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How reliable are documented collegiate hazing deaths in the United States? A critical reconsideration

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ABSTRACT

Objective: Fatal collegiate hazing incidents have occurred in the United States for over a century. These incidents have contributed to the creation of anti-hazing policies, anti-hazing organizations, and anti-hazing laws. However, the flexible manner in which "hazing deaths" have been tracked does not always correspond to academic definitions of hazing and may include ambiguous accidents. The aggregate use of this information may create misconceptions about both the number of well-documented hazing deaths and their typical characteristics. **Methods:** We systematically reanalyze a nation-wide sample of alleged collegiate hazing deaths in the United States (1994–2019) in order to assess their evidential clarity. **Results:** We find that nearly a third of alleged hazing deaths fail to meet a set of minimal criteria for categorization as "hazing deaths." **Conclusions:** Our discussion focuses on improving how hazing deaths are tracked and responding to the statistical regularities of these incidents.

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Many collegiate student groups have induction processes for new or prospective members. That is, tasks that must be completed in order to join or be recognized as legitimate members. A subset of these tasks is considered by researchers to fall under the category of "hazing." Hazing is, colloquially, the abuse of new or prospective group members, though some definitions extend the phenomenon to more senior members as well (see Formally Defining Hazing). Collegiate environments appear to have high levels of hazing, with the largest survey to date suggesting that about half of all students joining various clubs and organizations are exposed to hazing.[1] Hazing practices can encompass all manner of activities, including drinking to excess, paddling, branding, extreme calisthenics, and other ordeals of varying severity.[1] In the United States, collegiate hazing has long been problematized (e.g., Barber[2]; Hoover[3]; Nuwer[4]) and remains a serious matter of concern today. The fear of hazing has driven the creation of state anti-hazing laws, anti-hazing advocacy organizations, and anti-hazing programs and policies.[5–8] Hazing continues to be feared and prohibited because hazing practices have been implicated in deaths, serious injuries, and psychological traumatization.[9–13] Further, most fatal hazing incidents in the United States appear to be concentrated in collegiate student groups (usually social fraternities), making collegiate populations a priority for individuals concerned with lessening the harms of hazing.[12–14]

As researchers who study hazing, we agree that some of its collegiate manifestations have caused serious harms, the most visible and important of which is death itself. We further agree that any collegiate hazing programming ought to be responsive to the circumstances of these deaths. However, our past research into collegiate "hazing deaths" has indirectly suggested to us that many such deaths might not meet academic definitions of hazing. Specifically, the manner in which incidents have been counted as "hazing deaths" is flexible and has included a variety of ambiguous accidents. While this flexibility is sometimes acknowledged (e.g., Chamberlin[12]; Nuwer[15]; Perez and Cimino[16]), there has never been a formal analysis of the proportion of collegiate hazing deaths that meet accepted academic definitions of hazing. The absence of such an analysis creates possible problems for any who might make use of this information. For researchers, it means that inferences drawn from the aggregated details of these incidents may be invalid, and thus any resulting advice may be counterproductive for administrators and practitioners. To address this concern, our article will proceed as follows: First, we will review what is currently believed about the number of documented collegiate hazing deaths. We will discuss how this information has been collected and why it may benefit from additional scrutiny. Second, we will propose a set of minimal criteria needed to describe an event as a "hazing death." This criteria set will use established academic definitions of hazing and a careful attention to the precipitating circumstances. Third, we will reanalyze a published dataset of U.S. collegiate hazing deaths, systematically apply our criteria and provide an accounting of our findings.

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Fourth, we will examine the extent to which summative characteristics of collegiate hazing deaths may differ after excluding events that failed our criteria (e.g., regional distribution). Finally, we will discuss what conclusions and recommendations can be drawn from our analysis.

Collegiate hazing deaths, broadly conceived

There is only one comprehensive and continually updated database of U.S. hazing deaths, and it is the work of journalist Hank Nuwer.[12,13] Nuwer's hazing deaths database is available on the internet and is presented as a series of chronological event summaries, sometimes accompanied by news articles and Nuwer's own commentary. As of 2025, Nuwer's database is also hosted at HazingInfo.org, which has worked to make the information more easily accessible and searchable. Nuwer has done extensive original research on hazing and is commonly cited by hazing researchers and news organizations (e.g., Allan & Madden[1]; Cimino[17]; Parks[18]; Smith [19]; The Economist[20]; Thomas et al.[21]). Over the years, Nuwer has made a number of public statements about the frequency of hazing deaths (collegiate and otherwise) based on his database (e.g., Smith[19]; Nuwer[22,23]). More broadly, nearly every published claim that we can find about the frequency, distribution, or typical causes of U.S. hazing deaths appears to ultimately derive from Nuwer's database (e.g., Casey[24]; Chamberlin[15]; Cohen & Quintana[25]; Perez[14]; Smith[19]; The Economist[20]). Indeed, HazingInfo.org[26] claims that Nuwer's data "has been cited in thousands of media reports, research studies, books, legal documents, and other publications." It should be noted that Nuwer's database is a record of media-reported incidents, not a population survey designed to establish the true extent of hazing deaths in the U.S. Thus, although the database is described as "comprehensive" in the sense that it gathers reports from throughout the United States, it is not known how well Nuwer's data matches the true number of hazing deaths.

Subsets of Nuwer's database have been published in various contexts, including as a magazine article and book appendix (e.g., Nuwer[27,28]). However, to our knowledge, there is only one peer-reviewed academic article that has systematically analyzed the hazing deaths database: Perez.[14] Perez's article examined the frequency, distribution, and common characteristics of U.S. collegiate hazing deaths from 1994 to 2019 (for an analysis of associated media coverage, see[16]). Overall, Perez counted 95 collegiate hazing deaths across his study period, or an average of 3.65 deaths per year. Perez also found that most collegiate hazing deaths happened in association with social fraternities and were caused or influenced by alcohol or other intoxicants. Because of the broad use of the hazing deaths database, it is valuable to provide initial characterizations of its contents (or relevant subsets), as Perez has done. However, like many other researchers and journalists, Perez[14] largely accepted Nuwer's classification of these events as "hazing deaths." It is worth considering what "hazing" means in the context of the hazing deaths database.

