Topical Review

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Preventing Suicidal Behavior Among American Indian and Alaska Native Adolescents and Young Adults

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Abstract

From 2009 to 2018, overall suicide rates in the United States increased by 20.3% and increased by 43.5% among non-Hispanic American Indian and Alaska Native (AI/AN) communities. Combining years 2009 through 2018, suicide rates per 100 000 population among non-Hispanic AI/AN adolescents and young adults aged 15 to 34 years were 2 to 4 times higher than those of adolescents and young adults of other races and ethnicities. An estimated 14% to 27% of non-Hispanic AI/AN adolescents attempted suicide during that time. The elevated rates of suicidal behavior among non-Hispanic AI/AN adolescents and young adults reflect inequities in the conditions that create health. In this topical review, we describe school-based educational efforts that are driven by local AI/AN communities, such as the American Indian Life Skills curriculum, that teach stress and coping skills and show promise in reducing suicidal ideation attempts and fatalities among AI/AN adolescents. Using a social-determinants-of-health lens, we review the availability and quality of employment as an important influencer of suicidal behavior, as well as the role of the workplace as an environment for suicide prevention in AI/AN communities. Working with tribal, state, local, and federal colleagues, the public health community can implement programs known to be effective and create additional comprehensive strategies to reduce inequities and ultimately reduce suicide rates.

Keywords

suicide, suicidal behavior, American Indian/Alaska Native (AI/AN), social determinants of health, youth

Suicidal behavior is preventable even though suicidal injuries and deaths are a major public concern throughout the United States and the rest of the world.[1] In 2018 in the United States, suicide was the 10th leading cause of death, resulting in 48 344 deaths, for a rate of 14.2 per 100 000 population[2]; US rates increased 20.3% from 2009 to 2018.[2] Suicides reflect only a portion of the total impact of suicidal behavior. In addition to the emotional toll on loved ones, substantially more people are hospitalized because of nonfatal suicidal behavior than are fatally injured (Figures 1 and 2), and an even greater number are either treated in ambulatory settings or go without any treatment.[3-5]

Comparative studies of suicidal ideation or behavior show that suicide rates vary between and within racial and ethnic groups.[6] For example, suicide disproportionately affects non-Hispanic American Indian and Alaska Native (AI/AN) people. In 2018, the suicide rate among non-Hispanic AI/AN people was 22.1 per 100 000 population, and rates increased in this group by 43.5% from 2009 to 2018.[2] Suicide rates are higher among non-Hispanic AI/AN children, adolescents, and young adults than among other racial and ethnic groups of the same age (Figure 3). In 2018, the rate per 100 000 population of suicide among non-Hispanic AI/AN people aged 10 to 24 years was 29.4, compared with an overall rate

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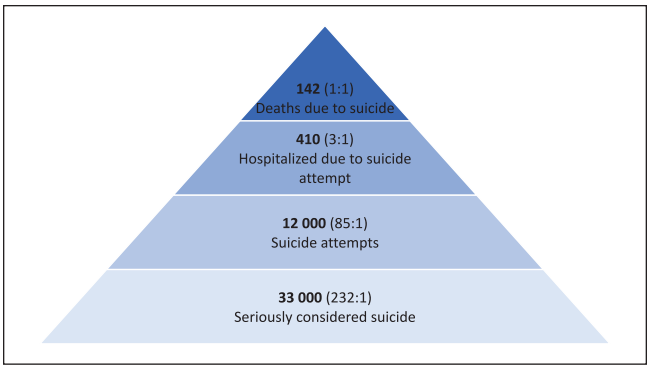

Figure 1. Number and ratio of people affected by suicidal thoughts and behaviors among non-Hispanic American Indian and Alaska Native adults aged 18 to 25 years, United States, 2018. Ratio defined as incidence of each behavior relative to the incidence of deaths due to suicide. Data on number of deaths from National Vital Statistics System.[2] Data on number of hospitalizations determined by first ICD-10-CM (*International Classification of Diseases, Tenth Revision, Clinical Modification*) code listed in the Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project–National Inpatient Sample.[3] Data on number of suicide attempts and number of people who seriously considered suicide from the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health.[4]

