

A Retrospective Medical Expenditure Panel Survey Database Study Assessing the Factors Associated with Health Status Among United States Adults with Asthma

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Background

- Asthma is a respiratory disease exemplified by chronic inflammation and airway restriction.
- Physical health among individuals with asthma can be influenced by symptoms, severity, exacerbations, risk factors, triggers, response to treatment, genetics, etc.
- Various factors may be associated with the health status of people with asthma that have not been previously investigated.

Objectives

- The objective of this study was to assess the factors associated with health status among United States (US) adults with asthma.

Methods

- This retrospective Medical Expenditure Panel Survey study dataset and included US adults (≥18 years) diagnosed with asthma.
- A multivariable logistic model assessed the association between the following factors and the dependent variable (good vs. poor health status): age, sex, race, ethnicity, education, employment, health provision, marriage, income, mental health, regular physical activity, current smoker, pain, and limitations.
- The analysis was weighted to produce nationally representative estimates.
- The complex survey data structure was maintained using cluster and strata variables.
- The statistical significance threshold was 0.05.

Table 1

Characteristics of United States adults in the weighted study population		
	Good Health % (95% CI)	Poor Health % (95% CI)
Age ≥70 years	11.8 (10.0, 13.6)	16.9 (13.1, 20.8)
Age 60-69 years	12.6 (10.9, 14.4)	21.5 (17.6, 25.5)
Age 50-59 years	14.2 (12.0, 16.3)	22.0 (17.4, 26.5)
Age 40-49 years	14.5 (12.3, 16.6)	13.7 (9.9, 17.5)
Age 30-39 years	21.0 (18.3, 23.7)	13.7 (9.6, 17.8)
Age 18-29 years	26.0 (22.8, 29.2)	12.1 (8.3, 16.0)
Male	43.0 (39.7, 46.4)	37.0 (32.1, 42.0)
White	74.1 (70.9, 77.4)	72.7 (67.8, 77.7)
Black	16.6 (13.6, 19.6)	15.2 (11.3, 19.1)
American Indian/Alaska native	1.3 (0.6, 2.0)	1.4 (0.3, 2.5)
Asian/Native Hawaiian/Pacific Islander	5.3 (3.1, 7.4)	4.5 (1.6, 7.5)
Multiple races	2.7 (1.9, 3.5)	6.1 (3.5, 8.7)
Hispanic	13.7 (11.6, 15.8)	12.6 (9.3, 15.9)
≤High school education	38.1 (34.6, 41.5)	52.3 (46.8, 57.8)
Employed	70.2 (67.2, 73.2)	40.7 (34.8, 46.6)
Private health provision	69.2 (66.0, 72.5)	39.6 (33.9, 45.3)
Public health provision	26.3 (23.3, 29.3)	54.9 (49.2, 60.6)
Married	47.9 (44.2, 51.6)	39.4 (33.5, 45.3)
Low income	25.5 (22.4, 28.7)	51.5 (45.7, 57.3)
Good mental health	93.3 (91.8, 94.7)	50.0 (44.9, 55.0)
Regular physical activity	56.0 (52.6, 59.4)	26.9 (22.0, 31.8)
Current smoker	10.0 (8.3, 11.7)	22.5 (18.4, 26.6)
Quite a bit/extreme pain	15.7 (12.0, 19.3)	55.5 (49.3, 61.7)
Any limitation	18.9 (16.7, 21.1)	69.8 (64.5, 75.0)

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

Table 2

Associations of variables with physical health status among United States adults with asthma	
Characteristic	Good vs. Poor Health Odds Ratio (95% CI)
Age ≥70 vs. 18-29 years	1.0 (0.4, 2.4)
Age 60-69 vs. 18-29 years	0.8 (0.3, 1.8)
Age 50-59 vs. 18-29 years	0.5 (0.2, 1.2)
Age 40-49 vs. 18-29 years	0.7 (0.3, 1.8)
Age 30-39 vs. 18-29 years	0.8 (0.3, 2.1)
Male vs. female	0.9 (0.6, 1.4)
White vs. multiple races	1.2 (0.6, 2.5)
Black vs. multiple races	1.1 (0.5, 2.5)
American Indian/Alaska native vs. multiple races	1.2 (0.4, 3.9)
Asian/Native Hawaiian/Pacific Islander vs. multiple races	1.0 (0.4, 2.8)
Hispanic vs. not-Hispanic	0.9 (0.5, 1.6)
≤High school vs. >high school education	1.1 (0.7, 1.6)
Employed vs. unemployed	0.9 (0.6, 1.4)
Private vs. no health provision	2.6 (1.1, 6.3)
Public vs. no health provision	1.8 (0.7, 4.4)
Married vs. not married	1.1 (0.7, 1.7)
Low vs. mid-high income	0.7 (0.5, 1.0)
Good vs. poor mental health	6.8 (4.3, 10.7)
Regular exercise yes vs. no	2.2 (1.4, 3.3)
Current smoker yes vs. no	1.2 (0.7, 2.0)
Quite/extreme vs. little/mod pain	0.3 (0.2, 0.4)
Any limitation vs. no limitation	0.3 (0.2, 0.4)

Statistically significant results indicated in bold font.

Conclusions

- This study reports the factors significantly associated with good health status among US adults with asthma. The results of this study may be helpful for targeting interventions to improve the health of US adults with asthma. Additional studies are needed to determine any temporal associations between these findings.

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