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Predictors of Lifetime Suicide Attempts in Individuals with Attenuated Psychosis Syndrome

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Abstract

Background—A strong association has been shown to exist between schizophrenia and suicide; however, research examining suicidality in the prodromal phase of psychotic disorders is limited. This study aimed to meet this need by examining potential risk factors for lifetime suicide attempts in a population of individuals with attenuated psychosis syndrome (APS), as defined in the fifth edition of the *Diagnostic and Statistical Manual for Mental Disorders* as a condition for further study.

Method—A retrospective chart review was conducted to identify individuals with APS during a 5-year period across a large medical university's inpatient and outpatient settings. Sociodemographic and clinical factors were examined in relation to suicide attempts to identify risk factors for suicide attempts. Chi-square analyses were used to analyze dichotomous variables, and *t*-test analyses were used to compare means of continuous predictors among those with vs. without suicide attempts. Final analyses consisted of fitting multivariate logistic regression models to control for sociodemographic factors.

Results—26.3% of the APS population had had at least 1 lifetime suicide attempt. Six covariates were found to be statistically significant predictors of suicide attempts: Axis II disorders ($P=0.006$); history of trauma as a whole ($P=0.022$); the subcategory of sexual trauma ($P=0.005$); tobacco use ($P=0.039$); family history of nonpsychotic Axis I disorders ($P=0.042$); and number of hospitalizations ($P=0.001$).

Conclusions—Suicidality is a prominent feature of APS, and a number of risk factors increase the likelihood of suicide attempts in this population.

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The authors declare no conflicts of interest.

Keywords

suicide; prodromal psychosis; attenuated psychosis syndrome; suicide attempts; DSM-5; suicidality

A strong association has been shown to exist between schizophrenia and suicide. The lifetime prevalence of suicide in individuals with schizophrenia has been reported to be greater than 5%,^{1,2} and it has been reported that up to 40% of individuals with schizophrenia attempt suicide at some point in their lifetimes, greater than 20 times the rate in the general population.^{3–5} There is evidence that individuals in the early phase of full-threshold psychotic disorders are at high risk for suicide, including studies that have shown a high frequency of suicidal ideation and suicide attempts among individuals experiencing first episodes of schizophrenia,^{6,7} and it has been proposed that high mortality rates during the early phase of schizophrenic illness are at least partially attributable to completed suicides.⁸

Although there is robust literature on the relationship between suicide and schizophrenia,^{3,9–11} research examining suicidality in the prodromal phase of psychotic disorders is more limited but emerging. One study of prodromal individuals found that 23.8% experienced suicidal ideations and 14.3% had a suicide attempt, although the sample size was small.¹² Other studies have found that suicidal ideation in prodromal individuals ranges from 7% to 15%.^{13,14} More recently, a study that identified individuals with schizophrenia and then retrospectively examined prodromal symptoms and suicidality found that 25.5% of patients experienced suicidal ideation and 7.5% experienced a suicide attempt during their prodromal period of psychosis, 3.8-fold and 8-fold greater than controls to which the sample was compared, respectively.¹⁵

Although an elevated prevalence of suicidality in the population with prodromal psychosis has been observed, relatively little is known about predictive factors for suicide attempts or completed suicides in this population. The goal of this study was to examine suicidal behaviors and potential risk factors to identify predictors of lifetime suicide attempts in a population of prodromal individuals, specifically those identified as having attenuated psychosis syndrome (APS) as defined in the fifth edition of the *Diagnostic and Statistical Manual for Mental Disorders* (DSM-5)¹⁶ as a condition for further study.

