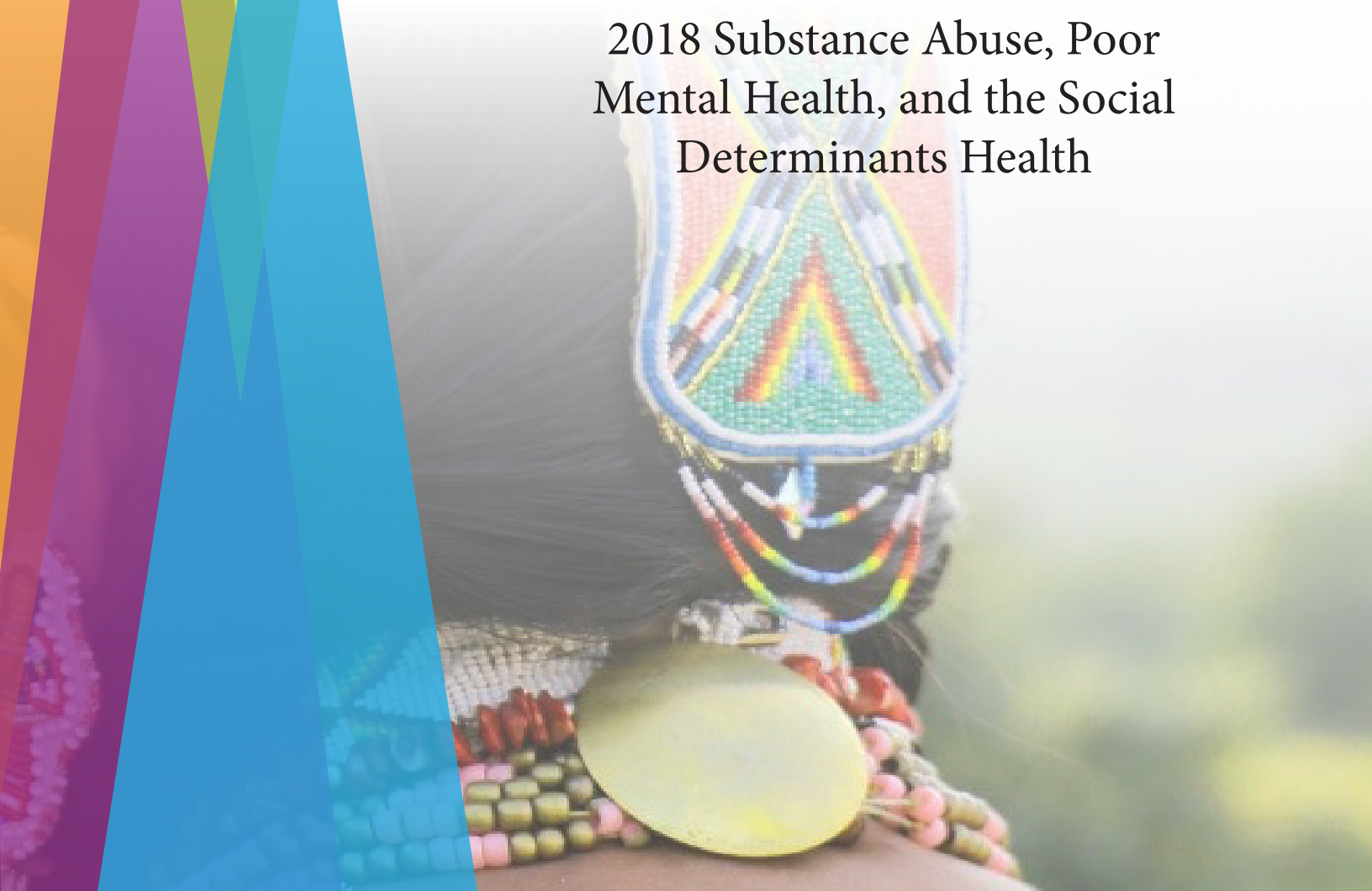
Rocky Mountain Tribal Leaders Council Epidemiology Center

Report

2018 Substance Abuse, Poor Mental Health, and the Social Determinants Health



The Rocky Mountain Tribal Leaders Council Epidemiology Center empowers American Indian Nations and urban Indian populations by building community-driven public health and epidemiological capacity through outreach and creative partnerships.

Rocky Mountain Tribal Leaders Council Epidemiology Center partnered with the Tribal Prevention Initiative to explore substance abuse and poor mental health in Montana and Wyoming using the social determinants of health framework. We appreciate this partnership and support of the Transitional Recovery and Culture Project, the Billings Area Indian Health Service, and Kaycee Martinez, a senior at Montana State University who helped us explore the SDOH model in a reservation context. We honor the workers, leaders, and supporters of recovery programs throughout Indian Country. Thank you.

