

Exploring the association of pain severity and perceived health status among United States adults using 2019 nationally representative data

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Objective

- Perceived health is associated with morbidity and mortality.
- There is limited contemporary data assessing the association between pain severity and health status
- This study aimed to assess the association of pain severity and other variables with perceived health status among United States adults.

Methods

- This retrospective, cross sectional study included United States adults aged ≥ 18 years in 2019 Medical Expenditure Panel Survey.
- Logistic regression models were used to identify statistical associations between pain severity and perceived health status and were adjusted for potentially confounding variables.
- The complex survey design was maintained while nationally representative estimates were obtained.

Results

- The weighted sample consisted of 242,169,897 United States adults.
- Excellent/very good/good perceived health = 88.1% (95% confidence interval [CI]=87.4%-88.8%).
- Fair/poor perceived health = 11.9% (95% CI=11.2%-12.6%).

Table 1

Characteristics of United States adults stratified by perceived health status in the 2019 Medical Expenditure Panel Survey			
Variable	Good perceived health N= 213,316,714 Weighted % (95% CI)	Poor perceived health N= 28,853,183 Weighted % (95% CI)	P value
Extreme pain	0.7 (0.5, 0.8)	12.1 (10.5, 13.6)	<0.0001
Quite a bit of pain	3.6 (3.2, 3.9)	22.3 (20.2, 24.4)	
Moderate pain	6.1 (5.6, 6.5)	15.8 (14.0, 17.7)	
Little pain	21.2 (20.3, 22.0)	23.7 (21.7, 25.6)	
18-39 years old	39.8 (38.7, 41.0)	21.4 (19.4, 23.4)	<0.0001
Female	51.4 (50.7, 52.1)	54.0 (51.8, 56.1)	0.0329
White	78.0 (76.5, 79.5)	77.4 (74.8, 80.0)	0.6246
Non-Hispanic	83.6 (81.9, 85.3)	82.3 (79.4, 85.2)	0.2457
More than high school education	62.5 (61.0, 64.0)	45.1 (42.4, 47.8)	<0.0001
Employed	71.5 (70.5, 72.4)	42.8 (40.3, 45.2)	<0.0001
Private insurance	71.7 (70.3, 73.1)	47.8 (45.3, 50.2)	<0.0001
Married	53.1 (51.9, 54.3)	44.8 (42.2, 47.5)	<0.0001
Middle/high income	76.4 (75.2, 77.6)	55.1 (52.2, 58.0)	<0.0001
Excellent/very good/good mental health	96.1 (95.7, 96.5)	58.3 (55.8, 60.8)	<0.0001
Exercise ≥ 30 mins ≥ 5 times/week	53.9 (52.7, 55.1)	29.3 (26.9, 31.7)	<0.0001
Non-smoker	87.3 (86.5, 88.1)	76.1 (73.7, 78.5)	<0.0001
<2 comorbid conditions	62.5 (61.4, 63.6)	24.7 (22.7, 26.7)	<0.0001
95% CI = 95% confidence interval.			

Table 2

Associations between pain severity and fair/poor (versus excellent/very good/good) health status among United States adults	
Variable	Adjusted Odds Ratio (95% CI)
Extreme vs no pain	12.7 (9.3, 17.3)
Quite a bit vs no pain	6.5 (5.3, 7.9)
Moderate vs no pain	3.4 (2.8, 4.1)
Little vs no pain	1.9 (1.7, 2.3)
Age ≥ 65 vs 18-39 years	0.9 (0.7, 1.1)
Age 40-64 vs 18-39 years	1.2 (1.0, 1.5)
Male vs female	1.2 (1.1, 1.4)
White vs other race	0.9 (0.7, 1.0)
Hispanic vs non-Hispanic	1.6 (1.3, 1.9)
High school or less vs more than high school education	1.3 (1.1, 1.5)
Employed vs unemployed	0.8 (0.7, 0.9)
Private vs uninsured	0.8 (0.6, 1.1)
Public vs uninsured	1.0 (0.7, 1.3)
Married vs other	1.0 (0.8, 1.1)
Poor/near poor/low vs. middle/high income	1.3 (1.1, 1.5)
Excellent/very good/good vs. fair/poor mental health	0.1 (0.1, 0.1)
Exercises ≥ 30 mins, ≥ 5 times/week yes vs. no	0.5 (0.4, 0.6)
Smoker yes vs. no	1.5 (1.3, 1.8)
Comorbid conditions <2 vs. ≥ 2	0.3 (0.3, 0.4)
95% CI = 95% confidence interval. Bold indicates the characteristic has a significant association with perceived health ($p < 0.05$)	

Conclusions

- This study found greater levels of pain severity were associated with greater odds of reporting fair/poor self-perceived health.
- Several other variables were also associated with greater odds of reporting fair/poor self-perceived health.