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Research Article

COGNITIVE INFLEXIBILITY AS A PROSPECTIVE PREDICTOR OF SUICIDAL IDEATION AMONG YOUNG ADULTS WITH A SUICIDE ATTEMPT HISTORY

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Background: *Previous studies suggest that people attempt suicide because they are cognitively inflexible, but past research suggesting a link between cognitive inflexibility and suicidal thoughts and behavior has been limited by cross-sectional designs. This study examined whether cognitive inflexibility differentially and prospectively predicted suicidal ideation among young adults with and without a history of a suicide attempt.* **Methods:** *A sample of 45 young adults with (n = 13) or without (n = 32) a suicide attempt history completed the Wisconsin Card Sorting Test (WCST), a diagnostic interview, and self-report measures of hopelessness, depressive symptoms, and suicidal ideation, and were followed up 6 months later to reassess suicidal ideation.* **Results:** *Cognitive inflexibility, as measured by perseverative errors on the WCST, predicted suicidal ideation at 6-month follow-up, among suicide attempters, but not among nonattempters, adjusting for the presence of a baseline mood or anxiety diagnosis, hopelessness, and baseline suicidal ideation.* **Conclusions:** *Cognitive inflexibility may increase vulnerability to suicidal ideation over time among individuals with a previous suicide attempt history. Implications for interventions with suicide attempters are discussed. Depression and Anxiety 29:180–186, 2012.*

Key words: *cognition; suicide; attempted; suicidal ideation; prospective studies*

INTRODUCTION

Studies conducted in the past decade have identified cognitive factors that might lead individuals to think about suicide and to make a suicide attempt,[1] but relatively few of these studies have sought to understand cognitive risk factors for suicidal thinking and behavior among young adults with a history of a previous suicide attempt. Research has found that suicidal behavior tends to peak in adolescence and young adulthood,[2] a history of a suicide attempt is one of the best predictors of a future attempt,[3] the lethality of suicide attempts increases with age,[4] and the majority of the individuals with a prior attempt go on to use more lethal methods in subsequent attempts.[5] Given these factors, it is especially important to identify cognitive vulnerabilities to suicidal behavior among young adults with a suicide attempt history. Research in this area may assist scientists and clinicians in the early identification of individuals who are likely to go on to make future, and potentially more lethal, suicide attempts. In addition, this research may also inform efforts to design interventions for young people who think about suicide.

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Previous research suggests that one reason people consider attempting suicide is that they are cognitively inflexible and thus unable to think of other alternatives when confronted with life stressors.[6,7] Cognitive inflexibility, defined as the failure to modify decision-making behavior in response to external feedback and changing environmental circumstances, has been theorized to contribute to suicidal ideation and behavior by resulting in cognitive constriction and problem-solving deficits.[7,8] This diathesis-stress model suggests that cognitively inflexible individuals are unable to generate effective solutions when dealing with stressful situations, and that the resultant feeling of hopelessness increases risk for suicidal behavior.

In addition to distinguishing depressed and dysphoric samples from controls,[9,10] cognitive flexibility has also been shown to distinguish those with and without a history of suicidality. Keilp and colleagues found that depressed patients who had previously made a high-lethality suicide attempt showed more cognitive inflexibility, in that they scored lower on tests of executive functioning, compared to depressed patients with a history of a low-lethality suicide attempt, and also compared to depressed patients without a suicide attempt history.[11] Depressed adult patients with suicidal ideation have also exhibited poorer performance on tests of executive functioning that involved cognitive flexibility than depressed patients without suicidal ideation.[12] Finally, a study with elderly depressed patients found that those with a past history of suicidal ideation or attempt exhibited worse performance on a battery of executive functioning tests than those without a history of suicidal ideation or attempts.[13]

It is unclear, however, whether cognitive inflexibility is merely a trait that distinguishes suicide attempters from nonattempters or whether it also increases risk of future suicidal ideation or attempts. Previous studies are limited by their cross-sectional designs. Research by Perrah and Wichman suggests that suicide attempters who are assessed long after an attempt are less cognitively inflexible than suicide attempters assessed just after an attempt.[14] Prospective research may shed light on whether cognitive inflexibility distinguishes nonattempters from suicide attempters who are not currently in the midst of a suicidal episode, and whether such inflexibility might predict risk for future suicidal thinking and behavior.

