

Brief Report

Chronic Suicidality in Youth Admitted for Mental Health Emergencies: A Retrospective Chart Review

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ABSTRACT

Introduction. Suicide is a leading cause of death among youth in the United States. Most youth who attempt suicide have underlying mental health disorders, which account for approximately 10% of pediatric hospitalizations. Researchers hypothesized that children with chronic suicidality (CS) have more suicide-related risk factors, attempt suicide with greater lethality, and have more pre-existing mental health diagnoses compared to those without chronic suicidality (Non-CS).

Methods. The study team reviewed pediatric hospitalizations related to suicide at Wesley Medical Center from 2016 to 2021. CS was defined as a reported history of, or prior hospitalization for, suicide-related behavior. The severity of suicidal ideation/behavior and actual lethality or medical damage was measured using the Columbia-Suicide Severity Rating Scale (C-SSRS).

Results. Of 375 patients, 253 were classified as CS and 122 as Non-CS. Age and race distributions were similar between groups. Females were more likely to have CS ($p = 0.0006$). Patients with CS were more often admitted for suicide attempts rather than non-suicidal self-injury ($p = 0.0171$). No significant differences were found in method or lethality of attempts.

Patients with CS experienced more peer stress, abuse, legal problems, and job-related issues (all $p < 0.05$). No differences were observed in other stressors. CS patients had more prior mental health treatment ($p < 0.0001$) and were more frequently discharged to inpatient mental health care ($p < 0.0001$).

Conclusions. Female gender and psychosocial stressors were associated with increased risk of chronic suicidality in youth. Early identification of these factors may enable earlier interventions to prevent suicide-related behaviors.

INTRODUCTION

Pediatric mental health concerns are on the rise, with 16.5% of youth in the United States meeting criteria for a mental health disorder.¹ However, only half of these youth receive counseling or treatment.¹

Workforce maps from the American Academy of Child and Adolescent Psychiatry highlight significant disparities, showing a shortage of child and adolescent psychiatrists (CAPs) in Kansas.² Nationally, there are approximately 14 CAPs per 100,000 children, while Kansas falls below that average, with only 10 per 100,000.² As a result, fewer than 35% of Kansas youth experiencing major depressive episodes receive any mental health treatment, and only 27% of those with severe symptoms receive consistent care.³ The lack of appropriate diagnostic and treatment resources contributes to worsening outcomes.

Youth suicide increased significantly between 2001 and 2021, accounting for nearly 20% of deaths among high school-aged adolescents and becoming the second-leading cause of death in this age group.⁴⁻⁶ According to the Centers for Disease Control and Prevention (CDC)'s Youth Risk Behavior Surveillance System (YRBSS), trends from 2013 to 2023 show a decrease in substance use among students but an increase in experiences of violence, poor mental health, and suicidal thoughts and behaviors.^{7,8} Notably, 39.7% of students reported persistent sadness or hopelessness, 28.5% reported poor mental health, 20.4% seriously considered suicide, and 9.5% attempted suicide in the past year.

While females have higher rates of suicide attempts, males have higher rates of suicide death.⁹ Risk factors in adolescents include pre-existing mental health disorders, prior suicidal or self-injurious behavior, impulsivity, family history of suicide or self-harm, access to lethal means, and adverse childhood experiences (ACEs).¹⁰

During the COVID-19 pandemic, emergency department (ED) volumes decreased overall, but mental health-related visits rose proportionally.¹¹⁻¹³ Many patients faced delays due to strained healthcare systems. Psychiatric boarding times in EDs more than doubled, with many youths waiting over two days for care.¹⁴ In response, multiple professional organizations jointly declared a national state of emergency in child and adolescent mental health.^{2,15}

Mental health issues account for 10% of youth hospital admissions,¹⁶ but this rate has been rising. From 2007 to 2014, hospitalizations related to suicide, self-injury, and other psychiatric conditions increased five-fold, outpacing increases in all-cause pediatric hospitalizations.¹⁷ Youth also are at particularly high risk for repeat suicide-related admissions.¹⁸ Although mental health interventions have been shown to be effective, identifying at-risk individuals remains difficult, as fewer than half of youth who die by suicide had received prior psychiatric care.¹⁹