METHODS

This study involved a secondary analysis of a pre-existing database of individuals with APS. The initial database was compiled by our group to determine the predictive validity of the DSM-5-defined APS. A brief overview of the methodology used to complete the initial database is included below, and a full detailed description of the methodology can be found in the original publication.¹⁷

To establish the initial database, a retrospective chart review was conducted analyzing all patients who were treated across the Medical University of South Carolina's (MUSC) inpatient and outpatient settings for a 5-year period between January 1, 2006 and December 31, 2010. The MUSC Clinical Data Warehouse (CDW) for Research was utilized to obtain

the charts for review. The study was approved by the MUSC Institutional Review Board. A database of individuals with APS was established to determine if the APS criteria would accurately identify individuals with prodromal psychosis and predict conversion to full-scale schizophrenia spectrum disorders. The database consisted of history, baseline data, and patient monitoring for 3 years following the initial diagnosis of APS. All individuals in the database initially met diagnostic criteria for APS, and data on suicidality were recorded, including suicide attempts before the diagnosis of APS, as well as suicide attempts during the period of monitoring for conversion to full-scale schizophrenia spectrum disorders. Historical data, co-occurring symptomatology, and potential risk factors were also included in the database.

Using this methodology and comparing our results with previous research from prospective studies of prodromal psychosis, we were able to show that the APS diagnosis predicted conversion to full-scale schizophrenia spectrum disorders at a rate analogous to that observed in previous prospective studies of conversion rates from prodromal symptoms to schizophrenia spectrum disorders that used research populations, structured interviews, and specialized rating scales. Therefore, this study established the predictive validity of the APS diagnosis, even when analyzed retrospectively.¹⁷

During the initial data analysis examining the predictive validity of the APS diagnosis, it was found that 26.3% of prodromal individuals experienced a suicide attempt during their lifetimes, a striking finding that prompted further evaluation of suicidality in this population. Therefore, a secondary analysis of the APS database was conducted for the study presented here. We used the APS database to examine specific sociodemographic and clinical characteristics to assess their predictive value for lifetime suicide attempts in this population of individuals with APS. We analyzed some factors that have previously been cited as predictors of suicidal behaviors in non-prodromal populations, for example: DSM-IV Axis II disorders (which in this study were predominantly personality disorders),¹⁸ trauma history,¹⁹ and tobacco use,²⁰ as well as covariates that have not been previously cited as risk factors for suicidal behaviors but that we hypothesized would be predictive. Overall, the following predictors were analyzed for their relationship with suicide attempts: age, race, sex, final diagnosis of mood disorder (further subdivided into bipolar disorder and depressive disorders), final diagnosis of psychotic disorder, no diagnosis at final follow up, Axis II disorder, substance use, psychiatric hospitalizations (including analysis both as a dichotomous variable [yes/no], and a continuous variable [number of hospitalizations]), history of trauma (which was further subdivided into sexual trauma, physical trauma, neglect, other trauma, and polytraumas), tobacco use, family history of psychosis, family history of nonpsychotic Axis I disorders, and family history of substance abuse.

All analyses were performed using IBM SPSS Statistics version 22.²¹ We first examined individual predictors of interest in unadjusted analyses, using chi-square analysis to determine statistical significance of dichotomous variables, and *t*-tests to examine continuous variables, all in relation to a dichotomous outcome measure of suicide attempts (yes/no). Final analysis consisted of fitting a multivariable logistic regression model to examine the associations between covariates and suicide attempts, while controlling for the demographic factors of age, race, and sex.

RESULTS

Individuals meeting diagnostic criteria for APS ($N = 152$) were included in the data analysis. Of these 152 individuals, 40 (26.3% of our study population) had had at least 1 lifetime suicide attempt. Demographic information for all individuals included in our study sample is summarized in Table 1.

Covariates were then analyzed to see if the presence of each covariate was associated with increased suicide attempts; all covariates analyzed are listed in Table 2. In univariate analyses, 8 predictors of interest were found to be statistically significant predictors of lifetime suicide attempts: presence of an Axis II (personality) disorder (42.9% of individuals with an Axis II disorder as opposed to 21.4% of individuals with no Axis II disorder; $P = 0.011$); history of trauma including trauma as a whole (38.9% with past traumas attempted suicide as opposed to 21.1% with no past traumas; $P = 0.021$), as well as the subcategories of sexual trauma (48.1% vs. 22.4%; $P = 0.007$), physical trauma (47.6% vs. 23.8%; $P = 0.023$), and polytraumas (47.6% vs. 23.8%; $P = 0.023$); tobacco use (35.3% vs. 19.5%; $P = 0.030$); family history of a nonpsychotic Axis I disorder (38.0% vs. 10.3%; $P = 0.029$); and number of hospitalizations (mean number of hospitalizations in patients who attempted suicide was 4.632 [SD 3.5975] vs. mean number of hospitalizations in patients who didn't attempt suicide which was of 2.482 [SD 2.2736]; $P = 0.001$).

