Potential Lethality of Suicide Attempts in Youth

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Abstract

Objective: Rates of suicide in youth have increased over the last 50 years, yet our ability to predict suicidal behaviors has not significantly improved during this time. Examining predictors of suicide attempt lethality can enhance our understanding of suicidality in youth, yet research has focused on actual medical lethality (the actual danger to life resulting from a suicide attempt) rather than potential lethality (the potential for death that is associated with a suicide attempt). Thus, the aim of the present study was twofold: first, we quantified the percentage of youth for whom the severity of suicide attempt was misclassified by considering only actual lethality; second, we tested whether key variables that predict the actual lethality of suicide attempts also predict the potential lethality of suicide attempts in youth.

Method: We examined these questions in a sample of children and adolescents admitted to a psychiatric inpatient unit following a suicide attempt.

Results: Over 70% of youth who made serious suicide attempts would have been misclassified by assessments relying on only actual lethality. Although several variables relevant to the construct of actual lethality significantly predicted potential lethality (e.g., male sex, substance use disorder), others did not. In addition, we found that the subset of youth who would have been misclassified as low risk based on actual lethality had a disproportionately high need for healthcare resources due to future hospital admissions.

Conclusion: The present study provides evidence to suggest that considering potential lethality may lead to improved detection and prediction of suicide risk in youth, and in doing so supports recent calls to broaden considerations of the lethality associated with suicide attempts.

Keywords: potential lethality, suicide, childhood, adolescence

Despite decades of research, suicide remains a leading cause of death among youth worldwide [1-3]. Indeed, suicide is currently the second leading cause of death in youth [4]. A recent meta-analysis concluded that prediction of suicidal ideation, plans, attempts, and death via suicide has not improved significantly in the last 50 years [5]. Consistent with this conclusion, rates of both suicide attempts and deaths among youth have increased during this time [6, 7]. Thus, there is a critical need to better understand factors that predict the risk and nature of suicide attempts in children and adolescents.

Suicide attempt lethality is a core determinant of the likelihood of death [8]. As such, examining predictors of the lethality of suicide attempts will improve our understanding of suicidality in youth. Indeed, risk factors associated with suicide attempt lethality may help identify individuals at greatest risk of attempting suicide, and in particular, youth at risk of undertaking highly lethal attempts [9]. However, a limited number of studies have investigated factors associated with suicide attempt lethality among children and adolescents. Moreover, past work has focused on identifying predictors of the *actual* medical lethality of suicide attempts, defined as the danger to life resulting from a suicide attempt, as inferred from physiological consequences and required medical procedures following an attempt [10, 11]. The severity of suicide attempts, however, are not always captured by the actual lethality. Suicide attempts differ greatly in their degree of *potential* lethality, defined as the potential for death that is associated with the suicidal behavior rather than the actual harm incurred [12]. It is critical to understand the factors characterizing youth at risk of suicide attempts high in potential lethality as these individuals are likely to be at the highest risk of dying if they re-attempt suicide. Indeed, many youths survive attempts high in potential lethality only because of external intervention (e.g., they were interrupted by a caregiver or bystander, or they received a significant medical intervention). For example, a suicide attempt involving the use of a firearm would be classified as low in actual lethality if the firearm fails due to a misfunction, yet the potential lethality associated with the attempted act is very high. Such attempts are particularly concerning because people generally prefer a specific suicide method and use the same method across re-attempts [13]. Thus, the degree of future suicide risk could easily be underestimated if only actual

lethality is considered. Given this concern, there have been recent calls to broaden considerations of suicide attempt lethality to include not only actual lethality but also potential lethality [12].