The hazing deaths database

While Nuwer's hazing deaths database is an important resource on hazing, it has a significant methodological limitation: It does not use any consistently applied definition of hazing. This complexifies the interpretation of event aggregations derived from the database. Nuwer has disclosed that his database includes a variety of incident types, but has never provided formal criteria for inclusion:

> Disclosure: Schools and fraternities have not always admitted that clear cases of hazing are, in fact, "hazing." In a few cases, there have been coverups. Therefore, the database includes deaths that appear to meet the consensus definition of criminal hazing, accidents while carrying out pledging or pledges being "encouraged" to drink, and suicides where parents believe hazing may have been a contributing factor. Many state laws take the position that hazing is considered hazing regardless of an individual's willingness to participate.[12]

For our purpose, the most important issue introduced by this disclosure is the inclusion of accidents that occur during the pledging period (the newcomer induction period for fraternities and sororities). Because most collegiate hazing deaths appear to be associated with social fraternities, this may not be a minor issue. Nuwer's justification for this choice is past institutional denials of hazing and the possibility of cover-ups. To some extent, we are sympathetic to this argument—the label of "hazing" (and investigations thereof) can be resisted for liability reasons. However, this creates the possibility that numerous "hazing deaths" are questionable in their inclusion.

Formally defining hazing

Of course, the number of "questionable" incidents in Nuwer's database depends critically on how one defines "hazing." Definitions of hazing can vary greatly across institutions, organizations, and individuals.[6,29,30] Regardless, within academia, modern hazing research tends to use one of two definitions (or minor variations thereof): Allan and Madden's[29] [2] or Cimino's.[6,31] These definitions are as follows:

> Allan and Madden:[29]
>
> [Hazing is] any activity expected of someone joining or participating in a group that humiliates, degrades, abuses, or endangers them regardless of a person's willingness to participate (p. 2).
>
> Cimino:[6]
>
> Hazing is non-accidental, costly aspects of group induction activities that: a) do not appear to be group-relevant assessments/preparations, or b) appear excessive in their application. Group induction activities are those tasks formally or informally required to obtain membership or participatory legitimacy for new or prospective members (p. 144).

Before addressing the adequacy of these definitions, it is important to understand why a concept like "hazing" even exists and what it is intended to capture about the world. Briefly, a variety of early ethnographers documented severe initiation practices in a number of small-scale societies (e.g., Butt-Thompson[32]). For anthropologists, the intensity and strangeness of these initiation practices gave rise to

theorizing about their purpose (e.g., Whiting et al.[33]), a process that has continued to this day and spread far beyond anthropology (e.g., Cimino et al.[34]; Keating et al.[35]; Parks[18]). While most academic work on hazing is now directed at industrialized societies, the motivating observation is the same: group newcomers are being subjected to strange and seemingly unnecessary activities. Thus, "hazing" is a kind of residual category, one designed to contain those group induction practices that appear arbitrarily punitive. Consequently, all popular hazing definitions implicitly depend on the concept of a *reasonable observer*, rather than a set of objective, fine-grained criteria. Consider that Allan and Madden have never explained how to objectively determine whether an activity is "humiliating," nor has Cimino ever explained how to determine whether an activity "appears excessive." One of the reasons why these definitions have nonetheless been useful is that they provide basic guidance to a reasonable observer. Specifically, they describe (1) what the *content* of hazing should look like (e.g., humiliating, abusive), and (2) what the *context* of hazing should look like (i.e., a group induction activity, or an activity "expected" of a group member). In practice, these definitions are rarely contested because they are applied to induction activities with wide observer agreement (e.g., fraternity paddling is an activity whose *content* appears humiliating or abusive and whose *context* is a group induction).

We also note that, whatever their limitations, both definitions have motivated and contextualized a variety of empirical and theoretical research on hazing (e.g., Alexander[36]; Allan et al.[37]; Allan & Madden[29]; Cimino et al.[34]; Cimino et al.[38]; Cimino & Thomas[39]; Costa Pinto et al.[40]; Kristensen et al.[41]; Marchell et al.[42]; Perez[14]; Thomas et al.[21]). Indeed, many of the things we believe we know about collegiate hazing depend upon these definitions (e.g., large-scale prevalence figures from Allan & Madden[1]). Of the two definitions, Allan and Madden's is the most commonly employed. We note the relative use of these definitions in order to describe the current state of the literature, not to imply differential value. Cimino,[6] for example, has argued that Allan and Madden's definition is overbroad, among other issues. A consideration of the merits of these arguments would be article-length in its own right, and thus will not be explored here (see Cimino[6]). Regardless, given that academics may disagree about which definition is ideal, we will separately apply each definition to each alleged hazing death, which may yield contrasting determinations.

Methods

Our target sample was the 95 U.S. collegiate hazing deaths (1994–2019) compiled by Perez[14] and derived from Nuwer's hazing deaths database. Perez[14] used the following criteria for inclusion:

1. Must be a hazing death occurring from January 1st, 1994 to December 31st, 2019;
2. Must take place at an IHE [Institution of Higher Education] in the United States;
3. Must have occurred in the context of an affiliated or unaffiliated student organization, including social fraternities and sororities, varsity or intermural athletic teams, performing arts organizations, service organizations, recreation clubs, academic clubs and honor societies, or other student groups;
4. Must have been attributed to a hazing practice (Note: Suicides or unconfirmed causes of deaths were not included in the current data. While suicidal behaviors are an undeniable possible result of hazing victimization, the motivation and risk factors for suicide are far too complex to attribute to one specific cause [see Mościcki, 1995]. As such, these cases could not be definitively classified as "hazing-related" deaths and were not included in the analysis.);
5. Must have enough public information available to be included in the analysis (p.6).

Thus, Perez's[14] inclusion criteria ensured that we were addressing modern incidents for which there was sufficient publicly available information for further evaluation.

Evidence collection and classification process

In reassessing these alleged hazing deaths, we constructed a spreadsheet containing a chronological list of each decedent, including relevant case details from Perez[14] (i.e., decedent, organization, institution, incident, and outcome characteristics). For our analysis, we added columns for a) whether the event caused or contributed to the decedent's death, b) whether the event met Allan and Madden's[29] definition of hazing, c) whether the event met Cimino's[6] definition of hazing, and d) our notes on the rationale for our classification decisions (see examples in Table 1 and our downloadable data package for the complete record).

When considering the concordance between an event and a definition of hazing, we focused on whether documented descriptions of the incident matched the required definitional elements (see Applying Definitional Criteria). We did not rely on whether any party (e.g., family, law enforcement, university officials, or journalists) claimed or denied that the event was hazing, as definitions of hazing can vary widely. Additionally, when coming to a determination, we considered *only* the incident in question. This means that although a decedent might have been involved in a hazing induction around the time of their death, the specific event leading to their death might not be classifiable as hazing. Cases were evaluated and classified using the following procedure: (1) Evidence Collection; (2) Collaborative Coding; (3) Consensus Review; (4) Documentation of Classification Decisions.

