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Risk Factors for Suicidal Behaviors in American Indian and Alaska Native Peoples: A Systematic Review

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Abstract

American Indian/Alaska Natives (AI/ANs) experience disproportionate rates of suicide, but current strategies for suicide prevention have not reduced these health disparities. Therefore, to gain insight into factors that may affect risk trajectories for suicide attempts (SAs) among AI/ANs, we conducted a systematic review of the literature. Forty-five articles met inclusion criteria for the final corpus. Results demonstrate that substance use, depression/hopelessness, childhood maltreatment, violent victimization, and friend/family-member death by suicide serve as robust predictors for SAs. For AI/AN youths specifically, risk-taking behaviors, family conflict, and school environment were associated with SAs. Notable differences in risk factors were identified across age, sex, and region. Limitations of this body of evidence are described, including heterogeneity in study design, measurement, and sampling. Predicated on these findings and limitations, we suggest four key strategies to advance the study of risk factors for AI/AN communities to prevent AI/AN suicide.

Death by suicide is an urgent public-health concern that disproportionately effects American Indian and Alaska Native (AI/AN) populations in the United States. Cross-cultural statistics demonstrate that AI/ANs die by suicide at rates higher than all other racial or ethnic groups until around age 45, when White populations become at most risk (National Center for Health Statistics, 2020). In an effort to understand this disparity, the Centers for Disease Control and Prevention (CDC) has issued reports demonstrating the disparity and patterns of death by suicide in AI/AN populations (e.g., Leavitt et al., 2018). Unfortunately, rates of death by suicide are predicted to continue increasing into the year 2030 for both AI/AN peoples

and the general U.S. population (Best et al., 2018). Although these epidemiological data assist in understanding the scope of this disparity, nonfatal suicidal behaviors typically go unrecorded, leading to a dearth in knowledge about prevalence rates of these precursors to suicide in AI/ANs. National surveys of youths have shown that AI/AN adolescents experience suicide ideation and nonfatal suicide attempts (SAs) at rates significantly greater than their peers ("Youth Risk

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Behavior Surveillance," 2020), however, comparable data are limited for adults (for one report, see Bolton et al., 2014).

The ultimate goal of AI/AN suicidology is to prevent AI/AN people from dying by suicide and reduce the suffering that leads to and comes from experiencing suicidal thoughts and behaviors. Unfortunately, psychological science has failed to bring the field closer to these goals: AI/AN suicide rates have increased around 45% over the past 5 years, before which they had remained stable (CDC, 2021). Although one may expect that the broader suicide literature would report findings closer to these goals, given that its field has vastly more resources (e.g., personnel, funding), the patterns are largely the same. Since the field's emergence over 5 decades ago, death by suicide in the general U.S. population has not decreased significantly. In fact, rates of suicide have been steadily increasing over the past 2 decades (CDC, 2021). Furthermore, researchers have not become better able to predict suicidal behavior and have largely struggled to generate consistently effective treatments for suicidal thoughts and behaviors in this time (Franklin et al., 2017).

Researchers do know that SAs are an incredibly risky behavior; of individuals who die by suicide, more than 70% died on their first-ever attempt (Jordan & McNiel, 2020; McKean et al., 2018). Of individuals who attempt suicide and survive, about 21% to 35% will go on to make an additional attempt within 4 years (Christiansen & Frank Jensen, 2007; Owens et al., 2002). This trajectory is troublesome because each suicide attempt incurs greater risk for eventual death by suicide (e.g., Beghi & Rosenbaum, 2010; Ribeiro et al., 2016; Suominen et al., 2004). The study of risk factors (RFs) for suicidal behaviors may provide insights into the mechanisms that engender and maintain this high level of risk, providing opportunity for intervention. Research that centers suicide ideation as the outcome of interest may ultimately be inadequate for appropriately identifying RFs for eventual death by suicide for AI/AN people because most individuals who think about suicide do not go on to make a suicide attempt (Klonsky & May, 2014). Furthermore, in some samples of AI/AN adults, it has been noted that some individuals report attempting suicide without previously thinking about it (Bolton et al., 2014). With this in mind, research on suicide ideation in particular may represent a qualitatively different group of individuals than research on SAs specifically. Moreover, there is evidence from the general population that specific RFs may differentiate people who think about suicide from people who actually go on to engage in suicidal behaviors (Mars et al., 2019; May & Klonsky, 2016). Together, this evidence suggests that narrowing the focus on SA may be an appropriate

way forward. However, no reviews have focused specifically on risk factors for AI/AN SAs.

Although no review has focused specifically on RFs for SAs, several prior reviews have addressed suicidality among AI/AN people from multiple angles. In particular, these reviews have highlighted the limitations of individual pathology frameworks and the overfocus on risk factors to the exclusion of resilience and protective factors (Wexler et al., 2015). A recent meta-analysis from the general suicide literature supports the necessity of ecological, contextual, and environmental factors because individual factors generally serve as weak predictors for death by suicide (Franklin et al., 2017). Instead, it has been suggested that researchers strive to use frameworks that allow for a more accurate and fruitful discussion of risk and resilience pathways among AI/AN communities (Alcántara & Gone, 2007). Therefore, in this review, we use the ecosystemic framework (EF) outlined by Burnette and Figley (2016) to organize our results. The framework situates risk and protection within societal, cultural, community, familial, and individual levels. Although all frameworks are limited in that they by definition privilege a single perspective (O'Keefe et al., 2018), the EF structure allows us to examine the current status of the field with an explicit eye toward gaps and opportunities across environmental levels.

Method

In the current project, we followed systematic-review best-practice guidelines from Siddaway and colleagues (2019). We were interested in answering the question, "What do we know comprehensively about statistically analyzed risk factors for suicide attempts among American Indian and Alaska Native populations?" Given our goal of gaining a comprehensive understanding of these factors, the current review includes nonpublished research. However, given practical limitations of synthesizing across methodologies and number of studies, we focused only on quantitative literature. We consulted a research librarian (author A. Riegelman), who joined the research team to assist with the searching and screening methods for the project. This review was not preregistered, and a protocol beyond what is included in the Method section of this article was not prepared. We had no competing interests.

Search strategy

A. Riegelman designed the search strategy to target studies capturing two broad themes: AI/AN populations and suicidality. Keywords (e.g., "suicide," "suicidal," "self-harm*," "Alaska Native*") and subject headings

(e.g., "Self-Destructive Behavior," "American Indians") specific to each database were used to identify the desired literature in 12 databases and search engines. The primary search strategy was designed in PsycINFO (Ovid; see Supplemental Method in the Supplemental Material available online). The search was then translated to the 11 other subject-specific and multidisciplinary search platforms, including those that return gray literature (Fig. 1). The literature was not limited to publication date, language, or type. The search was completed in June 2020. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram in Figure 1 contains the search results, deduplication, and screening totals.

Citation screening

Inclusion criteria. Inclusion criteria for the current review are twofold: (a) The study must include an appropriate sample of AI and/or AN individuals and (b) must statistically examine the relationship between a variable that might act as an RF for suicide behaviors and a nonfatal-SA variable. Articles needed to include a between-groups analysis of attempt and nonattempt participants. An appropriate sample of AI/AN individuals is defined as one in which the total study sample is 90% AI/AN or higher. Finally, articles were not required to have been published in peer-review journals to be included in this review.

Exclusion criteria. Articles were excluded from the current study if they did not represent original research (e.g., literature reviews, law briefs). If no statistical analysis was conducted, articles were excluded. This includes articles that used solely qualitative methodologies or were case studies of $N = 1$. Articles that were focused on Indigenous populations other than those of the United States as defined above were excluded. Finally, undefined "suicidal behaviors," death by suicide, nonsuicidal self-injury, thoughts of suicide, and suicide planning were not included, even when combined with a nonfatal-SA variable because in the current review, we aimed to examine the body of literature focused on risk for nonfatal-suicide-related behaviors specifically.

Screening process. For this review, we executed three rounds of double-masked screening to identify our corpus based on the original literature search (Fig. 1; for more detailed screening information, see Supplemental Method in the Supplemental Material). Each article was independently screened by two authors using the online screening tool, *Rayyan* (Rayyan QCRI; Ouzzani et al., 2016), and a consensus process was used for resolving any screening disagreements. We calculated a single

interrater reliability κ statistic (McHugh, 2012) for each stage in the screening process on the basis of the number of agreed exclusions and inclusions and conflicting decisions. Because the κ statistic is sensitive to which rater makes specific inclusion and exclusion decisions in conflicts and allows only two sets of responses to be compared, we had to develop a protocol for combining raters when more than two were involved in a screening round. For instance, if we had four raters (A, B, C, and D) and raters A and B screened the first half of the articles and raters C and D screened the second half, the κ statistic would differ if we combined raters A + C's responses and raters B + D's responses compared with combining A + D's and B + C's. To circumvent this issue and provide a conservative estimate of our reliability, we ran the κ statistic with each possible combination of raters and reported the lowest resulting reliability value in this article. κ statistics indicated that the reliability of the screening process was strong at Stages 1 (κ = .85) and 3 (κ = .93) and moderate (κ = .71) at Stage 2. Our corpus included 47 articles at this stage. Finally, an updated search of the literature was conducted in April 2021, after which our corpus total was 48 articles.

Data extraction

Articles that fulfilled the inclusion criteria were then systematically extracted and coded for the following information: (a) authors and publication date (if applicable), (b) sample size and demographics (including age, sex and/or gender, racial and ethnic makeup, geographic region, if applicable), (c) study method (e.g., sample size, time frame, data-collection method), (d) what variable or variables were identified by authors as RFs and examined in relation to the suicide behavior, (e) what statistical approach was used, (f) main findings, and (g) author interpretation of results (extraction documents that include corpus descriptives and data are available upon request from the corresponding author). Main findings refer to study results that were framed by the original authors as the final model of effects (e.g., if an article described bivariate results as preliminary to a multivariate model, only the final multivariate model was extracted). Each article was initially extracted by one member of the study team, and co-lead authors (A. K. Fetter and A. Wiglesworth) reviewed each extraction document in synthesizing the results. If data were missing for participant age, sex or gender, SA time frame, and SA screener wording in any given study, this omission was noted in Tables 1 and 2 below and Tables S1 and S2 in the Supplemental Material. From the extracted data, we synthesized summary statistics (e.g., sums, means, medians when relevant) for notable features of the study designs, including the
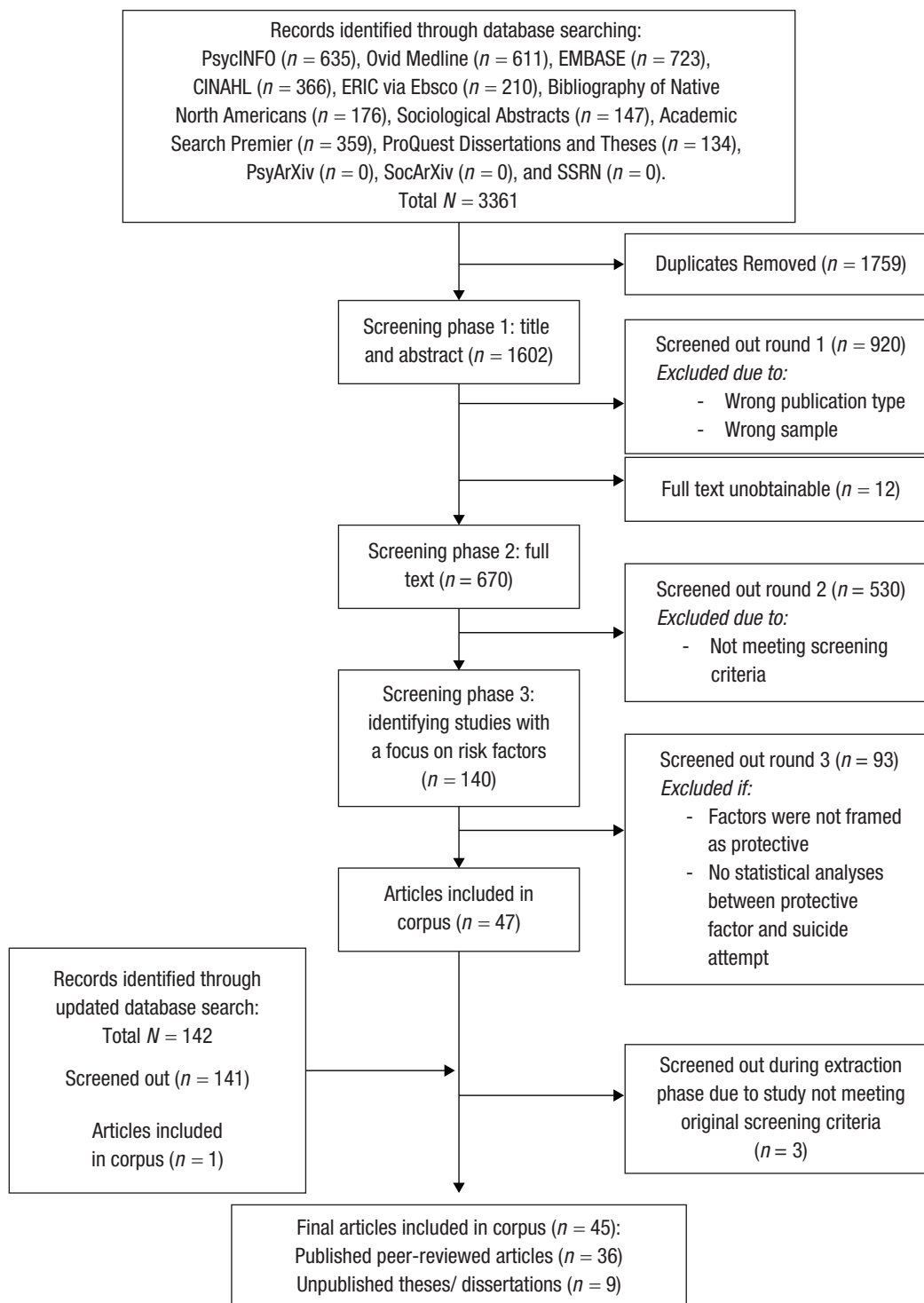
Records identified through database searching:
PsycINFO (*n* = 635), Ovid Medline (*n* = 611), EMBASE (*n* = 723),
CINAHL (*n* = 366), ERIC via Ebsco (*n* = 210), Bibliography of Native
North Americans (*n* = 176), Sociological Abstracts (*n* = 147), Academic
Search Premier (*n* = 359), ProQuest Dissertations and Theses (*n* = 134),
PsyArXiv (*n* = 0), SocArXiv (*n* = 0), and SSRN (*n* = 0).
Total *N* = 3361