When analyzed as a dichotomous variable, presence of a psychiatric hospitalization did not reach statistical significance but trended toward significance (28.5% of individuals with a psychiatric hospitalization attempted suicide vs. 6.7% without a psychiatric hospitalization; $P = 0.069$.) This analysis, however, was limited in statistical power, because only 15 individuals in our study did not have at least 1 lifetime psychiatric hospitalization. Finally, there was a trend toward a significant association between suicide attempts and the presence of a psychiatric diagnosis at final follow-up (ie, some individuals initially diagnosed with APS converted to schizophrenia/schizoaffective disorder or some other primary psychiatric disorder, whereas other individuals experienced APS symptoms which then resolved with no further psychiatric diagnosis), with 28.0% of individuals with any psychiatric diagnosis at final follow-up attempting suicide vs. none of the individuals with no final psychiatric diagnosis (similar to the analysis of dichotomous hospitalization, this analysis was limited in statistical power due to the fact that only 9 individuals had no final diagnosis at final follow-up). Complete data on individual potential predictors of interest and their relation to suicide attempts are included in Table 3.

A multivariate logistic regression model was then fitted for each predictor of interest, controlling for race, sex, and age in each model. After controlling for these factors, we still observed a statistically significant increase in lifetime suicide attempts among individuals with APS who had: 1) an Axis II (personality) disorder ($P = 0.006$, OR=3.353 with a 95% confidence interval [CI] of 1.408–7.985); 2) personal history of trauma as a whole ($P = 0.022$, OR=2.487, CI=1.138–5.438); 3) the subcategory of sexual trauma ($P = 0.005$, OR=3.968, CI= 1.512–10.411); 4) tobacco use ($P = 0.039$, OR=2.266, CI= 1.042–4.929); 5) family history of nonpsychotic Axis I disorder ($P = 0.042$, OR=2.370, CI= 1.032–5.444); and 6) number of hospitalizations ($P = 0.001$, OR=1.318, CI= 1.113–1.560). Physical trauma

($P = 0.063$, $OR = 2.561$, $CI = 0.950-6.901$), and polytraumas ($P = 0.052$, $OR = 2.801$, $CI = 0.990-7.921$) were no longer statistically significant but continued to trend toward significance. These results are summarized in Table 4. Adjusted analyses of our other potential predictors of interest did not materially change our interpretation from the unadjusted analyses.

DISCUSSION

Although there is an emerging body of literature examining the association between prodromal psychosis and suicidality, relatively little is known concerning specific risk factors for suicide attempts or suicides in this population. In addition, after the inclusion of a prodromal psychosis diagnosis termed APS as a condition for further study in the DSM-5, to the authors' knowledge there have been no studies examining suicidality specifically in individuals with APS. The study presented here aimed to meet these needs by retrospectively examining individuals with APS and analyzing potential risk factors for lifetime suicide attempts in this population.

Two important findings resulted from our study: first was the very high prevalence of lifetime suicide attempts in this study population of individuals with APS (26.3% of individuals had at least one lifetime suicide attempt); and second, a number of covariates emerged as statistically significant predictors of lifetime suicide attempts in this population.

