Serious Psychological Distress Among Montana Adults, 2012 and 2016

At a Glance

- 3.6% of Montanan adults reported experiencing serious psychological distress (SPD)
- Adults aged 45 to 54 years were three times more likely to experience SPD than Montanans 65 years of age and older
- Adults who reported being unable to work or unemployed were, respectively, eight and three times more likely to experience SPD than their employed counterparts

Introduction

Mental illnesses contribute to more disability than any other group of illnesses in the United States and are associated with chronic conditions such as cardiovascular disease, diabetes, and obesity, as well as with health risk behaviors including tobacco use and physical inactivity.[1,2] In any given year, approximately 22% of U.S. adults are living with at least one diagnosable mental illness.[3]

Among Montanan communities that completed a community health assessment or improvement plan between 2012 and 2017, one in five identified mental health and well-being as a health priority. The myriad of challenges facing communities engaged in combating mental illness include: the identification of risk factors, the identification of specific sub-populations at-risk, the alleviation and eventual eradication of health disparities, and improved access to mental health services and treatment.[3,4]

To provide data-driven assistance to address these challenges, the Montana Behavioral Risk Factor Surveillance System (BRFSS) survey included questions in 2012 and 2016 aimed specifically at estimating the prevalence of mental illness and treatment within Montana's adult population.

This report describes the prevalence of serious psychological distress (SPD), a measure of mental illness, and treatment status among Montanan adults. This report also describes the demographic characteristics and health statuses of Montanan adults experiencing SPD compared to those not experiencing SPD.

Methods

This report analyzed data from the 2012 and 2016 Montana BRFSS. The Montana BRFSS survey is an annual telephone survey conducted among Montana's

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non-institutionalized adult (aged 18 and older) population. The 2012 and 2016 Montana BRFSS included (in whole or in part) the Mental Illness and Stigma (MIS) optional module developed by the Centers for Disease Control and Prevention (CDC) and the Substance Abuse and Mental Health Services Administration (SAMSA).

The MIS module estimates the prevalence of serious psychological distress (SPD) using the Kessler 6 (K6) scale. The K6 scale is a validated tool developed to estimate the prevalence of Serious Mental Illness (SMI) in the general population, as opposed to clinical settings, by assessing indicators of non-specific psychological distress.[5,6] A key difference between SPD and SMI is that SPD captures less severe cases of mental illness in the community, which may otherwise be undiagnosed in a clinical setting.[6]

To assess psychological distress using the K6 scale, respondents were asked to rate, on a Likert scale with corresponding values of zero to four, how often in the past 30 days they felt (1) nervous, (2) hopeless, (3) restless or fidgety, (4) so depressed that nothing could cheer them up, (5) that everything was an effort, and (6) worthless.

Responses to each of the six questions were totaled for an overall respondent score (range 0 – 24). Respondents receiving an overall score of 13 or higher were classified as experiencing SPD, while those scoring 12 or lower were classified as not experiencing SPD.[2] In addition, the MIS module also included a question on receiving treatment, which allowed for treatment status among persons classified as experiencing SPD to be assessed.

This analysis is subject to a few limitations. First, the BRFSS is self-reported data. Respondents may underreport some behaviors that may be considered socially unacceptable (e.g., smoking, heavy alcohol use) and may over report behaviors that are desirable (e.g., physical activity). Furthermore, the cross-sectional design of the survey makes casual conclusions impossible. That is, we cannot say that an individual has a given condition or risk behavior because they have SPD, nor can we say that an individual has SPD because of a given condition or risk behavior. Finally, disability status was not analyzed due to changes in the assessment of disability status between the 2012 and 2016 survey years. Therefore, this report was limited by not being able to explore the prevalence of disability and SPD and the analyses were limited by not being able to include disability as a potential confounder.

Statistical Analyses

The data were weighted to be representative of the Montana adult population according to methodologies set forth by CDC. In the 2012 and 2016 combined dataset, the total sample size (n) was 12,985 and 424 respondents were categorized as having SPD. Respondents who answered, “Don’t Know,” “Not Sure,” or “Refused,” were excluded from all analyses. Therefore, analyzing the data by distinct subpopulations involved varied and smaller sample sizes for each respective analysis. Select prevalence estimates were not reported due to low precision, this included those with less than 50 respondents, with half-width confidence intervals greater than 10 percent, or with a relative standard error greater than 30 percent.