Duplicates Removed (*n* = 1759)

Screening phase 1: title and abstract (*n* = 1602)

Screened out round 1 (*n* = 920)
Excluded due to:
- Wrong publication type
- Wrong sample

Full text unobtainable (*n* = 12)

Screening phase 2: full text (*n* = 670)

Screened out round 2 (*n* = 530)
Excluded due to:
- Not meeting screening criteria

Screening phase 3: identifying studies with a focus on risk factors (*n* = 140)

Screened out round 3 (*n* = 93)
Excluded if:
- Factors were not framed as protective
- No statistical analyses between protective factor and suicide attempt

Articles included in corpus (*n* = 47)

Records identified through updated database search:
Total *N* = 142

Screened out (*n* = 141)

Articles included in corpus (*n* = 1)

Screened out during extraction phase due to study not meeting original screening criteria (*n* = 3)

Final articles included in corpus (*n* = 45):
Published peer-reviewed articles (*n* = 36)
Unpublished theses/ dissertations (*n* = 9)

Fig. 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) informed flow diagram of searching and screening process.

sample, setting, and data type, to provide a brief yet comprehensive overview of the representativeness and methodologies seen in the corpus. Three additional articles were excluded from the corpus following extraction because we determined that they did not fit inclusion criteria. Given that these were screened into

the corpus at Round 3, they were included as disagreements for reliability, providing a revised interrater reliability in the strong range (κ = .88).

Results

Descriptive statistics of the final corpus (*N* = 45 studies) can be found in Table 1. Nine studies were unpublished theses or dissertations, and the remaining 36 were peer-reviewed publications. Note that the corpus is predominantly adolescent focused (*n* = 30), approximately half is original data analysis versus secondary, and all the articles were cross-sectional. As is consistent with the larger literature base on AI/AN suicide (see Rey et al., 2022, for a thorough discussion of methodological concerns in AI/AN suicide literature; Wiglesworth, Rey, et al., 2022), it became clear that articles varied greatly in the degree to which they described sample characteristics; numerous studies failed to fully report participants' age, sex, and number of people who had an SA (see Table 1). Moreover, the corpus was heterogeneous in its setting, sample, and RFs of interest. Hundreds of RFs were examined across the corpus, and there was a wide range across studies. This heterogeneity limited our ability at times to build stronger confidence in any particular RF for a specific population in a setting (e.g., only five studies explicitly described their setting as a health clinic; see Table 1). In addition, the studies in our corpus varied widely in the wording of their suicide screen and the time frame of reported SAs (see Table S1 in the Supplemental Material). This variability presents significant concerns of recall bias and response bias based on question wording. Finally, per the recommendation put forth in our previous companion publication (Wiglesworth, Rey, et al., 2022), we used the EF (Burnette & Figley, 2016) as an organizational and theoretical structure for our reporting of the RFs evidenced in the corpus (for study descriptives and results, see Table 2).

Individual-level factors

Individual-level RFs were the most frequently studied across the life span and are divided into five areas: demographic and regional characteristics, psychopathology and personality, substance use, risky behaviors for youths, and more general health characteristics and utilization.

Demographic and regional characteristics. Findings demonstrating categorical demographic and regional differences in rates of SAs are largely unconvincing. However, a few studies were the only in the corpus to examine

Table 1. Corpus Descriptives

Descriptives	*N* = 45 (26 peer reviewed, 19 dissertation/theses)
Sample race/ethnicity, *n*	
American Indian	25
Alaska Native	3
American Indian/Alaska Native	17
Sample age, *n*	
Child–emerging adult (≤ 25)	30
Adult (18+)[a]	12
Life span	3
Sample size: mean; median [range]	1,958; 426 [30–13,454]
With suicide attempt	375; 89 [9–2,903][b]
Data type, *n*	
Original data	23
Secondary analysis	22
Study setting, *n*[c]	
School	24 (0 in college-age samples)
Health clinic	5
Treatment centers/prison	3
Study design, *n*	
Cross-sectional	43
Sequential cross-sectional	2
Risk factor: mean [range][d]	6.5 [1–31]

[a]Ten articles failed to include data regarding the full range of participant age (e.g., 18+). [b]Nine studies did not include this information. [c]Data do not sum to equal 45 because of settings left undescribed. [d]Data are likely an underestimate of the mean and high end of the range given that some studies did not clearly list all risk factors examined in the article.

their factor of interest, and all identified significant associations with SA. Adolescent males who identified as gay were more likely to report SAs than were their heterosexual counterparts (Barney, 2004). Contrary to expectations, lower financial strain was associated with SAs in a moderate-sized sample of reservation-based middle school youths (Medoff, 2006). Finally, being uninsured or on Medicaid was associated with SA-related doctors' visits among AN adults (Dillard et al., 2017).

Sex effects, for which females are more likely to report a history of SAs than males, have been found among adults (Bolton et al., 2014; LeMaster et al., 2004), but findings were mixed among adolescents. Most studies found sex differences in reports of SAs (two thirds of study years in Bush & Qeadan, 2020; Chino & Fullerton-Gleason, 2006; Grossman et al., 1991; Howard-Pitney et al., 1992), but two studies found no sex differences in SA rates among a boarding-school sample of high school (Dinges & Duong-Tran, 1994) and middle school youths (Medoff, 2006).

Table 2. Description of Corpus Studies and Select Findings

Article	*N*	Sample	Significant findings
Barney (2004; pub)	*N* = 4,319 (*n* = 65 gay) SA ≈ 487 (*n* ≈ 15 gay) Female = 0%	Multi-Tribal nonrandom convenience middle/high school sample Ages 12–19	Gay male youths (I) (compared with straight male youths) ↑ SA (NR)
Blum et al. (1992; pub)	*N* = 13,454 SA ≈ 2,256 Female = 50.7%	Multi-Tribal reservation based schools Grades 7–12	Physical-health status (I), alcohol use (I), family history of SA (F), poorer school performance (Cm) ↑ SA (NR); Heavy drinking (I), marijuana use (I), sexual intercourse (I), pregnancy (I), purging (I), physical abuse (F), sexual abuse (F), believe family do not understand (F), family suicide attempt (F), believe adults do not care (Cm), friend died by suicide (Cm) ↑ SA ("high risk")
Blum et al. (1997; pub)	*N* = 3,318 (*n* = 617 PC, *n* = 638 LEB, *n* = 402 COMB) SA = 655 Female = 57.5%	Multi-Tribal reservation-based schools Ages 12–18	Physical conditions (I), learning/emotional/ and behavioral conditions (I), and chronic conditions COMB (I) (compared with control participants) ↑ SA (NR)
Bolton et al. (2014; pub)	*N* = 3,084 SA = 67 Female = 42.8%	Northern Plains and Southwestern Tribes (AI-SUPERPFP, 1997) Ages 15–54	Younger age (I) (24–35 cohort compared with older cohorts) ↑ SA (LT), female sex (I) (compared with male sex; Northern Plains only) ↑ SA (LT)
Borowsky et al. (1999; pub)	*N* = 11,666 SA = 1,984 Female = 52.1%	Multi-Tribal reservation-based schools (NAIAHS, 1990) Ages 12–18	Health concerns (I), frequent alcohol or marijuana use (I), ever using other drugs (I), somatic symptoms (I), history of abuse (F), family member attempt or death by suicide (F), friend attempt or death by suicide (Cm) ↑ SA (LT) in a multivariate model Male youths only: age (I), gang involvement (I), and history of mental-health treatment (I) ↑ SA (LT) Female youths only: knowing where to get a gun (I), history of special education (I) ↑ SA (LT)
Brockie (2012; diss)	*N* = 288 SA = 100 Female = 51%	Northern Plains reservation-based AI Ages 15–24	Posttraumatic stress disorder symptoms (I), polydrug use (I), and emotional neglect (F) ↑ SA (LT) in a multivariate model
Brockie et al. (2015; pub)	*N* = 132 SA = 53 Female = NR	Northern Plains reservation-based AI Ages 15–18	Emotional abuse (F), physical abuse (F), emotional neglect (F), physical neglect (F), witness to violence against mother (F), sum of ACEs (F), high ACEs (F) ↑ SA (LT) controlling for sex, Tribal affiliation, and school attendance
Bush & Qeadan (2019; pub)	*N* = 2,730 (2011) SA = 326 *N* = 3,171 (2013) SA = 437 *N* = 2,604 (2014) SA = 363 Female = NR	Multi-Tribal New Mexico population (NM-YRSS, 2011, 2013, 2015) Grades 9–12	Female sex (I) (compared with male sex) (2011 and 2015 only), lower maternal education (F) (2015 only), low social support (Cm) ↑ SA (YR) in a multivariate model controlling for age, grade, and sex
Campbell & Troyer (2007; pub)	*N* = 407 SA = NR Female = NR	Nationally representative sample AIs (Add Health, 1994–2002) Ages 18–28 (in 2002)	Perceived racial misclassification (S) ↑ SA (YR) controlling for sex, substance use, age, socioeconomic status, intact family, feeling social accepted at school, feeling parents care about them

(continued)

Table 2. *(continued)*

Article	*N*	Sample	Significant findings
Cheref et al. (2019; pub)	*N* = 3,268 SA = NR Female = NR	Nationally representative survey of self-reported AI/ANs (NSDUH) Ages 18+	18–25 age cohort (I) (compared with 26- to 49- and 50+-year-old cohorts), depression (I), alcohol "abuse," and dependence (I) ↑ SA (YR)
Chino & Fullerton-Gleason (2006; pub)	*N* = 690 SA = 167 Female = NR	Multi-Tribal Reservation-based New Mexico AIs (1998–1999) Grades 9–12	Female sex (I), feeling life had no purpose (I), cigarette use (I; ≥ 3 in the past year), and being a victim of violence (Cm) ↑ SA (LT) in a multivariate model
De Ravello et al. (2008; pub)	*N* = 36 SA = 15 Female = 100%	Incarcerated AI/AN women Ages 20–60	High ACE scores (F) ↑ SA (LT)
Dillard et al. (2017; pub)	*N* = 890 SA = 890 Female = 58%	AI/AN serviced at a Tribally owned clinic in Alaska Ages NR	Behavioral health conditions (I), received care for injuries (I), dispensed opioid medication (I), uninsured or had Medicaid/Medicare (I) ↑ SA (LT) related visit in a multivariate model controlling for gender, age, and residence (urban vs. rural)
Dinges & Duong-Tran (1993; pub)	*N* = 124 SA = 9 Female = 52%	Multi-Tribal Northwestern boarding school population AI/AN Ages 14–18	Parent/family conflict (F), school environment (Cm), interpersonal conflict/tension (Cm) ↑ SA (NR)
Dinges & Duong-Tran (1994; pub)	*N* = 291 SA = 90 Female = 57%	Multi-Tribal Northwestern boarding school population AI/AN Ages 14–18	Depression (I), heightened somatic symptoms (I), marijuana use (I), less support from fathers (F) ↑ SA (LT)
Erickson (1999; diss)	*N* = 569 SA ≈ 86 Female = 51.7%	Multi-Tribal urban (primarily Ojibwe, Dakota, and Winnebego) school-based AIs (IRIS) Ages 9–15	Perpetrating violence (I), carrying a weapon (I), being in a gang (I), desire to run away from home (I), substance use (I), "disturbed" eating behaviors (I), suicide ideation (I), being sexually active (I), friend or family member who has attempted or died by suicide (Cm), siblings or friends who use substances (Cm), threatened with (Cm) or victim of violence (Cm) ↑ SA (LT)
Evans-Campbell et al. (2012; pub)	*N* = 447 SA = 134 Female = 41.4% 7.8% Transgender	Urban Two-Spirit AI/Ans Ages 18+	Attended boarding school (S) (compared with being raised by someone who attended boarding school) ↑ SA (LT)
Fernquist (2017; pub)	*N* = 1,688 SA = 280 Female = 45.80%	Multi-Tribal school-based population AI/AN (YRBSS, 1991–2013) Grades 9–12	Binge drinking (I), sadness (I), forced sex (Cm) ↑ SA (YR)
Freedenthal & Stiffman (2004; pub)	*N* = 144 (urban) SA = 21 Female = 53.4% *N* = 170 (reservation) SA = 30 Female = 56.9%	Urban- and reservation-based Western AI population Ages 13–20	Urban only: alcohol abuse or dependence (I), suicidal behavior in family member (F) ↑ SA (LT) controlling for age, sex, and income Reservation only: depression (I), cigarette smoking (I), conduct disorder (I), family substance abuse history (F) ↑ SA (LT) controlling for age, sex, and income
Gloppen et al. (2018; pub)	*N* = 1,409 SA = 89 Female = 42.5%	Multi-Tribal Minnesota school-based population AI/AN (MSS, 2013) Grades 8, 9, 11	Physical bullying perpetration (I) and relational (Cm) and physical bullying victimization (Cm) ↑ SA (YR) controlling for sex, grade, poverty, family structure, special education, type of school, and school location