1. Evidence Collection. Evidence collection began with a review of each alleged hazing death in the Perez[14] sample along with Nuwer's[12,13] summary of the incident. These summaries were supplemented by news articles derived from a prior study of media reporting on hazing deaths[16] and Google searches to verify information relevant to our classification criteria. Searches typically

Table 1. Example classifications of alleged hazing deaths (1994–2019).

Name	Year	Alleged hazing event (sources)	Caused or contributed to death	Hazing by Cimino definition	Hazing by Allan & Madden definition	Notes on Cimino definition	Notes on Allan and Madden definition
Seth Korona	2001	"Seth Korona died from the effects of a head injury contracted after consuming beer during a keg stand. Alcohol was a contributing factor, but other factors also were involved (previous illness)"[13]. "During the party, Korona performed a handstand on a beer barrel while drinking from the barrel's tap. Within minutes he fell backwards, slamming his head against the side of a metal door frame, knocking himself unconscious. He recovered consciousness, complained of a headache, but refused to go to the hospital until the next day"[43].	Yes	Unclear	Unclear	Unclear if keg stand was incidental or part of induction.	Unclear if keg stand was incidental or group-obligated.
Daniel Reardon	2002	"Daniel Reardon, 19, was found in a coma in January at the Phi Sigma Kappa house following Bid Night. Authorities and his family blame an alcohol drinking tradition associated with pledging for his death. No hazing charges were filed. Alcohol was cause of death. The ritual was a half-gallon of bourbon that was passed around a circle with each pledge expected to guzzle from it"[13]. "According to the suit, Reardon and most other pledges were intoxicated and vomiting by the time they finished the first half-gallon, but McLaughlin opened a second. When Reardon took his turn, he was cheered for drinking more than his share, and within minutes his eyes rolled back in his head and he lost consciousness, the suit says"[44].	Yes	Yes	Yes		
Robert Schmalz	2003	"Robert Schmalz, 22, died following a rush event in which he consumed a lethal amount of alcohol. He was a member, not a pledge. Alcohol contributed to the death"[13]. "According to Peoria authorities, Schmalz, a member of Phi Kappa Tau fraternity, began his drinking binge Saturday and either continued or started drinking again Sunday morning"[45].	Yes	No	Unclear	Decedent was not an inductee.	Unclear if level of alcohol consumption was incidental or group-obligated.

Note. For the complete list of decedents, classifications, and associated references, see the downloadable data package.

combined the decedent's name, the name of the university or college, the year of the incident, and relevant keywords (e.g., "hazing," "fraternity," "sorority," or "death").[3] Searches were performed primarily during 2024 with some searches conducted as part of the review process for this article in September of 2026. Every incident in the sample was evaluated using both Nuwer's summary and at least one additional news source.[4] When multiple additional sources were available, preference was given to sources containing the greatest detail regarding the circumstances of the incident.

2. Collaborative Coding. After compiling the available evidence, Author 2 initially evaluated all 95 cases to assess: (1) whether the event caused or contributed to the decedent's death, (2) whether the available information satisfied Allan and Madden's[29] definition of hazing, and (3) whether the available information satisfied Cimino's[6] definition of hazing. Author 1 was supplied these initial evaluations and then performed their own assessment of the summaries and sources, conducting additional searches in the process. During this stage, each author recorded brief notes explaining any uncertain or disqualifying aspects of the examined incidents.
3. Consensus Review. Following coding, the two authors reviewed each case together, compared their classifications, and discussed any disagreements or areas of uncertainty. Whenever the authors' assessments were not fully aligned, they jointly returned to the underlying sources and reconsidered the classification in relation to the relevant definitional elements. Additional searches were conducted when necessary, and discussion continued until both authors agreed on the final classification. Because this methodology was explicitly designed to produce case-by-case consensus, no inter-rater reliability statistics were calculated.
4. Documentation of Classification Decisions. If the available information was insufficient to establish that a hazing death had occurred, we documented the reason (see Applying the Lethality Criterion and Applying Definitional Criteria).

Note that, for all news sources, we accepted as provisionally true the details provided by journalists and quoted parties in the reporting (e.g., parents, law enforcement, and university officials). If differing accounts of an incident were material with respect to a determination of hazing, we relied on the account that most favored a determination of hazing. Importantly, this decision rule applied only to differing accounts of what occurred, not to claims that an incident was or was not hazing.

Applying the lethality criterion

In order for an alleged hazing incident to be a "hazing death," said incident must have played a causal or contributory role in a decedent's death. This criterion was evaluated independently of whether an incident could be classified as "hazing" because it constitutes a conceptually distinct question. We provisionally accepted that an incident caused or

contributed to a decedent's death unless contradicted by a relevant authoritative source, such as a medical examiner, court finding, or grand jury determination. In applying this criterion, we found two incidents in which authoritative sources contradicted a relationship between the alleged hazing event and the decedent's death. Specifically, a grand jury (in effect) concluded that Trey Walker's asthma-related death (1997) was unrelated to an alleged hazing event, while a medical examiner concluded that Robert Tipton Jr.'s (2012) death resulted from oxymorphone poisoning rather than injuries allegedly sustained during hazing. Finally, one decedent (Steven Judd) in our spreadsheet was identified as an erroneous inclusion in Perez's[14] original dataset because he does not appear in Nuwer's hazing deaths database. This case was retained in our data file for transparency but was excluded from all analyses.

Applying definitional criteria

Both hazing definitions are two-pronged in requiring (1) that hazing activities have one or more descriptive characteristics (e.g., costly, dangerous) and (2) that hazing activities have an identifiable social context (e.g., a group induction). Each case was evaluated by considering these requirements, as conceptualized by each definition.

For the Allan and Madden[29] definition, we evaluated whether available sources suggested that the activity was "expected of someone joining or participating in a group" and whether the activity appeared humiliating, degrading, abusive, or dangerous. We assessed whether the activity was "expected" by considering both explicit requirements and informal group obligations; as such, an activity did not need to be described as "forced" or "mandatory" to satisfy this element (though some clearly were). Evidence of group obligation included instructions or directions from established members or descriptions of the event as an initiation, ritual, or tradition. For example, a pledge described as drinking heavily is engaging in a potentially dangerous activity, but (stated by itself) said activity is not clearly a group obligation or requirement. On the other hand, a pledge described as drinking heavily with other pledges as part of a "tradition" or "ritual" suggests that the behavior is implicitly or explicitly required. We assessed whether the activity was humiliating, degrading, abusive, or dangerous by the "reasonable observer" standard (see Formally Defining Hazing).

