



Depression and anxiety disparities and comorbidities in Alaskan adults

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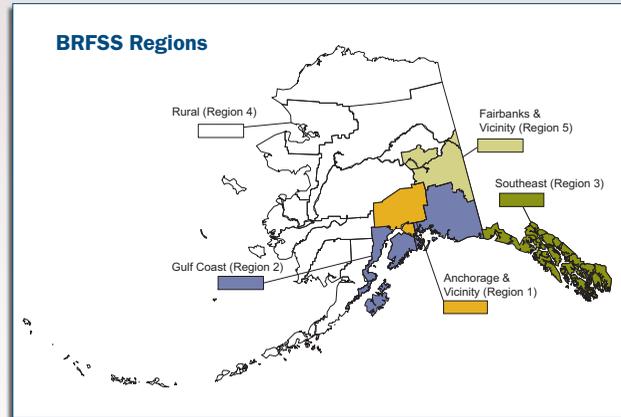
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Background

Prior to the 2006 Alaska BRFSS, there were no standardized population-based data measuring depression or anxiety among Alaskan adults. In 2006, the Anxiety and Depression Optional Module was implemented to provide estimates of Alaskan adults with current depression, lifetime diagnosis of depression and/or lifetime diagnosis of anxiety. The objective of this analysis was to examine the demographic distribution and chronic disease comorbidities of Alaskan adults with anxiety and/or depression.

Methods

The BRFSS is an ongoing random-digit-dial survey of non-institutionalized adults aged 18 years and older that is conducted in all 50 states, the District of Columbia and US territories. All BRFSS questionnaires and the BRFSS methods and weighting procedure are available on the CDC BRFSS website (www.cdc.gov/brfss). In Alaska, a stratified sampling plan was used and sample drawn from 5 regions defined by combinations of census areas and boroughs (Anchorage and Vicinity, Gulf Coast, Southeast, Rural, and Fairbanks and Vicinity).



Alaska BRFSS data from 2006 were used to examine the demographic characteristics and chronic disease status of Alaskans adults with current depression, lifetime diagnosis of depression and/or lifetime diagnosis of anxiety. Current depression was defined using the Patient Health Questionnaire-8 (PHQ-8), an 8-question scale included in the Anxiety and Depression Module. The response set of the PHQ-8 was standardized for the BRFSS by asking the number of days in the previous 2 weeks the person had experienced a particular depressive symptom. Four response categories were calculated, 0-1 day (0 points), 2 to 6 days (1 point), 7 to 11 days (2 points) and 12 to 14 days (3 points). Item scores were summed for a total score of 0 to 24. (1). For this analysis, the definition of current depression is a total score greater than or equal to 10 (moderate depression). The remaining two questions of the Anxiety and Depression Module assess lifetime diagnosis of depression or anxiety.

The BRFSS data were weighted to represent the distribution of Alaskan adults by sex, age and region. SAS v9 combined with SUDAAN were used to produce weighted percentages and 95% confidence intervals. Groups were considered significantly different if their confidence intervals did not overlap.

Results

The prevalence of current depression, lifetime diagnosis of depression and lifetime diagnosis of anxiety varied by demographics, chronic disease status and risk behavior status.

