

Assessing the association between pain severity and poor perceived mental health among United States adults using the MEPS 2019 data

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Objective

- The prevalence of pain and mental health conditions are increasing in the United States (US).
- Individuals with pain are at risk for mental health problems.
- This study investigated the association between pain severity and self-perceived poor mental health status among US adults.

Methods

- This retrospective, cross-sectional study included participants from the Medical Expenditure Panel Survey 2019 full-year consolidated data file who were ≥18 years, alive for the full calendar year, and had data available for pain status.
- Hierarchical logistical regression analysis assessed statistically significant associations between pain severity and other confounding variables with poor perceived mental health.
- The a priori alpha level was 0.05

Results

- The weighted population was 242,169,897 US adults (poor/fair mental health=20,327,445, good/very good/excellent mental health=221,842,452).

Table 1

Select characteristics of United States adults stratified by poor versus good perceived mental health status (N=17261)			
Variables	Poor Perceived Mental Health N= 1667 Weighted % (95% CI)	Good Perceived Mental Health N= 15594 Weighted % (95% CI)	p
Extreme pain	10.1 (8.5, 11.9)	1.3 (1.1, 1.5)	<0.0001
Quite a bit of pain	18.9 (16.8, 21.0)	4.6 (4.2, 5.0)	
Moderate pain	13.5 (11.6, 15.3)	6.7 (6.2, 7.1)	
Little pain	23.8 (21.5, 26.1)	21.2 (20.5, 22.0)	
18-39 years old	35.0 (31.9, 38.0)	37.9 (36.8, 39.0)	0.0012
Female	57.4 (54.6, 60.3)	51.2 (50.6, 51.8)	<0.0001
White	78.5 (75.9, 81.1)	77.9 (76.3, 79.4)	0.6259
Non-Hispanic	83.6 (80.9, 86.4)	83.4 (81.7, 85.1)	0.8514
Married	37.2 (34.0, 40.5)	53.5 (52.3, 54.6)	<0.0001
Moderate/high income	54.0 (50.3, 57.7)	75.7 (74.4, 76.9)	<0.0001
More than high school education	47.4 (44.1, 50.6)	61.7 (60.2, 63.1)	<0.0001
Employed	46.7 (43.4, 50.0)	70.0 (69.0, 71.0)	<0.0001
No health insurance	5.8 (4.3, 7.2)	7.7 (6.8, 8.5)	<0.0001
No IADL	84.3 (82.3, 86.4)	98.0 (97.7, 98.2)	<0.0001
No ADL	89.7 (88.0, 91.4)	98.9 (98.7, 99.1)	<0.0001
<2 chronic conditions	36.4 (33.5, 39.3)	59.9 (58.9, 61.0)	<0.0001
Fair/poor health	40.8 (37.6, 43.9)	92.4 (91.9, 92.9)	<0.0001
Regular exercise	31.2 (28.3, 34.0)	52.8 (51.6, 54.0)	<0.0001
Non-smoker	75.8 (73.0, 78.5)	86.9 (86.1, 87.7)	<0.0001

95% CI = 95% confidence interval. IADL = instrumental activities of daily living. ADL = activities of daily living.

Table 2

Association of pain severity with poor (versus good) perceived mental health among United States adults	
Factor	Adjusted Odds Ratio (95% CI)
Extreme vs no pain	2.0 (1.4, 2.9)
Quite a bit vs no pain	2.3 (1.8, 2.9)
Moderate vs no pain	1.8 (1.4, 2.3)
Little vs no pain	1.6 (1.3, 1.9)
Age ≥65 vs 18-39 years	0.4 (0.3, 0.5)
Age 40-64 vs 18-39 years	0.5 (0.5, 0.7)
Male vs female	0.9 (0.8, 1.0)
White vs other race	1.3 (1.1, 1.6)
Hispanic vs non-Hispanic	1.0 (0.8, 1.2)
Married vs other marital status	0.7 (0.6, 0.8)
Poor/near poor/low vs middle/high income	1.3 (1.1, 1.5)
Up to and including vs less than high school education	1.1 (0.9, 1.3)
Employed vs unemployed	0.8 (0.7, 1.0)
Private vs no health insurance	1.2 (0.9, 1.6)
Public vs no health insurance	1.5 (1.1, 2.0)
IADL limitation yes vs no	1.8 (1.3, 2.4)
ADL limitation yes vs no	1.8 (1.3, 2.6)
≥2 vs <2 chronic conditions	1.3 (1.0, 1.6)
Fair/poor vs excellent/very good/good perceived health	0.1 (0.1, 0.1)
Regular vs no regular exercise	0.7 (0.6, 0.8)
Smoker vs non-smoker	1.3 (1.1, 1.6)

95% CI = 95% confidence interval. IADL = instrumental activities of daily living. ADL = activities of daily living.

Conclusions

- Pain severity and other variables were significantly associated with reporting poor perceived mental health among US adults.
- These findings may help implement multidomain pain and mental health care strategies to improve health outcomes.