THE PRESENT STUDY

The present study examined whether cognitive inflexibility would prospectively predict suicidal ideation, and whether it would do so more among suicide attempters than among young adults without a suicide attempt history. We predicted that cognitive inflexibility would be associated with increased suicidal ideation over time, and that the relationship between inflexibility and ideation would be stronger among suicide attempters than among nonsuicide attempters.

METHODS

PARTICIPANTS

Forty-five young adult volunteers, aged 18–22, ($M = 18.31$, $SD = 0.73$) took part in this study for monetary compensation. Participants were selected from a sample of 1,011 adults who were screened for a history of a suicide attempt as part of a study of social-cognitive predictors of suicidal behavior.[15,16] From this larger sample, 96 young adults were recruited to complete baseline measures based on whether they reported a history of a past suicide attempt ($n = 37$), or no suicide attempt history ($n = 59$) (Note that the rate of a suicide attempt in the larger sample was 8%.). Of the nonattempters, participants were also recruited based on whether they reported any suicidal ideation in the previous 2 weeks. Forty-five of the 96 individuals returned 6 months later (Those who did not return either did not respond to our request to participate in the follow-up study or declined to participate.). Of these 45 participants, 13 were classified as having a suicide attempt history at baseline (see criteria below), and 32 were classified as having no suicide attempt history (10 of whom had reported suicidal ideation at baseline).

There were no statistically significant differences in sex and ethnicity between participants who did or did not participate in the follow-up. However, participants who took part in the follow-up were significantly younger ($M = 18.31$, $SD = 0.73$) than participants who did not take part in the follow-up ($M = 19.53$, $SD = 2.77$), $t(57.9) = 3.03$, $P < .01$. There were no significant differences between individuals who did and did not take part in the follow-up in rates of a suicide attempt, nor on the other study measures. Thus, the present analyses focus on the 45 participants who took part in the 6-month follow-up.

MEASURES

SUICIDE ATTEMPT HISTORY. A Suicidal Behavior Screening (SBS) was used to screen for lifetime history of suicide attempts at baseline. This self-report measure includes questions derived from the Diagnostic Interview Schedule for Children.[17] Suicide attempt history was determined by the question, "Have you ever, in your whole life, tried to kill yourself or made a suicide attempt?" Agreement between responses to this question and responses to the BSS question about suicide attempt history (see below) was high, $\kappa = .78$. In addition, participants completed the Self-Harm Behavior Questionnaire (SHBQ), a measure designed for use with nonclinical samples of young adults.[18] The SHBQ distinguishes between nonsuicidal self-injury and suicide attempts, in that individuals are asked about instances in which they purposely tried to hurt themselves ("Have you ever hurt yourself on purpose?") and also instances in which they tried to kill themselves ("Have you ever attempted suicide?"). Participants who endorse a suicide attempt history are also asked further details about their attempt, including the number of previous attempts, method of their most recent attempt, and wish to die during the attempt. Participants were initially screened for a suicide attempt history based on their response to the SBS but were classified as suicide attempters if they endorsed an attempt on the SHBQ that included a wish to die. Agreement between responses to questions about suicide attempt history on the SBS and SHBQ was high, $\kappa = .84$. Thirteen participants were classified as having a suicide attempt history, with nine of these individuals reporting a history of one previous suicide attempt on the SHBQ and four individuals reporting that they had made two

previous attempts. Method of the most recent attempt included ingestion ($n = 4$), cutting ($n = 5$), or another method (e.g. suffocation, hanging, and jumping) ($n = 4$).

COGNITIVE INFLEXIBILITY. Participants completed the computerized version of the Wisconsin Card Sorting Test (WCST),[19] designed to assess abstract reasoning and the ability to shift cognitive strategies in response to changing rules. During the task, participants are presented with four cards at the top of the screen that vary by number, shape, and color. A target card is then presented, and the participant must match the target card to one of the four cards shown based on one of the three stimulus characteristics (number, shape, and color). The computer informs the participant whether the attempt at sorting was correct or incorrect, and the participant must use this feedback to infer the matching rule. After a predetermined number of successful matches, the matching rule is altered, and the participant must again infer the new sorting rule. Cognitive inflexibility was measured using number of *perseverative errors*, or the number of trials on which a participant persists in sorting the card using a stimulus characteristic that is no longer correct. The WCST has been used previously as a measure of cognitive inflexibility and has been found to distinguish dysphoric from nondysphoric individuals,[9] and also individuals high in rumination from those low in rumination.[20]