The high rate of suicide attempts observed in our sample is consistent with previous findings from studies examining suicidality in prodromal individuals; however, the rates observed in our study were higher than in previous reports. Although a number of previous studies have examined suicidal *ideation* in the prodromal population, relatively few studies have looked at suicide *attempts*. In a study of 21 individuals with a first episode of psychosis, Yung and McGorry observed that 14.3% of these individuals had made a suicide attempt during the prodromal period,¹² and Andriopoulos et al¹⁵ found that 7.5% of 106 individuals with recent onset schizophrenia had experienced a suicide attempt during their prodromal period. Although both of these rates are well above the rate of suicide attempts in the general population,²² they are notably lower than the rates of suicide attempts found in our study. There are several possible reasons why our observed rates were higher than previously cited rates of suicide attempts in prodromal populations. First, individuals in our study may have represented a population with a more severe illness burden, as more than 90% of individuals in our study had had at least 1 lifetime hospitalization. Second, the APS diagnosis, as defined in DSM-5, has the potential of bias toward individuals further along the prodromal spectrum, as well as individuals who are experiencing a more significant degree of dysfunction [as individuals must be experiencing positive symptoms, and symptoms must be "sufficiently distressing and disabling to the individual to warrant clinical attention" (see diagnostic criteria in Table 5)]. Other studies of individuals in the prodromal period, which utilized structured interviews and specialized rating scales, had the capacity to identify prodromal individuals experiencing more subtle deficits which may represent a population with less severe dysfunction. This distinction could explain the higher rates of suicide attempts in our population, as both impairments in role functioning¹⁵ and degree of positive symptoms have been associated with suicidality in both individuals with psychotic disorders

and in individuals without full-scale psychotic disorders who are experiencing subthreshold psychotic-like symptoms.^{23–26} Finally, our study looked at lifetime suicide attempts, which included suicide attempts in the premorbid phase, during the acute prodromal period, and during the 3-year monitoring period for conversion to schizophrenia. This would inherently lead to higher observed rates of suicide attempts in comparison to studies that examined suicide attempts only during the prodromal period.

With regard to risk factors predicting suicidal behavior, relatively few studies have successfully identified predictive factors for suicide attempts in individuals in the prodromal phase of psychosis or in early phases of psychotic disorders. One study examining suicidal behaviors in patients enrolled in a comprehensive early psychosis program found that 15.1% of individuals had made a suicide attempt before entry into the program, but the investigators were unable to identify predictors of suicidal behavior (likely secondary to the small size of the sample of suicide attempters).²⁷ Another study identified individuals at first admission for psychosis, followed them for 2 years, and found that lower positive subscores on the Positive and Negative Syndrome Scale, a longer duration of first admission, and substance misuse were all predictors of suicidal behavior.⁷ In a study identifying individuals with schizophrenia that then retrospectively looked at the prodromal phase, depressed mood, marked impairment in role functioning, and tobacco smoking were all independent predictors of suicidal *ideation* during the prodromal phase; however, younger age of onset of prodromal symptoms and depressive symptoms during the prodromal phase were the only predictive factors for suicide *attempts* (of note: all suicide attempters in the study were tobacco smokers, but this was not statistically significant for predicting suicide attempts, likely secondary to the small number of attempters).¹⁵

In our study, 6 covariates were found to be statistically significant predictors of lifetime suicide attempts: Axis II disorder; history of trauma as a whole; the subcategory of sexual trauma; tobacco use; family history of nonpsychotic Axis I disorder; and number of hospitalizations. The presence of an Axis II disorder has previously been established as a predictor of suicidality in nonprodromal populations.^{18,28} Likewise, history of trauma has been previously cited as a predictive factor for suicidal behaviors,^{19,29} including specifically for patients with schizophrenia.³⁰ Our results are also consistent with previous literature on populations with nonprodromal psychosis with regard to family history of psychiatric illness predicting suicide attempts,^{31,32} as well as the strong association that has previously been shown to exist between smoking/tobacco use and suicide attempts.^{20,33,34} With regard to number of hospitalizations as a predictor of suicide attempts, this finding may be explained by a number of possibilities, including that individuals with a greater number of hospitalizations likely have a higher degree of illness burden, as well as the fact that suicidal ideation and suicide attempts are primary reasons for admission to psychiatric hospitals.

Although these findings align with previous research on suicidality in other populations, they are important, as to the authors' knowledge this is the first study identifying these covariates as risk factors for lifetime suicide attempts specifically in a population with prodromal psychosis.