Yet, to date, research has focused on predicting actual lethality of suicide attempts. This work has allowed for the identification of several key risk factors that predict actual lethality in adults, including depressive disorders, substance use disorders, male sex, and older age [14, 15]. Although there is little research examining predictors of actual lethality in youth, several demographic and clinical predictors have been documented. For one, male sex predicts suicide attempts higher in actual lethality, a finding that mirrors evidence from the adult literature [8, 16]. In addition, older-aged youth are more likely to have suicide attempts higher in actual lethality, which could reflect the impact of increased cognitive maturity on the ability to formulate and carry out a suicide attempt that has the potential to be lethal [17]. Older youth could also have more access to lethal means and/or greater prevalence of psychopathology. Both depressive disorders and substance use disorders also have been linked to attempts higher in actual lethality among youth [8, 18-20]. Finally, researchers have documented a seasonal trend of suicide attempts in youth. Peaks in suicide deaths among youth have been identified in both the autumn and spring months, which has been tied to seasonal events such as the start of the academic year and exam periods [21, 22]. Although researchers have identified predictors of the actual lethality of suicide attempts in youth, to date, no study has examined the correlates of suicide attempts high in potential lethality.

In sum, there is a significant dearth of research examining the characteristics that differentiate high- versus low-lethality attempts among pediatric suicide attempters. The work that has been conducted in an effort to fill this gap has focused solely on actual lethality and has ignored the concept of potential lethality. Therefore, the aim of the present study was twofold: first, we identified the number of youths for whom the severity of their suicide attempt would be misclassified if only actual lethality was considered; second, we tested whether key variables that predict the actual lethality of suicide attempts in youth (i.e., age, sex, diagnosis of depressive and substance use disorders, and season of attempt) also predicted the potential lethality of suicide attempts in a sample of children and adolescents admitted to a psychiatric inpatient unit following a suicide attempt.

Methods

Participants

The current sample was identified based on a medical record review of 1,794 children and adolescents who were admitted to CAPE over a 6-year period. Participants were included in the study if they had made an actual or interrupted suicide attempt and if the detailed information needed to rate the medical and potential lethality of the suicide attempt was included in the patient's chart. An 'actual attempt' was defined as any "potentially self-injurious act committed with at least some wish to die, as a result of [the suicidal] act," regardless of whether physical injuries were sustained [23]. An 'interrupted attempt' was defined as any attempt in which the individual is interrupted by an outside circumstance from beginning the potentially self-injurious act (and if not for that, an actual attempt would have occurred) [23]. As an example, an instance in which an individual is poised to jump from a height but is grabbed and taken down from the ledge by a bystander would be considered an interrupted attempt. Similarly, an instance in which an individual places a noose around their neck but is stopped from beginning to hang would be considered an interrupted attempt; once the individual begins to hang, the instance would be considered an actual attempt. Of the 109 youth who met C-SSRS criteria for an actual or interrupted suicide attempt, there was insufficient data to code the lethality of suicide attempts of six youth. These individuals did not differ from those with complete data with respect to age, sex, psychiatric diagnosis, season of attempt, or method of suicide attempt, *ps* > .312, and are not included in the final sample (*n*=103). Given that the current sample was gathered through consecutive admissions across a 6-year period, post-hoc power was calculated to confirm that the sample was sufficiently powered to detect the observed effects. Power calculations based on an effect size of 0.15 and $\alpha = .05$ indicated that 89 participants were required to reach a power of 0.95; thus, the present sample was sufficiently powered to detect the observed effects.

Psychiatric Diagnoses

Diagnoses assigned to patients were made by staff psychiatrists based on DSM-IV criteria during the patient's stay on CAPE. Diagnoses were retrieved via the Discharge Abstract Database (DAD), a

national database comprising all demographic, clinical, and administrative data relevant to an individual's inpatient stay.