We must find time to stop and thank people who make a difference in our lives. - John F. Kennedy

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Executive Summary

This report explores the Social Determinants of Health (SDOH) and Substance Use and Mental Health (SUMH) in Montana and Wyoming counties with a focus on American Indian populations. We used a descriptive cross-sectional study design to explore SDOH and SUMH in 79 counties in Montana and Wyoming. Our study was guided by two questions, “Is there a significant difference between SDOH based on Contract Health Service Delivery Area (CHSDA) and non-CHSDA status?” and “Is there is a significant association between SDOH and SUMH in Montana and Wyoming?”. The strongest correlations were observed for percent American Indian and poverty, $r(79) = .73$, $p < .01$, drug poisoning deaths and poor mental health, $r(32) = .53$, $p < .01$, and drug poisoning deaths and no high school diploma, $r(329) = .52$, $p < .01$. There was a significant association between SDOH and SUMH in Montana and Wyoming. American Indian populations carry a disproportionate burden of SDOH and immediate efforts are needed to address the underlying causes of health inequalities in this population.

Photo: Blackfeet Dancer
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Background

Substance Use and Mental Health

Substance Use and Mental Health conditions (SUMH) are gaining attention as the most pressing public health emergency of the century. Since 1990, SUMH conditions have increased 38% in the world [1]. Alcohol, opioid, and cocaine dependence also increased significantly during this time while mental health disorders did not [2]. Worldwide, SUMH conditions are the fifth leading cause of global disability-adjusted life years and accounted for 7% of the total disease burden in 2010 [1]. Globally, depressive disorders are the most common followed by anxiety disorders and drug use disorders [1]. SUMH conditions are also the leading cause of non-fatal disease worldwide. Young adults ages 15-29 experience the highest rates of drug use disorders while alcohol use disorders are most prevalent in adults ages 25-50 [1].

Nationally, more than 6.5 % of the population are dependent on alcohol or abuse alcohol, which is defined as a substance use disorder (SUD) [5]. However, in Montana this rate is slightly higher with 7.6% of the population having a SUD [5]. This rate is similar in Wyoming, where 7.5% of the population have a SUD [6]. Mental health conditions also vary—state prevalence ranges from 15.9% in Hawaii to 21.7% in New Hampshire. In comparison, 19.7% of Montana and 19.5% of the Wyoming populations have a mental health problem [4]. Past year serious mental illness among adults ages 18 or older in the US was 4.2% compared with 4.7% of Montanans and 4.4% of Wyoming [5-6].

Theoretical Framework

Multiple factors influence SUMH conditions. Examining these factors using the SDOH framework allows for analysis of underlying causes or conditions [16]. This brief literature review summarizes the SDOH and the body of research on SDOH and SUMH.

Social determinants are most often referred to as conditions of place and system—where people live, work, age, and die. These conditions are often impacted by political, economic, and social factors that affect health and well-being [17]. When differences in social conditions exist, health inequities are common [18]. Previous SDOH research has established the link between disadvantage and stress and anxiety, social exclusion and discrimination, unemployment, limited social support, and addiction [16]. SDOH research emphasizes the importance of place and health [19]. From this research, poverty has emerged as a key predictor of poor health outcomes [19-20]. Other SDOH research established linkages between alcohol dependence, illicit drug use, cigarette smoking and social and economic disadvantage [16].

Methods

The purpose of this study was to examine the SDOH as they relate to SUMH in Montana and Wyoming. This research focused on SDOH that have been identified in the literature: race, income/unemployment, poverty, education, violent crime, severe housing, percent rural, and percent uninsured [25]. The primary question this study seeks to answer is: "Are there differences in SDOH that could explain SUMH disparities in Montana and Wyoming?"

Publicly available data from multiple databases were used to examine the SDOH and SUMH by county. Unemployment, poverty, and high school diploma were extracted from the 2015 Economic Research Service (ERS) data set based on county level estimates [30]. Rural county designation codes were used from the 2015 ERS rural urban continuum codes. Poverty designation came from the 2015 ERS non-metro poverty data. Excessive drinking, poor mental health, violent crime, severe housing, drug poisoning deaths, percent rural, percent American Indian, and percent non-Hispanic White were extracted from the Robert Wood Johnson Foundation County Health Rankings data sets [29]. Excessive drinking and poor mental health data come from the Behavioral Risk Factor Surveillance System (2015). Severe housing problems data come from the Comprehensive Housing Affordability Strategy (CHAS) data [31]. Violent crime rates come from the Federal Bureau of Investigations Uniform Crime Reporting data set based on the number of violence crime offenses per 100,000 population. Drug poisoning death data come from the Centers for Disease Control WONDER mortality data set, 2006-2012 [32].