A. Demographic Distribution of Depression and Anxiety in Alaskan Adults

Table 1. Depression and Anxiety Status by Demographics, 2006 Alaska BRFSS

	Current Depression (PHQ-8 Score > 10)			Lifetime Diagnosis of Depression			Lifetime Diagnosis of Anxiety		
	Wt %	95% CI	N	Wt %	95% CI	N	Wt %	95% CI	N
Total	6.7%	5.4% - 8.2%	1,806	17.4%	15.4% - 19.7%	1,998	12.0%	10.2% - 14.1%	2,000
Sex									
Female	9.4%	7.2% - 12.3%	992	22.1%	19.1% - 25.4%	1,098	15.6%	12.9% - 18.1%	1,098
Male	4.0%	2.8% - 5.6%	814	13.1%	10.4% - 16.3%	900	8.6%	6.5% - 11.3%	902
Race									
White	5.8%	4.3% - 7.7%	1,310	18.4%	15.9% - 21.1%	1,410	12.2%	10.1% - 14.8%	1,412
American Indian/Alaska Native	10%	6% - 14%	281	10%	6.4% - 14.0%	341	9%	6% - 13%	340
Other (including multiracial)	8%	5% - 14%	204	20%	14% - 28%	233	14%	10% - 21%	235
Age									
18 - 24	10%	5% - 18%	147	19%	12% - 27%	162	13%	8% - 22%	163
25 - 34	6%	4% - 9%	310	17%	12% - 22%	329	13%	9% - 18%	329
35 - 44	7%	4% - 10%	373	17%	13% - 21%	406	11%	8% - 16%	405
45 - 64	6.2%	4.4% - 8.6%	762	20.1%	16.7% - 24.0%	841	12.6%	9.8% - 16.0%	840
65 years and older	5%	3% - 9%	214	8%	5% - 14%	260	7%	4% - 12%	263
Income									
< \$25,000	16%	10% - 23%	319	22%	17% - 29%	362	19%	14% - 25%	362
\$25 - \$34,999	10%	6% - 16%	181	23%	16% - 33%	208	12%	7% - 19%	207
\$35 - \$49,999	6%	3% - 10%	259	14%	10% - 20%	284	10%	7% - 16%	285
\$50,000 or more	3.1%	2.1% - 4.7%	892	16.1%	13.4% - 19.4%	945	10.1%	7.8% - 12.9%	945
Education									
High School Graduate or less	9.5%	6.8% - 13.1%	639	16.7%	13.4% - 20.6%	750	12.2%	9.4% - 15.5%	748
Some College	6.6%	4.6% - 9.2%	549	18.8%	15.1% - 23.3%	602	14.2%	10.7% - 18.5%	602
College Graduate	3.8%	2.4% - 6.0%	615	17.0%	13.6% - 21.0%	641	9.9%	7.2% - 13.4%	645
Employment Status									
Currently Employed	4.7%	3.4% - 6.5%	1,217	15.1%	12.9% - 17.7%	1,317	11.0%	8.9% - 13.5%	1,321
Currently Unemployed/ Unable to work	24%	16% - 33%	174	30%	22% - 39%	205	22%	15% - 30%	205
Retired/Homemaker/Student	6%	4% - 8%	408	19%	14% - 25%	461	11%	7% - 15%	461
Marital Status									
Currently Married	3.6%	2.5% - 5.1%	1,003	14.0%	11.6% - 16.8%	1,094	10.0%	7.9% - 12.6%	1,095
Divorced/Separated/Widowed	13%	9% - 18%	421	26%	21% - 32%	485	17%	13% - 23%	486
Never Married/Member unmarried couple	11%	8% - 16%	376	21%	17% - 27%	409	14%	10% - 19%	410
Geographic Region of Residence									
Anchorage and Vicinity	6%	4% - 8%	437	18%	15% - 22%	472	12%	9% - 16%	472
Gulf Coast	9%	6% - 13%	385	18%	14% - 23%	425	12%	10% - 18%	426
Southeast	7%	5% - 11%	330	17%	13% - 21%	371	12%	9% - 17%	373
Rural	9%	5% - 13%	283	10%	7% - 14%	326	7%	4% - 11%	324
Fairbanks and Vicinity	7%	4% - 10%	371	20%	16% - 25%	404	13%	10% - 17%	405

Females, respondents who were currently unemployed or unable to work and divorced, separated or widowed respondents were more likely to have current depression, lifetime diagnosis of depression and lifetime diagnosis of anxiety than respondents in other demographic groups. Alaskans with household income less than \$25,000 were associated with higher prevalences of both current depression and lifetime diagnosis of anxiety than those in the highest income group.