Despite the urgent need, data identifying risk factors for repeat suicide attempts are limited. The aim of this study was to delineate key differences in risk factors between adolescents with chronic suicidality (CS) and those without chronic suicidality (Non-CS) at a mid-sized metropolitan community hospital. The analysis included existing data collected in 2021 as part of a larger project. We hypothesized that adolescents with CS would exhibit more risk factors, attempt suicide with greater lethality and medical harm, and have higher rates of pre-existing mental health diagnoses and treatment compared to Non-CS peers.

METHODS

The researchers conducted a retrospective chart review of youth aged 7 to 17 years who were hospitalized for suicide-related behaviors at Wesley Medical Center (WMC) in Wichita, Kansas, between 2016 and 2021. This review was part of a larger project aimed at assessing trends and characteristics of pediatric mental health admissions to Wesley Children's Hospital during that time.

Suicide-related behaviors included preparatory acts, aborted and interrupted suicide attempts, actual suicide attempts, non-suicidal self-injury, suicidal ideation, and non-suicidal intoxication. Patients admitted for non-suicide-related mental health conditions or for conditions unrelated to mental health were excluded.

Classification into CS or Non-CS was based on patient-reported history or prior hospitalization for suicide-related behavior. CS was defined as having multiple admissions to WMC during the study period, a history of inpatient psychiatric admissions, or a history of suicide-related behavior. Lethality was assessed using the "Actual Lethality/Medical Damage" definitions from the Columbia-Suicide Severity Rating Scale (C-SSRS).^{20,21}

Study data were collected and managed using REDCap® (Research Electronic Data Capture), hosted at The University of Kansas Medical Center.^{22,23} Statistical analyses were performed using GraphPad Prism 10. Data were grouped into CS and Non-CS categories. Continuous variables were evaluated for normality; t-tests were used for parametric data, and Shapiro-Wilk tests for non-parametric data. Categorical variables were analyzed using Pearson Chi-square or Fisher's exact tests, with statistical significance set at an alpha level of 0.05.

This study was deemed exempt by the institutional review boards (IRBs) at both HCA HealthOne and The University of Kansas Medical Center.

Table 1. Actual lethality/medical damage score. Adapted from the C-SSRS.

Score	Definition	Examples
1	No physical damage or very minor physical damage	Surface scratches
2	Minor physical damage	Lethargic speech; first-degree burns; mild bleeding, sprains
3	Moderate physical damage: medical attention needed	Conscious but sleepy, somewhat responsive; second-degree burns; bleeding of major vessel
4	Moderately severe physical damage: medical hospitalization and likely intensive care required	Comatose with reflexes intact; third-degree burns less than 20% of body; extensive blood loss but can recover; major fractures
5	Severe physical damage: medical hospitalization with intensive care required	Comatose without reflexes; third-degree burns over 20% of body; extensive blood loss with unstable vital signs; major damage to a vital area
6	Death	

RESULTS

This study included 375 patients, of whom 253 (67.47%) were classified as having CS. No significant age differences were observed between the CS and Non-CS groups.

Patients with CS were more likely to be admitted for suicidal behavior, rather than for non-suicidal self-injury, suicidal thoughts,

or non-suicidal intoxication, compared to Non-CS patients (CS: 185 [73.12%], Non-CS: 74 [60.66%], $p = 0.0171$). The mean lethality score was numerically higher in the CS group (2.09) compared to the Non-CS group (1.89), though the difference was not statistically significant ($p = 0.2031$).

There were no significant differences between groups in terms of race, length of hospitalization, or method of suicide-related event. Ingestion was the most common method in both groups, accounting for approximately 80% of cases. The CS group had a higher proportion of female patients and included all transgender individuals in the cohort ($p = 0.0006$; Table 2).