Statistical significance was defined as a p-value < 0.05. Statistical significance was assessed for prevalence estimates using chi-squared tests for dichotomous groups (sex, race/ethnicity, veteran status) and tests for trend for ordinal groups (age, education, income, marital status, employment status). Unadjusted and adjusted odds ratio estimates were obtained using logistic regression. In the adjusted analysis, potential covariates were identified through a review of prior reports and existing literature. Sex and age were selected as primary covariates and additional covariates were determined using backwards selection. All statistical analyses were performed using SAS 9.4.

Results

Demographic Characteristics of Serious Psychological Distress

In the 2012 and 2016 combined analysis, 3.6% of Montanan adults reported experiencing SPD (Table 1). In Montana, the prevalence of SPD was higher among Adults who reported being younger, having less educational attainment, having lower income, being previously married, being unemployed, or being unable to work (Table 1). Furthermore, American Indian/Alaskan Native adults also reported a higher prevalence of SPD than white, non-Hispanic adults (Table 1).

Table 1. Prevalence of Serious Psychological Distress Among Montanan Adults, 2012 & 2016[1]

	N	Weighted Population Estimate[2]	Prevalence Estimate (%)	95% CI	p-value
All Adults	424	24,982	3.6	3.1 - 4.0	
Sex					
Male	168	11,788	3.4	2.7 - 4.1	
Female	256	13,194	3.7	3.1 - 4.3	NS[3]
Age					
18-34	74	7,476	3.9	2.8 – 5.0	
35-44	47	4,052	3.9	2.5 - 5.3	
45-54	126	6,346	5.5	4.2 - 6.8	
55-64	100	3,992	3.0	2.2 - 3.8	
65+	76	3,104	2.1	1.4 - 2.7	**0.002**
Education					
<High School	75	5,742	9.6	6.7 - 12.5	
High School/GED	161	9,160	4.3	3.4 - 5.2	
Some College	108	6,554	2.7	2.1 - 3.4	
College Degree	80	3,525	1.9	1.4 - 2.5	**<0.001**
Income					
<$15,000	132	6,248	9.3	7.1 - 11.4	
$15,000-$24,999	122	6,942	6.0	4.5 - 7.5	
$25,000-$49,999	73	5,522	3.0	2.1 - 3.9	
$50,000+	47	3,108	1.3	0.8 - 1.7	**<0.001**
Race/Ethnicity					
White, non-Hispanic	308	18,647	3.0	2.6 - 3.5	
AI/AN[4]	75	3,164	9.2	6.1 - 12.2	**<0.001**
Veteran Status					
Veteran	60	4,377	4.4	2.9 - 5.9	
non-Veteran	364	20,605	3.4	3.0 - 3.9	NS
Marital Status					
Married	146	9,684	2.4	1.9 - 3.0	
Previously Married[5]	182	7,737	5.6	4.5 - 6.7	
Never Married	92	7,470	4.6	3.4 - 5.9	**0.001**
Employment Status					
Employed	113	8,415	2.0	1.5 - 2.6	
Unemployed	60	3,186	9.1	6.0 - 12.1	
Homemaker/Student	41	3,022	4.2	2.6 - 5.8	
Retired	53	2,468	1.8	1.2 - 2.4	
Unable to Work	156	7,850	19.1	15.4 - 22.9	**<0.001**

[1] Data Source: 2012 and 2016 Montana Behavioral Risk Factor Surveillance System
[2] For 2012 and 2016 combined, total sample size (n) = 12,985, weighted total population estimate = 698,055
[3] NS = Not Significant
[4] American Indian/Alaskan Native only
[5] Divorced, widowed, or separated

Table 2. Unadjusted and Adjusted Odds Ratio (OR) Estimates of Serious Psychological Distress Among Montanan Adults, 2012 & 2016[1]

