge about what psychological factors protect against risk for suicidal behaviors and provide a new direction in this developing research area.

These findings also add to the growing literature on the importance of EI and especially to earlier findings on the particular importance of understanding and managing emotions. Earlier evidence suggests that the ability to manage emotions is associated with prosocial tendencies, positive peer nominations,[52,60] and higher quality of social interactions.[61] Strategic EI abilities have also been shown to relate to aspects of romantic partners' support style.[62] These earlier findings suggest that strategic EI may influence suicidal behavior through several different social and emotional mechanisms. Overall, the converging evidence regarding strategic EI provides an exciting point of departure for future research on the factors that may protect against suicidal behaviors.

There are several limitations to this study. First, our sample was relatively small, and so the results are based on a limited sample of episodes of suicidal ideation, suicide attempts, and CSA. Our sample also consisted mostly of European American adolescent girls who were willing to participate in a research study. Moreover, because participants were recruited for a larger study of nonsuicidal self-injury, many of those with suicidal ideation and all of those with suicide attempts in the current sample also had a history of nonsuicidal self-injury. These issues may limit the generalizability of the findings, and it will be important to replicate these findings in a larger and more diverse sample. Second, the current study did not control for other psychological factors (e.g., personality traits, IQ) that might contribute to the effect of EI. Controlling for such factors may have strengthened our findings; however, it is worth noting that personality and IQ have been shown to relate specifically to self-reported EI and not with performance-based EI,[63] so it is unlikely that these factors would have changed the observed effects. Third, the reports of childhood CSA are based on retrospective self-report. Recent frequency of suicidal ideation and attempts was also retrospectively reported. As a result, it is possible that participants inaccurately recalled or reported CSA or suicidal behaviors. Previous work suggests that, although there is error in long-term retrospective reporting of past events, risk estimates for suicide attempts (e.g., odds ratios) based on self-report data compared with official records are fairly similar.[64] Moreover, such risk estimates for suicide attempts based on retrospective recall have been found to be fairly stable over time.[65] Nevertheless, future studies should measure CSA and suicidal behaviors prospectively and using methods that do not rely exclusively on self-report.[37]

Given these limitations, the results of this study should be considered preliminary evidence for the protective effect of EI that enhance our understanding of suicidal behaviors but also raise key issues to address in future research. First, it is important to replicate these findings among a larger and more diverse sample. Doing so would support the generalizability of these findings. Second, studies are needed to test prospectively whether EI protects against the effects of co-occurring stressors (e.g., poor-functioning family).[66] In a related vein, future research should assess whether EI

buffers the effect of any mechanisms of CSA traumatization[67,68] or any subsequent risk factors for suicide (e.g., psychopathology).[26,69] Testing the degree of generalizability to other stressors and clinical risk factors is a necessary step to clarifying the nature of relations identified here. Third, it would be fruitful to test how EI works with other potential protective factors (e.g., social support) to reduce suicide risk. Studies also are needed to test the relations between EI and potential genetic[9,11] and neurobiological predispositions to suicidal behaviors.[10] The identification of additional protective factors and the subsequent development of more sophisticated theoretical and empirical models represent much needed directions in the effort to prevent these prevalent and harmful behavior problems.

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