The most frequently reported life stressors were related to family, school, significant others, and abuse (Figure 1). Patients in the CS group were significantly more likely to report specific stressors, including:

- Friend problems (CS: 44 [28.76%], Non-CS: 11 [9.02%], $p < 0.0001$)
- Sexual abuse (CS: 85 [33.60%], Non-CS: 14 [11.48%], $p < 0.0001$)
- Physical abuse (CS: 62 [24.51%], Non-CS: 13 [10.66%], $p = 0.0015$)
- Emotional abuse (CS: 53 [20.95%], Non-CS: 11 [9.02%], $p = 0.0034$)
- Legal problems (CS: 40 [15.81%], Non-CS: 8 [6.56%], $p = 0.0128$)
- Job problems (CS: 6 [3.92%], Non-CS: 0 [0%], $p = 0.0355$)

Patients with CS also were significantly more likely to have a prior history of mental health treatment (CS: 168 [66.40%], Non-CS: 38 [31.15%], $p < 0.0001$).

Discharge plans also differed significantly between groups ($p < 0.0001$). Patients with CS were more frequently discharged to acute inpatient psychiatric hospitals (CS: 165 [65.21%], Non-CS: 52 [42.62%]), while Non-CS patients were more often discharged home with outpatient services (CS: 67 [26.48%], Non-CS: 62 [50.82%]) or without services (CS: 4 [1.58%], Non-CS: 4 [3.28%]). Additionally, seven patients in the CS group (2.77%) were discharged to psychiatric residential treatment facilities, compared to none in the Non-CS group.

Table 2. Demographics and event characteristics.

Variable	CS n = 253	Non-CS n = 122	P value
Age at admission (yr)	15.37 (14.07, 16.59)	15.45 (14.27, 16.87)	0.3990
Gender			0.0006
Male	40 (15.81%)	40 (32.79%)	
Female	203 (80.24%)	82 (67.21%)	
Transgender MTF	1 (0.40%)	0 (0)	
Transgender FTM	4 (1.58%)	0 (0)	
Nonbinary	0 (0)	0 (0)	
Not specified	5 (1.98%)	0 (0)	
Race			0.4997
White	202 (79.84%)	92 (75.41%)	
Hispanic	6 (2.37%)	3 (2.46%)	
Black	23 (9.09%)	12 (9.84%)	
Asian	3 (1.19%)	0	
Hawaiian/Islander	2 (0.79%)	0	
Other/not reported	16 (6.32%)	15 (12.30%)	
Length of stay (hr)	30.00 (20.00, 46.50)	32.50 (20.00, 43.00)	0.9607
Method of event			0.2898
Ingestion	206 (81.42%)	97 (79.51%)	
Firearm	1 (0.40%)	0	
Hanging	6 (2.37%)	2 (1.64%)	
Suffocation	5 (1.98%)	1 (0.82%)	
Cutting	26 (10.28%)	7 (5.74%)	
Other	14 (5.53%)	7 (5.74%)	
No event	15 (5.93%)	15 (12.30%)	
Suicide attempt n (%)	185 (73.12%)	74 (60.66%)	0.0171
Lethality	2.09±1.42	1.89 ± 1.38	0.2031
Prior mental health treatment	168 (66.40%)	38 (31.15%)	<0.0001

Note: Continuous data reported as mean ± standard deviation for normally distributed data and median (interquartile range) for non-normally distributed data. Statistical significance has an alpha of 0.05. Gender was determined from chart documentation of patient's reported gender. Abbreviations: CS, chronic suicidality; Non-CS, without chronic suicidality; MTF, male to female, transgender female; FTM, female to male, transgender male.