(continued)

Table 2. *(continued)*

Article	*N*	Sample	Significant findings
Grossman et al. (1991; pub)	*N* = 6,637 SA = 971 Female = 51%	Navajo reservation-based AI youths (NAIAHS, 1988) Ages NR Median age = 14.4	Female sex (I) compared with male, history of mental/behavioral/emotional problem requiring professional help (I), drinking hard liquor weekly (I), exposure to SAs/deaths by family (F), poor perceived general health (I), physical abuse (F), sexual abuse (F), extreme alienation from family/community (Cm), SAs by friends (Cm) ↑ SA (LT)
Harman (2017; pub)	*N* = 59 SA = NR Female = 52.7%	Northern Michigan High School near reservation Ages 14–18	Depression (I), perceived discrimination (S), and higher self-esteem (I) ↑ SA (YR)
Howard-Pitney et al. (1992; pub)	*N* = 83 SA = 23 Female = 58%	Zuni reservation-based AI youths Ages NR Mean age = 15.6	Female sex (I) (compared with male), alcohol use and frequency (I), marijuana use (I), suicide ideation (I), depression (I), hopelessness (I), stress, global distress (I), less interpersonal communication abilities (I), less liking for school (Cm) ↑ SA (LT)
Kropp et al. (2013; pub)	*N* = 77 S = 24 Female = 37.7%	Urban northern plains AI adults in substance use treatment setting Ages 18–63	Earlier regular drug use (I) ↑ SA (YR)
LaFromboise & Howard-Pitney (1995; pub)	*N* = 176 (Zuni = 84, Sequoyah = 92) SA = 20%–30% Female = 100%	AI populations in Zuni, NM, and Sequoyah, OK, high schools Ages 14–20	Alcohol use (I), depression (I) (Zuni only) ↑ SA (LT)
LeMaster et al. (2004; pub)	*N* = 1,638 SA = NR Female = 50%	Community-based sample of Northern Plains AIs living near a reservation (AI-SUPERPFP) Ages 15–57	Female sex (I) (compared with male), depressive disorder (I), PTSD (I), substance abuse (I), and violent ideation/aggression (I) ↑ SA (LT) in a multivariate model controlling for sex and age
Mackin et al. (2012; pub)	*N* = 503 SA = 53 Female = 44%	Oregon school-based AI/ANs (OHT, 2006) Ages 12–18	Feeling sad or hopeless (I), "emotional condition" (e.g., depression or anxiety) (I), driving in car with self/other who drank alcohol (I), violent victimization (Cm), sexual victimization (Cm), and did not go to school because felt unsafe (Cm) ↑ SA (YR) controlling for sex and grade
Manzo et al. (2020; pub)	*N* = 6,417 SA = 1,075 Female = 49.0%	AI Montana urban and reservation-based high school students (YRBSS, 2003–2011) Grades 9–12	Sadness/hopelessness (I) and lack of school safety (Cm) ↑ SA (YR) in multivariate models disaggregated by sex and region (urban vs. rural) Females: inhalant drugs (I) (urban only), unhealthy weight control (I), early risk taking (I), weapon carrying (I), violent victimization (Cm) ↑ SA (YR) Males: unhealthy weight control (I) (urban only), early risk taking (urban only), violent victimization (Cm) (urban only), ↑ SA (YR)
Martin (2013; diss)	*N* = 329 SA = 177 Female = NR 100% GNC	National sample self-reported AI/ANs (NTDS, 2009) Ages 18+	Obstacles to education because of harassment, financial, or space concerns related to gender (S) ↑ SA (LT)
Matthews (1989; diss)	*N* = 281 SA = NR Female = 54%	Multi-Tribal enrolled boarding school AI youths in Southern California Ages 14–20	High substance abuse past 6 months (I) ↑ SA (NR) and number of SAs

(continued)

Table 2. *(continued)*

Article	*N*	Sample	Significant findings
Medoff (2006; diss)	*N* = 122 SA = 24 Female = 53%	Northern Plains Reservation-based AI Grades 6–8	Negative social problem-solving (I), hopelessness (I), suicide ideation (I), drug (I), alcohol use (I), lower financial strain (I) ↑ SA (LT)
Pettingell et al. (2008; pub)	*N* = 569 SA = 15.5% Female = 52%	Urban AIs (IRIS, 1995, 1998) Ages 9–15	Females: violence perpetration (I), substance use (I) ↑ SA (LT) in a multivariate model controlling for self-image, positive mood, family caring, and school connectedness Males: violence perpetration (I) ↑ SA (LT) in a multivariate model controlling for parental prosocial norms
Potthoff et al. (1998; pub)	*N* = 7,687 SA = NR Female = 53%	School-based, on/near reservation (NAIAHS, 1990) Grades 7–12	Younger females: risky substance use (alcohol, tobacco, and marijuana, driving drunk) (I) and delinquency (vandalism /stealing/ fighting) (I) ↑ SA (NR) Older females: risky sexual behaviors (I) ↑ SA (NR) Younger males: use of inhalants (I), mouthwash (I), "other drugs" (I), truancy/running away (I) ↑ SA (NR) Older males: violence or gang activity (I) ↑ SA (NR)
Rhoades-Kerswill (2012; diss)	*N* = 123 SA = 17 Female = 75%	Convenience sample of self-reported AI adults Ages 18–70	Anxiety (I), depression (I), and thwarted belongingness (I) ↑ SA (LT)
Schaefer et al. (2022; pub)	*N* = 1,483 SA = 314 Female = 63%	Southcentral Foundation, AN urban adults at an Alaskan Tribally owned clinic Ages 19–60+	Emergency or urgent care visits (I), diagnosis of poisoning or overdose (I), and any inpatient hospitalization (I) ↑ SA (YR) related visit
Segal (2001; pub)	*N* = 122 SA = 105 Female = 100%	AN women in substance use treatment Ages 18–47	History of sexual abuse (F), physical abuse (F) ↑ SA (NR)
Story et al. (1997; pub)	*N* = 12,039 SA = NR Female = 51%	School-based, on/near reservation (Indian Add Health, 1990) Ages 12–18	Purging (I) and dieting frequency (I) ↑ SA (LT) controlling for age and BMI
Subica & Wu (2018; pub)	*N* = 2,129 SA = 357 Female = 44%	School-based national sample of AI/AN students (YRBSS; 13 waves) Grades 9–12	Current alcohol (I) and cigarette use (I) ↑ SA (YR) controlling for age, sex, and survey year
Thomas (2017; diss)	*N* = 1,505 (*n* = 753 nonrural, *n* = 752 rural) SA = 61 (*n* = 38 nonrural, *n* = 23 rural) Female = NR	Rural and nonrural AI adolescents in Oklahoma Ages 10–19	Rural environment (I) (compared with nonrural), feeling worried a lot (I), feeling guilty a lot (I), feeling unsafe at home (F), experiencing a loss in the family (F), experiencing the loss of a friend (Cm), having few real friends (Cm) (rural only) ↑ SA (LT) in a multivariate model

Note: NR = not reported; SA = suicide attempt; AI = American Indian; AN = Alaska Native; diss = dissertation or thesis; pub = article published in a peer-reviewed journal; S = societal; Cm = community; F = family; I = individual; LT = lifetime suicide attempt; YR = past-year suicide attempt; AI-SUPERPFP = American Indian Service Utilization, Psychiatric Epidemiology, Risk and Protective Factors Project; NAIAHS = National American Indian Adolescent Health Survey; NM-YRSS = New Mexico Youth Risk Surveillance Survey; Add Health = National Longitudinal Study of Adolescent Health; NSDUH = National Survey on Drug Use and Health; IRIS = Indian Youth Resiliency Impact Study; OHT = Oregon Healthy Teens; BMI = body mass index; PC = physical conditions; LBE = learning, behavioral, and emotional conditions; COMB = PC and LBE combined; ACE = adverse childhood experience; GNC = gender nonconforming; YRBSS = youth risk behavior surveillance survey; MSS = Minnesota student survey; NTDS = National transgender discrimination survey.

Findings regarding age are limited and mixed. In two epidemiological samples, young adults ages 25 to 34 (Bolton et al., 2014) and 18 to 25 (Cheref et al., 2019) reported SAs at higher rates than older adults. But in another epidemiological sample, no differences in SA rates were found between the 15- to 24-year-old cohort and the 25- to 57-year-old cohort (LeMaster et al., 2004). Given that AI/AN young adults are most at risk for death by suicide (ages 20–24; CDC, 2020), it may be that cohort comparisons offer too coarse of a variable to address age as an RF.

Finally, general regional differences in SA rates were not demonstrated among the samples in this corpus (Freedenthal & Stiffman, 2004; Grossman et al., 1991; Manzo et al., 2020), with the exception of one article (Thomas, 2017). These demographic results make sense given that heterogeneity of AI/AN peoples' population-level risk differences across age, region, or sex may be unlikely to emerge.

Psychopathology and personality. Factors associated with psychopathology and personality were among the most studied in the corpus. Mental health broadly has been associated with SAs (Dillard et al., 2017; Grossman et al., 1991; Mackin et al., 2012). Depression (12-month only: Cheref et al., 2019; Dinges & Duong-Tran, 1994; Erickson, 1999; Harman, 2017; Howard-Pitney et al., 1992; lifetime: LeMaster et al., 2004; Rhoades-Kerswill, 2012) and hopelessness/life purposelessness (Chino & Fullerton-Gleason, 2006; Fernquist, 2017; Howard-Pitney et al., 1992; Mackin et al., 2012; Manzo et al., 2020; Medoff, 2006) emerged with the most robust evidence. Depression and hopelessness were associated with SA in 15 studies (four adult, 11 adolescent) that spanned 3 decades and included both nationally representative and tribally/regionally specific samples of AI/ANs, with few exceptions. For example, depression was found to be related to reported SA for reservation-based but not urban-based youths (Freedenthal & Stiffman, 2004) and for AI youths in New Mexico but not in Oklahoma (LaFromboise & Howard-Pitney, 1995) and was not related to SA in one multiple logistic regression analysis (Brockie, 2012).

The remaining factors were less frequently examined. First, suicidal ideation was also associated with SA, although examined in only three adolescent samples (Erickson, 1999; Howard-Pitney et al., 1992; Medoff, 2006). Anxiety or worry were found to be associated with reported SA in both adolescent (Thomas, 2017) and adult (Rhoades-Kerswill, 2012) samples, although the finding was nonsignificant among one sample of adults (Cheref et al., 2019). Among youths, factors related to feeding and eating disorders, including purging behaviors (Blum et al., 1992), purging and

dieting frequency (Story et al., 1997), "disturbed eating behaviors" (Erickson, 1999), and unhealthy weight control (urban males only, Manzo et al., 2020), were associated with reported SA. Furthermore, preliminary support exists for the association between reported SA and global distress (Howard-Pitney et al., 1992), guilt (Thomas, 2017), conduct disorder (reservation youths only, Freedenthal & Stiffman, 2004), somatic symptoms (Borowsky et al., 1999; Dinges & Duong-Tran, 1994), negative social problem-solving (Medoff, 2006), higher self-esteem (Harman, 2017), and lower interpersonal communication skills (Howard-Pitney et al., 1992).

Among adults, posttraumatic stress disorder was found to be significantly associated with SA in two studies (Brockie, 2012; LeMaster et al., 2004). Furthermore, preliminary support exists in adult samples for the association between reported SA and violent or homicidal ideation (LeMaster et al., 2004) and thwarted belongingness (Rhoades-Kerswill, 2012). However, neither perceived burdensomeness nor acquired capacity were found to be associated with SA (Rhoades-Kerswill, 2012).

Substance use. Factors associated with substance use were also among the most studied. In general, substance use emerged as a robust RF for youths (Erickson, 1999); initial evidence showed that youths that begin using substances earlier (Potthoff et al., 1998) and use substances more heavily (Matthews, 1989) are at greater risk than individuals who begin using substances later or use substances moderately. Among adults, drug use generally and earlier drug use has been associated with SA (Kropp et al., 2013; LeMaster et al., 2004). Although tobacco use (Hodge & Nandy, 2011) and marijuana use (Cheref et al., 2019) have been found to be nonsignificant, alcohol use (Cheref et al., 2019) has been found to be positively related to SA.

Among adolescents, alcohol use (Subica & Wu, 2018), including binge drinking (Fernquist, 2017), heavy drinking (Blum et al., 1992), alcohol abuse or dependence (urban only, Freedenthal & Stiffman, 2004), greater frequency of alcohol use (Borowsky et al., 1999; Howard-Pitney et al., 1992; LaFromboise & Howard-Pitney, 1995; Medoff, 2006), and drinking hard liquor (compared with beer/wine; Grossman et al., 1991), was found to be consistently associated with lifetime and past-year (Subica & Wu, 2018) SAs among adolescents. Only one study failed to identify an association between alcohol use and SA for youths (Dinges & Duong-Tran, 1994).