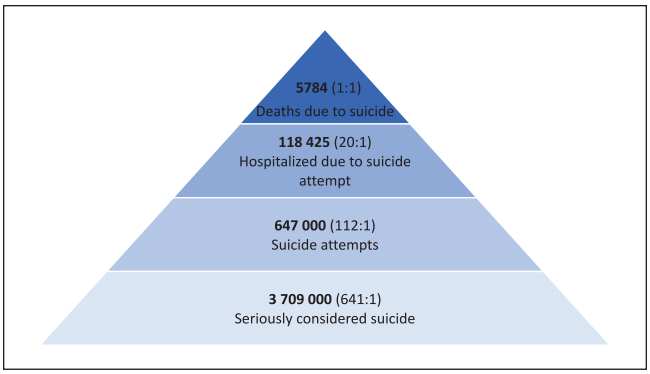

Figure 2. Number and ratio of people affected by suicidal thoughts and behaviors among adults aged 18 to 25 years, United States, 2018. Ratio defined as incidence of each behavior relative to the incidence of deaths due to suicide. Data on number of deaths from the National Vital Statistics System.[2] Data on number of hospitalizations determined by first ICD-10-CM (*International Classification of Diseases, Tenth Revision, Clinical Modification*) code listed in the Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project–National Inpatient Sample.[3] Data on number of suicide attempts and number of people who seriously considered suicide from Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health.[4]

of 11.6.[2] An estimated 14% to 27% of non-Hispanic AI/AN adolescents have attempted suicide.[7] Suicide rates also vary among AI/AN tribes.[8] While some evidence shows that suicide rates vary widely among tribes,[8] data are lacking for all tribes and for urban (nonreservation) areas.[9]

Suicidal Behavior as a Health Equity Issue

Health equity, defined as the attainment of the highest level of health for all people,[10] requires "valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities."[10] The elevated rates of suicide among non-Hispanic AI/AN adolescents and young adults represent an important health disparity that requires dedicated public health strategies and approaches to achieve health equity. For example, AI/AN adolescents and young adults, populations in the early stages of awakening their productive potential, require equitable opportunities to create and live the healthiest lives possible through modifying social determinants of health (SDOH) to include high-quality education and employment opportunities.

Suicidal behavior is a complex problem influenced by risk factors at multiple levels, including individual, relationship, community, society, and health systems.[1] Risk factors for suicide at the individual level include mental health problems, substance abuse, family history of suicide, and recent unemployment or financial loss. At the relationship level, family problems (eg, adverse childhood experiences), relationship problems with peers (eg, bullying as either a victim or perpetrator), and social isolation can increase risk for suicide. Examples of risk factors at the community level include discrimination, stress associated with acculturation and dislocation, and trauma or abuse. At the societal level, access to lethal means (eg, firearms, some medications) and stigma associated with help-seeking behaviors increase the risk for suicide.

Finally, at the health systems level, risk factors such as low health literacy in general, low mental health literacy specifically, and a lack of culturally responsive mental health care and AI/AN health care providers can act as barriers to accessing health care in resource-limited health settings and may contribute to risk for suicide.[1,11] Several of these risk factors may contribute to the observed increased suicidal behavior among non-Hispanic AI/AN adolescents and young adults and create barriers to achieving health equity. There are, however, several protective factors against suicidal behavior among AI/AN adolescents and young adults, such as the cross-generational transmission of cultural heritage (cultural continuity), high levels of cultural spiritual orientation, and connectedness to family and friends.[12]

Importance of SDOH in Achieving Health Equity in Suicide Prevention Among AI/AN Adolescents and Young Adults

SDOH can be defined as conditions in the places where people live, learn, work, and play that affect health behaviors, health risks, and health outcomes.[13,14] SDOH and how