An important aspect of the study that is worth expanding on is the inclusion of *lifetime* suicide attempts in our study. As noted above, the suicide attempt rate in our study includes attempts made prior to the onset of prodromal psychosis symptoms, during the acute period of prodromal symptomatology, and during the 3-year monitoring period for conversion to schizophrenia. Due to the retrospective nature of the study, it was not possible to deduce accurate temporal information on when the suicide attempts occurred for all of the patients in our sample. We, therefore, are not able to report on rates of suicide attempts for each distinct period but rather are reporting lifetime suicide attempts as a whole. Because of this, it cannot be implied that prodromal psychosis is the etiology of suicidal behavior, particularly because comorbid psychiatric conditions, including depressive and anxiety disorders, are common in individuals with prodromal psychosis.³⁵

However, the authors do not feel that the possibility of comorbid psychiatric conditions detracts from the findings in the study. Although the inclusion of suicide attempts that could have occurred in all 3 phases may reduce the applicability specifically to the period in which the individual is experiencing prodromal symptoms, this does not negate the clinical relevance of our findings. Our results show that these individuals attempt suicide at exceptionally high rates, and that the rates further increase with the presence of a number of risk factors. This information is applicable and relevant to clinicians treating this population and could be used along with other clinical decision-making tools when conducting risk assessments.

Specific strengths of this study include the relatively large number of suicide attempters, which allows for more robust statistical evaluation of potential risk factors. Another strength is the naturalistic nature of our study population—our population was a “real world” clinical population of help-seeking individuals. This clinical population eliminates referral bias and provides a study population closely representative of a standard patient population, which has the potential to allow for greater generalizability to a standard clinical population, makes the results directly applicable to clinical practice, and allows the findings to be easily implemented in clinical care.

LIMITATIONS

Limitations of the study include the retrospective nature of the research. Concerns regarding retrospective reviews include difficulty in controlling bias, the potential presence of confounders, the potential for incomplete or underreporting of historical information, and relying on the accuracy of the written record.^{36–38} An additional limitation of the study was our inability to include individuals who died by suicide. Due to the retrospective nature of the study and the required follow-up to be included in the analysis, individuals who had died by suicide were not captured in our patient population as they did not have follow-up and thus were excluded from our initial database.¹⁷ It is also notable that a recent report has observed that nearly two thirds of individuals who die by suicide do so on their first attempt that comes to medical attention.³⁹ Thus, the results of our study may have underrepresented suicidal behaviors in this population and may not have captured a subset of the population that could have provided further evidence concerning predictive factors for suicidal behaviors. Another limitation was that a large majority (greater than 90%) of our sample

population had had at least 1 psychiatric hospitalization, which had the potential to introduce a selection bias into our sample. Another potential selection bias arises from the fact that, due to the retrospective nature of the study, we were not able to include individuals treated outside of our university healthcare system, that is, individuals in the community who would have met criteria for APS but were receiving care at other facilities. Further selection bias may have arisen as the study was a secondary analysis of an existing database.

In addition, although our sample size of suicide attempters was large in comparison to previous studies examining suicidality specifically in the population with prodromal psychosis, the total of 152 individuals included in the analysis and the 40 suicide attempters involve relatively small sample sizes compared to much of the literature on suicidality in populations with nonprodromal psychosis. Another potential limitation could be the potential for errors because of multiple comparisons. The use of a correction for multiple comparisons, such as a Bonferroni correction, was considered. However, due to the exploratory nature of the study, the moderate number of covariate predictors of interest, and the focus on a single outcome, we determined that a statistical correction for multiple comparisons was not warranted. Furthermore, since this was the first study examining suicidal behaviors specifically in a population with the DSM-5-defined APS, we determined it was more appropriate to utilize less stringent statistical specifications, so as to not miss a potential signal.