In addition, drug use broadly has been found to be significantly associated with suicide attempt in youths (Borowsky et al., 1999; Medoff, 2006), including poly-drug use (Brockie, 2012). When examining specific

drugs, most studies identified a significant relationship between marijuana use and SA (Blum et al., 1992; Borowsky et al., 1999; Dinges & Duong-Tran, 1994; Howard-Pitney et al., 1992). However, a recent, large, population-based study of AI/AN youths did not support this association when controlling for age, sex, and survey year (Subica & Wu, 2018). Finally, tobacco use has also been associated with SA among youths (Chino & Fullerton-Gleason, 2006; reservation only: Freedenthal & Stiffman, 2004; Subica & Wu, 2018; Thomas, 2017).

Risky behaviors for youths. Risky behaviors examined in the corpus were quite heterogeneous and thus are difficult to synthesize. Among one sample of AI/AN urban youths, perpetrating violence, carrying a weapon, being in a gang, and a desire to run away from home were all associated with a history of SA (Erickson, 1999). However, differences appear to exist in what particular risk behaviors are associated with SA according to youths' sex, age, and context when demographic variables are examined. This is exemplified by the study from Potthoff and colleagues (1998), which examined factors among younger and older adolescent male and females separately as four groups and found that no factors were significantly related to SA across multiple groups. Significant factors related to SA included vandalism and stealing among younger adolescent females, truancy and running away among younger adolescent males, and violence or gang activity among older adolescent males. Likewise, Borowsky and colleagues (1999) also found that gang involvement was associated with SA for male youths, whereas access to a gun served as an RF for female youths only. Manzo and colleagues (2020) examined early risk taking among urban and reservation-based youths and identified an association only for urban males. Bullying perpetration has also been examined in a sample of AI/AN youths in Minnesota, in which perpetration of physical bullying (e.g., hitting others), but not relational bullying (e.g., spreading rumors), was associated with SA (Gloppen et al., 2018). One study examined risky behaviors related to substance use and found that driving after drinking or riding in a car with someone who had consumed alcohol was related to past-year SA (Mackin et al., 2012). Finally, sexual activity has been associated with SA (Erickson, 1999). Adolescents who were categorized as high risk for SAs were more likely to report having sexual intercourse and pregnancy than were "low risk" adolescents (Blum et al., 1992), and risky sexual behaviors have been associated with SA among older adolescent females (Potthoff et al., 1998).

Health characteristics and utilization. Factors related to health characteristics and utilization were not commonly examined in the corpus. Among youths, these factors

included having a chronic physical, learning, or emotional health condition (Blum et al., 1997) and poor perceived physical health or health concerns (Blum et al., 1992; Borowsky et al., 1999; Grossman et al., 1991). Sleep problems, which have been a large focus in the general suicide literature (Liu et al., 2020), were examined in only one study among youths (Farrell, 2013). This dissertation project did not find an association between sleep problems and SA but may have been underpowered to do so with only 14 suicide attempters included.

Health-service-utilization factors were examined in four studies. Borowsky and colleagues (1999) found that previous mental-health treatment was associated with reported SA among adolescent males but not females. Dillard and colleagues (2017) found that receiving treatment for an injury, behavioral-health specialty-care visits, and opioid-medication dispensation were all more common among individuals with a suicide-related visit within the following year compared with control participants matched on gender, age, and residence (urban vs. rural).

Building on this work, Schaefer and colleagues (2022) found that frequency of primary-care visits, frequency of emergency or urgent-care visits, and inpatient hospitalizations were associated with SA history recorded in medical charts after controlling income, marital status, and religious affiliation in a sample of urban AN adults that were also matched on age, sex, and location. This team also found that having a previous visit for poisoning or overdose were associated with SA history. This project also included many additional health factors that were not found to be significant in the multivariate model, including behavioral-health conditions, injury, chronic conditions, depression screening, alcohol use screening, seeing a behavioral-health consultant, and attending an "other" outpatient visit. Finally, safer sex practices and HIV testing were not found to be associated with SAs in a sample of rural AI/AN adults (Hodge & Sinha, 2010).

Family-level factors

Family-level RFs were categorized into themes of family structure and characteristics, family history of psychopathology, and childhood maltreatment and were predominantly explored among adolescents.

Family structure and characteristics. Two studies examined family structure among adolescents, such as parental marital status (Christensen, 1999) and household makeup (Grossman et al., 1991), and both failed to identify an association between these factors and SA. Bush and Qeadan (2020) also found that lower maternal education was associated with SA, but only in one of three

study survey years. However, there was evidence of an association between SA and other family characteristics for adolescents in the literature, including less support from fathers (Dinges & Duong-Tran, 1994), experiencing a loss in the family (Thomas, 2017), family or parent conflict (Dinges & Duong-Tran, 1993), and limited family connectedness (Blum et al., 1992; Grossman et al., 1991).

Family history of psychopathology. The evidence for a relation between family history of psychopathology and adolescent SA is quite mixed in the literature. Adolescents with a family member who has made an SA or died by suicide were found to be more likely to report an SA (Blum et al., 1992; Borowsky et al., 1999; Grossman et al., 1991). However, Freedenthal and Stiffman (2004) found this pattern only for urban-based youths, not reservation-based youths. Freedenthal and Stiffman also examined family substance abuse and found an association with reported SA for reservation-based but not urban-based adolescents. One other study found a nonsignificant relationship between parental alcohol and drug use and reservation-based adolescents' SAs (Howard-Pitney et al., 1992). However, note that these studies were likely sampling from different reservation communities.

Childhood maltreatment. Findings related to childhood maltreatment are generally robust, although results vary, in part because of small sample sizes (Bohn, 2003; Christensen, 1999), heterogeneity in samples (incarcerated adults vs. national sample of young adults), and factor conceptualization (e.g. presence of lifetime abuse vs. continuous adverse childhood experience [ACE] scores). Physical and sexual abuse were both associated with reported SAs for adolescents (Blum et al., 1992; Borowsky et al., 1999; Grossman et al., 1991). In one dissertation, emotional neglect, but not physical neglect, physical abuse, or sexual abuse, were associated with lifetime SA among young adults ages 15 to 24 when modeled together in a multivariate model (Brockie, 2012). However, in a later published study that included a subsample of Brockie (2012), youths ages 15 to 18, emotional and physical neglect, witnessing violence against your mother, physical abuse, and ACEs (cumulative and high ACE scores) were significant predictors of SA, although sexual abuse was not (Brockie et al., 2015). Only one study examined a secondary index of harm exposure and found that feeling unsafe in the home was related to SA for youths (Thomas, 2017).

Among adults, only two studies have examined childhood maltreatment as an RF, specifically among already vulnerable populations. Segal (2001) found that past sexual and physical abuse were significantly associated with SA in an adult sample of women in substance abuse treatment. De Ravello and colleagues (2008) reported that ACEs were associated with SA among a sample of incarcerated adults. Therefore, little is known about the effects of childhood maltreatment over the life span in regard to SA risk.

Community-level factors

Community-level RFs spanned three themes—community harm, friendships, and school—and were examined only among adolescents.

Community harm. Harm done by or within the community was examined in eight studies. Violent victimization, although defined differently across studies, was consistently related to reports of SA (Chino & Fullerton-Gleason, 2006; Erickson, 1999; Fernquist, 2017; Mackin et al., 2012; Manzo, 2020), with the exception of one (Brockie, 2012). In addition, among youths, interpersonal conflict (Dinges & Duong-Tran, 1993), including being the victim of bullying, seems to be related to a history of SA (Gloppen et al., 2018; Grossman et al., 1991), although prejudice-based harassment was nonsignificant (Gloppen et al., 2018). The final factors in this category were related to community adults caring about youths, which emerged as mixed (Blum et al., 1992; Chino & Fullerton-Gleason, 2006).

Friendships. Six studies examined RFs related to features of friendships among adolescents. Having a friend attempt or die by suicide was found to be significantly related to SA history in four samples of youths (Blum et al., 1992; Borowsky et al., 1999; Erickson, 1999; Grossman et al., 1991). One study found an association between friends or siblings using substances and history of SA among a sample of urban elementary and early high school youths (Erickson, 1999). Moreover, limited social support (Bush & Qeadan, 2019) and losing friends (Thomas, 2017) were also associated with reports of previous SAs. Furthermore, there is initial evidence that youths' community of residence may affect the relationship between social support and SA (Bush & Qeadan, 2019; Thomas, 2017). Specifically, youths in rural areas appear to be more affected by a lack of social support than do youths from nonrural areas (Thomas, 2017). Inversely, urban youths appear to be more likely to report having attempted suicide despite experiencing high levels of support compared with reservation-based youths (Bush & Qeadan, 2019).

School. Factors related to school were found to be related to SA history among adolescents, including less liking for school, feeling less safe at school (Dinges &

Duong-Tran, 1993; Howard-Pitney et al., 1992; Manzo, 2020), not attending school because of not feeling safe (Mackin et al., 2012), and poor school performance (Blum et al., 1992). However, a history of special education was found to be related to SA history only for female adolescents (Borowsky et al., 1999).

Cultural-level factors

RFs at the cultural level were infrequently studied across the corpus, seen in three studies. In these studies, Indigenous cultural traditionality (Grossman et al., 1991), religiosity (Howard-Pitney et al., 1992), and less participation in specific cultural activities (Harman, 2017) were not significantly related to SA among adolescents. In two of the studies, it was unclear whether the presence or absence of the factors was positioned as incurring risk for SA, making it difficult to interpret null results (Grossman et al., 1991; Howard-Pitney et al., 1992). Harman (2017) represents the only study in the corpus to position a lack of cultural engagement as a risk factor for SA; Harman noted that low sample size and low base rate of participation in cultural activities were significant limitations.

Societal-level factors

Societal-level RFs were put forth in the corpus by seven studies, the majority of which were more recent and focused on historical oppression and forms of discrimination. Experiences of racial misclassification by others (e.g., being incorrectly identified as White) was associated with past-year SA among adults, controlling for socioeconomic status and social support (Campbell & Troyer, 2007). Attending an American Indian boarding school was found to be significantly related to SA for one sample of adults (Evans-Campbell et al., 2012). When examining experiences of racial discrimination, findings were mixed (Brockie et al., 2015; Harman, 2017), although experiencing harassment-based obstacles to education was significantly related to SA in a sample of gender-nonconforming adults (Martin, 2013). Finally, neither of the two studies that examined symptoms associated with historical losses (e.g., feeling depressed or angry when you think about the loss of your culture; the Historical Loss Associated Symptoms Scale; Whitbeck et al., 2004) found a connection to lifetime SA (Brockie, 2012; Brockie et al., 2015).

Discussion

Most individuals who die by suicide do so from their first SA (Jordan & McNiel, 2020; McKean et al., 2018), making it incredibly important to understand who might go on to make an attempt to inform prevention efforts. Although upstream prevention approaches (e.g., addressing systemic forms of risk such as poverty and discrimination) are critical for reducing conditions that might lead to suicidality and other forms of distress, these efforts often occur on a protracted timeline, making it important to also understand the mechanisms that may contribute to or facilitate suicidal behaviors for communities already experiencing such distress. Accordingly, in this systematic review, we sought to answer the question, "What do we know comprehensively about statistically analyzed RFs for suicide attempts among American Indian and Alaska Native populations?" In doing so, we used the EF (Burnette & Figley, 2016) as a grounding framework for our synthesis.

Despite the literature on RFs for AI/AN SA being about 2.5 larger than that on protective factors (see Wiglesworth, Rey, et al., 2022), it is similarly difficult to synthesize across these heterogeneous studies to extract meaningful takeaways. However, when examined using the EF, it is evident researchers know a great deal more about individual-level risk for SA than cultural- or societal-level RFs. Moreover, research in this corpus more often focused on RFs for SA among adolescents compared with adults, a focus that may be warranted given the crisis of suicide among AI/AN youths (CDC, 2020). However, although it is known that AI/AN youths have demonstrated a unique pattern of developmental risk compared with other ethno-racial groups, in that AI/AN young adults are most at risk for death by suicide (ages 20–24; CDC, 2020), only two studies (Brockie, 2012, ages 15–24; Campbell & Troyer, 2007, ages 18–28) in this corpus focused on this developmentally risky period. Tellingly, nearly all of the studies focused on familial and community-level risk focused on youths or adolescents.

In keeping with the review of protective factors, we found that risk profiles for life-span and adult samples were primarily focused on historical individual risk exposure and psychopathology. Under the EF, studies did not examine potential community-level or current familial factors (e.g., familial conflict, unemployment), limiting the understanding of risk for AI/AN adults. What is known is that experiencing depression, PTSD, substance use, and a history of exposure to harm (e.g., neglect, abuse) all serve as robust SA RFs for AI/AN adults.

For AI/AN youths, it is evident that poor mental and physical health are related to SA risk, although depression and hopelessness are the most robust. Looking at youths' environments and social support, poor relationships with parents/caretakers is a key factor, as is young peoples' experience of their school environment and social disconnection/conflict. Moreover, experiencing traumas in and outside the home, such as abuse, neglect,

violent victimization, and loss of family and friends, puts young people at risk for SA. In keeping with the larger literature base, we found that a variety of risky behaviors, including earlier and riskier substance use, also put youths at greater risk for SA. Note that what risky behaviors are associated with SA appear to vary by context, sex, and potentially region. Conceptually, this tracks with an understanding of risky behaviors, including substance use, as maladaptive coping strategies. Which maladaptive coping strategies are associated with SA may be grounded in contextual risk trajectories (e.g., gang involvement as a particular RF for older male youths).