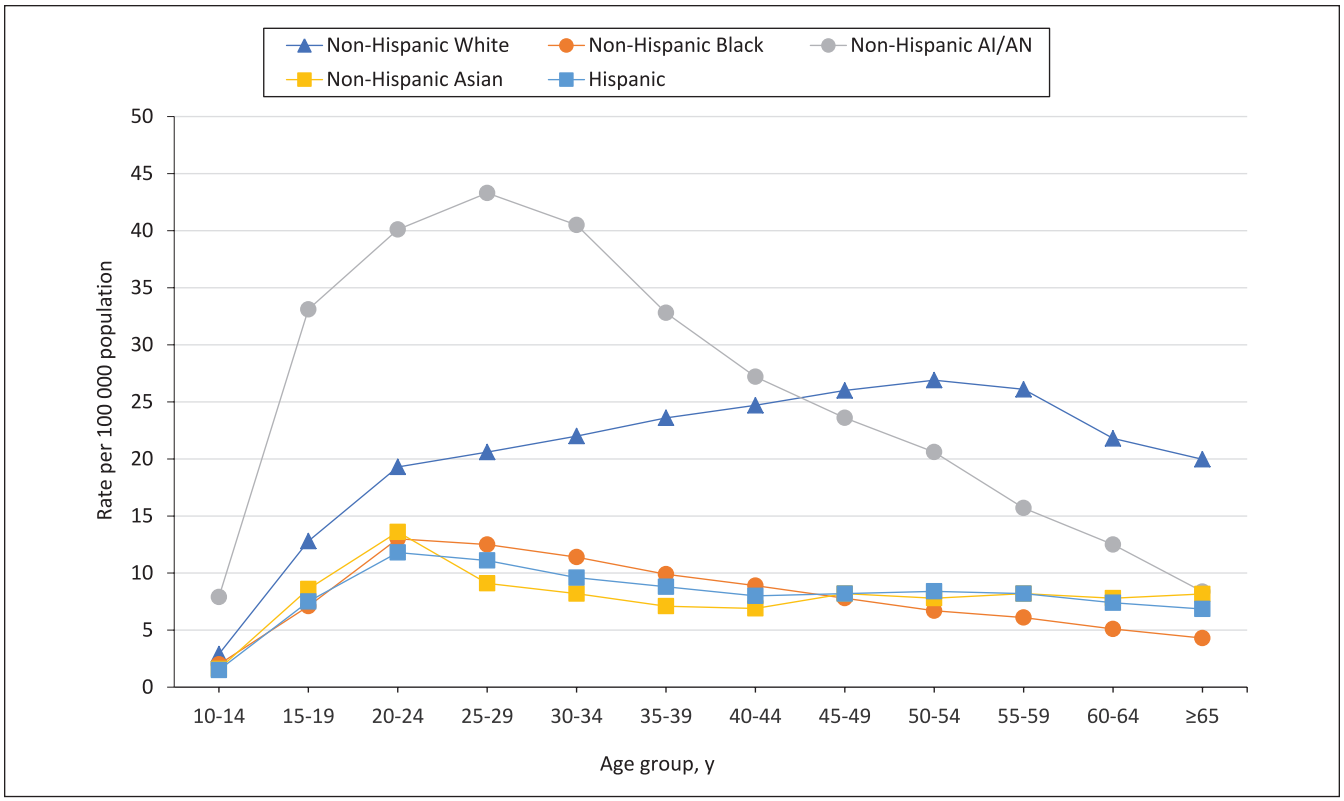

Figure 3. Suicide rates per 100 000 population, by race and ethnicity and age group, United States, 2015-2019. Abbreviation: AI/AN, American Indian and Alaska Native. Data source: Centers for Disease Control and Prevention.[2]

people experience them are related to the concept of "place," which is a "key element in our identity and life experiences. The spaces we occupy have profound social meaning for us and, in a literal sense, define not only who we are, but also how we live and die."[15]

Examples of SDOH that affect and shape health outcomes include the health care system, housing, neighborhood quality, and work environments. Recognizing that SDOH are patterned by structural mechanisms such as macroeconomic, social, and health policies; cultural and societal norms and values; socioeconomic position; social class; sex/gender; and racism[16] is key to understanding how SDOH influence health disparities, health equity, and health outcomes. It is also important to note that SDOH are not static and can be improved through community health, economic development, and other types of initiatives driven by research, community input, policy change, and partnerships.[17]

