



MICHIGAN BRFSS SURVEILLANCE BRIEF

A NEWSLETTER FROM THE CHRONIC DISEASE EPIDEMIOLOGY UNIT, MDCH

Major Depression and Arthritis Among Michigan Adults

Background. The prevalence of major depression among adults in Michigan has been associated with adverse general health status and health risk behaviors. Compared to adults without major depression, adults with major depression in 2006 were six times more likely to report their general health as fair or poor, 50% more likely to be current smokers and 80% more likely to not engage in any leisure-time physical activity.¹ Arthritis and unmet health care needs may contribute to these relationships. In a national survey, major depression was found to be substantially related to arthritis, due in part to the elevated levels of functional limitations experienced by adults with both conditions.² In a study of arthritis patients under the care of a rheumatologist, depression was also significantly associated with restricted activity, and few patients reported receiving care for their psychosocial problems.³

Methods. One question focusing on doctor-diagnosed arthritis and ten questions related to anxiety and depression were included as state-added questions within the 2010 Michigan Behavioral Risk Factor Survey (MiBRFS). The first eight questions within the anxiety and depression module were from the Patient Health Questionnaire 8 (PHQ-8). The PHQ-8 questions focused on eight of the nine DSM-IV criteria for diagnosis of major depression and asked respondents questions related to their mood in the past two weeks. Responses to these eight questions were combined to form an indicator for major depression (Table 1). Prevalence rates of major depression by arthritis status were calculated in order to examine differences between adults with and without arthritis. In addition, the prevalence of selected health indicators and risk factors among Michigan adults with arthritis were calculated by major depression status in order to examine the impact of major depression on Michigan adults with arthritis.

Results. In 2010, 9.4% (8.3-10.6) of Michigan adults were classified as having major depression. The prevalence of major depression was significantly higher among adults with doctor-diagnosed arthritis (14.7%) when compared to adults without arthritis (6.9%) [Table 1]. The prevalence of major depression decreased with increasing age, education, and household income level among both the arthritis and non-arthritis populations. In addition, the prevalence of major depression did not differ by gender and race/ethnicity within both of these subpopulations. Furthermore, when compared to adults without arthritis, adults with doctor-diagnosed arthritis had significantly higher rates of major depression among all age, gender, and education levels, as well as among White, non-Hispanics and adults with household incomes of < \$35,000.

When examining the prevalence of selected health indicators and risk factors by major depression status among adults with arthritis many significant results were reported (Table 2). Compared to adults with arthritis but no major depression, adults

Table 1. Prevalence of Major Depression¹ among Michigan Adults by Arthritis Status, 2010 MiBRFS

	Population Without Arthritis	Population with Arthritis
	% (95% CI)	% (95% CI)
Total	6.9 (5.7-8.4)	14.7 (12.6-17.0)
Age		
18 - 44	8.5 (6.6-10.8)	30.9 (23.2-39.8)
45 - 64	5.3 (4.1-6.9)	14.3 (12.1-16.9)
65 +	1.9 (1.0-3.6)	5.1 (3.9-6.7)
Gender		
Male	6.2 (4.5-8.5)	12.4 (9.1-16.7)
Female	7.7 (6.1-9.7)	16.3 (13.8-19.1)
Race/Ethnicity		
White, non-Hispanic	6.4 (5.1-7.9)	14.2 (12.0-16.7)
Black, non-Hispanic	10.0 (6.2-15.7)	14.5 (9.5-21.4)
Other, non-Hispanic	10.5 (4.9-21.2)	24.3 (13.1-40.5)
Hispanic	9.9 (3.5-24.9)	---
Education		
< High school	14.8 (8.4-24.8)	30.6 (20.9-42.5)
HS grad or some college	9.0 (7.2-11.3)	15.4 (12.8-18.5)
College graduate	2.8 (1.9-4.3)	9.3 (6.7-12.9)
Household Income		
< \$35,000	12.8 (10.0-16.3)	24.9 (21.2-29.1)
\$35,000 - \$74,999	6.7 (4.6-9.8)	10.8 (7.0-16.2)
\$75,000 +	2.8 (1.6-4.9)	7.7 (4.8-12.2)

¹ Calculated from the responses to Q.1-8 of the CDC BRFS Anxiety and Depression optional module. Responses in number of days were converted to points (0-1 days = 0 points, 2-6 days = 1 point, 7-11 days = 2 points, 12-14 days = 3 points). Points were summed across the eight questions and a total of 10 points or greater was classified as major depression. (N = 5,338)

MiBRFSS News

- Data collection for the 2011 Michigan BRFS will be completed over the next month. 2011 Michigan BRFS estimates will be available in April or May of 2012.
- The Michigan BRFS questionnaires from 2003-2011 are now available on the Michigan BRFSS website (www.michigan.gov/brfs).
- Did you miss an issue of Michigan BRFSS Surveillance Brief? Back issues are also available on our website.