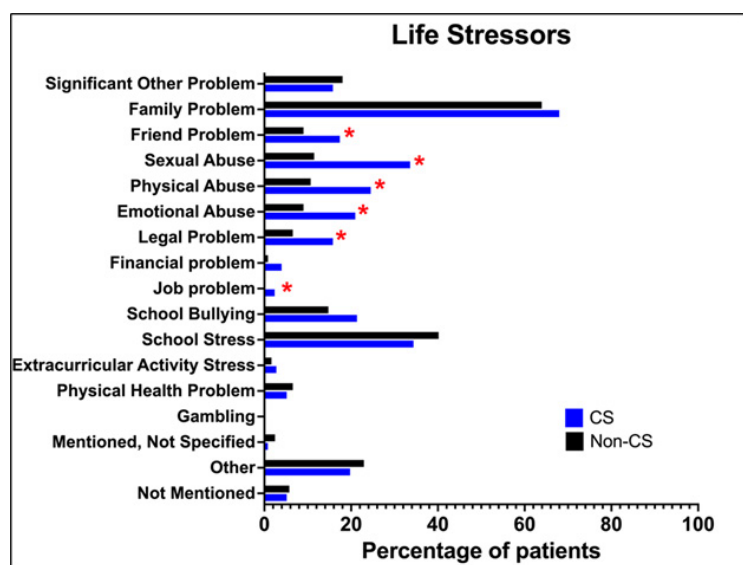


Figure 1. Life stressors of adolescents with chronic suicidality (CS) and without chronic suicidality (Non-CS).

*Indicates significant difference between CS and Non-CS. Statistical significance has an alpha set at 0.05.

DISCUSSION

WMC experienced a high volume of pediatric admissions for mental health emergencies during the study period. A substantial proportion of these patients exhibited CS. By comparing youth with CS to Non-CS, we identified important trends that may inform clinical assessment and intervention strategies.

Patients in the CS group were significantly more likely to have experienced physical, sexual, and emotional abuse. They also had higher rates of previous mental health diagnoses and treatment. These findings are consistent with prior literature. The ACEs study demonstrated that such experiences increase the risk of suicide attempts two- to five-fold, with a graded relationship between cumulative ACE score and suicide risk across the lifespan.²⁴ Additionally, research in military populations has shown that individuals with multiple suicide attempts are more likely to report childhood sexual abuse and prior mood disorders,²⁵ further supporting the association between early trauma and CS. This study adds to a growing body of evidence linking adverse childhood experiences to repeated suicide-related behavior.

Length of hospital stay did not significantly differ between CS and Non-CS groups, averaging approximately 30 hours. This is shorter than national averages reported in a multicenter study, which found a typical stay of four days at high-volume hospitals and two days at lower-volume hospitals.²⁶ In our study, a higher proportion of CS patients were discharged to acute inpatient psychiatric facilities, whereas more Non-CS patients were discharged home, with or without outpatient services. The similarity in length of stay across groups may be related to regional limitations in psychiatric facility availability during the COVID-19 pandemic. Local clinicians reported extended hospitalizations due to limited inpatient bed access. Although the current study did not explicitly evaluate pandemic-related impacts, future research could compare pre- and post-pandemic hospitalization patterns. However, changes in institutional data-sharing policies may limit access to post-pandemic datasets.

Strengths and Limitations. A major strength of this study is the inclusion of all pediatric mental health admissions at a major regional hospital over a six-year period. The use of the C-SSRS allowed for systematic stratification of suicidality, enhancing the reliability of comparisons between CS and Non-CS groups. This approach offers valuable insight into youth mental health in Kansas beyond state agency reports or school-based surveys.

However, the study has limitations. It relied on patient self-reports and medical chart documentation, both of which may introduce reporting bias or inconsistency. Also, because the dataset was limited to a single hospital, the analysis may not account for care received elsewhere. The study period, ending in 2021, limits the generalizability of findings to the current post-pandemic context.

CONCLUSIONS

This study underscores the importance of comprehensive screening for suicidality in adolescents. While screening tools such as the Patient Health Questionnaire-9 (PHQ-9) are widely used, they may be insufficient. Prior research indicates that approximately 30% of adolescents who later attempt suicide score zero on the PHQ-9 question regarding thoughts of death or self-harm within the preceding 30-90 days.²⁷ For

patients with CS, screening strategies that include broader risk factors, such as trauma history, peer conflict, and prior mental health treatment, may enhance detection and support early intervention. These efforts may help reduce the risk of suicide-related behaviors, injury, and death among both CS and Non-CS youth.

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