For the Cimino[6] definition, we evaluated whether available sources suggested that the activity was costly and non-accidental while being part of a formal or informal group induction process. If so, the activity needed to appear either non-group relevant or excessive in its application. While the Allan and Madden[29] definition includes individuals joining or participating in a group, Cimino's[6] definition applies only to new or prospective members. As such, we assessed whether the activity was part of a formal or informal induction process in a manner similar to the Allan & Madden[29] requirement but excluded individuals who were full members rather than inductees (e.g., active members of a fraternity). We evaluated whether the activity was "costly" by considering whether it had energetic, somatic, social, or opportunity costs (see Cimino[17]). We assessed whether the activity was "non-group relevant" or "excessive" by the "reasonable observer" standard. For example, social fraternities do not regularly partake in activities that require high levels of cardiovascular fitness, thus making pledges do exhausting calisthenics appears non-group relevant.

If the required content or context could not be established by the available evidence, the incident was classified as "Unclear" for that definition. An incident was treated as directly contradicting a definition when the available evidence affirmatively conflicted with its required content or context, such as (for Cimino's definition) evidence that a decedent was an established member. The basis for these classifications was documented in our data file (see examples in Table 1). Note that we did not find any incidents that clearly violated the *content* requirement of these definitions. In other words, we did not find any incidents that—for the Cimino[6] definition—failed to appear costly. Nor did we find—for the Allan and Madden[29] definition—any incidents that failed to appear dangerous, humiliating, degrading, or abusive. This means that definitional failures exclusively occurred on the second prong, the *context* of the incidents.

Classification scope and caveats

In summary, our process was systematic but employed an inclusive standard using relaxed evidentiary requirements for classifying an event as a "hazing death." That is, we did not require high-resolution details of the incident, sworn witness statements, judicial findings, or equivalent evidentiary demands. Similarly, we provisionally accepted the link between an alleged hazing incident and a decedent's death unless this was contradicted by a relevant authoritative source. We adopted this approach in order to estimate a conservative lower bound on the number of incidents that could not be affirmatively classified as hazing deaths and to partially address Nuwer's[12] concerns about hazing investigations. Further, if many alleged hazing deaths are questionable under relaxed evidentiary requirements, this is more informative than finding the same under strict requirements.

Before proceeding, it is important to understand what our classifications do and do not represent. Specifically:

1. Our classifications are not legal determinations. State anti-hazing laws vary, and legal definitions of hazing do not necessarily correspond with the academic definitions of hazing in use.
2. Our classifications are not moral conclusions about the incidents in question. Determining that an incident does not satisfy an academic definition of hazing does not imply that the conduct involved was acceptable or without serious consequence. Many incidents that could not be affirmatively classified as hazing nonetheless involved dangerous or reckless behaviors that present genuine student health and safety concerns (see our Discussion section).

Analysis strategy

We constructed two analytical sub-samples of the Perez[14] data, each based on one of the hazing definitions. Both sub-samples contained only those incidents that (1) satisfied the lethality criterion and (2) satisfied the jointly required content and context of the named definition. In order to descriptively compare our aggregate findings with the Perez sample, we recreated the figures and tables used by Perez[14] and added information from the two sub-samples. To allow for meaningful descriptive comparisons with the Perez[14] sample, we updated the time-sensitive variables in Perez's original dataset, including arrests, convictions, and lawsuits. This ensured that any observed differences reflected our classification decisions rather than changes in publicly available information since the initial Perez[14] study.

Note that we intended to perform *descriptive* comparisons as we did not believe that significance testing was appropriate and informative for our purpose. Regardless, our approach created a large number of possible comparisons within our tables and the three samples they comprised. In order to make visual evaluation easier, we added "a" "b" and "c" subscripts to the values given for the sub-samples. Each subscript corresponds to a range of difference when compared to the Perez[14] sample: a = > 0 to < 5 percentage points; b = ≥ 5 to < 10 percentage points; c = ≥ 10 percentage points.

Results

Proportion of alleged hazing deaths that failed lethality and/or definitional criteria

To calculate the proportion of hazing deaths that could not be affirmatively classified as such (Figure 1), we divided the number of decedents in incidents that failed to meet our definitional or lethality criteria by the 94 total decedents in the Perez[14] sample. For the Allan and Madden[29] sample, 26 deaths could not be affirmatively classified (~28% of the Perez sample). For the Cimino[6] sample, 28 deaths could not be affirmatively classified (~30% of the Perez sample). Thus, across the same sampling frame, the Perez[14] sample included 3.62 hazing deaths per year, the Allan and Madden[29] sample included 2.62 hazing deaths per year, and the Cimino[6] sample included 2.54 hazing deaths per year.

The application of our lethality and definitional criteria is shown in Figure 1. Two decedents were in incidents that failed the lethality criterion because authoritative findings contradicted a causal or contributory relationship to their deaths. The remaining 92 decedents were then evaluated using the two academic definitions of hazing. Under the Allan and Madden[29] definition, 68 decedents were in incidents that met the definition. For the definitional failures, none resulted from evidence directly contradicting the definition; instead, 24 decedents were in incidents that lacked sufficient evidence to establish the required definitional