Advancing knowledge of AI/AN suicide risk: four strategies

In our corpus, we identified some similar limitations as have been outlined in the broader SA literature (Franklin et al., 2017) as well as unique challenges and opportunities specific to AI/AN suicide prevention. In conducting our synthesis of this corpus and in meaningfully integrating the lessons and knowledge from the broader fields of suicidology and AI/AN well-being, we have identified key sticking points that we believe, if acted on, would significantly propel the field forward toward its goals. These future directions include addressing limitations in current methodologies as they apply to theory-driven research, clinically relevant quantitative methods, and complex systems and identities.

Produce theory-informed research. There have long been calls for empirical research to ground hypothesized relationships in theory-informed models (Fiedler, 2017). The absence of theory alongside the ubiquity of real-world associations can lead to issues of replicability and applicability (Calude & Longo, 2017; Oberauer & Lewandowsky, 2019). In AI/AN suicide, explicit theoretical grounding that is inclusive of culture is necessary for developing capacity for effective suicide prevention (for a review of theories/frameworks in AI/AN suicidology, see O'Keefe et al., 2018). A clear methodological limitation in this corpus is the lack of theory-based testing and model building, leading to limitations (and variability) in the justification, creation, testing, and discussion of statistical models across studies.

The large number of RFs tested relative to the number of studies included in our corpus reflects our concerns about limited theory-driven research. Often facilitated by national health-risk data sets, dozens of proposed "risk factors" for SA were examined in the same study without theory-informed grounding or hypotheses as to the mechanisms promoting risk for engaging in an SA. The distinction between risk for suicidality broadly and risk for initiating suicidal behaviors to make an attempt is an important one because, as previously mentioned,

most individuals who think about suicide will not make an attempt (Klonsky & May, 2014). Testing a number of risk factors in the absence of a mechanistic hypothesis can produce significant associations that may reflect the nature of these factors as proxy variables for specific mechanisms of interest. For example, riding in a truck bed may be reflective of social class, peer groups, or behavioral impulsivity and is unlikely to be a target of SA prevention itself (Potthoff et al., 1998). In contrast, a robust SA RF that has also been identified in qualitative literature (Shaw et al., 2019) is family or friend loss because of suicide, which may implicate a number of mechanisms (e.g., grief, contagion/behavioral modeling, genetics in family loss). However, across the four studies that examined these factors (Blum et al., 1992; Borowsky et al., 1999; Grossman et al., 1991; Thomas, 2017), it was not clearly outlined how this factor was thought to affect risk trajectories. The interpretations of these significant relationships, and thus how the mechanism might be acted on for suicide prevention, is likely different according to the theoretical mechanism thought to be at play.

In addition to difficulties in interpreting significant results, null findings from RFs that were not clearly linked to theoretical models a priori were frequently uninterpreted. Exceptions to this include the four studies in our corpus that reported only null results (Bohn, 2003; Farrell, 2013; Hodge & Nandy, 2011; Hodge & Sinha, 2010; see Table S2 in the Supplemental Material). The limited discussion of nonsignificant RFs may be a practical decision in an article with limited allocated space that tests a broad swath of RFs. However, the lack of discussion limits our ability to understand the authors' conceptualizations of whether there is meaning in these factors being nonsignificantly related to SA (e.g., because of study design, population, theory) and whether these factors might be pursued in future research. These limitations may exist in part because the statistical method dominating this literature base, null hypothesis significance testing (NHST), is not the most appropriate for the questions being asked. NHST has been argued to be useful when the null is theoretically interesting and plausible (Rouder et al., 2009). The lack of interpretation of null effects may suggest authors did not have a theoretical interest in a particular RF's lack of relationship with SA. In addition, NHST has been described as inadequate for testing statistical equivalence (e.g., Wasserstein et al., 2019). Bayesian approaches may produce more interpretable tests of statistical equivalence by being less sensitive to statistical power and providing a data-based ratio of odds of the alternative hypothesis to the null hypothesis (rather than rejecting the null at an arbitrary cutoff to determine statistical significance). Kelter (2021) provided

further direction on which Bayesian approaches may be preferred because of their sensitivity to theoretical and practical considerations. Using statistical methods that more closely align with the assumptions of theoretical models of suicide risk may be one way to advance understanding of how particular risk factors are related to past or future SA.

In the absence of a theory to ground hypothesized RFs and relationships, studies also differed widely in their approach to multivariate modeling when such methods were used. This included what variables were positioned as covariates to statistically control for, what variables were considered RFs of interest, and the rationale provided for such decisions. For example, some articles positioned so-called demographic variables of sex, age, geography, and indicators of socioeconomic status as controls, whereas others included them as RFs or performed disaggregated analyses. The limitations of statistically controlling for these variables include the dismissal of variance of real import to outcomes of interest as error or biasing (Becker, 2005). In addition, in some studies, all significant RFs at the bivariate level were included in multivariate models, whereas in others, a certain number of the "most significant" or those with the largest effect size were included. These statistical decisions can lead to dramatically different results, emphasizing the importance of clearly outlining and justifying the data-analysis approach and theoretical relationship between the variables.

The RF literature base offered numerous RFs that were studied in one or two articles, offering intriguing avenues for future research to further explore and refine. However, given limited resources and the importance of identifying true predictors for prevention, we recommend that future research clearly ground study variables in theory. This can involve explicitly testing a theoretical model of suicide (e.g., the interpersonal theory of suicide, Joiner, 2005), which was done in one study (Rhoades-Kerswill, 2012), or testing risk and protective factors thought to reflect theory-driven mechanisms (for a discussion of "factors" versus "mechanisms" in the context of protection, see Allen et al., 2022). If theoretical justifications are lacking, future research should consider mixed methods and qualitative approaches to (a) develop and explicate potential theoretical models for later quantitative research (for an exemplar study refining a conceptual model for White Mountain Apache youths' suicide, see Tingey et al., 2014) and (b) inform included variables and proposed relationships.

Adopt clinically informative designs. In our corpus, the time frame of the retrospective reports of SA and RFs

was rarely discussed or justified in studies. In many cases, the specific time frame of past SA went completely unreported, as did the wording of the SA screener (see Table S1 in the Supplemental Material). Retrospective self-report of suicidal thoughts of behaviors has been found to be concerningly inconsistent for time frames beyond a year; 40% of individuals that endorsed a suicidal thought or behavior later denied this history (Klimes-Dougan et al., 2022). Furthermore, the significant influence of screener wording on participant response (e.g., who is defined as the "SA" group) is supported by work that found poor agreement across four variants of an SA screening question (intraclass correlation coefficients = .12–.32) among individuals who responded "yes" to at least one question (Ammerman et al., 2021). In addition, no corpus studies were longitudinal, thus very little information was provided about the chronological patterns of RFs and SAs. Without this information, it is difficult to characterize the directional relationship between these variables to inform suicide-intervention efforts. In the general suicide literature, longitudinal research is primarily characterized by long follow-up intervals ($\approx$5–10 years). However, critiques of this approach pointed out that this research has limited predictive ability and clinical utility (Franklin et al., 2017).

Conducting research at a finer timescale might improve both the predictive and clinical relevance of research and address inaccuracy in retrospective self-report. In a clinical setting, providers are most interested in understanding how these factors interact in real time to alter risk trajectories (e.g., clinicians do not need to know whether their client might be at risk for an SA in 5 years but, rather, in the hours and days after leaving the session). The use of "real-time" monitoring (e.g., ecological momentary assessment [EMA], ambulatory assessment) technology has been increasing dramatically over the past 3 decades in an aim to understand how clinical phenomena occur "in nature" (Kleiman & Nock, 2017). These studies have lent important insights into how suicidality, particularly suicidal ideation, fluctuates within individuals and how these patterns are affected by RFs moment to moment (Kleiman et al., 2017, 2018; Kleiman & Nock, 2018). Future directions of this research involve incorporating known biological RFs into EMA studies (e.g., measuring heart rate through smart watches; frequent cortisol sampling) and recruiting large enough samples to capture suicidal behaviors and identify patterns that differentiate escalation to behaviors from fluctuations of suicidal-ideation severity. Thus far, EMA research has included primarily White samples. Unfortunately, there are a host of reasons to expect that these data would not be generalizable to the daily lives of AI/AN peoples (e.g., daily experiences of minority stress, community context [e.g., reservation/

urban/suburban]), which undoubtedly affect the mechanisms at play. Thus, it is critical that AI/AN suicidologists can conduct this work in AI/AN communities, which will require overcoming barriers to implementation of EMA research (Kleiman et al., 2019) and considerable institutional support (e.g., grant funding).

With the current knowledge of RFs for SA, the AI/AN suicide literature is poised to leverage EMA to advance the knowledge of how risk mechanisms are operating in AI/AN peoples to produce observed disparities in suicidal behavior. To put forth an example, substance use emerged as one of the most consistent RFs for SA in our corpus. However, it was unclear how substance use was temporally related to SA. In pulling from the literature outside of our corpus, research has shown that in one specific Tribal community, binge-drinking behaviors and suicidality emerge somewhat simultaneously in adolescence (Cwik et al., 2018), and the majority of youths who attempted suicide (both fatal and nonfatal attempts) were retrospectively characterized as "drunk or high" at the time of the attempt (Barlow et al., 2012). Furthermore, these adolescents reported that their engagement in binge drinking was often motivated by recent stressful life events and a desire to regulate their emotions (Cwik et al., 2018). Taken together, an important next step for this literature may be to delineate how substance use and life stress interact over time to facilitate suicidal behaviors. This could be accomplished through EMA, in which stressful life events, substance use, and suicidality (e.g., ideation frequency/intensity, planning, intent, attempt) are frequently sampled over time to map out their cofluctuations and patterns of escalation. Such research would highlight more specific patterns of risk that might be useful indicators that immediate intervention is needed.

Promote a cross-cutting, intersectional framework.
A clear theme identified in our review is the preponderance of a medicalized professional or clinical perspective (e.g., individual, pathology-based) that fails to sufficiently characterize and contextualize the experiences of AI/AN peoples at risk for suicidality (Fish, 2022; Wexler et al., 2015). This same pattern has been noted in the broader quantitative suicide literature, in which the RFs studied have become more homogeneous over time to primarily focus on demographics and internalized psychopathology (Franklin et al., 2017). Unfortunately, most studied individual RFs are weak or inaccurate predictors of suicidal thoughts and behaviors (Franklin et al., 2017). This narrow view is detrimental to suicidology in general, but particularly when focusing on AI/AN peoples who exist in a colonial landscape characterized by hundreds of years of genocide and oppression (e.g., Gone, 2007).

This approach is also in direct contrast to calls from Indigenous thinkers who emphasize the importance of expanding the understanding of risk to account for the complex interactions between context and identity (e.g., societal/community factors, intersectionality theory; Levac et al., 2018; Wexler et al., 2015).

To contextualize AI/AN risk, the field needs to recognize and conceptualize RFs as operating through different levels of the EF. One gap in the RF literature exemplifies the importance of this. The effects of socioeconomic poverty were nearly absent from the corpus, with the exception of two articles (Dillard et al., 2017; Medoff, 2006). In addition, only three studies controlled for socioeconomic status, poverty, income, and related constructs (Campbell & Troyer, 2007; Freedenthal & Stiffman, 2004; Gloppen et al., 2018). This is surprising given that social class was identified as a key RF for suicide among a national sample of older adults and a national sample of youths (Choi et al., 2019; Hoffmann et al., 2020). Moreover, AI/AN communities and Tribal Nations face a disproportionate burden of poverty stemming from a legacy of federal policies and colonization that undermine sovereignty and create a lack of economic opportunity (Cornell & Kalt, 2006). Finally, in qualitative work with AI/AN communities, poverty and lack of resources have been described as key stressors related to SA (Shaw et al., 2019; Tingey et al., 2014).

In an illuminating study, community members in a rural Alaskan village made explicit the connection between suicide and public well-being, loss of culture, language, and subsistence activities and a lack of local economic opportunities for young people in the community (de Schweinitz et al., 2017). As outlined above, reducing the role of social class to that of a covariate or control prevents understanding the role of social class as a moderator, mediator, or mechanism in suicide behaviors (Diemer et al., 2013). Indeed, positioning social class as a biasing variable reflects not the realities of the world, but perhaps the field's hesitation to grapple with the role of context in individual decision-making. Instead, social class and related constructs should be considered as cross-cutting variables of interest that can operate in multiple levels of the EF. For example, at the individual level, unstable housing or access to food may act as a considerable stressor, neighborhood or zip-code-level poverty data can serve as a community-level factor, and state-level social-support policies and programs may serve as societal factors. Even when accounting for the complex role of socioeconomic status, understanding of risk must integrate the interactions of multiple identities and social positions.

AI/AN suicidology is in the earliest stages of integrating intersectionality theory (e.g., Bauer, 2014; Black & Veenstra, 2011) into how research is conducted. There is very little research that focuses on the meaningful heterogeneities of AI/AN peoples, including Tribal affiliation, cultural background (e.g., biracial or multiracial), sex, age, gender, sexual orientation, socioeconomic status, and so on (e.g., see Wiglesworth, Clement, et al., 2022). Indeed, in our corpus, we observed significant limitations in the reporting of these variables (e.g., no studies differentiated sex from gender) and almost no meaningful inclusion of them in the questions asked. As a notable exception, one study in our corpus found that adolescent males who identify as gay were more likely than their heterosexual peers to report past SA (Barney, 2004). However, more work is needed because it is apparent that these identities interact with the systems AI/AN peoples exist in to inform experiences and fundamentally alter risk trajectories (for further discussion of intersectionality and the EF, see Wiglesworth, Rey, et al., 2022).