Lethality of Suicide Attempt

The Columbia Suicide Severity Rating Scale (C-SSRS) was developed by Posner and colleagues [23] and is considered a gold-standard for measuring suicidal behavior. The C-SSRS allows for suicide attempts to be rated according to both actual lethality and potential lethality. It has high sensitivity for suicidal behavior classifications and has strong predictive and incremental validity among samples of youth [23, 24]. We used the multiple dimensions of the C-SSRS to retrospectively rate both the actual and potential lethality of suicide attempts based on medical records. Using the C-SSRS, actual medical lethality is rated on a 5-point scale: a score of 0 indicates no physical damage or very minor physical damage, a score of 1 indicates minor physical damage, a score of 2 indicates moderate physical damage with attention needed, a score of 3 indicates moderately severe physical damage with medical hospitalization needed, a score of 4 indicates severe physical damage requiring medical hospitalization with intensive care, and a score of 5 indicates death. Ratings of actual lethality were based on post-attempt medical symptoms, laboratory test results, and medical interventions received (e.g., admission to the ICU, activated charcoal administration).

The C-SSRS was also used to rate potential lethality. Ratings were made based on method of attempt, materials used during attempt and, where applicable, severity of self-poisoning (i.e., amount of medication ingested) using the standardized Poisindex®-informed thresholds, which provide data on the clinical effects and range of toxicity for over 350,000 substances [23]. In the C-SSRS, potential lethality is scored on a 3-point scale: a score of 0 indicates that the behavior is not likely to result in injury, a score of 1 indicates that the behavior is likely to result in injury but not likely to cause death, and a score of 2 indicates that the behavior is likely to result in death despite available medical care. For instance, an individual found on the outside railing of a 100m+ bridge and restrained by a bystander would be assigned a potential lethality of 2 but an actual lethality rating of 0. A trained clinical research assistant rated suicide attempts on both medical and potential lethality. Following the methodology of previous

studies [15, 18, 25] actual and potential lethality variables were dichotomized to indicate whether an attempt was low or high in severity. Specifically, actual lethality was dummy coded in order to be consistent with previous studies: attempts assigned a score of 0 (no physical damage or very minor physical damage), 1 (minor physical damage), or 2 (moderate physical damage with attention needed) were assigned a value of 0, indicating low actual-lethality severity; attempts assigned an actual lethality score of 3 (moderately severe physical damage with medical hospitalization needed) or 4 (severe physical damage requiring medical hospitalization with intensive care) were assigned a value of 1, indicating high actual-lethality severity. Similarly, potential lethality was dummy coded in a similar manner: suicide attempts assigned a score of either 0 (behavior is not likely to result in injury) or 1 (behavior is likely to result in injury but not likely to cause death) were assigned a value of 0, indicating low potential-lethality severity; suicide attempts assigned a potential lethality rating of 2 (behavior is likely to result in death despite available medical care) were assigned a value of 1, indicating high potential-lethality severity. Suicide attempts were also coded as either violent or non-violent using the criteria proposed by Åsberg et al. [26]: violent methods included hanging, jumping from heights, cutting, drowning, running into traffic, and strangling/suffocation, and non-violent methods included ingestion [26].

Procedures

Of the 1,794 patients who were admitted to CAPE over the six-year period, 103 presented due to a suicide attempt and had the information needed to rate the medical and potential lethality of the suicide attempt in their charts. A chart review was performed to determine whether a patient's attempt met the C-SSRS criteria for an actual or interrupted suicide attempt. Patients meeting criteria were then included in a comprehensive retrospective review of medical charts in which clinical and demographic information was collected. For the purpose of assigning lethality ratings to suicide attempts, the following information was collected: method of attempt (including specific materials used during the attempt), relevant laboratory results, symptomatology on emergency department (ED) admission, and information pertaining to any medical interventions received as a result of the suicide attempt (including medical hospitalization). Using this information, alongside the criteria for actual and potential lethality outlined by the C-SSRS, a trained

rater who was blind to the predictor variables of interest rated the actual and potential lethality of each suicide attempt. To assess interrater reliability, 15% of the suicide attempts were randomly selected and independently re-rated for high versus low actual and potential lethality by a second trained clinical research assistant. The percent agreement was 94% for potential lethality (κ=.85) and 88% for actual lethality (κ=.77), both of which fall into the strong to nearly perfect range [27]. Finally, to examine subsequent rates of healthcare resource utilization, we conducted a secondary chart review to record instances of readmission to the ED in the period between a patient's discharge and their 18th birthday.