ANXIETY AND MOOD DISORDER DIAGNOSES AND DEPRESSIVE SYMPTOMS. The computer-assisted young adult version of the Diagnostic Interview Schedule for Children (C-DISC-IV; Shaffer et al.)[17] was administered to participants by lay interviewers. The C-DISC-IV is a structured diagnostic interview that uses computer algorithm scoring to yield diagnoses based on the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV).[21] The C-DISC-IV has demonstrated reliability and validity comparable with that of other diagnostic measures.[17] For the purposes of the current study, the following diagnoses were assessed: generalized anxiety disorder, social anxiety disorder, major depressive disorder, dysthymic disorder, mania, and hypomania. In the present sample of 45 participants, 11 individuals (24%) had at least one of the above diagnoses at baseline, with two participants (4%) meeting criteria for two diagnoses.

In addition, depressive symptoms were assessed using the Beck Depression Inventory-II (BDI-II), a 21-item self-report questionnaire that inquires about sadness, anhedonia, and other symptoms of depression on a 0- to 3-point Likert scale.[22] Total scores can range from 0 to 63, and in the present sample, scores ranged from 0 to 38, with a mean score of 14.2 ($SD = 8.9$). Cronbach's α was .90 in the present sample.

HOPELESSNESS. The Beck Hopelessness Scale (BHS) is a 20-item self-report questionnaire that assesses negative expectations about the future.[23] Questions are presented in a true/false format, and scores can range from 0 to 20. Scores ranged from 0 to 20 in the present sample, with a mean score of 6.2 ($SD = 4.7$). Cronbach's α was .87 in the present sample.

SUICIDAL IDEATION. The Beck Scale for Suicidal Ideation (BSS) is a 21-item self-report measure that assesses passive and active suicidal ideation during the previous week, and includes questions about wish to die, frequency of ideation, suicide plans, and access to means.[24] Total scores are tabulated by summing items 1–19. An additional question inquires about whether individuals have ever previously made a suicide attempt. Scores can range from 0 to 38. In the present sample, scores at baseline ranged from 0 to 14, with a mean score of 1.5 ($SD = 3.3$), and scores at follow-up ranged from 0 to 8, with a mean of 1.0 ($SD = 2.0$). For the current sample of 45 participants, Cronbach's α was .95 at baseline and .97 at 6-month follow-up.

PROCEDURE

During an initial screening session, 1,011 participants completed self-report measures that included the SBS and other scales not relevant to the present analyses. A subsample of 96 individuals was then recruited to participate in a baseline session that occurred approximately 3 weeks later. During this baseline session, participants completed the BSS, BDI, BHS, and SHBQ, along with computerized tasks that included the WCST and C-DISC-IV, as well as other tasks not relevant to the present study.

Approximately 6 months after the baseline session, the 96 participants were contacted by electronic mail and phone and invited to participate in the present follow-up study. A total of 45 individuals were successfully recruited, and completed self-report questionnaires that again included the BSS, as well as other measures not included in the present analyses.

After each of the three study sessions, research assistants completed a risk assessment procedure before debriefing participants. Individuals who reported suicidal ideation with a plan were interviewed by a licensed clinical psychologist and referred for further assessment, if necessary.[16] All participants were provided with a list of local treatment referrals.

RESULTS

DEMOGRAPHIC CHARACTERISTICS

Demographic information for the sample is summarized in Table 1. There was no statistically significant difference in the proportion of males vs. females who reported a suicide attempt history at baseline. However, there was an omnibus difference by race/ethnicity,

TABLE 1. Demographic characteristics

			Attempters ($n = 13$)		Nonattempters ($n = 32$)		All ($n = 45$)	
Age	***M*** **(*SD*)**		18.31	(0.63)	18.31	(0.78)	18.31	(0.73)
Sex	***X*** (%)	Female	12	(92%)	23	(72%)	35	(78%)
		Male	1	(8%)	9	(28%)	10	(22%)
Ethnicity	***X*** (%)	White	3	(23%)	8	(25%)	11	(24%)
		Black	1	(8%)	2	(6%)	3	(7%)
		Hispanic*	0	(0%)	10	(31%)	10	(22%)
		Asian	7	(54%)	11	(34%)	18	(40%)
		Other	2	(15%)	1	(3%)	3	(7%)

*$P < .05$.

$\chi^2(4) = 9.52$ (likelihood ratio), $P < .05$, with fewer Hispanic participants (0%) reporting a suicide attempt than expected by chance, $Z = 2.3$, $P < .05$.