Select findings from our corpus illustrate how an intersectional framework can better characterize risk pathways for AI/ANs. For example, being in an urban or reservation environment did not emerge as a significant RF for SA among youths (Freedenthal & Stiffman, 2004; Manzo, 2020). However, when AI/AN youths were disaggregated on the basis of urban and rural environments and sex, researchers did identify differences in what RFs were significant for youths in each context (Freedenthal & Stiffman, 2004; Manzo, 2020). Therefore, to understand risk pathways, it is critical to move beyond factors such as rural versus urban as demographic-based RFs and instead recognize differential exposure to risk and unique risk profiles based on individuals' constellations of identities.

Person-centered statistical methods such as multilevel modeling (also referred to as nested models or mixed-effects models) can aid future research in capturing these complex pictures and account for factors across levels of the EF (Evans et al., 2018; Howard & Hoffman, 2018). Through these methods, researchers can model data to account for relevant clusters of identity and experiences that likely make individuals more similar to one another. For instance, research on risky behaviors for adolescents was among the most frequently studied in our corpus and demonstrated considerable differences according to sample characteristics. In future work examining risky behaviors, researchers might find it useful to model clusters of geographic regions (e.g., reservation, rural, urban), sex, neighborhood socioeconomic status, family composition, and so on to examine which clusters are differentially related to specific risky behaviors and how these clusters may influence the relationship between risky behaviors and SA.

Investigate culturally relevant societal factors. A culturally relevant and comprehensive approach to understanding risk calls for the intentional inclusion of RFs of import to AI/AN communities, including historical loss and discrimination. Just as it is important to expand the researchers' thinking when it comes to characterizing AI/AN peoples, the field must extend its focus on RFs beyond the individual lens. Through the implementation of forced relocation (e.g., the 1830 Indian Removal Act and the designation of Indian Territory), AI/AN boarding schools (e.g., the Civilization Fund Act of 1819), and incentivized assimilation (e.g., the Indian Relocation Act of 1956), AI/AN peoples have experienced a widespread disconnect from their cultures. These processes have contributed to historical trauma (Brave Heart, 1998; Brave Heart et al., 2011), which profoundly affects the well-being of AI/AN people (Gone et al., 2019). However, as a field, researchers' efforts toward operationalizing historical trauma are in their infancy (Gone et al., 2019).

Two studies in this corpus examined the emotional impact of historical loss (Whitbeck et al., 2004) on SA risk and found null results (Brockie, 2012; Brockie et al., 2015). However, mixed findings of the effects of historical loss are not uncommon given challenges including balancing measurement specificity and generalizability given Tribes' diverging histories with colonization (Gone et al., 2019). In addition, much of the literature uses small sample sizes or bivariate associations that may not be equipped to capture the complex interactions of historical loss (Walls & Whitbeck, 2011). The mechanisms of historical loss have been demonstrated to directly relate to distress broadly (Fetter & Thompson, under review) and serve as an indirect contributor to suicidal ideation through an increase in brooding (Tucker et al., 2016). Preliminarily, this research suggests that historical loss may serve as a contributor to suicidality more broadly while not necessarily precipitating or facilitating suicidal behaviors. Given the import of historical trauma and loss in AI/AN communities, future studies should thoughtfully explore the interplay of historical loss as a culturally specific RF for suicidality, clearly delineating whether this factor contributes to suicidal thoughts and/or facilitates suicidal behaviors.

Another fundamental yet understudied facet of societal RFs includes experiences of discrimination. Discrimination was examined in only three articles in this corpus despite the evidence that experiences of discrimination serve as key determinants of health with implications for mental and physical health (Pascoe &

Richman, 2009; Schmitt et al., 2014). In the broader suicide literature, experiences of discrimination have been linked with suicide attempts and capability for suicide (Brooks et al., 2020; Gomez et al., 2011). Moreover, qualitative literature suggests the role of bullying (Bell et al., 2014) and discrimination-based bullying as related to youths' suicide (Cwik et al., 2022). To inform effective intervention and prevention strategies, it will be necessary to capture the role of experiences of discrimination when considering vulnerable periods of development and the role of humiliation, isolation, and lack of belongingness in suicide behavior.

Review limitations

This systematic review has several limitations, which are necessarily informed by the body of evidence itself. First, we did not operationalize our own definition of "risk factors" for this review and instead chose to rely on author-defined RFs. However, the authors' positioning of factors as risk (or absence of resilience) was not always clear. What constitutes a "risk factor" is a long-standing conversation that is continuing to evolve (e.g., Henson et al., 2017; Kraemer et al., 1997), and our corpus may have missed highlighting factors that were intended to be perceived as "risky" but were not clearly defined in the original articles. In addition, despite our efforts to combat publication bias by including gray literature, publication bias may nevertheless be present. Only nine of our included studies were unpublished theses and dissertations. Of the studies that presented only null results regarding RFs for SA, there was a nearly even split between published and unpublished literature, perhaps indicating a lack of bias in the publishing of null results specific to this corpus (see Table S2 in the Supplemental Material). Of the 33 published studies that reported significant results, only 11 included control variables in their models; age, sex, and some indicator of socioeconomic status were the most common control variables, although these were not applied consistently across studies. No dissertation studies included any control variables in the production of their results, which may highlight one area of publication bias. Given the scope of the review, we did not comprehensively evaluate qualitative literature, which presents an additional limitation. However, we endeavored to include this literature in our discussion and strategies for future research.

Finally, the current review did not provide a formal assessment of risk of bias or study quality (and such an assessment is not required per the guidance provided for systematic reviews by Siddaway et al., 2019). In part, this is because our review does not seek to recommend concrete alternative approaches to assessment or treatment

for policy purposes. In addition, the limitations of this corpus are quite apparent (which much of this review engages), and so there was little to be gained through study-by-study evaluation of corresponding strength of evidence. However, we have provided a high-level overview and key study-specific limitations throughout the Results section. In addition, our four suggested strategies are informed by those study limitations that are typically recommended to be assessed in best-practice conducting guidelines (e.g., Cochrane Community; Higgins et al., 2022) by structured evaluation tools (the grading of recommendations, assessment, development and evaluations framework; Guyatt et al., 2011). These study limitations include inconsistent and insufficient reporting of methods (e.g., not providing demographic information, justifications for methodological decisions), potentially inadequate SA sample size in select studies, limited theoretical grounding for RFs, and lack of statistical controls for theoretically based confounders (e.g., age, sex, psychopathology), among other sources of potential bias. These widespread methodological concerns generally suggest that the confidence in the current evidence is low; again, it was unlikely that formal assessment of confidence for each study would have yielded additional useful information.

Conclusion

The research characterizing RFs for SA among AI/AN peoples remains a relatively underdeveloped field. The corpus reviewed here has provided insights into useful lines for future research and highlighted obvious areas in need of further attention in quantitative research (e.g., societal RFs). To prevent suicide, researchers must identify factors that tap into mechanisms of risk through theory-driven research that is appropriately contextualized with respect to identity and systems and model these mechanisms as they relate to SA through clinically useful methods. Research design and methodology need to be appropriate to researchers' goals, whether they are looking for clinical relevance to inform individual intervention or broad-based prevention efforts at familial or community levels. Regardless, designs need to account for context.

LittleDove F. Rey: Conceptualization; Data curation; Writing – review & editing.

Michael Azarani: Data curation; Writing – review & editing.

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Amy Riegelman: Data curation; Methodology; Resources; Supervision; Writing – original draft; Writing – review & editing.

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Supplemental Material

Additional supporting information can be found at http://journals.sagepub.com/doi/suppl/10.1177/21677026221126732

References

References marked with an asterisk indicate studies included in the systematic review.

Alcántara, C., & Gone, J. P. (2007). Reviewing suicide in Native American communities: Situating risk and protective factors within a transactional–ecological framework. *Death Studies*, *31*(5), 457–477. https://doi.org/10.1080/07481180701244587

Allen, J., Wexler, L., & Rasmus, S. (2022). Protective factors as a unifying framework for strength-based intervention and culturally responsive American Indian and Alaska Native suicide prevention. *Prevention Science*, *23*(1), 59–72. https://doi.org/10.1007/s11121-021-01265-0

Ammerman, B. A., Burke, T. A., Jacobucci, R., & McClure, K. (2021). How we ask matters: The impact of question wording in single-item measurement of suicidal thoughts and behaviors. *Preventative Medicine*, *152*(Pt. 1), Article 106472. https://doi.org/10.1016/j.ypmed.2021.106472

Barlow, A., Tingey, L., Cwik, M., Goklish, N., Larzelere-Hinton, F., Lee, A., Suttle, R., Mullany, B., & Walkup, J. T. (2012). Understanding the relationship between substance use and self-injury in American Indian youth. *The American Journal of Drug and Alcohol Abuse*, *38*(5), 403–408. https://doi.org/10.3109/00952990.2012.696757

*Barney, D. D. (2004). Health risk-factors for gay American Indian and Alaska Native adolescent males. *Journal of Homosexuality*, *46*(1–2), 137–157. https://doi.org/10.1300/J082v46n01_04

Bauer, G. R. (2014). Incorporating intersectionality theory into population health research methodology: Challenges and the potential to advance health equity. *Social Science & Medicine*, *110*, 10–17. https://doi.org/10.1016/j.socscimed.2014.03.022

Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, *8*(3), 274–289. https://doi.org/10.1177/1094428105278021

Beghi, M., & Rosenbaum, J. F. (2010). Risk factors for fatal and nonfatal repetition of suicide attempt: A critical appraisal. *Current Opinion in Psychiatry*, *23*(4), 349–355. https://doi.org/10.1097/YCO.0b013e32833ad783

Bell, R., Arnold, E., Golden, S., Langdon, S., Anderson, A., & Bryant, A. (2014). Perceptions and psychosocial correlates of bullying among Lumbee Indian Youth. *American Indian and Alaska Native Mental Health Research*, *21*(1), 1–17. https://doi.org/10.5820/aian.2101.2014.1

Best, A. F., Haozous, E. A., de Gonzalez, A. B., Chernyavskiy, P., Freedman, N. D., Hartge, P., Thomas, D., Rosenberg, P. S., & Shiels, M. S. (2018). Premature mortality projections in the USA through 2030: A modelling study. *The Lancet Public Health*, *3*(8), e374–e384. https://doi.org/10.1016/S2468-2667(18)30114-2

Black, J., & Veenstra, G. (2011). A cross-cultural quantitative approach to intersectionality and health: Using interactions between gender, race, class and neighbourhood to predict self-rated health in Toronto and New York City. In E. Hankivsky (Ed.), *Health inequities in Canada: Intersectional frameworks and practices* (pp. 71–91). UBC Press.

*Blum, R. W., Harmon, B., Bergeisen, L., & Resnick, M. D. (1992). American Indian-Alaska Native youth health. *Journal of the American Medical Association*, *267*(12), 1637–1644. https://doi.org/10.1001/jama.1992.03480120075036

*Blum, R. W., Potthoff, S. J., & Resnick, M. D. (1997). The impact of chronic conditions on Native American adolescents. *Families, Systems, & Health*, *15*(3), 275–282.

*Bohn, D. K. (2003). Lifetime physical and sexual abuse, substance abuse, depression, and suicide attempts among Native American women. *Issues in Mental Health Nursing*, *24*(3), 333–352. https://doi.org/10.1080/01612840305277

*Bolton, S.-L., Elias, B., Enns, M. W., Sareen, J., Beals, J., & Novins, D. K. The Swampy Cree Suicide Prevention Team, & The AI-SUPERPFP Team. (2014). A comparison of the prevalence and risk factors of suicidal ideation and suicide

attempts in two American Indian population samples and in a general population sample. *Transcultural Psychiatry*, *51*(1), 3–22. https://doi.org/10.1177/1363461513502574

*Borowsky, I. W., Resnick, M. D., Ireland, M., & Blum, R. W. (1999). Suicide attempts among American Indian and Alaska Native youth: Risk and protective factors. *Archives of Pediatrics and Adolescent Medicine*, *153*(6), 573–580. https://doi.org/10.1001/archpedi.153.6.573

Brave Heart, M. Y. H. (1998). The return to the sacred path: Healing the historical trauma and historical unresolved grief response among the Lakota through a psychoeducational group intervention. *Smith College Studies in Social Work*, *68*(3), 287–305. https://doi.org/10.1080/00377319809517532

Brave Heart, M. Y. H., Chase, J., Elkins, J., & Altschul, D. B. (2011). Historical trauma among Indigenous peoples of the Americas: Concepts, research, and clinical considerations. *Journal of Psychoactive Drugs*, *43*(4), 282–290. https://doi.org/10.1080/02791072.2011.628913

*Brockie, T. N. (2012). *Historical and contemporary factors influencing non-lethal suicidal behaviors among reservation-based Native American youth* [Unpublished doctoral dissertation]. Johns Hopkins University.