There were no significant differences between race groups; however, American Indian or Alaska Native adults had the highest prevalence of current depression and the lowest prevalence of lifetime diagnosis of depression, suggesting possible underdiagnosis of depression in this group. A similar pattern is seen comparing the Alaskans living in the Rural region to other regions.

B. Risk Factor Distribution and Comorbidities of Depression and Anxiety in Alaskan Adults

Table 2. Depression and Anxiety Status by Chronic Disease and Risk Factor Status, 2006 Alaska BRFSS

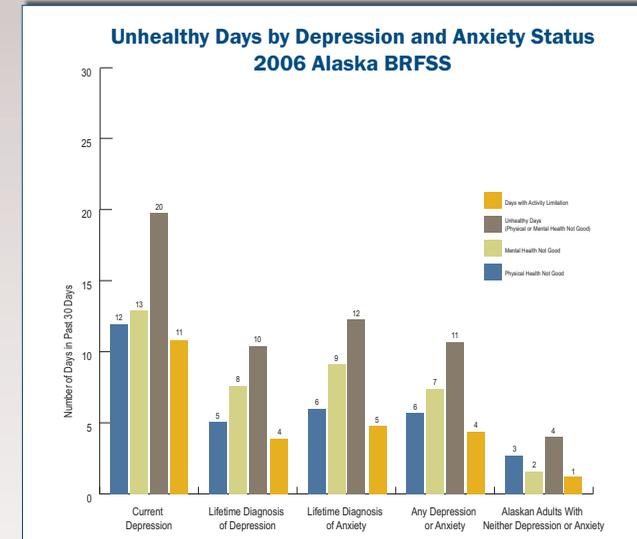
	Current Depression (PHQ-8 Score > 10)			Lifetime Diagnosis of Depression			Lifetime Diagnosis of Anxiety		
	Wt %	95% CI	N	Wt %	95% CI	N	Wt %	95% CI	N
General Health Status									
Excellent/Very Good	2.8%	1.9% - 4.1%	1,038	13.9%	11.4% - 16.8%	1,108	9.4%	7.2% - 12.2%	1,112
Good	7.4%	4.7% - 11.7%	505	18.7%	15.0% - 23.0%	588	12.7%	9.7% - 16.6%	585
Fair/Poor	24%	18% - 31%	259	31%	24% - 38%	295	23%	17% - 29%	297
Social and Emotional Support									
Always/Usually	4.2%	3.1% - 5.7%	1,412	15.0%	12.8% - 17.5%	1,520	10.9%	9.2% - 13.0%	1,889
Sometimes/Rarely/Never	17%	13% - 23%	376	28%	23% - 34%	445	DSU	DSU	86
Disability									
Yes	17%	13% - 22%	422	31%	26% - 37%	484	23%	18% - 28%	482
No	3.7%	2.6% - 5.3%	1,364	13.4%	11.3% - 15.9%	1,488	9.1%	7.2% - 11.3%	1,492
Binge Drinking									
Yes	7%	4% - 13%	297	16%	13% - 25%	314	12%	8% - 18%	314
No	6.4%	5.1% - 8.0%	1,469	17.3%	15.1% - 19.8%	1,627	11.8%	9.9% - 14.1%	1,628
Heavy Drinking									
Yes	7%	3% - 13%	105	19%	11% - 30%	110	6%	4% - 17%	112
No	6.5%	5.2% - 8.2%	1,655	17.2%	15.1% - 19.6%	1,823	12.0%	10.1% - 14.1%	1,822
Smoking Status									
Current	11%	8% - 16%	444	24%	19% - 30%	485	15%	11% - 19%	485
Former	6.8%	4.7% - 9.8%	533	16.9%	13.4% - 21.0%	587	13.0%	9.9% - 16.9%	588
Never	4.5%	3.1% - 6.5%	823	14.6%	11.9% - 17.8%	916	10.3%	7.8% - 13.4%	918
Obese (BMI >= 30)									
Yes	9.4%	6.3% - 13.8%	501	20.9%	16.7% - 25.9%	557	16.4%	12.6% - 20.9%	555
No	5.7%	4.4% - 7.3%	1,260	15.9%	13.6% - 18.6%	1,381	10.1%	8.2% - 12.5%	1,385
Leisure Time Physical Activity									
Yes	4.8%	3.7% - 6.2%	1,414	16.6%	14.3% - 19.2%	1,531	11.8%	9.8% - 14.1%	1,534
No	14%	10% - 19%	390	20%	16% - 26%	463	13%	10% - 18%	462
Lifetime Anxiety									
Yes	22%	16% - 30%	212	62%	53% - 69%	236	100%		242
No	4.4%	3.2% - 5.9%	1,584	11.7%	9.8% - 13.8%	1,750			
Lifetime Depression									
Yes	19%	14% - 24%	327	100%		366	41%	34% - 48%	365
No	4.0%	2.9% - 5.6%	1,469				5.4%	4.1% - 7.0%	1,621
Any CVD (heart attack, CAD or stroke)									
Yes	DSU	DSU	131	26%	18% - 35%	151	16%	10% - 23%	154
No	5.8%	4.7% - 7.3%	1,662	16.8%	14.7% - 19.2%	1,830	11.6%	9.8% - 13.8%	1,829
Diabetes (non-gestational)									
Yes	12%	7% - 19%	123	19%	12% - 28%	137	13%	8% - 21%	137
No	6.3%	5.0% - 8.0%	1,662	17.3%	15.2% - 19.7%	1,860	11.9%	10.1% - 14.1%	1,862
Asthma									
Yes	13%	9% - 18%	276	29%	23% - 36%	297	23%	17% - 29%	293
No	5.6%	4.3% - 7.3%	1,528	15.4%	13.2% - 17.8%	1,699	10.3%	8.5% - 12.4%	1,704