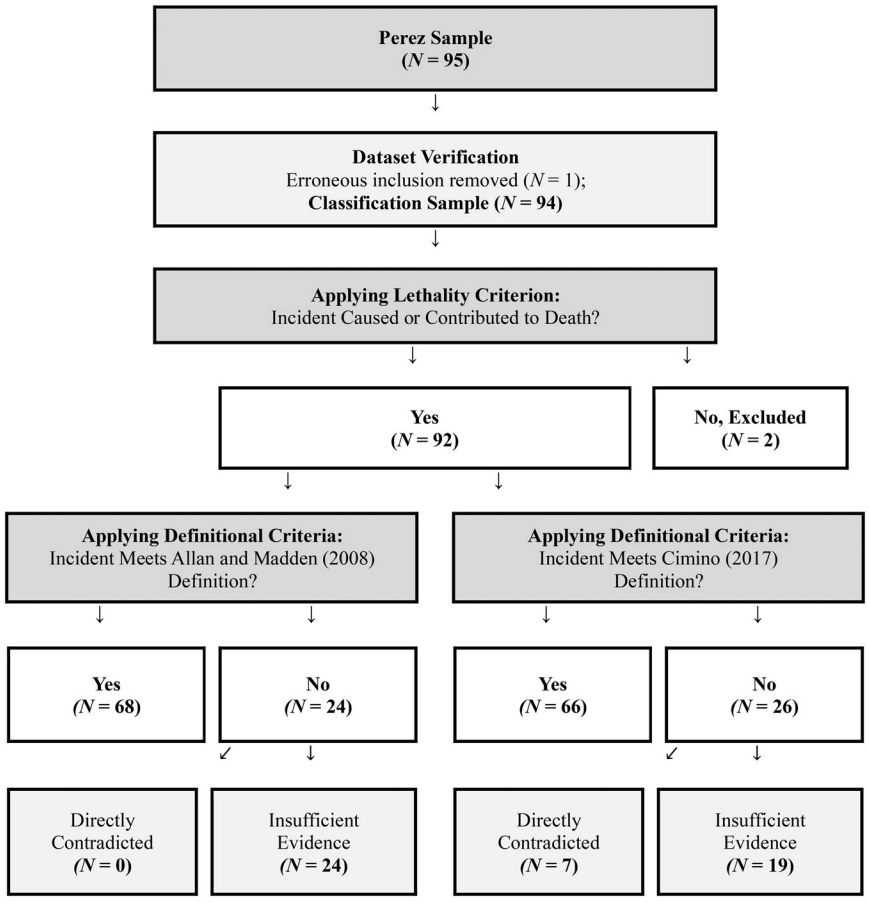

Figure 1. Classification flow of alleged collegiate hazing deaths.

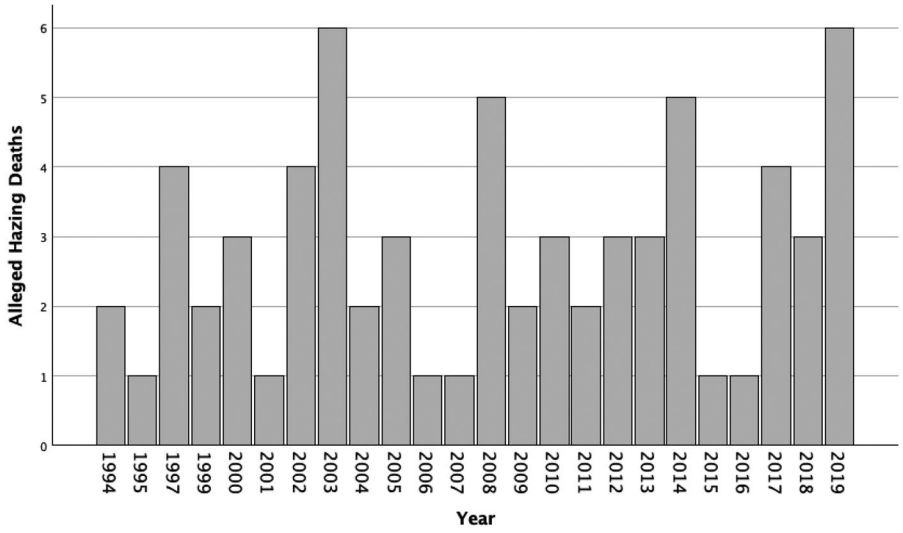

Figure 2. Alleged hazing deaths by year, Allan & Madden definition (1994–2019). *N* = 68.

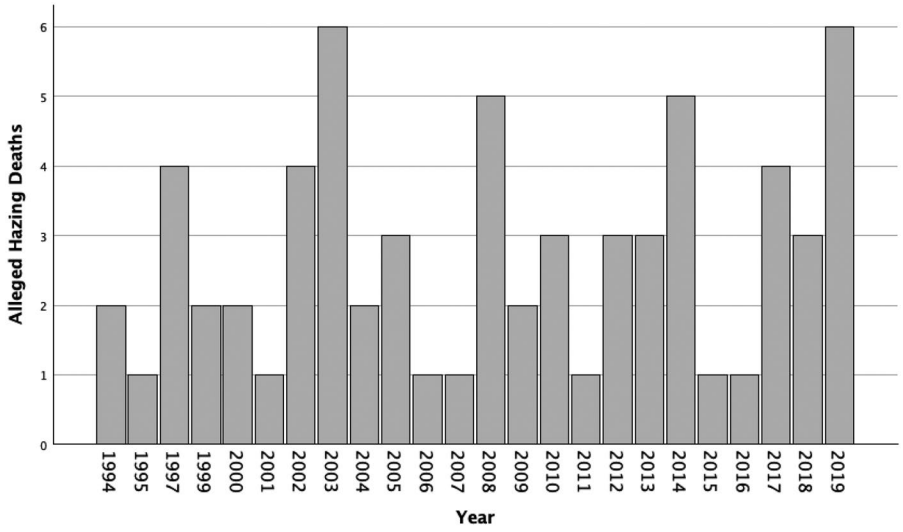

Figure 3. Alleged hazing deaths by year, Cimino definition (1994–2019). *N* = 66.

Table 2. Decedent characteristics of alleged hazing deaths (1994–2019).

Variable		Allan & Madden sample*	Cimino sample**	Perez sample***
Gender				
	Male	91.2% [a]	90.9% [a]	92.6%
	Female	8.8% [a]	9.1% [a]	7.4%
Mean Age		19.4	19.4	19.3
(Min. – Max.)		(17–26)	(17–26)	(17–26)

Note. *Allan & Madden full sample *N* = 68; **Cimino full sample *N* = 66; ***Perez full sample *N* = 94. Subscripts indicate the magnitude of the percentage-point difference relative to the Perez[14] sample: a = > 0 to < 5 percentage points; b = ≥ 5 to < 10 percentage points; c = ≥ 10 percentage points.

elements. Under the Cimino[6] definition, 66 decedents were in incidents that met the definition. Of the 26 decedents that did not meet the definition, seven were in incidents that directly contradicted the definition because they were established members rather than inductees. The remaining 19 decedents were in incidents that lacked sufficient evidence to establish the required definitional elements.

Differences among event characteristics and outcomes

Our tables and figures collectively show alleged hazing deaths per year (Figures 2 and 3), decedent age/gender (Table 2), as well as characteristics of the organization (Table 3), institution (Table 4), incident (Table 5), and outcome (Table 6). Note that because the Cimino[6] sub-sample and the Allan and Madden[29] sub-sample only differed by 2 decedents, differences between the sub-samples were trivial in size.

When comparing each sub-sample with the Perez[14] sample, we found a total of 69 category "a" differences (i.e., $0 < x < 5$ percentage points). These encompassed nearly every descriptive characteristic examined, including decedent gender, organization type, most Greek council affiliations, institution characteristics, causes of death, alcohol involvement, and most institutional and legal outcomes. Actual differences ranged from 0.2% to 4.9%, with the largest category "a" difference observed for students convicted in the Allan and Madden[29] sample (4.9 percentage points). We found a total

Table 3. Organization characteristics of alleged hazing deaths (1994–2019).