Statistical Analyses

Descriptive statistics were used to examine the demographic and clinical characteristics of the sample, as well as to compare the number of suicide attempts classified as high in actual lethality as opposed to the number classified as high in potential lethality. All dichotomous variables were dummy coded, including sex, presence of a diagnosis of depression, and presence of a substance use diagnosis. Dummy coded variables were constructed for seasons of spring, summer, and fall, each with the reference season of winter (following the methodology of previous work) [28]. A logistic regression analysis was then conducted to assess whether age, sex, diagnosis of a depressive disorder, substance use diagnosis, or season of attempt represent predicted suicide attempts high in potential lethality.[1]

Results

Patient Characteristics

Patient demographic and clinical characteristics are presented in Table 1. Patients admitted to CAPE following a suicide attempt were an average age of 14.61 years old (*SD*=1.39, range=10-17 years), with biological females accounting for 76% of admissions. The majority of individuals (78%) met criteria for more than one DSM-IV disorder (*M*=2.38, *SD*=1.06). The most common primary diagnosis was major depressive disorder, accounting for 40% of all psychiatric diagnoses, followed by adjustment disorder (16%) and depressive disorder not otherwise specified (13%). Beyond patients' primary diagnosis, 21% met criteria for a comorbid substance use disorder, and 24% met criteria for a comorbid depressive disorder. Regarding the seasonality of suicide attempts, 14% of attempts occurred during the

summer months, 30% occurred during the fall months, 28% occurred in the winter months, and 28% occurred in the spring months. Ingestion (i.e., self-poisoning) accounted for 80% of suicide attempts in the present sample, followed by attempts via hanging (9%).

[Table 1 here]

Classifying Suicide Attempt Severity

With respect to the actual lethality of suicide attempts, 94% (n = 97) were classified as low and the other 6% (n = 6) were classified as high. Regarding potential lethality, 83% (n = 85) of suicide attempts were classified as low and 18% (n = 18) were classified as high. Highlighting the need to consider potential lethality, of the 18 youth with suicide attempts considered high in potential lethality, only 5 of those attempts were coded as high in actual lethality. Thus, by considering only the actual lethality of a suicide attempt, the suicide attempts of 13 youth that were likely to have resulted in death if they had not been interrupted would have been characterized as non-severe. In other words, over 70% of youth who made serious suicide attempts based on potential lethality ratings would have been missed by estimates relying only on actual lethality (see Figure 1).[2]

[Figure 1 here]

Predicting the Medical and Potential Lethality of Suicide Attempts

To determine whether suicide attempts high in potential lethality were predicted by age, sex, season of attempt, diagnosis of depression (either primary or comorbid, n = 80), and/or a substance use disorder diagnosis (either primary or comorbid, n = 24), a logistic regression was conducted. Overall, the model fit was significant, $X^2(7) = 22.72$, $p = .002$, Nagelkerke's $R^2 = .328$. Of the individual predictors included in the model, sex was significant, $B = 1.96$, $SE = 0.68$, $p = .004$, such that males were over 7 times more likely than females to have a suicide attempt high in potential lethality, OR 7.12, 95% CI [1.88, 27.02]. Diagnosis of a substance use disorder also emerged as a significant predictor of suicide attempts high in potential lethality, $B = 1.75$, $SE = 0.67$, $p = .010$; individuals with a substance use disorder diagnosis were over 5 times more likely than those without a substance use disorder to have a suicide attempt high in potential lethality, OR 5.74, 95% CI [1.53, 21.54]. In contrast, however, age,

season of attempt, and diagnosis of depression did not emerge as significant predictors of potential lethality. These findings are presented in Table 2.