GROUP DIFFERENCES AT BASELINE AND CORRELATIONS AMONG VARIABLES

Suicide attempters had higher suicidal ideation at baseline, $t(12.3) = 2.83$, $P < .05$, compared to nonattempters. They also more often met criteria for a mood or anxiety diagnosis, $\chi^2(1) = 6.46$ (continuity correction) $P < .05$, compared to nonattempters (Table 2). However, there was no statistically significant difference between the two groups on cognitive inflexibility, as measured by the total number of perseverative errors on the WCST, $t(43) = 1.33$, $P = .19$, nor on hopelessness, $t(43) = 1.51$, $P = .14$, or depressive symptoms, $t(43) = 0.06$, $P = .95$. Means, *SD*s, and effect sizes for each group are listed in Table 2.

Correlations among variables are summarized in Table 3. Perseverative errors were not significantly related to any baseline study variables but were associated with suicidal ideation at follow-up. Baseline hopelessness, suicide attempt history, and diagnosis were significantly and positively associated with suicidal ideation at baseline, and depressive symptoms, hopelessness, and suicide attempt history—but not diagnosis—were significantly and positively associated with suicidal ideation at follow-up.

GROUP DIFFERENCES OVER TIME

Baseline cognitive inflexibility was examined as a predictor of suicidal ideation at follow-up via a hierarchical linear regression. Two models were built, with continuous predictor variables centered around their means. Cognitive inflexibility was entered as a predictor of suicidal ideation in the first step of the regression, adjusting for baseline suicidal ideation, the presence of a mood or anxiety diagnosis, a suicide attempt history, and hopelessness (Model 1). The interaction between cognitive inflexibility (centered) and suicide attempt history was entered into the second step of the regression (Model 2) (Note that BDI score was not included in the models, in order to reduce the number of predictors in the final analyses, given the small sample size, and given that when entered into the regression, it did not predict ideation at follow up, $b = 0.00$.). Standard errors and 95% confidence intervals for unstandardized regression coefficients were computed via bootstrapping using 1,000 resamples.[25] Model 1 accounted for a significant proportion of variability in suicidal ideation at 6-month follow-up, Adjusted $R^2 = .49$, $P < .01$, with hopelessness predicting increased suicidal ideation and the presence of a diagnosis predicting decreased suicidal ideation at 6-month follow-up (although the latter was found at a $P < .10$ level) (Table 4). The addition of the interaction between cognitive inflexibility and suicide attempt history in Model 2 explained an additional

TABLE 2. Scores on symptom measures at baseline

		Attempters ($n = 13$)		Nonattempters ($n = 32$)		All ($n = 45$)		Cohen's *d*
Perseverative errors	***M* (*SD*)**	7.69	(6.80)	10.63	(6.65)	9.78	(6.75)	0.44
BHS Score		7.85	(4.90)	5.56	(4.50)	6.22	(4.68)	0.49
BDI Score		14.31	(9.12)	14.13	(9.00)	14.18	8.93	0.02
BSS Score**		4.31	(4.97)	0.38	(0.91)	1.51	(3.25)	1.10
Any mood/anxiety Dx**	***X*** (%)	7	(54%)	4	(13%)	11	(24%)	
Social phobia		3	(23%)	3	(9%)	6	(13%)	
Generalized anxiety disorder		2	(15%)	0	(0%)	2	(4%)	
Major depressive disorder		2	(15%)	1	(3%)	3	(7%)	
Dysthymic disorder		0	(0%)	0	(0%)	0	(0%)	
Mania		2	(15%)	0	(0%)	2	(4%)	

**$P < .01$.

TABLE 3. Correlations among study variables

	BSS-1	BDI	Diagnosis	Attempt	BHS	WCST	BSS-2
Baseline SI (BSS-1)	–						
Depressive Sxs (BDI)	−.04	–					
Mood/anxiety diagnosis	.37**	.17	–				
Suicide attempt	.55**	.01	.40**	–			
Hopelessness (BHS)	.41**	.43**	.30*	.22	–		
Perseverative Errors (WCST)	−.19	.21	−.02	−.19	−.04	–	
Follow-up SI (BSS-2)	.27+	.29++	−.21	.33*	.53**	.32*	–

+$P < .10$, ++$P = .05$, *$P < .05$, **$P < .01$.

