

Variables Statistically Associated with Mental Health Among United States Adults with Asthma in the Medical Expenditure Panel Survey

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Pharmacy

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Background

- Asthma involves chronic respiratory inflammation and restriction of the airways.
- Mental health is a prominent and contemporary health issue that affects many people with respiratory diseases.
- Poor mental health can exacerbate other health problems and further deteriorate overall wellbeing.
- Similarly, those suffering from poor mental health can experience an increased risk of asthma.
- Several variables may be statistically associated with mental health among United States (US) adults with asthma, which warrant investigation.

Objectives

- This study aimed to identify and describe the magnitude of association for variables statistically associated with mental health among US adults with asthma.

Methods

- This database study of US adults with asthma used the Medical Expenditure Panel Survey data.
- A multivariable logistic model assessed statistical associations between the following variables and good versus poor mental health (dependent variable): age, sex, ethnicity, race, marriage, income, education, employment, health provision, physical health, physical activity, smoking status, pain level, and any limitations.
- The threshold for statistical significance was 0.05.
- A weighted analysis produced nationally representative data.

Table 1

Characteristics of United States adults in the weighted study population		
	Good Mental Health % (95% CI)	Poor Mental Health % (95% CI)
Age ≥70 years	13.4 (11.4, 15.3)	10.4 (7.6, 13.1)
Age 60-69 years	14.2 (12.4, 15.9)	16.5 (12.5, 20.5)
Age 50-59 years	15.8 (13.7, 17.9)	16.2 (11.7, 20.6)
Age 40-49 years	14.2 (12.2, 16.2)	14.9 (10.2, 19.6)
Age 30-39 years	19.6 (17.0, 22.2)	18.5 (13.8, 23.3)
Age 18-29 years	22.9 (20.1, 25.8)	23.5 (17.7, 29.3)
Male	42.0 (38.7, 45.2)	40.6 (34.6, 46.6)
White	73.8 (70.6, 77.1)	73.8 (68.3, 79.3)
Black	16.7 (13.7, 19.6)	14.3 (9.9, 18.6)
American Indian/Alaska native	1.2 (0.6, 1.8)	2.2 (0.1, 4.3)
Asian/Native Hawaiian/Pacific Islander	5.4 (3.1, 7.7)	3.5 (0.7, 6.4)
Multiple races	2.9 (2.1, 3.8)	6.2 (3.4, 8.9)
Hispanic	12.9 (10.9, 15.0)	16.1 (10.9, 21.4)
≤High school education	38.7 (35.3, 42.1)	53.9 (47.8, 60.0)
Employed	66.8 (64.0, 69.5)	48.6 (42.3, 54.8)
Private health provision	66.5 (63.4, 69.6)	43.8 (38.1, 49.6)
Public health provision	28.9 (26.0, 31.7)	50.9 (44.9, 56.9)
Married	47.6 (44.2, 51.1)	37.9 (30.8, 45.1)
Low income	27.3 (24.0, 30.6)	51.1 (45.2, 56.9)
Good physical health	87.3 (85.6, 89.0)	33.1 (27.1, 39.0)
Regular physical activity	53.0 (49.7, 56.3)	32.7 (26.4, 38.9)
Current smoker	10.6 (8.9, 12.2)	24.0 (18.6, 29.4)
Quite a bit/extreme pain	24.7 (20.5, 28.9)	47.5 (40.3, 54.6)
Any limitation	24.2 (21.7, 26.7)	59.3 (53.5, 65.1)

CI = confidence interval. Differences between groups were compared using chi-square tests. There were differences between groups for all variables except age, sex, and ethnicity.

Table 2

Associations of variables with mental health status among United States adults with asthma	
Characteristic	Good vs. Poor Mental Health Odds Ratio (95% CI)
Age ≥70 vs. 18-29 years	6.2 (2.7, 14.1)
Age 60-69 vs. 18-29 years	4.6 (2.1, 10.1)
Age 50-59 vs. 18-29 years	5.0 (2.2, 11.0)
Age 40-49 vs. 18-29 years	1.9 (0.9, 4.1)
Age 30-39 vs. 18-29 years	1.3 (0.5, 3.1)
Male vs. female	0.9 (0.6, 1.5)
White vs. multiple races	1.2 (0.5, 2.8)
Black vs. multiple races	1.3 (0.5, 3.3)
American Indian/Alaska native vs. multiple races	1.3 (0.3, 5.7)
Asian/Native Hawaiian/Pacific Islander vs. multiple races	1.3 (0.4, 3.6)
Hispanic vs. not-Hispanic	0.6 (0.3, 1.3)
≤ vs. > high school education	0.7 (0.5, 1.1)
Employed vs. unemployed	1.3 (0.8, 2.3)
Private vs. no health provision	0.9 (0.3, 2.6)
Public vs. no health provision	0.9 (0.3, 2.8)
Married vs. not married	1.0 (0.7, 1.5)
Low vs. mid-high income	0.8 (0.5, 1.2)
Good vs. poor health	6.9 (4.3, 10.9)
Regular exercise yes vs. no	1.1 (0.7, 1.8)
Current smoker yes vs. no	0.7 (0.4, 1.2)
Quite a bit/extreme vs. little/moderate pain	0.9 (0.6, 1.4)
Any vs. no limitation	0.6 (0.3, 1.1)

Statistically significant results indicated in bold font.

Conclusions

- This study found older age groups and physical health status were significantly associated with mental health among a nationally representative analysis of US adults with asthma, although future work is needed to assess how these variables may be informative for campaigns related to mental health in this population.

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