	Unadjusted OR	95% CI	Adjusted OR[2]	95% CI
All Adults				
Sex				
Male	Reference		Reference	
Female	1.1	0.8 - 1.4	1.0	0.7 - 1.4
Age				
18-34	**1.9**	1.3 - 2.9	**2.4**	1.2 - 4.9
35-44	**1.9**	1.2 - 3.1	**3.0**	1.3 - 6.6
45-54	**2.8**	1.8 - 4.1	**3.2**	1.6 - 6.2
55-64	1.5	1.0 - 2.2	1.5	0.8 - 2.9
65+	Reference		Reference	
Education				
<High School	**5.4**	3.5 - 8.4	**2.4**	1.4 - 4.2
High School/GED	**2.3**	1.6 - 3.3	1.3	0.9 - 2.0
Some College	1.4	1.0 - 2.1	1.0	0.6 - 1.5
College Degree	Reference		Reference	
Income				
<$15,000	**8.0**	5.1 - 12.5	**2.7**	1.6 - 4.6
$15,000-$24,999	**5.0**	3.1 - 7.8	**2.8**	1.7 - 4.6
$25,000-$49,999	**2.4**	1.5 - 3.9	**2.1**	1.3 - 3.4
$50,000+	Reference		Reference	
Race/Ethnicity				
White, non-Hispanic	Reference		Reference	
AI/AN[3]	**3.3**	2.2 - 4.8	**1.7**	1.1 - 2.7
Veteran Status				
Veteran	0.8	0.5 – 1.1	**0.5**	0.3 - 0.8
non-Veteran	Reference		Reference	
Marital Status				
Married	Reference		Reference	
Previously Married[4]	**2.4**	1.8 – 3.2	1.4	0.9 - 2.0
Never Married	**1.9**	1.4 - 2.8	1.0	0.6 - 1.5
Employment Status				
Employed	Reference		Reference	
Unemployed	**4.8**	3.0 - 7.5	**2.8**	1.7 - 4.7
Homemaker/Student	**2.1**	1.3 - 3.4	**1.8**	1.1 - 3.1
Retired	0.9	0.6 - 1.4	1.6	0.8 - 3.4
Unable to Work	**11.3**	8.0 - 16.1	**7.5**	4.7 - 12.0

[1] Data Source: 2012 and 2016 Montana Behavioral Risk Factor Surveillance System
[2] Adjusted for sex, age, education, income, race/ethnicity, and employment status
[3] American Indian/Alaskan Native only
[4] Divorced, widowed, or separated

Age, education, income, race/ethnicity, and employment status were each independently associated with SPD. In the adjusted analysis, Montana adults aged 45-54 years were over three times as likely to experience SPD compared to adults aged 65 years and older (adjusted odds ratio [AOR]= 3.2, 95% Confidence Interval [CI]:1.6-6.2) (Table 2). Meanwhile, adults in age groups 18-34 years and 35-44 years were, respectively, two and three times as likely to experience SPD as adults aged 65 years and older (AOR= 2.4, 95% CI: 1.2-4.9 and 3.0, 95% CI: 1.3-6.6) (Table 2).

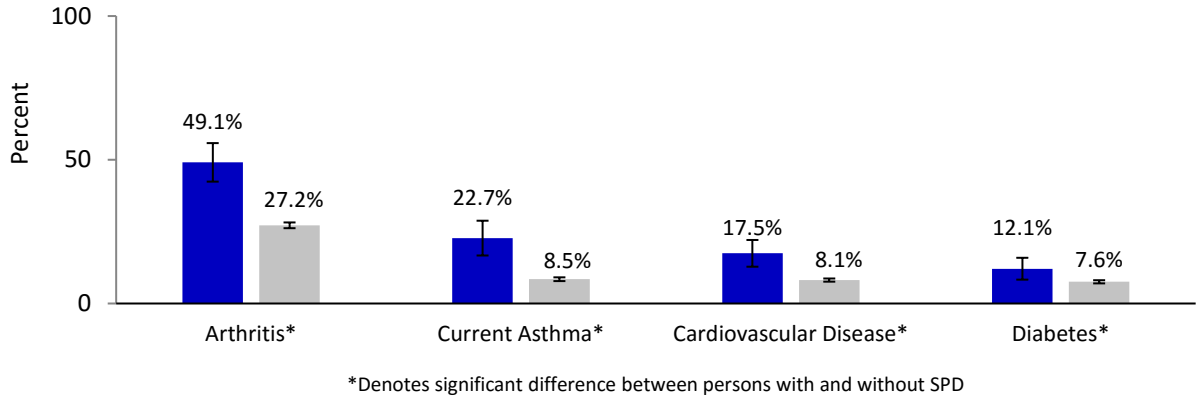
Lower income Montana adults were also more likely to experience SPD. Compared to adults with an annual household income of $50,000 or higher, adults with an annual household income of less than $25,000 or between $25,000 and $50,000 were, respectively, nearly three times and two times as likely to experience SPD (Table 2).