The health of AI/AN communities is affected by all SDOH mentioned. While some factors have also been identified as particularly relevant to the health of indigenous people, recommendations for SDOH interventions that have a direct effect on suicidal behavior are limited.[18] This topical review focuses on discussion of SDOH that shape risk for suicide and suicide-related disparities affecting AI/AN adolescents and young adults. We pay special attention to work and school environments as places that can shape access to resources and improve the community health risk profiles and health outcomes of AI/AN people. This review does not seek to comprehensively address suicidal behavior among AI/AN adolescents and young adults; rather, it seeks to provide a thought-provoking discussion that will lead to solutions that consider the opportunities to intervene afforded by school and work environments.

Suicide and Work

Work as an SDOH

We understand work to be an SDOH and a powerful, yet underused tool for addressing health inequities such as the elevated rates of suicide among non-Hispanic AI/AN adolescents and young adults. Work conditions, employment opportunities, and job market factors are environmental variables that affect perceptions about one's future and potential for social and economic security and mobility.[16] Employment not only exposes workers to workplace hazards, but one's job, or a lack thereof, influences other SDOH such as income, social status, housing, access to health care, and free time.[19] As a result, work can be seen as a principal mechanism for addressing health inequities.[17] Although public health has paid attention to workplace safety and hazards, the relationship between work and well-being is understudied, and