*Brockie, T. N., Dana-Sacco, G., Wallen, G. R., Wilcox, H. C., & Campbell, J. C. (2015). The relationship of adverse childhood experiences to PTSD, depression, poly-drug use and suicide attempt in reservation-based native American adolescents and young adults. *American Journal of Community Psychology*, *55*(3–4), 411–421. https://doi.org/10.1007/s10464-015-9721-3

Brooks, J. R., Hong, J. H., Cheref, S., & Walker, R. L. (2020). Capability for suicide: Discrimination as a painful and provocative event. *Suicide and Life-Threatening Behavior*, *50*(6), 1173–1180. https://doi.org/10.1111/sltb.12671

Burnette, C. E., & Figley, C. R. (2016). Risk and protective factors related to the wellness of American Indian and Alaska Native youth: A systematic review. *International Public Health Journal*, *8*(2), 137–154.

*Bush, A., & Qeadan, F. (2020). Social support and its effects on attempted suicide among American Indian/Alaska Native youth in New Mexico. *Archives of Suicide Research*, *24*(Suppl. 1), 337–359. https://doi.org/10.1080/13811118.2019.1577779

Calude, C. S., & Longo, G. (2017). The deluge of spurious correlations in big data. *Foundations of Science*, *22*(3), 595–612. https://doi.org/10.1007/s10699-016-9489-4

*Campbell, M. E., & Troyer, L. (2007). The implications of racial misclassification by observers. *American Sociological Review*, *72*(5), 750–765.

Centers for Disease Control and Prevention, National Center for Health Statistics. (2021). *Underlying cause of death 1999-2020 on CDC WONDER online database*. http://wonder.cdc.gov/ucd-icd10.html

*Cheref, S., Benoit, J. S., & Walker, R. L. (2019). Refining psychological, substance use, and sociodemographic predictors of suicide ideation and attempts in a national multiethnic sample of adults, 2008-2013. *Journal of Nervous and Mental Disease*, *207*(8), 675–682. https://doi.org/10.1097/NMD.0000000000001026

*Chino, M., & Fullerton-Gleason, L. (2006). Understanding suicide attempts among American Indian adolescents in New Mexico: Modifiable factors related to risk and resiliency. *Ethnicity and Disease*, *16*(2), 435–442.

Choi, J. W., Kim, T. H., Shin, J., & Han, E. (2019). Poverty and suicide risk in older adults: A retrospective longitudinal cohort study. *International Journal of Geriatric Psychiatry*, *34*(11), 1565–1571. https://doi.org/10.1002/gps.5166

*Christensen, R. B. (1999). *Risk factors in adolescent problem behaviors among Native and nonnative Americans* (Publication No. 304529044) [Doctoral dissertation, Utah State University]. ProQuest Dissertations & Theses A&I.

Christiansen, E., & Frank Jensen, B. (2007). Risk of repetition of suicide attempt, suicide or all deaths after an episode of attempted suicide: A register-based survival analysis. *Australian & New Zealand Journal of Psychiatry*, *41*(3), 257–265. https://doi.org/10.1080/00048670601172749

Cornell, S. E., & Kalt, J. P. (2006). *Two approaches to economic development on American Indian reservations: One works, the other doesn't*. Native Nations Institute, Udall Center for Studies in Public Policy, University of Arizona; Harvard Project on American Indian Economic Development, John F. Kennedy School of Government, Harvard University. http://www.jopna.net/pubs/jopna_2005-02_Approaches.pdf

Cwik, M., Doty, S. B., Hinton, A., Goklish, N., Ivanich, J., Hill, K., Lee, A., Tingey, L., & Craig, M. (2022). Community perspectives on social influences on suicide within a Native American reservation. *Qualitative Health Research*, *32*(1), 16–30. https://doi.org/10.1177/10497323211045646

Cwik, M. F., Rosenstock, S., Tingey, L., Goklish, N., Larzelere, F., Suttle, R., Haroz, E., Hill, K., Craig, M., & Barlow, A. (2018). Characteristics of substance abuse and self-injury among American Indian adolescents who have engaged in binge drinking. *American Indian and Alaska Native Mental Health Research*, *25*(2), 1–19. https://doi.org/10.5820/aian.2502.2018.1

*De Ravello, L., Abeita, J., & Brown, P. (2008). Breaking the cycle/mending the hoop: Adverse childhood experiences among incarcerated American Indian/Alaska Native women in New Mexico. *Health Care for Women International*, *29*(3), 300–315. https://doi.org/10.1080/07399330701738366

de Schweinitz, P. A., Nation, C., DeCou, C. R., Stewart, T. J., & Allen, J. (2017). Cultural perspectives on suicide from a rural Athabascan Alaska Native community: Wellness teams as a strengths-based community response. *Journal of Rural Mental Health*, *41*(1), 4–16.

Diemer, M. A., Mistry, R. S., Wadsworth, M. E., López, I., & Reimers, F. (2013). Best practices in conceptualizing and measuring social class in psychological research: Social class measurement. *Analyses of Social Issues and Public Policy*, *13*(1), 77–113. https://doi.org/10.1111/asap.12001

*Dillard, D. A., Avey, J. P., Robinson, R. F., Smith, J. J., Beals, J., Manson, S. M., & Comtois, K. A. (2017). Demographic, clinical, and service utilization factors associated with suicide-related visits among Alaska Native and American Indian adults. *Suicide and Life-Threatening Behavior*, *47*(1), 27–37. https://doi.org/10.1111/sltb.12259

*Dinges, N. G., & Duong-Tran, Q. (1993). Stressful life events and co-occurring depression, substance abuse and suicidality among American Indian and Alaska Native adolescents. *Culture, Medicine and Psychiatry*, *16*, 487–502.

*Dinges, N. G., & Duong-Tran, Q. (1994). Suicide ideation and suicide attempt among American Indian and Alaska Native boarding school adolescents. *American Indian and Alaska Native Mental Health Research*, *4*, 167–188. https://doi.org/10.5820/aian.mono04.1994.167

*Erickson, S. L. (1999). *Probability profiling with urban American Indian youth determining priorities for suicide prevention* [Unpublished doctoral dissertation]. University of Minnesota.

Evans, C. R., Williams, D. R., Onnela, J.-P., & Subramanian, S. V. (2018). A multilevel approach to modeling health inequalities at the intersection of multiple social identities. *Social Science & Medicine*, *203*, 64–73. https://doi.org/10.1016/j.socscimed.2017.11.011

*Evans-Campbell, T., Walters, K. L., Pearson, C. R., & Campbell, C. D. (2012). Indian boarding school experience, substance use, and mental health among urban Two-Spirit American Indian/Alaska Natives. *American Journal of Drug & Alcohol Abuse*, *38*(5), 421–427.

*Farrell, E. I. (2013). *Sleep disturbance as an independent predictor of suicidality in American Indian/Alaskan Native adolescents* (Publication No. 1491163297) [Doctoral dissertation, Walden University]. ProQuest Dissertations & Theses A&I.

*Fernquist, R. M. (2017). Trends in attempted suicide among ten demographic groups of U.S. high school students, 1991-2013. *Suicidology Online*, *8*, 89–103.

Fetter & Thompson. (under review). *The impact of Historical Loss on Native American college students' mental health: The protective role of ethnic identity* [Unpublished Manuscript].

Fiedler, K. (2017). What constitutes strong psychological science? The (neglected) role of diagnosticity and a priori theorizing. *Perspectives on Psychological Science*, *12*(1), 46–61. https://doi.org/10.1177/1745691616654458

Fish, J. (2022). Towards a Haudenosaunee developmental science: Perspectives from the Two Row Wampum. *Infant and Child Development*, *31*(1), Article e2279. https://doi.org/10.1002/icd.2279

Franklin, J. C., Ribeiro, J. D., Fox, K. R., Bentley, K. H., Kleiman, E. M., Huang, X., Musacchio, K. M., Jaroszewski, A. C., Chang, B. P., & Nock, M. K. (2017). Risk factors for suicidal thoughts and behaviors: A meta-analysis of 50 years of research. *Psychological Bulletin*, *143*(2), 187–232. https://doi.org/10.1037/bul0000084

*Freedenthal, S., & Stiffman, A. R. (2004). Suicidal behavior in urban American Indian adolescents: A comparison with reservation youth in a southwestern state. *Suicide and Life-Threatening Behavior*, *34*(2), 160–171. https://doi.org/10.1521/suli.34.2.160.32789

*Gloppen, K., McMorris, B., Gower, A., & Eisenberg, M. (2018). Associations between bullying involvement, protective factors, and mental health among American Indian youth. *American Journal of Orthopsychiatry*, *88*(4), 413–421. https://doi.org/10.1037/ort0000284

Gomez, J., Miranda, R., & Polanco, L. (2011). Acculturative stress, perceived discrimination, and vulnerability to suicide attempts among emerging adults. *Journal of Youth and Adolescence*, *40*(11), 1465–1476. https://doi.org/10.1007/s10964-011-9688-9

Gone, J. P. (2007). "We never was happy living like a Whiteman": Mental health disparities and the postcolonial predicament in American Indian Communities. *American Journal of Community Psychology*, *40*(3–4), 290–300. https://doi.org/10.1007/s10464-007-9136-x

Gone, J. P., Hartmann, W. E., Pomerville, A., Wendt, D. C., Klem, S. H., & Burrage, R. L. (2019). The impact of historical trauma on health outcomes for Indigenous populations in the USA and Canada: A systematic review. *American Psychologist*, *74*(1), 20–35. https://doi.org/10.1037/amp0000338

*Grossman, D. C., Milligan, B. C., & Deyo, R. A. (1991). Risk factors for suicide attempts among Navajo adolescents. *American Journal of Public Health*, *81*(7), 870–874. https://doi.org/10.2105/AJPH.81.7.870

Guyatt, G., Oxman, A. D., Alk, E. A., Kunz, R., Vist, G., Brozek, J., Norris, S., Falck-Ytter, Y., Glasziou, P., deBeer, H., Jaeschke, R., Rind, D., Meerpohl, J., Dahm, P., & Schünemann, H. J. (2011). GRADE guidelines: 1. Introduction– GRADE evidence profiles and summary of findings tables. *Journal of Clinical Epidemiology*, *64*, 383–394. https://doi.org/10.1016/j.jclinepi.2010.04.026

*Harman, M. (2017). The interaction of culture, self-perception, and depression in Native American youth. *Michigan Sociological Review*, *31*, 152–172.

Henson, M., Sabo, S., Truillo, A., & Teufel-Shone, N. (2017). Identifying protective factors to promote health in American Indian and Alaska Native adolescents: A literature review. *The Journal of Primary Prevention*, *38*, 5–26.

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2022). *Cochrane Handbook for Systematic Reviews of Interventions version 6.3* (updated February 2022). Cochrane. www.training.cochrane.org/handbook

*Hodge, F., & Nandy, K. (2011). Factors associated with American Indian cigarette smoking in rural settings. *International Journal of Environmental Research and Public Health*, *8*(4), 944–954.

*Hodge, F. S., & Sinha, K. (2010). Safer sexual practices and HIV screening behavior among rural California American Indians. *Californian Journal of Health Promotion*, *8*(1), 10–21. https://doi.org/10.32398/cjhp.v8i1.2026

Hoffmann, J. A., Farrell, C. A., Monuteaux, M. C., Fleegler, E. W., & Lee, L. K. (2020). Association of pediatric suicide with county-level poverty in the United States, 2007-2016. *JAMA Pediatrics*, *174*(3), 287–294. https://doi.org/10.1001/jamapediatrics.2019.5678

Howard, M. C., & Hoffman, M. E. (2018). Variable-centered, person-centered, and person-specific approaches: Where theory meets the method. *Organizational Research Methods*, *21*(4), 846–876. https://doi.org/10.1177/1094428117744021

*Howard-Pitney, B., LaFromboise, T. D., Basil, M., September, B., & Johnson, M. (1992). Psychological and social indicators of suicide ideation and suicide attempts in

Zuni adolescents. *Journal of Consulting and Clinical Psychology*, *60*(3), 473–476. https://doi.org/10.1037/0022-006X.60.3.473

Joiner, T. E. (2005). *Why people die by suicide*. Harvard University Press.

Jordan, J. T., & McNiel, D. E. (2020). Characteristics of persons who die on their first suicide attempt: Results from the National Violent Death Reporting System. *Psychological Medicine*, *50*(8), 1390–1397. https://doi.org/10.1017/S0033291719001375

Kelter, R. (2021). Bayesian Hodges-Lehmann tests for statistical equivalence in the two-sample setting: Power analysis, type I error rates and equivalence boundary selection in biomedical research. *BMC Medical Research Methodology*, *21*(1), 171. https://doi.org/10.1186/s12874-021-01341-7

Kleiman, E. M., Glenn, C. R., & Liu, R. T. (2019). Real-time monitoring of suicide risk among adolescents: Potential barriers, possible solutions, and future directions. *Journal of Clinical Child & Adolescent Psychology*, *48*(6), 934–946. https://doi.org/10.1080/15374416.2019.1666400

Kleiman, E. M., & Nock, M. K. (2017). Advances in scientific possibilities offered by real-time monitoring technology. *Psychiatry*, *80*(2), 118–124. https://doi.org/10.1080/00332747.2017.1325661

Kleiman, E. M., & Nock, M. K. (2018). Real-time assessment of suicidal thoughts and behaviors. *Current Opinion in Psychology*, *22*, 33–37. https://doi.org/10.1016/j.copsyc.2017.07.026

Kleiman, E. M., Turner, B. J., Fedor, S., Beale, E. E., Huffman, J. C., & Nock, M. K. (2017). Examination of real-time fluctuations in suicidal ideation and its risk factors: Results from two ecological momentary assessment studies. *Journal of Abnormal Psychology*, *126*(6), 726–738. https://doi.org/10.1037/abn0000273

Kleiman, E. M., Turner, B. J., Fedor, S., Beale, E. E., Picard, R. W., Huffman, J. C., & Nock, M. K. (2018). Digital phenotyping of suicidal thoughts. *Depression and Anxiety*, *35*(7), 601–608.

