



ARTHRITIS

Texas Behavioral Risk Factor Surveillance System Report 2001 Survey Data

Introduction

Arthritis, the leading cause of disability in the U.S., consists of more than 100 different diseases and conditions that impact joints and surrounding tissue. Doctor diagnosed arthritis and chronic joint symptoms affect almost 70 million Americans¹ and cost the U.S. over \$100 billion in medical care and lost productivity each year.* Common symptoms of arthritis are pain, swelling, and stiffness of the joints. Arthritis and related diseases stress the body's connective tissues and supporting structures, which, in turn, can trigger inflammation of organs such as the lungs and heart. Adults with arthritis are at a higher risk for heart disease, obesity, depression, and other illnesses.²

This report examines the burden of arthritis on Texas from four perspectives using data from the 2001 Texas Behavioral Risk Factor Surveillance System (BRFSS). First, while the impact of arthritis cuts across all demographic groups, significant disparities are apparent in the data. Second, even though early diagnosis and treatment of arthritis can reduce the severity of the disease and its related disability, many Texans who report chronic joint symptoms have never been seen by a doctor for their condition. Third, although arthritis is rarely listed as the underlying cause of mortality, it is strongly associated with health problems that do often result in death such as heart disease and diabetes. Finally, arthritis can have a decidedly negative impact on individuals' health-related quality-of-life.

Methods

The Texas BRFSS, sponsored by the Texas Department of Health in partnership with the Centers for Disease Control and Prevention (CDC), is an ongoing, monthly telephone survey that collects information from adults relating to their health status, personal health habits, and use of preventive health services. The 2001 survey data were collected over a 12-month period from interviews with 5,916 Texas residents. Interview subjects were selected in two stages. First, telephone numbers were randomly called until a household was identified. Second, after contacting a household, one household member age 18 years or older was randomly selected for the interview.

The 2001 BRFSS survey asked an assortment of questions relating to health and quality of life, with six questions specifically regarding arthritis. Based on the standard CDC definition, respondents were identified as having arthritis if they had either chronic joint symptoms (CJS) or had ever been diagnosed with arthritis by a physician. Persons were considered to have CJS if they answered "Yes" to both of the following questions: (1) "During the past 12

*According to a recent report titled "Arthritis in Your State," by the CDC, arthritis cost more than \$49 billion in direct medical costs in 1997. According to another CDC report titled, "Arthritis—One of Three U.S. Adults are affected by arthritis or chronic joint symptoms," loss of productivity from arthritis cost the U.S. \$60 billion in 1995.

months, have you had pain, aching, stiffness or swelling in or around a joint?” and (2) “Were these symptoms present on most days for at least one month?” Persons were considered to have doctor-diagnosed arthritis if they answered “Yes” to the question, “Have you ever been told by a doctor that you have arthritis?”

Prior to analysis, the data were weighted to adjust for unequal probabilities of selection and to make the final data reflective of Texas’ age and sex distributions. All statistical analyses included in this report were run on the weighted data using SUDAAN software and are reported with 95% confidence intervals (CI). References to “significance” and “confidence intervals” in this paper refer to the probability of an association being due to random chance less than five times out of 100 (expressed as $P < 0.05$). This report contains both prevalence rates, and where appropriate, rates that are age and gender adjusted to the 2000 Standard Population.³

Data collection and analytical methods used for the BRFSS adhere to the highest scientific standards for survey research and have been evaluated by the CDC and participating states for nearly 20 years. However, BRFSS surveys are not without some limitations. As with all telephone surveys, households without working phones are excluded from the sample. Moreover, since BRFSS data are self-reported, respondents may under-report socially undesirable behaviors that are unhealthy or illegal and over-report desirable behaviors. Also, the accuracy of self-reported information often depends on respondents’ abilities to recall past behaviors and health screening results.