To follow-up on our finding that male sex predicted suicide attempts high in potential lethality, we conducted exploratory analyses to examine whether there were sex differences in the method used during the attempt. Specifically, we tested whether there were sex differences in the violent nature of the method used. Though violent methods are generally higher in potential lethality, this is not always the case as potential lethality also considers the specific details of a suicide attempt (e.g., dose of medication ingested, material used during a hanging attempt, height at which an individual attempted to jump from). This analysis indicated that males were over 8 times more likely to attempt suicide using a violent method, OR 8.22, 95% CI [2.92, 23.13], $p < .001$. Similarly, we examined whether the diagnosis of a substance use disorder predicted the violent nature of the method used, which could help to explain why individuals with substance use disorders make attempts that are high in potential lethality. This analysis indicated that individuals with a substance use disorder were over 3 times more likely to attempt suicide using a violent method, OR 3.32, 95% CI [1.20, 9.18], $p = .020$.

[Table 2 here]

Predicting Subsequent Resource Utilization

To examine the clinical utility of classifying youth's suicide attempts based on potential lethality, we conducted exploratory analyses to examine rates of healthcare resource utilization based on lethality classifications. To do so, we conducted a secondary chart review to record instances of readmission to the ED in the period between a patient's discharge and their 18th birthday, at which point youth age out of care at the BC Children's Hospital. These analyses indicated that readmissions to the ED were significantly higher in the subset of individuals we identified as being high-risk based on potential lethality who would have been misclassified as low risk based on actual lethality ($M = 3.69$, $SD = 5.01$) compared to in other youth ($M = 1.49$, $SD = 2.78$), $F(2,106) = 3.44$, $p = .036$, partial $\eta^2 = 0.06$. Examining the specific reasons for ED admissions, we found that this misclassified subset of youth were significantly more likely ($M = 2.77$, $SD = 4.32$) than other youth ($M = 0.92$, $SD = 1.95$) to be readmitted to the ED for

non-suicide related reasons (e.g., mental health crises not related to suicide, accidents, illnesses), $F(2,106) = 4.00$, $p = .021$, partial $\eta^2 = 0.07$. These youth were also more likely to be readmitted to the ED for suicide-related reasons ($M = 0.92$, $SD = 1.44$) than other youth ($M = 0.39$, $SD = 0.78$) at a trend level, $F(2,106) = 2.49$, $p = .088$, partial $\eta^2 = 0.05$.

Discussion

Findings from the present study underscore the importance of considering potential lethality in future work, and support calls for the consideration of potential lethality to improve suicide prediction [12]. By examining potential lethality, this study also responds to recent calls to develop a more comprehensive understanding of the factors putting children and adolescents at risk of dying by suicide [29]. This is critical as childhood and adolescence represent particularly vulnerable periods for the development of suicidal ideation and self-harm behaviors [30, 31]. By assessing suicide attempts based only on actual lethality, over 70% of youth who made serious suicide attempts based on potential lethality ratings would have been classified as low risk in the present sample. This result is especially sobering given that youth who made attempts high in potential lethality are at particularly high risk for death by suicide if they were to reattempt [18], and given that the subset of youth who would have been misclassified as low risk were at heightened risk for recurrent difficulties, as indicated by elevated rates of subsequent ED readmissions.

In the suicide literature, there is a lack of consistent taxonomy across studies, which hinders communication and limits our ability to measure outcomes and draw conclusions across studies. In part, this is a reflection of the challenges inherent in the assessment of suicidality. This is highlighted in the present study, where we found that ratings of suicide attempt severity differed depending on whether actual or potential lethality was considered. This suggests that assessing a single facet of lethality is insufficient, and thus supports recent work recommending that future research consider multiple dimensions of lethality when characterizing serious suicide attempts (including actual medical lethality and potential lethality) [12]. By expanding our conceptualization of lethality, the current study presents a novel way in which to identify a recognized population who are at high risk of dying by suicide [32].