Furthermore, American Indian/Alaskan Native adults were almost twice as likely to experience SPD as white, non-Hispanic adults. Veterans, on the other hand, were less likely to experience SPD (AOR = 0.48; 95% CI: 0.3-0.8) than non-Veterans.

Finally, compared to employed adults, those unable to work were almost eight times more likely to experience SPD. Unemployed adults were three times as likely to experience SPD and homemakers and students were twice as likely to experience SPD. No significant difference was detected between retired adults and employed adults.

Chronic Conditions Among Montanan Adults with and without SPD

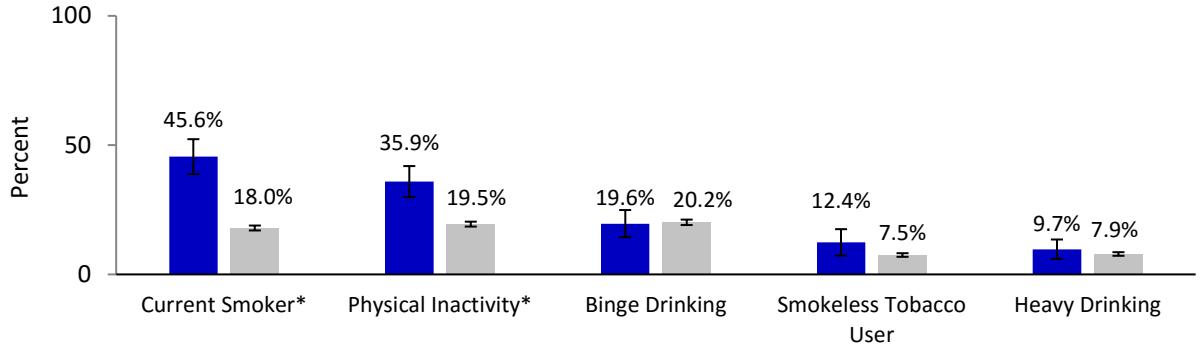
Figure 1: Prevalence of Select Chronic Conditions Among Montanan Adults with SPD Versus without SPD, 2012 & 2016



*Denotes significant difference between persons with and without SPD

Prevalence estimates for several chronic conditions, as well as some health risk behaviors, were significantly higher among adults with SPD compared to those without SPD. Almost half of all adults with SPD reported having arthritis (49.1%) and one in five reported currently having asthma (22.7%) (Figure 1). Additionally, the prevalence of cardiovascular disease (17.5%) and diabetes (12.1%) were also significantly higher among adults with SPD, compared to adults without SPD (Figure 1).

Figure 2: Prevalence of Select Health Risk Behaviors Among Montanan Adults with SPD Versus without SPD, 2012 & 2016



*Denotes significant difference between persons with and without SPD

Furthermore, nearly half (45.6%) of adults with SPD were current smokers and over one-third (35.9%) were physically inactive (Figure 2). By comparison, 18.0% of adults without SPD were current smokers and 19.5% were physically inactive (Figure 2).

Table 3. Unadjusted and Adjusted Odds Ratio (OR) Estimates of Serious Psychological Distress Among Montanan Adults by Select Chronic Conditions and Health Risk Behaviors, 2012 & 2016

Chronic Condition or Health Risk Behavior	Unadjusted OR[1]	95% CI	Adjusted OR[2]	95% CI
Current Asthma	**3.2**	2.2 - 4.5	**2.1**	1.3 - 3.3
Arthritis	**2.6**	2.0 - 3.4	**2.3**	1.6 - 3.3
Diabetes	**1.7**	1.2 - 2.4	1.1	0.7 - 1.7
Cardiovascular Disease	**2.4**	1.7 - 3.3	1.5	1.0 - 2.4
Heart Attack	**2.1**	1.4 - 3.3	1.4	0.8 - 2.6
Coronary Heart Disease	**1.7**	1.1 - 2.8	1.5	0.8 - 2.7
Stroke	**3.5**	2.3 - 5.4	1.7	0.9 - 3.3
Physical Inactivity	**2.3**	1.8 - 3.0	1.4	1.0 - 2.0
Current Smoker	**3.8**	2.9 - 5.0	**2.0**	1.4 - 2.8
Smokeless Tobacco User	**1.8**	1.1 - 2.8	**2.0**	1.1 - 3.5
Binge Drinking	1.0	0.7 - 1.4	0.9	0.6 - 1.4
Heavy Drinking	1.3	0.8 - 1.9	1.4	0.8 - 2.3
Binge or Heavy Drinking	1.0	0.7 - 1.4	1.0	0.6 - 1.4