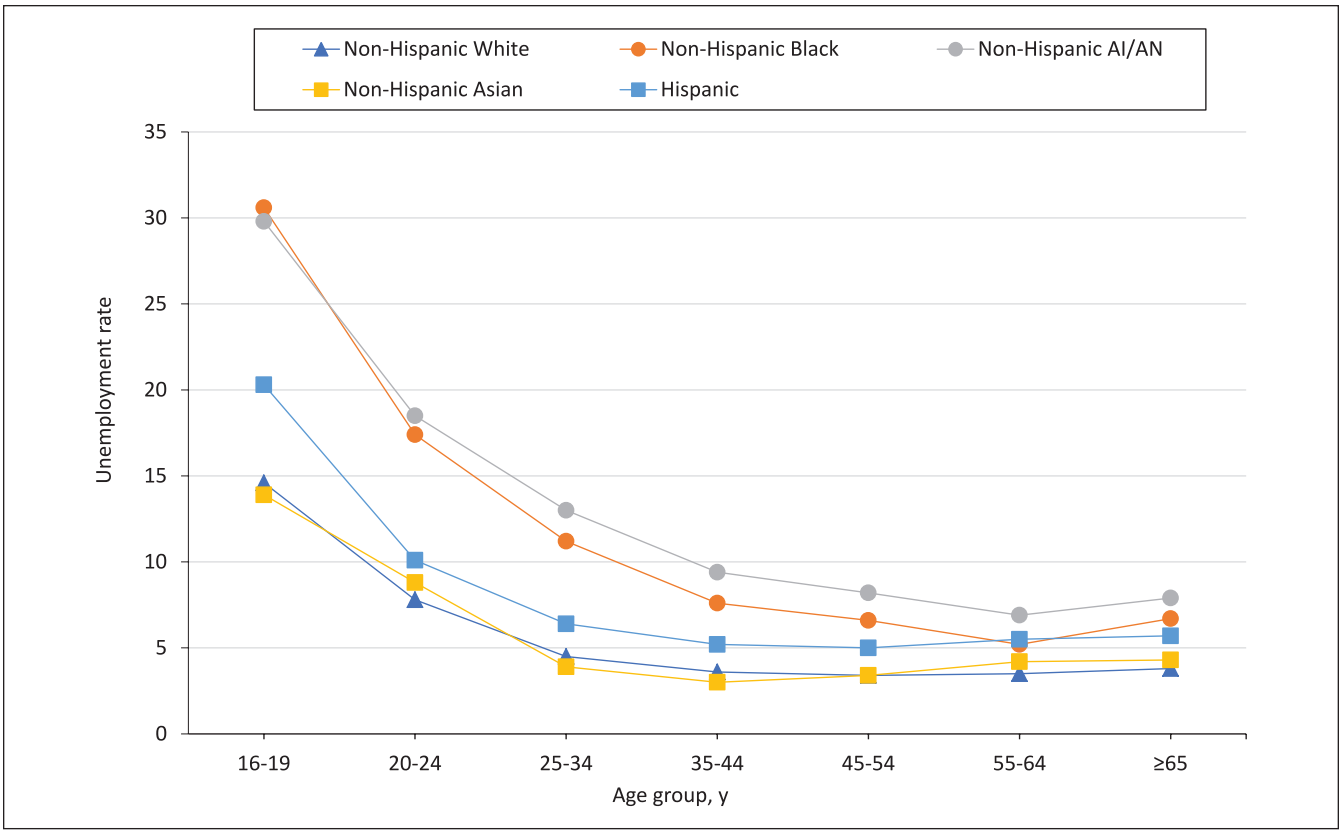

Figure 4. Unemployment rate, by race and ethnicity and age, United States, 2013-2017. Data source: US Census Bureau.[31] Abbreviation: AI/AN, American Indian and Alaska Native.

work-related variables are largely absent from health equity research.[20,21] A broader conception of work as a positive force in individual and community health in public health research and implementation is needed.[17,22] The ability to secure basic needs, through money and employment, has been identified as 1 of 7 interrelated aspects of life that are central to the physical and mental well-being of AI/AN people in the United States.[23] Given the elevated rates of unemployment in AI/AN communities, which exceed 80% in some areas,[24] improving access to good jobs is an essential piece of any comprehensive strategy for reducing suicide rates among AI/AN adolescents and young adults.[25,26] Improving access to jobs that support health (eg, with fair wages and benefits) can serve as a prevention strategy by increasing economic security, self-esteem, and social connectedness.[27] However, deficits in work opportunities or work environments may influence racial and ethnic groups in different ways.

Employment, Unemployment, and Suicide

Data from the Behavioral Risk Factor Surveillance System indicate that unemployed adults aged 18 to 25 years have 3 times greater odds of reporting depression compared with employed adults in this age group.[28] Yet, simply having a job is not enough. Increasing reliance on nonstandard employment arrangements[29] has led to recognition that job quality is an important variable for understanding the relationship between work and suicide. Recent research suggests that a lack of supervisor support and job insecurity are linked to suicidality.[30] Therefore, it is important to consider factors such as job stability, compensation including benefits, and social support from coworkers when evaluating the relationship between suicide and work.

Unemployment rates among non-Hispanic AI/AN adolescents and young adults are high, and rates remain higher throughout life than for any other racial or ethnic group (Figure 4).[31] Unemployment leads to poverty, and poverty is associated with a higher incidence of suicide among AI/AN adolescents and young adults.[32] Although research is limited on the relationship between unemployment and suicide in AI/AN communities, the elevated rates of both, particularly among non-Hispanic AI/AN adolescents and young adults, suggest that improving access to good jobs could be an important part of suicide prevention strategies. Increasing access to work can also be understood as a primary vehicle for responding to the Surgeon General's call to action on community health and economic prosperity.[17] A study published in 2003 recorded significant decreases in psychiatric symptoms in a sample of the Eastern Band of Cherokee Indian children and adolescents aged 9 to 13 years whose families transitioned out of poverty after a casino was opened on a local reservation.[33] However, formative research on

work–life balance among American Indian women in the Southwest and upper Midwest reminds us that the definition of a "good job" may vary by sociocultural context.[34,35]

Suicide Prevention and Work

Work can be understood not only as a cause of health inequities but also as an intervention site to improve health inequities on at least 3 levels.[36] At the individual level, programs can be implemented by employers to improve knowledge and promote health behaviors among employees. For example, employers can train employees on recognizing the warning signs of suicide and where to get help.[37-40] At the organizational level, companies can implement policies that create conditions that protect workers. Research with police officers suggests that implementing policies that reduce access to lethal means (eg, locking up firearms when not in use) can help reduce suicide at work.[38,41] Employers can also implement policies (eg, improved compensation) that can positively affect the SDOH that contribute to the well-being of their workers and their families.[42,43] At the societal level, labor policies such as paid family leave can be understood and analyzed through a public health lens.

