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The Rising Prevalence of Chronic Low Back Pain*

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Abstract

Background—National or state-level estimates on trends in the prevalence of chronic low back pain (LBP) are lacking. The objective of this study was to determine whether the prevalence of chronic LBP, and the demographic, health-related, and care-seeking characteristics of individuals with the condition have changed over the past 14 years.

Methods—A cross-sectional, telephone survey of a representative sample of North Carolina (NC) households was conducted in 1992 and repeated in 2006. 4,437 households were contacted in 1992 and 5,357 households were contacted in 2006 to identify noninstitutionalized, adults 21 years and older with chronic, impairing (pain > 3 months that limits daily activities). These individuals were interviewed in more detail about their health and care-seeking.

Results—The prevalence of chronic, impairing LBP rose significantly over the 14 year interval, from 3.9% (95% CI:3.4–4.4) in 1992 to 10.2% (95% CI:9.3–11.0) in 2006. Increases were seen for all adult age strata, in males and females, and in white and black races. Symptom severity and general health were similar for both years. The proportion of individuals who sought care from a health care provider in the past year increased from 73.1% (95% CI:65.2–79.8) to 84.0% (95% CI: 80.8–86.8), while mean number of visits to all providers were similar (19.5 vs 19.4).

Conclusions—The prevalence of chronic, impairing LBP has risen significantly in NC, with continuing high levels of disability and care utilization. A substantial portion of the rise in LBP care costs over the past two decades may be related to this rising prevalence.

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Introduction

Low back pain (LBP) is the second most common cause of disability in US adults(1) and a common reason for lost work days.(2–3) An estimated 149 million days of work per year are lost due to LBP.(4) The condition is also costly with total costs estimated to be between 100–200 billion dollars annually, two-thirds of which are due to decreased wages and productivity.(5)

Over 80 percent of the population will experience an episode of LBP at some time during life.(6) For most, the clinical course is benign, with 95 percent of those afflicted recovering within a few months of onset.(7) Some, however, will not recover and will develop chronic LBP (i.e., pain that lasts for 3 months or longer). Recurrences of LBP are also common with the percentage of subsequent LBP episodes ranging from 20–44 percent within 1 year for working populations, to lifetime recurrences of up to 85 percent.(8)

The utilization of health care services for chronic LBP has increased substantially over the past two decades. Multiple studies using national and insurance claims data have identified greater use of spinal injections,(9–11) surgery (12–16), and opioid medications(17), treatments most likely utilized by individuals with chronic LBP. Studies have also documented increases in medication prescription and visits to physicians, physical therapists, and chiropractors. (18–21) Because individuals with chronic LBP are more likely to seek care(22–24) and to utilize *more* care,(25–27) relative to individuals with acute LBP, increases in health care utilization are likely driven more by chronic than acute cases.

Increased health care utilization for chronic LBP could be a function of i) increased prevalence of chronic LBP; ii) increased proportion of those with chronic LBP that seek care; iii) increased utilization by those who seek care, or some combination of the above. (28) The documented increase in use of services is often assumed to be due to increased care-seeking or utilization by those who seek care. A less investigated contributing factor is increased prevalence of chronic LBP.

National and state estimates on trends in the prevalence of LBP have been hampered by the lack of consistent data over time.(29, 30) Previous studies have used inconsistent definitions of LBP, preventing cross-study comparisons, or do not use the same definition over time, leading to varying conclusions on trends in prevalence.(29, 31, 32) Data from England suggest that the prevalence of LBP has increased substantially over the past several decades, (31, 33) while data from the US, Finland, and Germany indicate little change over the past two decades.(29, 32, 34–36) Studies specifically focusing on trends over time in the prevalence of *chronic* LBP in the US, using consistent definitions from one time point to the next, are acutely lacking. Discerning whether the prevalence of chronic LBP is increasing and contributing to the increase in health services use is vital in developing strategies to contain costs and improve care for this condition.

We repeated a population-based, telephone survey, originally conducted in 1992 in North Carolina, to determine whether the prevalence of chronic LBP and the demographic, health-related, and care-seeking characteristics of those so afflicted have changed in the state. For both surveys, we used *identical* definitions of chronic LBP.