[1] Referent category is absence of the given chronic condition or health risk behavior, statistically significant results are displayed in bold type

[2] Adjusted for sex, age, education, income, race/ethnicity, and employment status, statistically significant results are displayed in bold type

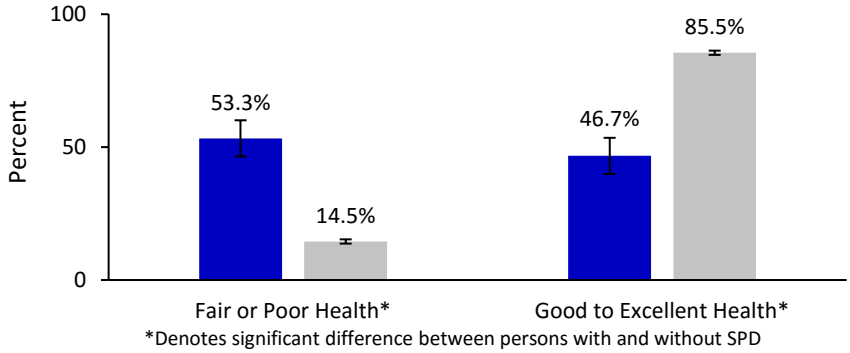
After adjusting for select demographic factors, adults with current asthma and adults diagnosed with arthritis were twice as likely to experience SPD as adults without current asthma or without arthritis respectively (Table 3).

Additionally, adults who reported being current smokers or smokeless tobacco users (including chewing tobacco, snuff, or snus) were twice as likely to report SPD as non-smokers and non-users respectively (Table 3).

General Health Status of Montanan Adults with and without SPD

Overall, adults with SPD reported worse general health than adults without SPD. Nearly one in two adults with SPD (53.3%) reported fair or poor general health (Figure 3). Meanwhile, almost nine out of ten adults without SPD (85.5%) reported good or excellent general health (Figure 3).

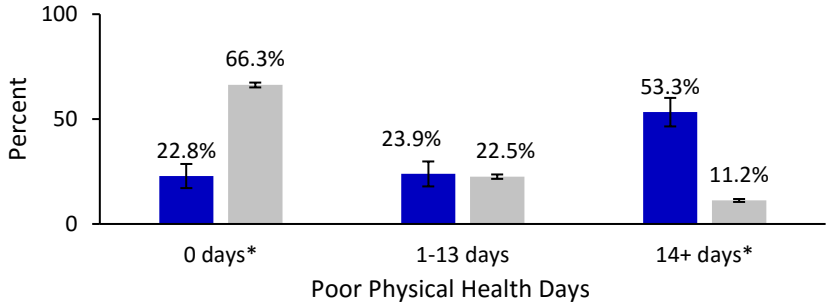
Figure 3: Self-Reported General Health Status
Montanan adults **with SPD** versus **without SPD**, 2012 & 2016



*Denotes significant difference between persons with and without SPD

The prevalence of poor physical health (14 or more days in the past 30) was greater among Montana adults with SPD (53.3%) than those without (11.2%) (Figure 4).

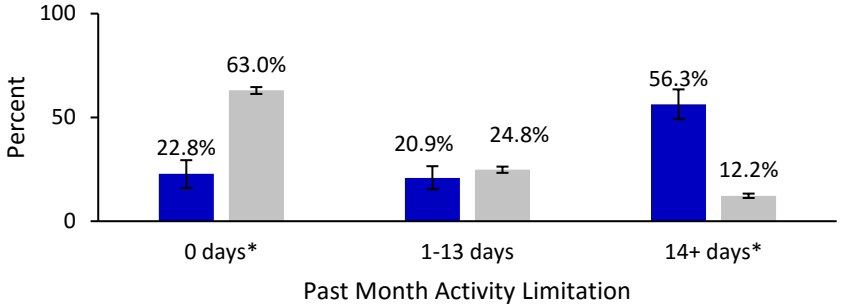
Figure 4: Self-Reported Past Month Physical Health Status
Montanan adults **with SPD** versus **without SPD**, 2012 & 2016



*Denotes significant difference between persons with and without SPD

Over half (56.3%) of adults with SPD reported being limited in their usual activities, such as self-care, work, or recreation, by poor physical or mental health on 14 or more days (within the last 30 days), compared to approximately 12% of adults without SPD (Figure 5).