Few workplace suicide prevention programs have been evaluated and shown to be successful,[44] and none are specific to AI/AN communities. However, some principles of workplace strategies might be adapted to AI/AN communities. The relationship between economic stability and mental health[23,28,33] suggests that increasing access to gainful employment opportunities for AI/AN adolescents and young adults is an essential element of a comprehensive strategy to reduce suicide in this group. Delving into the relationship between job characteristics and community health may also provide public health professionals and tribal officials with a broader conceptual framework through which to evaluate existing jobs and new development projects in AI/AN communities. Further examination of the relationship between job characteristics and community health also provides key partners such as tribal governments and tribal employment rights organizations additional criteria that could help them improve the quality of jobs in their community, through negotiation, legislation, or regulation. Discussion of job quality could help public health professionals and tribal officials integrate their priorities of improving community health with more established initiatives on workforce development and corporate responsibility that increasingly influence development projects and how jobs are structured.[45-47] This engagement could help ensure these development projects and the jobs they create are designed to improve the health of AI/AN communities in general and the mental health of their adolescents and young adults specifically.

Suicide and Schools

School as an SDOH

Schools are places where children, adolescents, and young adults have experiences that can reduce or increase suicide risk. Both primary school–based and community-based interventions conducted in schools make use of settings where children, adolescents, and young adults spend large amounts of time in the classroom or engaged in extracurricular activities. Some school-based suicide prevention programs have shown benefits to high school students, including increases in help-seeking behavior and supportive attitudes.[48]

Schools are second to families in their potential to affect children's and adolescents' mental health. They can contribute to healthy development by providing nurturance, structuring opportunities to reinforce relationships, and supporting the development of social and psychological skills.[49] The rationale for focusing on schools as a context for suicide prevention hinges on the need to reach the greatest number of students to assist the smaller number of students who may be at risk for suicide, so that they access mental health support and services before they become engaged in suicidal behavior.[50]

American Indian Life Skills Development Curriculum

Since 1990, the American Indian Life Skills (AILS) development curriculum has been implemented in several AI/AN tribal schools, Bureau of Indian Education, public middle schools and high schools, and charter schools throughout Indian Country in reaction to a growing awareness of a substantial, escalating trend in suicidal behavior among AI/AN adolescents and young adults. AILS is a universal, community-driven intervention developed with Pueblo of Zuni community members in New Mexico that emphasizes social cognitive skills training to reduce high rates of AI/AN adolescent suicidal behaviors.[51]

AILS focuses on (1) building self-esteem, (2) identifying emotions and stress, (3) increasing communication and problem-solving skills, (4) recognizing self-destructive behavior and finding ways to eliminate it, (5) learning information about suicide, (6) helping a suicidal friend get help, and (7) planning for a great future. It provides 13 to 56 lessons, depending on implementation opportunities. Students are taught an array of psychosocial skills necessary for effectively dealing with the challenges of everyday life (eg, emotional identification, problem solving, positive thinking) with the aim to decrease depression, hopelessness, anger, anxiety, and suicidal behavior. AILS-M, a series of 30 sessions consisting of 35 minutes each of AILS, has been created to include relevant developmental issues of concern to early adolescents.[51]

In addition to social psychological intervention, AILS underscores AI/AN heritage cultures. Resilience indicators of well-functioning community members are emphasized throughout the curriculum. AILS encourages respect, connectedness, and culturally appropriate ways of expressing grief and anger. It advocates for community members to be integral partners in the intervention team. When AILS was