Demographics

Based on the results of the 2001 BRFSS survey, nearly one of every three

Texas adults suffers from arthritis. Of this group, approximately 34% report that they have both CJS and physician diagnosed arthritis, 34% report CJS only, and 32% report physician diagnosed arthritis only. Though all demographic subgroups are impacted by arthritis, there is variation in rates among them. For example, females (34%) are more likely than males (25%) to have arthritis, and the prevalence of arthritis among Texans increases with age, rising from 11% among persons 18-24 to 58% among those over 65. Also, Whites (34%) and African-Americans (31%) have similar prevalence rates, but the rate for Hispanics (21%) was significantly lower. Finally, arthritis rates were lower among college graduates (24%) than non-graduates (31-34%) and also lower for those with incomes of \$50,000 or more (25%) than those with incomes below \$15,000 (41%) (*Table 1*).

Table 1
Prevalence of Arthritis/CJS by Selected Characteristics
Texas Adults, BRFSS 2001

	%	Lower CI	Upper CI
Total with Arthritis/CJS	30	29	31
Age			
18 to 24	11	8	15
25 to 34	16	13	18
35 to 44	20	18	23
45 to 54	37	33	40
55 to 64	49	45	53
65+	58	55	62
Gender			
Male	25	24	27
Female	34	33	36
Race/Ethnicity			
White	34	33	36
African American	31	26	35
Hispanic	21	19	24
Education			
Less than High School	34	31	38
High School Graduate	32	30	35
Some College	31	28	33
College Graduate	24	22	26
Annual Household Income			
Less than \$15,000	41	36	45
\$15,000 to less \$24,999	30	27	33
\$25,000 to \$34,999	30	26	33
\$35,000 to \$49,999	27	24	30
\$50,000+	25	22	27

Comparison with the U.S.

The rate of arthritis is slightly lower in Texas than for the U.S. as a whole (30% vs. 33%).⁴ However, for a high percentage of Texans, CJS go untreated. According to published CDC statistics, Texas ranks last among all U.S. states in the percentage of adults with CJS who have never been seen by a health-care provider regarding their ailment.⁵ On this measure, Texas performs worse than the U.S. for most demographic categories. Differences between U.S. and Texas rates are especially pronounced among younger adults, race/ethnic minorities, and individuals with less than a high school education (*Table 2*).

According to the CDC, early diagnosis and aggressive treatment of arthritis are crucial to reducing permanent joint damage and disability.⁶ Thus, increasing the percentage of adults with CJS

who seek prompt medical treatment is an important strategy for reducing the long-term burden of arthritis on the people of Texas.

Cardiovascular Health and Arthritis

The Harvard Medical School recently completed a longitudinal study of 114,342 women who were between the ages of 30 to 55 years and free of arthritis and cardiovascular disease in 1976 (the time of the baseline questionnaire).⁷ The researchers concluded that women with rheumatoid arthritis are at significantly greater risk for heart attack than women without the disease. The researchers speculate that the inflammation and blood cell abnormalities caused by arthritis contribute to atherosclerosis and other acute heart diseases, which, in turn, lead to an elevated risk of heart attack.

Table 2
Prevalence of Texas Adults with CJS¹ who have Never Seen a Doctor, Nurse, or other Health Professional for their Joint Symptoms by Selected Characteristics
Texas vs. U.S., BRFSS 2001

	Texas			U.S.		
	%	Lower CI	Upper CI	%	Lower CI	Upper CI
Total	28	25	31	22	21	22
Age						
18 to 44*	37	31	42	28	27	29
45 to 64	25	21	29	20	19	21
65+	22	17	27	16	15	17
Gender						
Male*	32	27	36	25	24	26
Female*	25	22	29	20	19	20
Race/Ethnicity						
White	23	20	26	21	20	21
African American*	32	23	42	20	18	22
Hispanic*	42	35	50	31	28	35
Education						
<= 8 Years	42	30	53	27	23	31
9 to 11 Years*	43	34	52	25	23	27
HS Graduate	26	21	31	22	21	23
13 to 15 Years	24	19	29	20	19	21
>= 16 Years	22	17	27	20	19	22