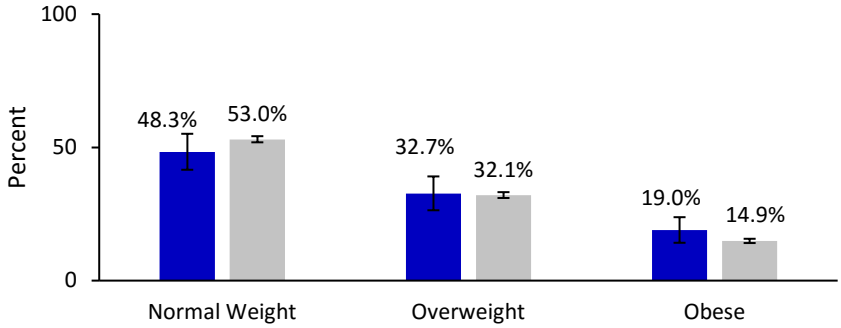
Figure 5: Self-Reported Past Month Activity Limitation
Montanan adults **with SPD** versus **without SPD**, 2012 & 2016



*Denotes significant difference between persons with and without SPD

No significant difference in weight status was detected between adults with and without SPD (Figure 6). Weight status was determined based on Body Mass Index (BMI), calculated from respondents' self-reported height and weight.

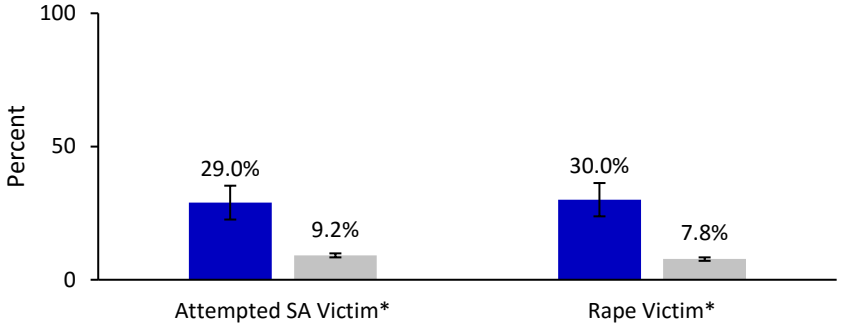
Figure 6: Self-Reported Weight Status
Montanan adults **with SPD** versus **without SPD**, 2012 & 2016



Normal Weight: BMI 18.5-24.9; Overweight: BMI 25-29.9; Obese: BMI 30+

The prevalence of being a victim of sexual violence was significantly higher among adults with SPD. Among adults with SPD, 29.0% reported ever being a victim of attempted sexual assault (SA), compared to 9.2% of adults without SPD (Figure 7). Furthermore, 30.0% of adults with SPD reported ever being a victim of rape, compared to 7.8% of adults without SPD (Figure 7).

Figure 7: Victim of Sexual Violence
Montanan adults **with SPD** versus **without SPD**, 2012 & 2016



*Denotes significant difference between persons with and without SPD

Table 4. Unadjusted and Adjusted Odds Ratio (OR) Estimates of Serious Psychological Distress Among Montanan Adults by Select Health and Social Statuses, 2012 & 2016

Condition or Behavior	Unadjusted OR[1]	95% CI	Adjusted OR[2]	95% CI
General Health Status				
Good to Excellent	Reference		Reference	
Fair or Poor	**6.7**	5.1 - 8.9	**3.5**	2.3 - 5.3
Poor Physical Health				
0 days	Reference		Reference	
1-13 days	**3.1**	2.1 - 4.6	**2.8**	1.8 - 4.3
14+ days	**13.8**	9.8 - 19.5	**8.8**	5.6 - 13.8
Days Usual Activity Limited due to Poor Health				
0 days	Reference		Reference	
1-13 days	**2.3**	1.5 - 3.7	**2.6**	1.6 - 4.1
14+ days	**12.7**	8.6 - 18.8	**10.3**	6.5 - 16.2
Weight Status				
Normal Weight	Reference		Reference	
Overweight	1.1	0.8 - 1.5	1.1	0.7 - 1.5
Obese	1.4	0.9 - 2.0	1.0	0.6 - 1.6
Victimization Status				
Attempted Sexual Assault Victim	**4.1**	3.0 - 5.6	**3.2**	2.2 - 4.6
Rape Victim	**5.1**	3.7 - 7.0	**3.5**	2.4 - 5.1