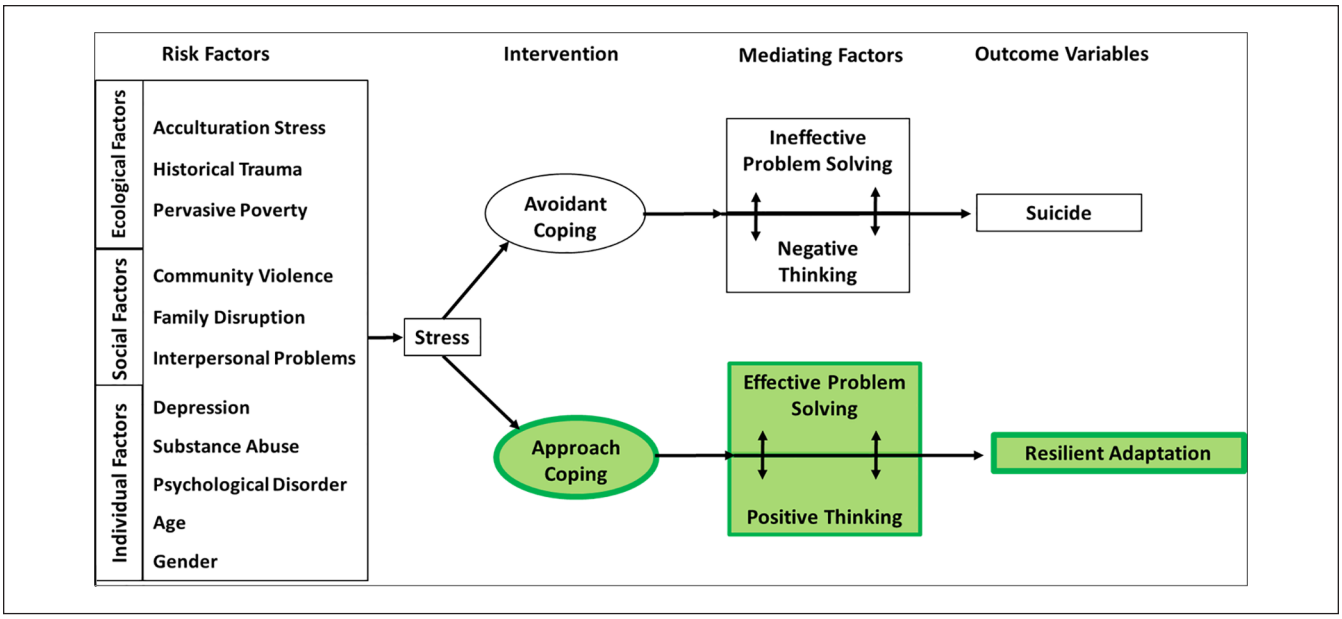

Figure 5. Life skills stress-coping model, American Indian Life Skills Development Curriculum. Reprinted with permission from Praeger/ABC-CLIO. Source: LaFromboise and Fatemi.[53]

developed, service providers from the Zuni community taught the curriculum to Zuni students; the Zuni language was spoken frequently by both service providers and students. In each lesson, AILS presents realistic situations as part of skills training. Ecological risk factors such as exposure to land degradation,[52] community violence, economic pressure, parent/caretaker reactions to life stressors, and adverse childhood experiences are interwoven into the lesson content (Figure 5). Service providers are trained to adapt the content of AILS to accommodate the community-specific clinical problems or risk and protective factors. Service providers are also encouraged to test whether the desired goals of that adaptation were achieved.

Studies of suicide prevention among AI/AN adolescents in school settings revealed positive attitudinal and behavioral outcomes with no evidence of triggering suicidal ideation or action.[54,55] Participants in a high school AILS evaluation study reported less hopelessness, less suicidal ideation, fewer attempts, and greater self-efficacy to manage anger, and they demonstrated greater effectiveness in helping a friend solve problems and get help for suicidal ideation than students in the no-treatment comparison group[54]; those in the middle school AILS-M evaluation indicated significant gains in their confidence to manage depression, cope with stress, and enlist community and social support resources.[55]