DSU = Data do not meet the criteria for statistical reliability (data based on less than 50 respondents (N) or confidence interval half-width greater than 10)

Among Alaskan adults, those who reported fair or poor general health status, those with a disability and those who had ever been told they have asthma had significantly higher prevalences of current depression, lifetime diagnosis of depression and lifetime diagnosis of anxiety than those without these conditions. Sometimes, rarely or never getting the social and emotional support you need and current smoking were associated with higher prevalences of both current and lifetime diagnosis of depression. Obese Alaskans had a higher prevalence of lifetime diagnosis of anxiety than those who were not obese.

There was a high level of comorbidity of depression and anxiety. Alaskan adults with lifetime diagnosis of anxiety reported a significantly higher prevalence of current depression and lifetime diagnosis of depression than those without lifetime diagnosis of anxiety. In addition, Alaskans with lifetime diagnosis of depression reported a significantly higher prevalence of current depression and lifetime diagnosis of anxiety than those without lifetime diagnosis of depression.

C. Unhealthy Days Distribution and Depression and Anxiety in Alaskan Adults



All depression and anxiety groups reported more frequent unhealthy days in the past 30 days than Alaskans without current depression (PHQ-8 score <= 10), lifetime diagnosis of depression or lifetime diagnosis of anxiety. As might be expected, Alaskans with current depression reported the highest number of unhealthy days in the past 30 days.

Conclusions

The Anxiety and Depression module on the 2006 Alaska BRFSS provided a substantial amount of baseline data on anxiety and depression among Alaskan adults. The repeat of the PHQ-8 on the 2008 BRFSS will allow more detailed analysis of current depression.

The high level of comorbidity of measures of mental health with chronic disease and its risk factors suggests chronic disease programs need to collaborate with the behavioral health field on surveillance of mental health as well as physical conditions. Both depression and anxiety need to be examined because of the high level of comorbidity between the two conditions. The possible underdiagnosis of depression in American Indian or Alaska Native adults and those who live in the Rural region should be examined more closely.



(1) Kroenke K, Spitzer RL. The PHQ-9: a new depression diagnostic and severity measure. Psychiatr Ann 2002; 32(9):1-7.



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