Variable		Allan & Madden sample*	Cimino sample**	Perez sample***
Type				
	Social fraternity or sorority	89.7% $_{a}$	89.4% $_{a}$	92.6%
	Performing arts organization	1.5% $_{a}$	1.5% $_{a}$	1.1%
	Service fraternity or sorority	1.5% $_{a}$	1.5% $_{a}$	1.1%
	Recreation club	2.9% $_{a}$	3.0% $_{a}$	2.1%
	Academic club	4.4% $_{a}$	4.5% $_{a}$	3.2%
Greek Council *n* (%)	North American Interfraternity Conference (NIC)	40 (65.6% $_{a}$)	38 (64.4% $_{b}$)	61 (70.1%)
	National Panhellenic Council (NPHC)	9 (14.8% $_{a}$)	9 (15.3% $_{b}$)	9 (10.3%)
	National Asian Pacific Islander Desi American Panhellenic Association (NAPA)	3 (4.9% $_{a}$)	3 (5.1% $_{a}$)	4 (4.6%)
	Other Councils (NPC, NIMC)	1 (1.6% $_{a}$)	1 (1.7% $_{a}$)	2 (2.3%)
	Unaffiliated	8 (13.1% $_{a}$)	8 (13.6% $_{a}$)	11 (12.6%)

Note. *Allan & Madden full sample $N=68$; **Cimino full sample $N=66$; ***Perez full sample $N=94$. Greek Council classifications are reported as n (%); percentages are calculated only among incidents involving social fraternities or sororities (Allan & Madden, $N=61$; Cimino, $N=59$; Perez, $N=87$). Subscripts indicate the magnitude of the percentage-point difference relative to the Perez[14] sample: a = > 0 to < 5 percentage points; b = ≥ 5 to < 10 percentage points; c = ≥ 10 percentage points.

Table 4. Institution characteristics of alleged hazing deaths (1994–2019).

Variable		Allan & Madden sample*	Cimino sample**	Perez sample***
Funding				
	Public	79.4% $_{a}$	80.3% $_{a}$	79.8%
	Private	20.6% $_{a}$	19.7% $_{a}$	20.2%
Type				
	University	94.1% $_{a}$	93.9% $_{a}$	93.6%
	College	5.9% $_{a}$	6.1% $_{a}$	6.4%
Region				
	West	32.4% $_{a}$	33.3% $_{a}$	33.0%
	Midwest	5.9% $_{b}$	6.1% $_{b}$	11.7%
	South	27.9% $_{a}$	27.3% $_{a}$	26.6%
	Northeast	33.8% $_{b}$	33.3% $_{a}$	28.7%
Enrollment Size				
	Very Small or Small	5.9% $_{a}$	6.0% $_{a}$	6.4%
	Medium	23.5% $_{a}$	24.2% $_{a}$	21.3%
	Large	70.6% $_{a}$	69.7% $_{a}$	72.3%
Setting	Primarily nonresidential	26.5% $_{b}$	27.3% $_{b}$	20.2%
	Primarily residential	42.6% $_{b}$	40.9% $_{b}$	50.0%
	Highly residential	30.9% $_{a}$	31.8% $_{a}$	29.8%

Note. *Allan & Madden full sample $N=68$; **Cimino full sample $N=66$; ***Perez full sample $N=94$. Subscripts indicate the magnitude of the percentage-point difference relative to the Perez[14] sample: a = > 0 to < 5 percentage points; b = ≥ 5 to < 10 percentage points; c = ≥ 10 percentage points.

Table 5. Incident characteristics of alleged hazing deaths (1994–2019).

Variable		Allan & Madden sample*	Cimino sample**	Perez sample***
Cause of Death				
	Alcohol, water, or drug intoxication	50.0% $_{a}$	50.0% $_{a}$	49.0%
	Auto accident	14.8% $_{a}$	15.2% $_{a}$	13.8%
	Drowning	10.3% $_{a}$	10.6% $_{a}$	12.8%
	Physical trauma, overexertion, or illness	19.0% $_{a}$	18.2% $_{a}$	17.0%
	Pledging-related fall	5.9% $_{a}$	6.0% $_{a}$	7.5%
Alcohol Involved?				
	Yes	64.7% $_{a}$	65.2% $_{a}$	69.1%
	No	35.3% $_{a}$	34.8% $_{a}$	30.9%

Note. *Allan & Madden full sample $N=68$; **Cimino full sample $N=66$; ***Perez full sample $N=94$. Subscripts indicate the magnitude of the percentage-point difference relative to the Perez[14] sample: a = > 0 to < 5 percentage points; b = ≥ 5 to < 10 percentage points; c = ≥ 10 percentage points.

of 13 category "b" differences (i.e., $5 \leq x < 10$ percentage points). These differences covered organizational affiliation (North American Interfraternity Conference and National Panhellenic Council), four institution characteristics (Midwest institutions, Northeast institutions, primarily nonresidential institutions, and primarily residential institutions), as well as three outcome characteristics (unknown/no institutional response, students sentenced to prison or jail, and students sentenced to community sanctions). In this category, actual differences ranged from 5.0 to 9.1 percentage points, with the largest category "b" difference found for primarily residential institutions in the Cimino[6] sample (9.1 percentage points). Finally, we found only two category "c" differences (i.e., $10 \leq x$ percentage points), both involving the proportion of incidents in which a lawsuit was filed. These differences ranged from 14.0 to 15.1 percentage points, with the largest

Table 6. Outcome characteristics of alleged hazing deaths (1994–2019).

Variable		Allan & Madden sample*	Cimino sample**	Perez sample***
Institutional Response				
	Suspension	52.9% $_{a}$	51.5% $_{a}$	48.9%
	Disbandment, Expulsion	19.1% $_{a}$	19.7% $_{a}$	17.0%
	Already non-sanctioned	14.7% $_{a}$	15.2% $_{a}$	14.9%
	Unknown / none yet	13.2% $_{b}$	13.6% $_{b}$	19.1%
Legal Responses				
n (%)	Students arrested and charged	31 (45.6% $_{a}$)	29 (43.9% $_{a}$)	39 (41.5%)
	Students convicted	25 (36.8% $_{a}$)	24 (36.4% $_{a}$)	30 (31.9%)
	Students sentenced to prison or jail	14 (58.3% $_{a}$)	14 (60.9% $_{b}$)	16 (55.2%)
	Students sentenced to community sanction	10 (41.7% $_{a}$)	9 (39.1% $_{b}$)	13 (44.8%)
	Lawsuit filed (against individual(s), organization, and/or institution)	58 (85.3%$_{c}$)	57 (86.4%$_{c}$)	67 (71.3%)

Note. *Allan & Madden full sample $N=68$; **Cimino full sample $N=66$; ***Perez full sample $N=94$. Legal responses are reported as *n* (%). Arrest/charge, conviction, and lawsuit percentages use the full sample denominators. Sentencing percentages are calculated among incidents involving convicted students for whom the sentencing outcome was known (Allan & Madden, $N=24$; Cimino, $N=23$; Perez, $N=29$). One convicted case in each sample had an unknown sentencing outcome and was excluded from the sentencing percentages. Subscripts indicate the magnitude of the percentage-point difference relative to the Perez[14] sample: a = > 0 to < 5 percentage points; b = ≥ 5 to < 10 percentage points; c = ≥ 10 percentage points.

category "c" difference found for lawsuits filed in the Cimino[6] sample.