Finally, it is important to note the distinction between suicide attempts and actual suicides. As previously mentioned, because of the retrospective nature of the study design, we were not able to include individuals who died by suicide. The authors acknowledge the challenges and complexities of attempting to extrapolate data on actual suicides via the proxy of suicide attempts and therefore caution against drawing conclusions about suicides on the basis of our reported data on suicide attempts. However, previous suicide attempts do remain one of the strongest predictive factors for future suicide attempts as well as for actual suicide.^{39–41} Therefore, the current study does represent a population of individuals at high risk of self-harm behaviors and provides relevant data on this population that can be utilized by clinicians treating individuals with prodromal psychosis.

CONCLUSIONS

Relatively few studies have been able to identify risk factors for suicide attempts in individuals with prodromal psychosis and, to the authors' knowledge, this is the first reported study specifically examining suicidality in a population with DSM-5-defined APS. Our results show that suicidality is a prominent feature of individuals with APS and emphasize that is important for clinicians who are treating individuals with prodromal psychosis to recognize potential suicidal behaviors. In addition to the strikingly high rates of lifetime suicide attempts observed in our study (26.3% of individuals had at least one suicide attempt), we also identified a number of risk factors that were predictors of lifetime suicide attempts, including: presence of an Axis II disorder, history of trauma as a whole, the subcategory of sexual trauma, tobacco use, family history of nonpsychotic Axis I disorder, and the number of inpatient psychiatric hospitalizations. These findings are of clinical significance and invite further research.

Future studies could include individuals identified with APS who would then be prospectively followed to monitor for suicidal behaviors and identify risk factors for self-harm. Studies examining interventions to prevent suicidal behaviors in this population are also warranted.

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Table 1

Demographic Information concerning the 152 individuals included in the analysis

Variable	N (%)
Race	
African American	97 (64%)
White	51 (34%)
Other	4 (3%)
Sex	
Male	101 (66%)
Female	51 (34%)
Age	
Mean (SD)	20.6 (5.7) yrs
Median	20 yrs
Range	12–35 yrs

Table 2

Covariates analyzed to determine if they were predictors of lifetime suicide attempts in a population with attenuated psychosis syndrome

Mood disorder (any)	Physical trauma
Bipolar disorder	Neglect
Depressive disorder	Other trauma
Psychotic disorder	Polytraumas
No final diagnosis	Tobacco use
Axis II disorder	Family history of psychosis
Substance abuse	Family history of nonpsychotic Axis I disorder
Psychiatric hospitalization (Y/N)	Family history of substance abuse
Number of psychiatric hospitalizations	Race
Trauma (any)	Sex
Sexual trauma	Age

Table 3

Covariates as risk factors for lifetime suicide attempts

	Total # Covariate Positive	# Suicide Attempts	% Suicide Attempts	Total # Covariate Negative	# Suicide Attempts	% Suicide Attempts	P	Sig. Diff.
Dichotomous Covariates^a								
Mood disorder	33	12	36.4%	119	28	23.5%	0.138	
Bipolar disorder	22	7	31.8%	130	33	25.4%	0.526	
Depressive disorder	5	2	40.0%	147	38	25.9%	0.480	
Psychotic disorder	93	25	13.0%	59	15	25.4%	0.842	
No final diagnosis	9	0	0.0%	143	40	28.0%	0.065	
<i>Axis II disorder</i>	35	15	42.9%	117	25	21.4%	0.011	***
Substance abuse	91	25	28.6%	61	14	23.0%	0.440	
Psychiatric hospitalization	137	39	28.5%	15	1	6.7%	0.069	
<i>Trauma (total)</i>	54	21	42.9%	117	25	21.4%	0.021	***
<i>Sexual trauma</i>	27	13	48.1%	116	26	22.4%	0.007	***
<i>Physical trauma</i>	21	10	47.6%	122	29	23.8%	0.023	***
Neglect	6	1	16.7%	137	38	27.7%	0.551	
Other trauma	23	8	34.8%	120	31	25.8%	0.377	
<i>Polytraumas</i>	21	10	47.6%	122	29	23.8%	0.023	***
<i>Tobacco use</i>	68	24	38.0%	82	16	19.5%	0.030	***
Family history of psychosis	28	5	17.9%	117	34	29.1%	0.230	
<i>Family history of nonpsychotic Axis I</i>	50	19	38.0%	95	20	10.3%	0.029	***
Family history of substance abuse	36	12	33.3%	108	27	25.0%	0.330	
Race	97 ^(AA)	24	24.7%	51 ^(W)	15	29.4%	0.540	
Sex	101 ^(M)	24	23.8%	51 ^(F)	16	31.4%	0.314	
Non-Dichotomous Covariates^b								
	Mean Age Attempters	SD		Mean Age Non-Attempters	SD		P	Sig. Diff.
Age (y)	21.65	5.99		20.188	5.535		0.163	
No. psychiatric hospitalizations	4.632	3.598		2.482	2.274		0.001	***