Klimes-Dougan, B., Mirza, S. A., Babkin, E., & Lanning, C. (2022). Biased reporting of past self-injurious thoughts and behaviors: A literature review. *Journal of Affective Disorders*, *308*, 596–606. https://doi.org/10.1016/j.jad.2022.04.073

Klonsky, E. D., & May, A. M. (2014). Differentiating suicide attempters from suicide ideators: A critical frontier for suicidology research. *Suicide and Life-Threatening Behavior*, *44*(1), 1–5. https://doi.org/10.1111/sltb.12068

Kraemer, H. C., Kazdin, A. E., Offord, D. R., Kessler, R. C., Jensen, P. S., & Kupfer, D. J. (1997). Coming to terms with the terms of risk. *Archives of General Psychiatry*, *54*(4), 337–343. https://doi.org/10.1001/archpsyc.1997.01830160065009

Kropp, F., Somoza, E., Lilleskov, M., Granados-Bad Moccasin, M., Moore, M., Lewis, D., Boetel, B., Smith, C., & Winhusen, T. (2013). Characteristics of Northern Plains American Indians seeking substance abuse treatment in an urban, non-tribal clinic: A descriptive study. *Community Mental Health Journal*, *49*, 714–721. https://doi.org/10.1007/s10597-012-9537-7

*LaFromboise, T. D., & Howard-Pitney, B. (1995). Suicidal behavior in American Indian female adolescents. In S. S. Canetto & D. Lester (Eds.), *Women and suicidal behavior* (pp. 157–173).

Leavitt, R. A., Ertl, A., Sheats, K., Petrosky, E., Ivey-Stephenson, A., & Fowler, K. A. (2018). Suicides among American Indian/Alaska Natives—National Violent Death Reporting System, 18 States, 2003–2014. *Morbidity and Mortality Weekly Report (MMWR)*, *67*(8), 237–242. https://doi.org/10.15585/mmwr.mm6708a1

*LeMaster, P. L., Beals, J., Novins, D. K., & Manson, S. M. (2004). The prevalence of suicidal behaviors among Northern Plains American Indians. *Suicide and Life-Threatening Behavior*, *34*(3), 242–254. https://doi.org/10.1521/suli.34.3.242.42780

Levac, L., McMurtry, L., Stienstra, D., Baikie, G., Hanson, C., & Mucina, D. (2018). *Learning across Indigenous and Western knowledge systems and intersectionality: Reconciling social science research approaches*. Social Sciences and Humanities Research Council of Canada.

Liu, R. T., Steele, S. J., Hamilton, J. L., Do, Q. B. P., Furbish, K., Burke, T. A., Martinez, A. P., & Gerlus, N. (2020). Sleep and suicide: A systematic review and meta-analysis of longitudinal studies. *Clinical Psychology Review*, *81*, Article 101895. https://doi.org/10.1016/j.cpr.2020.101895

*Mackin, J., Perkins, T., & Furrer, C. (2012). The power of protection: A population-based comparison of Native and non-Native youth suicide attempters. *American Indian and Alaska Native Mental Health Research*, *19*(2), 20–54. https://doi.org/10.5820/aian.1902.2012.20

*Manzo, K., Hobbs, G. R., Gachupin, F. C., Stewart, J., & Knox, S. S. (2020). Reservation-urban comparison of suicidal ideation/planning and attempts in American Indian Youth. *Journal of School Health*, *90*(6), 439–446. https://doi.org/10.1111/josh.12891

Mars, B., Heron, J., Klonsky, E. D., Moran, P., O'Connor, R. C., Tilling, K., Wilkinson, P., & Gunnell, D. (2019). What distinguishes adolescents with suicidal thoughts from those who have attempted suicide? A population-based birth cohort study. *Journal of Child Psychology and Psychiatry*, *60*(1), 91–99. https://doi.org/10.1111/jcpp.12878

*Martin, C. (2013). *The influence of negative educational experiences on health behaviors among gender nonconforming American Indian/Alaska Native people* (Publication No. 1440134357) [Doctoral dissertation, Colorado State University]. ProQuest Dissertations & Theses A&I.

*Matthews, R. D. (1989). *Risk factors for substance abuse in Native American boarding schools* (Publication No. 303829878) [Doctoral dissertation, United States International University]. ProQuest Dissertations & Theses A&I.

May, A. M., & Klonsky, E. D. (2016). What distinguishes suicide attempters from suicide ideators? A meta-analysis of potential factors. *Clinical Psychology: Science and Practice*, *23*(1), 5–20. https://doi.org/10.1111/cpsp.12136

McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, *22*(3), 276–282.

McKean, A. J. S., Pabbati, C. P., Geske, J. R., & Bostwick, J. M. (2018). Rethinking lethality in youth suicide attempts: First suicide attempt outcomes in youth ages 10 to 24.

Journal of the American Academy of Child & Adolescent Psychiatry, *57*(10), 786–791. https://doi.org/10.1016/j.jaac.2018.04.021

*Medoff, L. R. (2006). *Suicidal ideation and related factors in Native American adolescents with and without learning disabilities* (Publication No. 304979072) [Doctoral dissertation, Stanford University]. ProQuest Dissertations & Theses A&I.

National Center for Health Statistics. (2020). *CDC WISQARS fatal injury data visualization too*. Centers for Disease Control and Prevention. www.cdc.gov/injury/wisqars/fatal.html

Oberauer, K., & Lewandowsky, S. (2019). Addressing the theory crisis in psychology. *Psychonomic Bulletin & Review*, *26*(5), 1596–1618. https://doi.org/10.3758/s13423-019-01645-2

O'Keefe, V. M., Tucker, R. P., Cole, A. B., Hollingsworth, D. W., & Wingate, L. R. (2018). Understanding Indigenous suicide through a theoretical lens: A review of general, culturally-based, and Indigenous frameworks. *Transcultural Psychiatry*, *55*(6), 775–799. https://doi.org/10.1177/1363461518778937

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—A web and mobile app for systematic reviews. *Systematic Reviews*, *5*, Article 210. https://doi.org/10.1186/s13643-016-0384-4

Owens, D., Horrocks, J., & House, A. (2002). Fatal and non-fatal repetition of self-harm: Systematic review. *British Journal of Psychiatry*, *181*(3), 193–199. https://doi.org/10.1192/bjp.181.3.193

Pascoe, E. A., & Richman, L. S. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, *135*(4), 531–554. https://doi.org/10.1037/a0016059

*Pettingell, S. (2008). Protecting urban American Indian young people from suicide. *American Journal of Health Behavior*, *32*(5), 465–476. https://doi.org/10.5993/AJHB.32.5.2

*Potthoff, S. J., Bearinger, L. H., Skay, C. L., Cassuto, N., Blum, R. W., & Resnick, M. D. (1998). Dimensions of risk behaviors among American Indian youth. *Archives of Pediatrics and Adolescent Medicine*, *152*(2), 157–163.

Pettingell, S., Bearinger, L. H., Skay, C. L., Resnick, M. D., Pothoff, S. J., & Eichhorn, J. (2008). Protecting urban American Indian young people from suicide. *American Journal of Health Behavior*, *32*(5), 465–476. https://doi.org/10.5993/AJHB.32.5.2

Rey, L. F., Wiglesworth, A., Prairie Chicken, M., Fetter, A. K., Azarani, M., Riegelman, A., & Gone, J. P. (2022). A systematic review of research methodologies in American Indian and Alaska Native suicide research from 2010-2020. *Cultural Diversity & Ethnic Minority Psychology*. Advance online publication. https://doi.org/10.1037/cdp0000531

*Rhoades-Kerswill, S. (2012). *The application of the interpersonal psychological theory of suicidal behavior to an American Indian sample* (Publication No. 1318498723) [Master's thesis, Oklahoma State University]. ProQuest Dissertations & Theses A&I.

Ribeiro, J. D., Franklin, J. C., Fox, K. R., Bentley, K. H., Kleiman, E. M., Chang, B. P., & Nock, M. K. (2016). Letter to the Editor: Suicide as a complex classification problem: Machine learning and related techniques can advance suicide prediction – A reply to Roaldset (2016). *Psychological Medicine*, *46*(9), 2009–2010. https://doi.org/10.1017/S0033291716000611

Rouder, J. N., Speckman, P. L., Sun, D., Morey, R. D., & Iverson, G. (2009). Bayesian t tests for accepting and rejecting the null hypothesis. *Psychonomic Bulletic & Review*, *16*(2), 225–237. https://doi.org/10.3758/PBR.16.2.225

*Schaefer, K. R., Muller, C. J., Smith, J. J., Avey, J. P., & Shaw, J. L. (2020). Using the electronic health record to identify suicide risk factors in an Alaska Native Health System. *Psychological Services*, *19*(1), 76–84. https://doi.org/10.1037/ser0000492

Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin*, *140*(4), 921–948. https://doi.org/10.1037/a0035754

*Segal, B. (2001). Responding to victimized Alaska Native women in treatment for substance use. *Substance Use Health Services Research*, *36*(6–7), 845–865. https://doi.org/10.1081/JA-100104094

Shaw, J. L., Beans, J. A., Comtois, K. A., & Hiratsuka, V. Y. (2019). Lived experiences of suicide risk and resilience among Alaska Native and American Indian people. *International Journal of Environmental Research and Public Health*, *16*(20), Article 3953. https://doi.org/10.3390/ijerph16203953

Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology*, *70*(1), 747–770. https://doi.org/10.1146/annurev-psych-010418-102803

*Story, M., French, S. A., Neumark-Sztainer, D., Downes, B., Resnick, M. D., & Blum, R. W. (1997). Psychosocial and behavioral correlates of dieting and purging in Native American adolescents. *Pediatrics*, *99*(4), Article E8. https://doi.org/10.1542/peds.99.4.e8

*Subica, A. M., & Wu, L.-T. (2018). Substance use and suicide in Pacific Islander, American Indian, and Multiracial youth. *American Journal of Preventive Medicine*, *54*(6), 795–805. https://doi.org/10.1016/j.amepre.2018.02.003

Suominen, K., Isometsä, E., Suokas, J., Haukka, J., Achte, K., & Lönnqvist, J. (2004). Completed suicide after a suicide attempt: A 37-year follow-up study. *American Journal of Psychiatry*, *161*(3), 562–563. https://doi.org/10.1176/appi.ajp.161.3.562

*Thomas, C. E. (2017). *Examining the relationship between rurality and suicidality among American Indian adolescents* (Publication No. 2056514201) [Master's thesis, Oklahoma State University]. ProQuest Dissertations & Theses A&I.

Tingey, L., Cwik, M. F., Goklish, N., Larzelere-Hinton, F., Lee, A., Suttle, R., Walkup, J. T., & Barlow, A. (2014). Risk pathways for suicide among Native American adolescents. *Qualitative Health Research*, *24*(11), 1518–1526. https://doi.org/10.1177/1049732314548688

Tucker, R. P., Wingate, L. R., O'Keefe, V. M., Hollingsworth, D. W., & Cole, A. B. (2016). An examination of historical loss thinking frequency and rumination on suicide ideation in American Indian young adults. *Suicide and*

Life-threatening Behavior, *46*(2), 213–222. https://doi
.org/10.1111/sltb.12185

Walls, M. L., & Whitbeck, L. B. (2011). Distress among
Indigenous North Americans: Generalized and cultur-
ally relevant stressors. *Society and Mental Health*, *1*(2),
124–136. https://doi.org/10.1177/2156869311414919

Wasserstein, R. L., Schirm, A. L., & Lazar, N. A. (2019). Moving
to a world beyond "p < 0.05". *The American Statistician*,
73, 1–9. https://doi.org/10.1080/00031305.2019.1583913

Wexler, L., Chandler, M., Gone, J. P., Cwik, M., Kirmayer, L. J.,
LaFromboise, T., Brockie, T., O'Keefe, V., Walkup, J., &
Allen, J. (2015). Advancing suicide prevention research
with rural American Indian and Alaska Native popula-
tions. *American Journal of Public Health*, *105*(5), 891–
899. https://doi.org/10.2105/AJPH.2014.302517

Whitbeck, L. B., Adams, G. W., Hoyt, D. R., & Chen, X. (2004).
Conceptualizing and measuring historical trauma among
American Indian people. *American Journal of Community*
Psychology, *33*(3–4), 119–130. https://doi.org/10.1023/
B:AJCP.0000027000.77357.31

Wiglesworth, A., Clement, D. N., Wingate, L. R., & Klimes-
Dougan, B. (2022). Understanding suicide risk for youth
who are both Black and Native American: The role of
intersectionality and multiple marginalization. *Suicide
and Life-Threatening Behavior*, *52*(4), 668–682. https://
doi.org/10.1111/sltb.12851

Wiglesworth, A., Rey, L. F., Fetter, A. K., Azarani, M., Prairie
Chicken, M., Davis, A., Young, A. R., Riegelman, A., &
Gone, J. P. (2022). Attempted suicide in American Indian
and Alaska Native populations: A systematic review of
research on protective factors. *Clinical Psychology: Science
and Practice*, *29*(3), 205–218. https://doi.org/10.1037/
cps0000085

Youth Risk Behavior Surveillance—United States, 2019. (2020).
MMWR, *69*(1, Suppl.). https://www.cdc.gov/healthy
youth/data/yrbs/pdf/2019/su6901-H.pdf