Table 2. Prevalence of Health Indicators and Risk Factors by Major Depression¹ Status among Michigan Adults with Arthritis, 2010 MiBRFS

	Population Without Major Depression	Population With Major Depression
	% (95% CI)	% (95% CI)
Fair to Poor General Health	17.8 (15.8-19.9)	54.4 (45.8-62.7)
Activity Limitations (14+ Days of Health Restricted Activity in the Past 30 Days)	7.8 (6.3-9.5)	47.0 (38.9-55.3)
Inadequate Sleep (14+ Days of Poor Sleep in the Past 30 Days)	22.9 (20.4-25.6)	71.7 (62.7-79.3)
Obesity	37.5 (34.7-40.3)	41.5 (33.7-49.7)
Current Smoking	15.7 (13.6-18.1)	36.9 (29.3-45.2)
No Leisure-Time Physical Activity	26.1 (23.8-28.7)	41.4 (33.8-49.4)

¹ Calculated from the responses to Q.1-8 of the CDC BRFSS Anxiety and Depression optional module. Responses in number of days were converted to points (0-1 days = 0 points, 2-6 days = 1 point, 7-11 days = 2 points, 12-14 days = 3 points). Points were summed across the eight questions and a total of 10 points or greater was classified as major depression. (N = 5,338)

with both conditions had significantly greater prevalence rates of fair to poor general health, activity limitations, inadequate sleep, current smoking, and no leisure-time physical activity. The prevalence of obesity was similar among the arthritic populations with (41.5%) and without (37.5%) major depression, but the obesity prevalence rates within both of these groups were still significantly higher than the Michigan obesity prevalence of 31.7% (30.3-33.1).

Since adults with both arthritis and major depression seem to have significantly more health problems and risks than adults with arthritis but no major depression, treatment of major depression within this group becomes even more important. When examining the prevalence of current treatment for major depression among adults with both arthritis and major depression it was determined that only 65.5% (54.5-75.1) of these individuals were actually being treated for their major depression.

Conclusions. Adults with arthritis, across the majority of demographic categories (Table 1), report a significantly higher prevalence of major depression than adults without arthritis. Adults with both arthritis and major depression also experience higher prevalence rates of negative health status and health risk factors than adults with arthritis alone. In addition, over one-third of adults with both arthritis and major depression are not currently taking medications or receiving treatment for their anxiety or depression. Priorities for interventions to reduce major depression among adults with arthritis should focus on addressing psychosocial problems, improving general health and functioning and reducing health risk factors such as smoking and inadequate exercise and sleep.

References

- ¹ Fussman C, Rafferty AP, Lyon-Callo S. Characteristics of Michigan Adults with Depression. Michigan BRFSS Surveillance Brief. Vol 2. No. 4. Lansing MI: Michigan Department of Community Health, Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology, Surveillance and Program Evaluation Section, Chronic Disease Epidemiology Unit, November 2008.
- ² Dunlop DD, Lyons JS, Manheim LM, et al. Arthritis and heart disease as risk factors for major depression: the role of functional limitation. Med Care. 2004;42:502-511.
- ³ Vali FM, Walkup J. Combined medical and psychological symptoms: impact on disability and health care utilization of patients with arthritis. Med Care. 1998;36:1703-1084.

The Michigan Behavioral Risk Factor Surveillance System (MiBRFSS)

The MiBRFSS comprises annual, statewide telephone surveys of Michigan adults aged 18 years and older and is part of the national BRFSS coordinated by the CDC. The annual Michigan Behavioral Risk Factor Surveys (MiBRFS) follow the CDC BRFSS protocol and use the standardized English core questionnaire that focuses on various health behaviors, medical conditions, and preventive health care practices related to the leading causes of mortality, morbidity, and disability. Interviews are conducted across each calendar year. Data are weighted to adjust for the probabilities of selection and a poststratification weighting factor that adjusts for the sex, age, and race distribution of the adult Michigan population. All analyses are performed using SAS-callable SUDAAN® to account for the complex sampling design.

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