[1] OR = Unadjusted Odds Ratio, significant results in bold
[2] AOR = Adjusted Odds Ratio, adjusted for sex, age, education, income, race/ethnicity, and employment status, significant results in bold

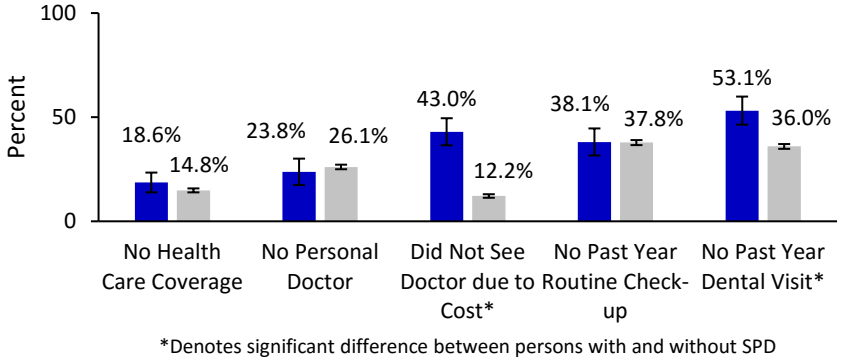
After adjusting for select demographic factors, adults with SPD were 3.5 times more likely to report fair or poor general health, 8.8 times more likely to report 14+ days of poor physical health, 10.3 times more likely to report 14+ days of activity limitation due to poor health, 3.2 times more likely to report ever being a victim of attempted sexual assault, and 3.5 times more likely to report ever being a victim of rape than adults without SPD (Table 4).

Access to Care and Healthcare Utilization Indicators Among Montanan Adults with and without SPD

Adults with SPD reported a higher prevalence of not seeing a doctor due to costs, 43.0% compared to 12.2%, and no dental visit in the past year, 53.1% compared to 36.0%. There was no significant difference in the prevalence of no health care coverage, no personal doctor, and no routine check-up in the past year among adults with SPD versus without SPD (Figure 8).

Figure 8: Access to Care and Preventative Care Utilization

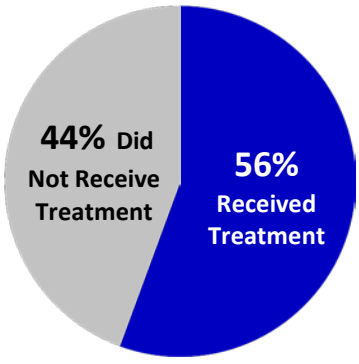
Montanan adults **with SPD** versus without SPD, 2012 & 2016



*Denotes significant difference between persons with and without SPD

Lastly, 56% of Montanan adults with SPD reported currently taking medicine or receiving some form of treatment from a doctor or other health professional for any type of mental health condition or emotional problem (Figure 9).

Figure 9: Prevalence of Mental Health Treatment Among Montanan Adults with SPD, 2012 & 2016



Recommendations to Promote Mental Well-Being Through Public Health Practice

Adults with serious psychological distress are more likely to report select chronic conditions and health risk behaviors, such as asthma, arthritis and tobacco use, than persons free of serious psychological distress. Thus, chronic disease prevention and management programs, as well as health promotion programs, should target and tailor interventions to persons with mental illnesses. Integration of care for physical and mental well-being may assist in reducing barriers to mental health care by increasing awareness about mental disorders, removing stigma, and decreasing healthcare costs.

Recommended Actions for Public Health Practioners:[3]

- Increase mental illness awareness and eliminate stigma
    - Provide accurate and timely information dispelling myths surrounding mental illness and facilitating informed
- Promote the effectiveness of treatment and improve access to mental health services
    - Actively promote available treatment resources and target programs and services to at risk populations
    - Identify mental health care shortage areas and allocate resources as appropriate
    - Ensure cultural competency

Acknowledgements

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