*Statistically significant at $P < 0.05$

¹Includes only chronic joint symptoms for purposes of comparison with CDC data

Texas BRFSS data also point to an association between arthritis and cardiovascular health. According to the age and gender adjusted statistics shown in **Table 3**, adults with arthritis are twice as likely to suffer from cardiovascular disease (defined as individuals who have ever had a heart attack, stroke, or angina pectoris) as adults without arthritis. Additionally, adults with arthritis are more likely to have high blood pressure, high cholesterol, and diabetes.

While arthritis related inflammation likely contributes to the poor cardiovascular health of some adults with arthritis, behavioral risk factors may also play a role. For example, according to the Arthritis Foundation, physical activity, which is crucial for maintaining a healthy cardiovascular system, is also an important part of arthritis management.⁸ Yet, Texans with arthritis are more likely to be obese than other Texans and are less likely to participate in leisure-time physical activity (**Table 3**). Smoking, another risk factor for cardiovascular disease, is also more preva-

lent among individuals with arthritis. These results suggest that promoting healthy behaviors such as physical activity, good nutrition, and abstinence from smoking should be an important element of any plan to decrease the burden of arthritis on Texas.

Health-Related Quality-of-Life

According to the CDC, health-related quality-of-life measures are consistently lower for individuals with arthritis.⁹ Results from the 2001 BRFSS survey confirm this finding as arthritis sufferers report more days of poor physical and mental health than Texans without arthritis, more days feeling tired, and a lower level of general health overall. As **Table 4** shows, disparities on quality-of-life measures between Texans with arthritis and Texans without arthritis are significant even when the data are adjusted for age and gender.

The 2001 BRFSS asked respondents, “For how many days during the past 30 days was your physical

health not good,” and, “For how many days during the past 30 days was your mental health not good.” Respondents with arthritis were nearly three times as likely to have five or more days of poor physical health in the past month and more than twice as likely to have five or more days of poor mental health. Overall, Texans with arthritis were more than twice as likely to rate their general health as only fair or poor.

The 2001 BRFSS statistics on activity limitations (**Table 4**) further demonstrate the impact arthritis has on the quality of many Texans’ lives.

Table 3
Cardiovascular Risk Factors, Age and Gender Adjusted
Texas Adults, BRFSS 2001
With Arthritis vs. Without Arthritis

	With Arthritis			Without Arthritis		
	%	Lower CI	Upper CI	%	Lower CI	Upper CI
High Blood Pressure*	35	32	37	22	20	23
High Cholesterol*	35	32	37	26	25	28
Diabetes*	11	9	13	5	4	6
¹ Cardiovascular Disease*	13	10	15	6	4	7
Obesity*	33	30	36	20	19	21
² Leisure Time Physical Activity*	66	63	69	76	75	78
³ Moderate Physical Activity	42	38	45	45	43	46
Current Smoking*	28	25	30	21	19	22
Lifetime Smoking*	50	47	53	41	39	43

*Statistically significant at P<0.05

¹Individuals who have ever had a heart attack, stroke, or angina pectoris

²Did not participate in any physical activity outside of regular job during previous 30 days

³Moderate physical activity for 30 or more minutes per day, five or more days per week or vigorous physical activity for 20 or more minutes per day, three or more days per week

Adults with arthritis were four times more likely than adults without arthritis to have answered “Yes” in response to this question: “Are you limited in any way in any activities because of physical, mental, or emotional problems?” Texans with arthritis were also more than twice as likely to have been kept from doing usual activities for five or more days in the past month because of poor physical or mental health. In addition, they were five times more likely to need special equipment, ten times more likely to need help with personal

care and routine needs, and significantly less likely to be able to walk a mile or more. As these results make clear, “arthritis limits the independence of affected persons and disrupts the lives of family members and other care givers.”¹⁰