We found that male sex predicted suicide attempts that were significantly higher in potential lethality. This finding is consistent with previous findings that male adolescents are 3 times more likely than females to die by suicide despite findings that female adolescents are more likely to experience suicidal ideation [33-35]. Attempts made by males may be higher in potential lethality because males are more likely than females to choose more violent and high-risk methods that are likely to result in death if they are not interrupted [23, 36-38]. In particular, there is evidence showing that adolescent males tend to choose more irreversible methods of suicide than adolescent females [17]. Specifically, previous work has shown that young males who die by suicide are more likely to use violent methods, such as firearms, than young females who die by suicide [39]. This is supported by our exploratory analyses, which indicated that male participants were eight times more likely than female participants to attempt suicide using violent methods. In sum, these results support recommendations made by Gagné et al. [40] and Sloan et al. [41] to implement targeted means-reduction interventions for young males at risk of suicidal behavior. Indeed, means restriction is one of the intervention measures with the strongest empirical support, and there is evidence that restricting means is particularly valuable in reducing suicide rates in males below 25 years of age [41, 42].

A diagnosis of a substance use disorder also predicted suicide attempts high in potential lethality. This finding is consistent with evidence that substance use increases the likelihood that youth will engage in suicidal behaviors [43, 44] and differentiates youth who experience suicidal ideation from those who will make a suicide attempt [20]. In line with the three-step theory of suicide [45], substance use may precipitate the progression from suicidal ideation to attempt; specifically, substance use may increase an individual's capacity to carry out a suicide attempt by lowering inhibitions and impairing decision making. Our findings underscore arguments that the availability of alcohol and illicit substances to youth is problematic, and support calls for greater restrictions on the availability of alcohol and substances to youth [46]. These findings also highlight the importance of incorporating suicide risk reduction into substance use disorder treatment programs for youth. For instance, this could involve a suicide risk screening paired with a brief intervention involving safety planning, community resources, and telephone

check-ins. Previous work has shown that even simple interventions such as these have the potential to substantially decrease the number of suicide attempts in high-risk populations [47].

Further, we found that the cohort of youth who would have been misclassified as low risk based on actual lethality had a disproportionately high rate of readmissions to the ED during the follow-up period subsequent to their suicide attempt. Thus, this finding indicates that potential lethality is associated with higher future medical and psychiatric needs and in doing so, underscores the importance of considering potential lethality and its predictors, rather than only actual lethality, in research on suicide and suicidal behaviours. Further, if replicated, this finding could have several important clinical implications as it suggests that this group would benefit from additional community resources and interventions. Further, it points to the value of ED-focused interventions such as child guidance models designed to provide streamlined mental health care to youth presenting to the ED via a collaborative child guidance team consisting of, for instance, a child psychiatrist and a psychiatric social worker [48].

Importantly, potential lethality in the present sample was not predicted by several key variables that have been found to predict actual lethality in other research. For instance, we found that patient age did not predict the potential lethality of attempt. Other researchers have shown that suicide attempts among older youth are higher in actual lethality than attempts among younger youth, perhaps due to an increased ability to formulate and carry out an attempt that is more medically lethal [17]. However, there is evidence that suicide deaths in younger children occur predominantly through hanging, a violent and often irreversible method [49]. Younger children are also more closely monitored by parents and caregivers, which could mean that suicide attempts are more likely to be interrupted. As a result, serious attempts made by younger children may be more likely to be classified as high in potential lethality, rather than actual lethality. Thus, there is reason to expect higher potential lethality both in older youth, who have increased cognitive capacities, and in younger youth, who choose more violence and irreversibility methods and who are more closely supervised. Together, these competing factors could wash out effects of age on the potential lethality of suicide attempts. Further, we found that a diagnosis of depression did not predict potential lethality. Though a diagnosis of depression may be associated with