Discussion

Based on our analysis of a 26-year period of alleged collegiate hazing deaths (1994–2019), a substantial proportion are not clearly classifiable as a product of "hazing" (~28–30%, depending on the definition applied). This is due to disqualifying aspects of the incident, insufficient information, or a doubtful connection between a hazing event and a decedent's death. Note also that this range was derived from a classification process that was generous to both the possibility of hazing and the contribution of the event to a fatal outcome. That is, we consider this range to be a conservative lower bound that would increase upon any more rigorous requirement.

In addition to assessing the number of non-affirmatively classified incidents, we were also concerned with examining the descriptive characteristics of these events in our reduced sub-samples. We found that the characteristics of our sub-samples were substantially similar to the Perez sample, and that Perez's[14] primary conclusions remained true. In particular, alleged hazing deaths were predominantly associated with Greek letter societies and with the use of alcohol or other intoxicants (Tables 3 and 5). Almost all observed differences were relatively small, though a notable exception was the proportion of decedents in incidents involving lawsuits, which was 14–15 percentage points higher in our sub-samples. We suspect two possible contributors to this delta. The first is that incidents involving legal action may have triggered more thorough investigations and thus provided clearer evidence for hazing in associated news articles. The second is that the incidents *themselves* may have had greater *prima facie* evidence of hazing and thus may have been more actionable in the first place. We maintain that it is important to consider causal pathways for the other observed differences, but we believe that larger samples of decedents will be needed prior to interpreting them as non-stochastic.

Additionally, as with any research, our study has limitations and caveats. Notably:

1. We were dependent upon journalistic sources in order to assess alleged hazing deaths. These sources vary in the depth of their reporting and thus the detail that they can provide regarding the circumstances of each incident. As additional reporting becomes available over time, some classifications may require reexamination.
2. The definitions of hazing that we applied are not perfectly objective. While we provided incident-specific notes on our classifications (see our data file), other researchers applying the same academic definitions may differ on some classifications, particularly in incidents with limited or ambiguous evidence.
3. We focused on a sample of relatively recent alleged hazing deaths that occurred prior to the disruptions caused by the COVID-19 pandemic (1994–2019). We believe that this provides a reasonably modern window into the definitional consistency and evidential clarity of the hazing deaths database. Nonetheless, our findings may not reflect the database's consistency/clarity for older sampling frames.
4. Final counts from our classifications should not be interpreted as estimates of the "true" incidence of collegiate hazing deaths as they are not sourced from a database capable of generating such prevalence figures (see Collegiate Hazing Deaths, Broadly Conceived).

Improving our approach to tracking fatal hazing events

Our classifications of hazing deaths relied on three criteria: lethality, content, and context. Specifically, we considered a "hazing death" to be an incident that caused or contributed to a fatality while simultaneously exhibiting both the content and context of hazing. Requiring some kind of evidence for all three criteria is (from our perspective) the only way to ensure conceptual coherence in the hazing deaths database. Maintaining this coherence is crucial for building a reliable understanding of the typical causes of hazing deaths and (by inference) the best means of preventing them.

We acknowledge that the hazing deaths database may have been born of different goals than ours, particularly

anti-hazing advocacy. An advocacy-focused effort might wish to include even ambiguous incidents so as to avoid excluding *possible* hazing deaths. However, as highlighted by its current host (HazingInfo.org), the hazing deaths database has now been cited in *thousands* of books, media reports, legal documents, and academic articles. In our experience, it is typically cited in a matter-of-fact manner that logically assumes definitional consistency and clear lethal causality. As such, whatever the original goals of the database, it should be interpreted with considerable caution when used in domains requiring explicit, consistent, and reproducible classifications. This includes academic research, institutional decision-making, policy development, and litigation. We recommend that HazingInfo.org separate out (or clearly label) decedents in questionable or ambiguous incidents. Further, given that many decedents in the hazing deaths database were added prior to the broad acceptance of the Allan and Madden[29] definition (as endorsed by HazingInfo.org), we believe that this separation/labeling process should involve a thorough review of the entire database. We also note that the hazing deaths database is inconsistent in providing sources for its allegations and it is not clear if ambiguous but relatively recent incidents are ever given follow-up research. This overall lack of transparency in the way that decedents are added, removed, or reviewed can be remedied by creating clear and publicly shared processes for doing so. These processes should include a description of what is considered an acceptable source for an alleged hazing death and how conflicting sources are resolved.

Note that, from a collegiate perspective, how we choose to interpret questionable hazing deaths is important for how we approach the different student safety problems we are facing. Consider that, in our analysis, many alleged collegiate hazing deaths had insufficient evidence to classify as "hazing" (Figure 1). While it is logically possible that all such incidents were indeed "hazing deaths" in spite of the missing evidence, most alleged hazing deaths happened in association with social fraternities (~89% in our sub-samples). Fraternity chapters vary, but many have alcohol-based party cultures (e.g., Arnold[46]; Biddix et al.[47]; Mathews[48]). We suspect that a large population of young men who regularly party and drink to excess will generate a number of non-hazing fatal incidents over time (car accidents, alcohol poisonings, etc.). Further, the frequency with which these groups induct new members and the length of such processes creates an environment in which newcomers may be incidentally involved in these fatal incidents. This confluence could generate many tragic events that misleadingly create the impression of hazing. Importantly, describing such incidents as "not hazing" does not place them outside the concern of the involved institutions or associated national fraternal organizations. All involved parties have an interest in reducing fatal accidents, but this interest is not advanced by the unnecessary application of a concept that requires the use of specialized theories and practices (e.g., Biddix et al.[49]). In order to be effective, we must correctly align our problems with our solutions.