TABLE 4. Predictors of suicidal ideation at 6-month follow-up

Model		*b*	*s.e.*†	Bias†	95% *CI*†	Partial *r*	R^2_{Adj}
1	Baseline SI	0.00	0.15	0.03	(−0.20, 0.40)	.00	.49**
	Mood/anxiety Dx+	−1.29	0.65	0.04	(−2.51, −.03)	−.34	
	Hopelessness**	0.23	0.06	−0.01	(0.08, 0.33)	.59	
	Suicide attempt	1.76	1.00	−0.10	(−0.34, 3.56)	.43	
	Perseverative errors	0.11	0.06	−0.01	(−0.02, 0.20)	.47	
2	Baseline SI	0.04	0.18	0.04	(−0.14, 0.65)	.08	.60**
	Mood/anxiety Dx+	−1.16	0.62	0.08	(−2.30, 0.10)	−.34	
	Hopelessness*	0.24	0.07	−0.02	(0.07, 0.34)	.65	
	Suicide attempt+	1.81	2.46	−0.89	(−7.27, 3.68)	.49	
	Perseverative errors	0.05	0.04	−0.00	(−0.03, 0.13)	.22	
	Attempt × Persev.*	0.22	0.54	−0.21	(−1.90, 0.49)	.48	

+$P<.10$, *$P<.05$, **$P<.01$. †Estimated using a bootstrap method with $n = 1{,}000$ resamples in Model 1 and $n = 999$ resamples in Model 2.

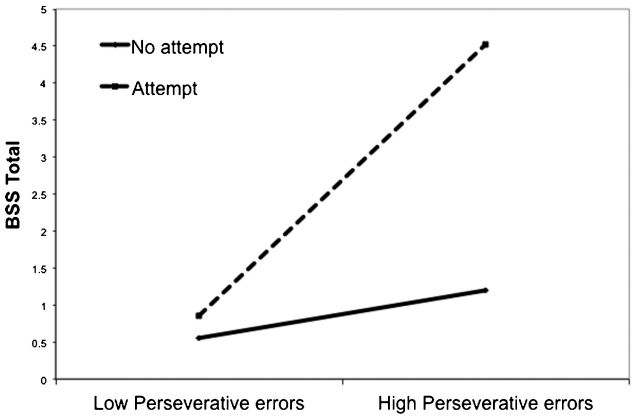

Figure 1. Interaction between number of perseverative errors and suicide attempt history in predicting suicidal ideation at 6-month follow-up.

11% of variability in suicidal ideation. That is, there was a statistically significant interaction between cognitive inflexibility and suicide attempt history.

Simple effects for the interaction between cognitive inflexibility and suicide attempt history were probed using the method suggested by Hayes and Matthes.[26] Cognitive inflexibility predicted suicidal ideation among individuals with a suicide attempt history, $b = 0.27$, $P < .01$, but not among individuals without a suicide attempt history, $b = 0.05$, $P = .17$. The interaction is shown in Figure 1.

DISCUSSION

In previous cross-sectional research, cognitive inflexibility has been found to distinguish individuals with current suicidal ideation or a recent attempt from nonsuicidal control groups.[11–13] These findings suggest that cognitive inflexibility may increase risk for suicidal thoughts and behavior. The present study extended this line of research by examining cognitive inflexibility as a prospective predictor of suicidal ideation. We found that cognitive inflexibility predicted suicidal thinking at a 6-month follow-up, although only among young adults with a prior lifetime suicide attempt. Our results suggest that even among young adults who are assessed long after a prior suicidal crisis, cognitive inflexibility increases vulnerability for suicidal ideation over time.

This study's findings can be interpreted in light of prevailing cognitive theories of vulnerability to suicidal ideation and behavior. Fluid vulnerability theory,[27] which draws upon Beck's theory of modes,[28] proposes that when individuals engage in suicidal behavior, the connections between suicide-related thoughts, feelings, and behaviors are strengthened in memory, thus lowering the threshold for triggering future suicidal thoughts and attempts. It is possible that cognitive inflexibility plays a role in this process. Individuals with a history of a suicide attempt may be more vulnerable to future suicidal ideation because they are fixated on suicide-related solutions that they have considered or utilized in the past, and are thus unable to generate alternative strategies to current problems. Wenzel and Beck suggest that this type of cognitive constriction, which they describe as a preoccupation with suicide as a solution, may transact with hopelessness to increase risk for future suicidal thoughts and behavior.[29]

One way in which cognitive inflexibility may contribute to suicidal ideation is by increasing maladaptive rehearsal. Previous research suggests that cognitive inflexibility is associated with rumination,[20,30] a form of perseverative thinking that has been found to predict increased suicidal ideation over time.[31,32] Alternatively, cognitive inflexibility may increase risk for suicidal thoughts and behavior through deficits in problem solving. Schotte and Clum suggest that cognitive inflexibility results in problem-solving difficulties, and that when individuals are unable to effectively manage life stressors, they experience feelings of hopelessness, which increases their risk for suicidal ideation.[8] Previous studies have found that suicide attempters generate fewer solutions to problems compared to nonattempters, and that the solutions are less effective.[33] More research is needed

to examine the possible relationships between cognitive inflexibility, problem-solving, hopelessness, and suicidal ideation.