suicide attempts high in actual lethality, other psychiatric diagnoses might contribute to increases in potential lethality. For instance, there is evidence that children and adolescents diagnosed with depression who die by suicide (compared to those who do not die from their attempts) often also have comorbid disruptive and/or substance use disorders [50]. Indeed, substance use disorders have been found to contribute substantially to the risk of a youth dying by suicide when co-occurring with a mood disorder [51]. Thus, future research might examine the interactive effects of substance use and mood disorders in predicting potential lethality. There is also evidence that youth with depression are more likely to engage in acts of non-suicidal self-injury [52, 53]. Given that depressed youth may therefore have more familiarity and practice with self-harming behaviors, suicide attempts in this cohort may be more likely to be high in actual lethality rather than potential lethality. Finally, we found that the season of attempt was not associated with the potential lethality of suicide attempts. Previous work in this area is very sparse and has been conducted primarily in samples of youth from Finland or Japan. North American youth may experience seasonal events differently than youth in other areas of the world. Given the lack of research investigating this phenomenon, future work conducted with diverse and internationally representative samples is needed to clarify the effects of season on suicide attempt lethality.

Several limitations of the present study warrant discussion. First, the present analyses are limited to basic demographic and clinical predictors. Though it is important to consider the association between these predictors and the potential lethality of suicide attempts, future work should examine additional predictors of potential lethality, including environmental (e.g., childhood maltreatment and bullying), psychological (e.g. impulsivity, hopelessness, and suicidal ideation), and biological risk factors (such as alterations in the serotonergic system), which have been found among youth and adults who have died by suicide [54, 55]. The current study is also limited by the generalizability of results beyond the population sampled: our sample only includes youth who have been admitted to an emergency psychiatric inpatient unit following suicide attempt. As such, the present findings are not necessarily representative of youth who die by suicide, youth who were discharged following admission to the emergency department, or youth who did not present to the hospital following a suicide attempt. It will be critical for future research

to examine the longitudinal associations between risk factors and suicide attempt lethality considered more broadly (including potential and actual lethality) among diverse groups of youth, which could help to better elucidate the complex and interactive relations among factors putting youth at risk of dying by suicide. Finally, the wide confidence intervals associated with the observed odds ratios, which are common among studies concerned with the classification of individuals into groups, indicate that replication in a larger sample is needed [56].

This is the first study to compare the number of youth whose suicide attempts are classified as high in potential lethality to those whose attempts are classified as high in actual lethality, and to examine predictors of potential lethality in youth. We also provide novel evidence that classifying suicide attempts based on potential, rather than actual, lethality can help to identify individuals at greater risk for future distress. These results suggest that it is important for clinicians and care providers to collect and consider information related to the potential lethality of a youth's suicide attempt. Doing so can more thoroughly conceptualize the lethality of the attempt and, thus, may predict future risk. Indeed, the observed findings, if replicated, have the potential to lay the foundation for a novel area of investigation that could help clinicians and care providers better predict which youth are at future risk of hospitalization and death by suicide. Further, the present work responds to recent calls to broaden considerations of the lethality associated with a suicide attempt to include the potential lethality of the act. By considering potential lethality, we may be able to enhance our capacity to detect youth at heightened risk and, thus, to better identify characteristics associated with future risk. This knowledge can then be applied to prevent serious suicide attempts and ultimately deaths by suicide. A more comprehensive understanding of the factors associated with suicide attempt lethality in pediatric populations will allow for improved identification of youth at-risk for highly lethal attempts who would most likely benefit from prevention interventions. The present findings underscore the importance of proactive interventions (e.g., means restrictions) for individuals at higher risk of lethal suicide attempts such as males and those with a substance use disorder.

Footnotes

1. A parallel regression analysis examining predictors of actual medical lethality was not conducted given the low base rate of suicide attempts high in actual lethality (n = 6).

2. Of note, and as illustrated in Figure 1, the suicide attempt of one individual was classified as high in actual lethality but low in potential lethality. In this case, while the attempt resulted in moderately severe physical damage for which the youth was hospitalized, without intervention the suicidal act would not have been lethal.

Conflict of Interest Statement: On behalf of all authors, the corresponding author states that there is no conflict of interest.

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