The challenges of prevention

Our analysis underlines some of the key observations originally made by Perez.[14] Namely, collegiate hazing deaths within our sub-samples have predominantly occurred among fraternities, particularly those that use alcohol or other intoxicants. Even if the absolute number of collegiate hazing deaths would be different in a population-level survey, we suspect that their overall concentration would remain among said fraternities. To us, this suggests a clear need to focus on fraternities and intoxicants, but it does not (by itself) impel a specific prevention method. It is nonetheless worth considering the empirical status of hazing prevention methods in a collegiate context and an approach that has yet to be tried.

To begin, although there has been over a century of recorded collegiate hazing deaths, there are no known hazing prevention methods that have rigorous, real-world evidence of reducing hazing deaths or hazing more broadly. Given that all hazing prevention strategies are intended to ultimately ramify out into reductions in hazing or hazing injuries, we consider studies that do not include such outcome data to be limited in their informativeness (e.g., Allan et al.[50]; Kerschner & Allan[51]; Simeon[52]; Veldkamp et al.[53]). Indeed, after decades of attempts to reduce collegiate hazing, we know of only a single case study with actual hazing outcome data, and it was conducted in circumstances that create considerable ambiguity and is based on a dataset that is over a decade old.[42] While the near-absence of hazing outcome data is not by itself evidence of ineffectiveness, we suggest that there are *indirect* indicators that most hazing prevention programs have had limited impacts. The first indicator is that, whenever collegiate hazing surveys are done, they suggest that it is a common phenomenon, particularly in Greek letter societies and athletic teams (e.g., Allan et al. [37]; Allan & Madden[1]; Hoover[3]; Kerschner & Allan[54]; McGlone[55]). The second indicator is that the only study to look for an association between hazing prevention activities and the probability of students being hazed found no significant relationship.[54] The third indicator is that the number of reported collegiate hazing deaths has shown no clear downward trend over the past few decades, even when one excludes a number of ambiguous cases (as we have done here). The fourth and final indicator is some degree of despondence among anti-hazing advocates and those who have worked on the problem the longest. While such despondence is anecdotal, some of these individuals have many years of experience and have been well-positioned to observe (or be informed of) any large-scale changes that might have gone unreported by researchers. Nuwer,[56] for example, has written as follows:

> I've met dozens of the hazed and hazers alike, the families of the dead, the dedicated Greek professionals, a lot of jaded alums, and activists from HazingPrevention.org, Stophazing,org, the AHA Movement and so on. Many parents who gave years of service to the cause have quit, so disillusioned by the continuing string of deaths that they no longer can even utter the word "hazing." Everything possible has been tried. Bystander training. Help Weeks instead of Hell Weeks. Associate memberships instead of pledges. Delayed rush. Yanking charters. But still the deaths continue.

Nuwer is not alone in his frustration. Christina Parle is a current board member and past president of the Association for Student Conduct Administration. Her career has included on-the-ground experience managing fraternity and sorority life. In reflecting on these experiences, Parle[57] recently wrote:

> I've spent most of my career around hazing. Investigating it. Researching it. Sitting with organizations after something has gone wrong and asking how we got here. Here's the hard truth: our current approach to hazing prevention is not working! Young people are still dying. Minor and severe incidents are still happening across sororities and fraternities, athletics, and beyond. Just this year alone over 500+ incidents have been reported with the new federal requirements for transparency about hazing incidents on campuses.

Of course, all of the above indicators are indirect and can be contested individually. Surveys may show that collegiate hazing is common, but such surveys are cross-sectional and usually only cover a handful of institutions. This limits their ability to demonstrate changes that may be occurring at a national level. Kerschner and Allan's[54] finding on hazing prevention is singular and (as with most other studies) only covers a limited number of campuses. The persistence of *documented* collegiate hazing deaths may not show a clear downward trend, but our ability to track the full extent of such deaths is incomplete. And while Nuwer, Parle, and some others may be despondent, perhaps (through no fault of their own) they have missed trends that happened outside their view. We also acknowledge that there is no shortage of well-articulated *ideas* for hazing prevention (e.g., Allan et al.[58]; Biddix et al.[49]) and that our skeptical perspective on the state of collegiate hazing prevention is not shared by all. Some see promise in public health approaches (e.g., Marchell et al.[42]; Sasso et al.[59]) and may be encouraged by initial indications that students respond to hazing prevention trainings (e.g., they can recognize/report hazing, see Kerschner and Allan[51]). There is also some work suggesting that institutions can grow in their ability to implement and assess various hazing prevention programs and efforts.[50,53]

Regardless, we believe that it is time to investigate a long-neglected approach to collegiate hazing: *harm reduction.*[9,16,60] A possible harm reduction strategy would be crafting messages about safer induction practices that are not focused on condemning hazing but rather on directing those who implement hazing practices (hazers) to make safer choices about their activities, particularly avoiding alcohol. In some respects, this approach is not a radical suggestion in the context of current collegiate messaging around drugs and alcohol. Specifically, many colleges and universities provide safer consumption strategies to students, even with the knowledge that underage drinking is illegal (e.g., Penn State University[61]; University of Kansas[62]; University of Maryland[63]; Virginia Tech [64]; Washington & Lee University[65]). Adopting a similar approach for hazing practices may be warranted, even in states that have anti-hazing laws. With that said, our suggestion is like so many other hazing prevention methods in that it has yet to be formally tested in-context and with outcome data. We offer it here to raise awareness of its possible utility and the need for systematic study.

Whatever prevention method employed, collegiate hazing deaths remain a tragic phenomenon that continues to require the attention of researchers, practitioners, and administrators. We suggest that all parties will benefit from a shared, transparent, and definitionally consistent approach to documenting and addressing these events.

Notes

1. Although this article is focused on collegiate hazing, it is important to acknowledge that hazing is a broad phenomenon that can be found across cultures and time (see [34]).
2. Allan and Madden's definition was originally derived from—but is not identical to—the definition used by Hoover[3].
3. One of the oldest incidents in the sample (Terry Linn, 1994) failed to yield useful information from our Google searches. As such, our target article for this incident was found using the journalistic database Newsbank.com.
4. For three incidents, we cited a non-journalistic source (The Fraternal Law Newsletter), which is written by a law firm specializing in fraternity law (Fraternity Law Partners). This newsletter has also been cited by 13.

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Ethical approval

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Author contributions

CRediT: **Aldo Cimino**: Conceptualization, Investigation, Methodology, Writing – original draft, Writing – review & editing; **Nicholas M. Perez**: Conceptualization, Investigation, Formal analysis, Methodology, Writing – review & editing.

Data availability

Our complete data package is available online: https://www.aldocimino.com/hazing_deaths_data.zip

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