In contrast to the previous research, the current study did not find differences in cognitive inflexibility between those with and without a history of a prior suicide attempt. One explanation might be that, unlike the current study, the previous studies assessed cognitive inflexibility among suicide attempters who were hospitalized soon after an attempt,[11,13] or among individuals who were experiencing current suicidal ideation in the context of depression.[12] Suicide attempters who are assessed well past their attempts may be more cognitively flexible than attempters assessed while in the midst of a suicidal crisis.[14] Alternatively, the previous research has found that formerly depressed individuals with a history of suicidal ideation or attempts differed from depressed and nondepressed individuals without a history of ideation/attempts on problem solving only after a negative mood induction.[34] It is thus possible that the absence of differences was owing to the lack of differences in mood. This is a possibility, given that BDI scores did not differ between the two groups. Nevertheless, it should be noted that, in this study, cognitive inflexibility was found to predict ideation at 6-month follow-up even after adjusting for the presence of a mood or anxiety diagnosis.

One unexpected finding in this study was that the presence of a mood or anxiety diagnosis at baseline was associated with decreased suicidal ideation at 6-month follow-up (at a trend level). Given that there was no statistically significant bivariate relationship between diagnosis and suicidal ideation at follow-up, it is possible that the negative relationship between diagnosis and ideation after adjusting for other variables is owing to statistical suppression (i.e. as diagnosis was positively related to other variables included in the analyses), such that the relationship between diagnosis and suicidal ideation was clarified once all predictors were entered into the analysis.[35] Given that this was a trend-level finding in a small sample, this relationship should be examined in a larger sample. It is also possible that other variables not included in this study, such as whether participants sought treatment, might account for these findings. For instance, participants with a diagnosis may have been more likely to receive treatment and thus to experience decreases in ideation owing to treatment. This explanation is speculative but may warrant examination in future research.

Limitations of the present research include the size of the sample, as only 47% of individuals from the baseline sample of 96 participants took part in the 6-month follow-up. A larger sample than the present one would be needed to detect the approximately medium effect size ($d = .44$) for the difference between groups in perseverative errors that was found in this study. Furthermore, the fact that the sample was not from a clinical setting limits the generalizability of these findings to young adults from a nonclinical setting. At the same time, a history of a suicide attempt is one of the best predictors of a future suicide attempt,[3] young adulthood is a time of increased risk for suicidal behavior,[2] and adolescents and young adults tend not to disclose their suicidal thoughts and behavior.[36] Thus, examining cognitive factors that increase vulnerability to suicidal ideation among young adults with a history of a suicide attempt may provide information about whether these individuals will consider suicide in the near future. Another limitation of this study is that suicide attempt history was not confirmed by clinician interview. Although self-report can be a useful tool in psychological research, adolescents often report sensitive behaviors inaccurately.[37] Consequently, a multimethod approach, which would include both self-report and clinician assessment, is crucial to fully understanding a complex phenomenon such as suicide.

CONCLUSIONS

Research conducted in the past decade has identified a number of cognitive factors that may increase risk for suicidal thoughts and behavior, including rumination, overgeneral autobiographical memory, and impulsivity.[1,38] Cognitive inflexibility may represent a more general cognitive vulnerability that is implicated in each of these risk factors. In the present study, we found that lower cognitive flexibility predicted suicidal ideation at 6-month follow-up among prior suicide attempters. Although the current study provides prospective evidence that cognitive inflexibility may increase risk for suicidal thinking over time, more research is needed to examine this relationship over a longer follow-up period and to identify possible mediators, such as rumination, problem-solving deficits, or hopelessness. In light of the current findings, clinicians may wish to gauge the levels of cognitive inflexibility in individuals with a suicide attempt history to assess their risk for future suicidal ideation. In addition, the present findings point to a need for developing interventions that increase cognitive flexibility. Such interventions may be particularly helpful in decreasing continued suicidal ideation among individuals who have made a prior suicide attempt.

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