Due to the nature of the disease, it is not surprising that arthritis is associated with higher rates of physical pain. Texans with arthritis were six times more likely to experience five or more days of pain in the last 30 days. Texans with arthritis also experi-

enced greater rates of sadness and anxiety, as they were more than twice as likely to experience five or more days of feeling sad and twice as likely to experience five or more days of feeling worried. The Arthritis Foundation suggests exercising as one way to decrease depression and boost self-esteem.¹¹

Finally, employment can have a profound impact on personal independence and quality-of-life. Based on 2001 BRFSS survey results, approximately 70% of Texans with arthritis are in the working age population, and this group has a significantly lower rate of labor force participation than adults without arthritis aged 18-64 years (66% vs. 76%). Goal 2-5 of Healthy People 2010 calls for increasing the employment rate among working-age adults with arthritis to 78%.¹²

Table 4
Health-Related Quality-of-Life Indicators, Age and Gender Adjusted
Texas Adults, BRFSS 2001
With Arthritis vs. Without Arthritis

	With Arthritis			Without Arthritis		
	%	Lower CI	Upper CI	%	Lower CI	Upper CI
Physical Health Not Good (5+ days)*	32	29	35	11	9	12
Mental Health Not Good (5+ days)*	33	30	36	14	13	15
General Health Only Fair or Poor*	31	28	33	14	13	15
Limited in Activities due to Physical, Mental, or Emotional Problems*	33	30	36	8	7	9
Poor Physical or Mental Health Kept from Doing Usual Activities (5+ days)*	32	29	36	13	11	15
Need Special Equipment*	11	9	13	2	1	2
Need Help With Personal Care*	5	3	7	1	0	1
Need Help With Routine Needs*	13	11	16	2	1	2
Able to Walk One Mile or More*	77	74	80	94	93	95
5 or More Days of Pain*	30	26	34	5	4	6
5 or More Days Feeling Sad*	30	26	34	13	11	15
5 or More Days Worried*	48	43	52	24	21	26
5 or More Days Tired*	59	55	64	42	39	44
¹ Employment Rate (Working Age)*	66	63	70	76	74	77

*Statistically significant at P<0.05

¹Adjusted only for age to maintain consistency with Healthy People 2010 Goal 2-5

Conclusion

Today, 4.6 million Texas adults suffer from arthritis, and as the population ages, this number will increase. Without a coordinated public health effort, the significant societal and individual costs inflicted by arthritis will also increase. For Texas, the burden of arthritis is reflected in the high percentage of persons with CJS who go untreated, the strong relationship between arthritis and other severe health conditions, and arthritis' negative impact on health-related quality-of-life measures.

Unfortunately, there is no "magic bullet" cure for arthritis, and there are only a few primary prevention strategies, such as weight management, occupational/sports injury prevention, and infectious disease control. Although advances in arthritis research may lead to more primary prevention alternatives, there are many secondary and tertiary prevention strategies that are currently available but under-utilized. Early diagnosis and medical treatment can prevent arthritis-related diseases from advancing, and medication, physical activity, rehabilitation, and surgery can reduce pain and improve quality of life. Increasing awareness is a key component of a coordinated public health effort to translate advances in biomedical research into results, and an important step toward reducing the burden of arthritis on the people of Texas.

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Texas Task Force on Arthritis

Since December 2002, the Texas Task Force on Arthritis has met quarterly to review available state arthritis data sources and build the framework for a statewide action plan to prevent and treat arthritis in Texas.



Formed as the advisory group for the Texas Department of Health's Arthritis Program, Task Force membership includes representation from the three Arthritis Foundation Chapters in Texas, the Texas Department on Aging, persons with/or affected by arthritis, organizations that serve the older adult population, and research and medical professionals with expertise in arthritis.

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