Results from studies of suicide prevention using AILS and AILS-M among AI/AN adolescents attest to the importance of interventions based on culturally unique factors, as well as responsiveness to the needs of diverse AI/AN communities. Like suicide prevention historically, AILS has focused on treatment of the individual. Although individual-level treatment meets the needs of people in crises, broader public health interventions are needed. Approaches to family involvement and communitywide change in suicide prevention among AI/AN people are increasing but understudied. Multilevel interventions working in tandem with explicit consideration of SDOH can reverse the trend of suicidal behavior among AI/AN adolescents and young adults.[56]

Public Health Implications

Approaches to achieve health equity in reducing suicide and suicidal behavior among AI/AN adolescents and young adults require more than an individual approach and can benefit from addressing SDOH as part of a larger public health model. Work and school are key settings in which opportunities for reducing suicide and suicidal behavior among AI/AN adolescents and young adults can occur. Doing so requires full recognition of the potential impact of work and school as environments in which positive change can occur. Programs and interventions working to reduce suicide and suicidal behavior may have an impact not only for those at highest risk but also for the larger AI/AN community. For example, integrating public health prevention messages and strategies for suicide prevention in public-facing environments, such as work and school, may help decrease stigma, normalize suicide prevention, and thereby improve health equity related to suicide among AI/AN adolescents and young adults. Finally, incorporating work- and school-related variables in health equity research and public health frameworks is a key part of understanding and using work and school as environments for change.

This topical review highlighted work and school as 2 examples of using SDOH to address suicidal behavior

among AI/AN adolescents and young adults. A need exists for other resources that reach beyond the individual level to include community and multilevel strategies for communicating information on suicide risk and prevention to AI/AN adolescents and young adults. Social media may be an unexplored and beneficial tool for communicating about suicide prevention. It is not uncommon for AI/AN adolescents and young adults to disclose depressive symptoms and suicidal ideation on social media channels. A survey of AI/AN adolescents aged 15 to 24 years in the United States found that more than 50% of respondents reported going on social media platforms each day, and 29% reported seeing concerning posts and messages about depression, suicide, or self-harm while online.[57] Previous research showed that adolescents and young adults can be involved in developing and disseminating suicide prevention efforts among their peers on social media, thereby helping to normalize the activity of communicating safely online.[58] A pilot research study showed the positive effects of a tool used to train adults to respond to concerning social media posts by AI/AN adolescents and young adults. "Viewer Care Plan" trains adults to have a plan to intervene, support, and connect AI/AN children, adolescents, and young adults who view or post concerning messages on social media with life-saving resources.[59] Lastly, the Centers for Disease Control and Prevention's technical package, *Preventing Suicide Through a Comprehensive Public Health Approach*, documents the best available evidence for suicide prevention.[60] The document identifies 7 population- and individual-level strategies and their corresponding approaches. Work and school are critical environments in which many strategies for suicide prevention education can be implemented among AI/AN adolescents and young adults.[60]

Conclusion

Understanding suicide and its prevention are now firmly within the mainstream of public health activities and squarely in the limelight.[61] Researchers have long known that suicide is not just a problem of individual mental health. Large-scale interventions that have reduced rates of suicide and suicidal behavior are consistent with a whole-of-community approach.[62] One additional insight from suicide prevention work undertaken in AI/AN communities is that work is not merely a place in which preventive interventions can be delivered, but that the economic opportunity, life satisfaction, and sense of community and connectedness that can accompany work can protect against the full spectrum of suicidal behavior. Making maximal use of effective interventions in work, school, and other communitywide settings, implemented and maintained consistently, is a proven strategy to decrease the elevated rates of suicidal behavior[60] and, potentially, a means of preventing disparities.

Acknowledgments

An online-only supplemental file lists resources for decreasing the burden of suicide in diverse American Indian/Alaska Native communities. This review was based on information originally presented at Centers for Disease Control and Prevention (CDC) Public Health Grand Rounds in March 2019. We acknowledge those listed at https://www.cdc.gov/grand-rounds/pp/2019/20190319-preventing-suicidal-behavior.html for their contributions to the Grand Rounds session. We also acknowledge Martha Knuth, CDC Public Health Library and Information Center, for bibliographic assistance. The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of CDC.

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Supplemental Material

Supplemental material for this article is available online.

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