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Results of SPSS statistical analysis of covariates: 8 covariates (italicized in the table^{a,b,c}) were found to be statistically significant predictors of lifetime suicide attempts: presence of an Axis II disorder, history of trauma as a whole (as well as the subcategories of sexual trauma, physical trauma, and history of multiple types of trauma), tobacco use, family history of nonpsychotic Axis I disorder, and number of inpatient psychiatric hospitalizations.

^aDichotomous variables were analyzed using Pearson chi-square tests.

^bNon-dichotomous variables were analyzed using a *t* test for comparison of means.

AA indicates African American; W, white, M, male, F, female

Note that the mood disorders category included both depressive and bipolar disorders (ie, depressive and bipolar disorders were examined both individually and in combination)

Table 4

Multivariable Logistic Regression Analysis of Covariates

Covariates	P-value	Odds ratio	95% CI	Sig. Diff.
<i>Axis II disorder</i>	<i>0.006</i>	<i>3.353</i>	<i>1.408–7.985</i>	<i>***</i>
<i>Trauma (total)</i>	<i>0.022</i>	<i>2.487</i>	<i>1.138–5.438</i>	<i>***</i>
<i>Sexual trauma</i>	<i>0.005</i>	<i>3.968</i>	<i>1.512–10.411</i>	<i>***</i>
<i>Tobacco Use</i>	<i>0.039</i>	<i>2.266</i>	<i>1.042–4.929</i>	<i>***</i>
<i>Family history of nonpsychotic Axis I disorder</i>	<i>0.042</i>	<i>2.370</i>	<i>1.032–5.444</i>	<i>***</i>
<i>No. psychiatric hospitalizations</i>	<i>0.001</i>	<i>1.318</i>	<i>1.113–1.560</i>	<i>***</i>
Physical trauma	0.063	2.561	0.950–6.901	
Polytraumas	0.052	2.801	0.990–7.921	

Results of multivariable logistic regression analysis. After controlling for race, sex, and age, the following 6 covariates (italicized in the table^{***}) remained statistically significant predictors of lifetime suicide attempts: Axis II disorder; personal history of trauma as a whole; the subcategory of sexual trauma; tobacco use; family history of nonpsychotic Axis I disorder; and number of psychiatric hospitalizations. Physical trauma and polytraumas were no longer statistically significant, but continued to trend toward significance. The remainder of the covariates were also analyzed with this logistic regression model, but none showed changes in statistical significance.

Table 5**Proposed Criteria for Attenuated Psychosis Syndrome^{*}**

1	At least one of the following symptoms is present in attenuated form, with relatively intact reality testing, and is of sufficient severity or frequency to warrant clinical attention: <ol style="list-style-type: none">1. Delusions.2. Hallucinations.3. Disorganized speech.
2	Symptom(s) must have been present at least once per week for the past month.
3	Symptom(s) must have begun or worsened in the past year.
4	Symptom(s) is sufficiently distressing and disabling to the individual to warrant clinical attention.
5	Symptom(s) is not better explained by another mental disorder, including a depressive or bipolar disorder with psychotic features, and is not attributable to the physiological effects of a substance or another medical condition.
6	Criteria for any psychotic disorder have never been met.

^{*} Proposed criteria for attenuated psychosis syndrome are included in DSM-5, Section III: Conditions for Further Study, p. 783¹⁶ and are reprinted with permission from the American Psychiatric Association.