This study focused on 79 counties in Montana and Wyoming and eight American Indian reservation communities (CHSDAs).

Independent Variables. Unemployment, poverty all ages, no high school diploma, percent rural, percent uninsured, percent American Indian, violent crime rate, and severe housing problems.

Dependent Variable. The dependent variable, SUMH, was created by combining the number of excessive drinking days and the number of poor mental health days for each county. Drug poisoning deaths were explored as a variable but not included in the final model due to the large number of missing cases.

Results

	Montana & Wyoming Counties (non-CHSDAs) (n=79)		MT WY Reservation/CHSDA (n=8)	
Characteristic	Mean or %	SD	Mean or %	SD
Unemployment	4.26	(1.4)	4.85	(1.14)
Poverty All Ages %	13.87	(5.03)	17.76**	(4.75)
No High school Diploma %	8.59	(3.42)	9.80	(1.81)
Excessive				
Drinking %	18.48	(3.43)	19.58	(3.14)
Poor Mental Health Days	3.08	(.63)	2.88	(.65)
Violent Crime Rate	191.37	(98.08)	201.36	(51.32)
Severe Housing Problem %	12.83	(4.37)	14.19	(3.40)
Drug Poisoning Deaths	15.17	(4.13)	5.65**	(5.39)
Rural %	67.25	(32.06)	73.57	(16.02)
Uninsured	25.45	(5.45)	29.75*	(4.22)
Adults %	25.45	(5.45)	29.75*	(4.22)
American Indian %	6.24	(13.55)	20.05**	(12.09)

Discussion

Relationship between SDOH and SUMH. We computed correlations among all SDOH variables of interests for all counties in Montana and Wyoming. Our results suggest that relationships between several SDOH variables were statistically significant. The strongest correlations were observed for the following SDOH: American Indian and poverty, drug poisoning deaths and poor mental health, and drug poisoning deaths and no high school diploma. Inverse relationships were observed for the following SDOH: poverty and non-Hispanic White, uninsured and non-Hispanic White. One important observation is the difference in SDOH based on the percentage of American Indians and non-Hispanic Whites. All SDOH were positively correlated with percent American Indian and negatively correlated with the percent of non-Hispanic Whites. In general, these results suggest that American Indian populations in Montana and Wyoming may experience greater vulnerabilities to SDOH than non-Hispanic Whites. This is consistent with previous literature.

Lessons

We must understand and document the underlying factors that contribute to SUMH before we can be effective in our intervention/prevention efforts.

Change the Focus

How many SUMH prevention and treatment programs incorporate the SDOH? We must be innovative in our prevention and intervention approach. We must look at workforce development, education/support, job-training programs, economic development, and owner/housing programs.

Social Determinants

We know the conditions that create health in communities. We must grow these like a gardener. We must enrich the soil and feed the soil. We must encourage our young people to do the same.

Key Findings

Education. Uninsured. Violent Crime. Severe Housing Shortage.

Social determinants are associated with SUMH conditions in Montana and Wyoming.

Our study findings partially answered our first question, “Is there a significant difference between SDOH based on CHSDA and non-CHSDA status?”. A significant difference was observed for four SDOH variables: no high school diploma, percent uninsured, drug poisoning deaths, and CHSDA status.

Lower Educational Attainment. The differences in SDOH are consistent with previous reports where educational attainment among American Indian populations is lower, 82% of American Indians over the age of 25 have at least a high school diploma compared with 86% of the overall population [33].

Uninsured. American Indians are less likely to be insured than the nation as a whole—Census reports indicate that 26.9% of American Indians lack health insurance coverage compared with 14.5% of the nation [33]. This study found that the 29% of the population living in CHSDAs were uninsured.

Our study findings answered the second question, “Is there is a significant association between SDOH and SUMH in Montana and Wyoming?”. The strongest SDOH correlations were percent American Indian and poverty, drug poisoning deaths and poor mental health, and drug poisoning deaths and no high school diploma. This is consistent with previous research.

Prevention and Treatment

Socioeconomic Factors Shape Health and Behaviors

Improve Education Outcomes. Decrease Substance Abuse and Poor Mental Health.

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