METHODS

The current study builds on a computer-assisted telephone survey of LBP prevalence and health care use conducted in 1992.(25, 26) The 1992 survey addressed acute and chronic LBP. The current survey, fielded in 2006, addressed chronic LBP and chronic neck pain. LBP was defined as pain at the level of the waist or below, with or without buttock and/or leg pain.(25) An individual was considered to have chronic LBP if s/he reported: 1) pain and activity limitations nearly every day for the past three months; or 2) greater than 24 episodes of pain that limited activity for one day or more in the past year.(25) This study was approved by the institutional review board of the University of North Carolina at Chapel Hill.

2006 Survey Instrument

The 2006 survey instrument was an expansion of the 1992 instrument. Questions were added to identify individuals with neck pain and to gather more detailed information about the health and health care use of individuals with chronic pain. We also created a Spanish version since the Hispanic population of North Carolina had increased substantially in the interval. Prior to data collection, the University of North Carolina at Chapel Hill Survey Research Unit (UNC-SRU) piloted the instrument, using computer-assisted telephone interviewing, on a random sample of North Carolina residents or known cases of chronic LBP (n=84). Instrument revisions were made based on the results of the pilot study.

The final instrument had four sections: household roster, acute/chronic screener, back pain module, and neck pain module. The household roster, to be completed by an adult member of the household, included questions on the demographic characteristics of each household member 21 years and older and a screener for low back and neck pain (i.e., As far as you know did (Adult #1) have any kind of back or neck problem in the past few years?). The acute/chronic screener, to be completed by a household member with a history of back or neck pain, included questions on pain severity and duration in the past year. The back pain module, to be completed by individuals with chronic LBP, included a series of questions on symptoms (e.g. pain intensity, presence of leg pain), general health status (SF-12, presence of comorbidities), functional status (Roland-Morris Disability Questionnaire), and use of health care providers and treatments in the past year. The neck pain module had a similar design.

Both the back and neck pain modules ended with more detailed questions on employment and demographic characteristics. Two questions were used for individuals to self-identify their race and ethnicity. These were 1) How would you describe your race/ethnicity?; and 2) Do you consider yourself Hispanic or Latino?

Sample Selection

At each contacted household, an adult gave verbal consent and completed the household roster. If one or more adults in the household had a history of back problems (1992 survey) or back or neck problems (2006 survey) in the past few years, one individual was randomly selected to be interviewed in more detail. The selected individual gave verbal consent and

completed the survey. Individuals who reported both chronic back and neck pain in the 2006 survey completed the questions on back pain in order to emulate the 1992 survey procedures.

2006 Sample

A stratified probability sample of North Carolina telephone numbers was obtained from GENESYS Sampling Systems.(37) Numbers were chosen from six sampling strata, defined by the cross-classification of region of the state (mountains, piedmont, coastal) and concentration of African-Americans (high 15.5% of population, low < 15.5% of population). The latter variable was chosen to ensure adequate representation of African-Americans so we could more accurately determine whether the prevalence of chronic LBP varied by race/ethnicity.

Figure 1 details the sample selection strategy. 5,357 households with one or more adults 21 years or older were contacted and 9,924 adults were rostered. The household response rate was 66 percent, computed as the sum of households interviewed divided by the sum of eligible households plus an estimate of the proportion of households with unknown eligibility.(38) Of the 5,357 households contacted, 3,276 households (61%) had one or more adults with a history of back and/or neck pain in the past few years. Of the adults randomly selected from these households (n=3,276), 2,723 were interviewed for an individual response rate of 86 percent and an overall response rate (household RR × individual RR) of 57 percent. Adults randomly selected to be interviewed were similar in age, sex, and race to those not selected. Adults who refused to be interviewed or who could not be reached were similar in age and race to responders, but were more likely to be male (chi square test, p<.001).

1992 Sample Selection

Details of the sample selection in 1992 are described elsewhere.(25) Briefly, a two-stage proportionate stratified sample (based on region of state and urban/rural status) of residential North Carolina telephone numbers was generated using a modified version of the Waksberg random digit dialing sampling design.(39) 4,437 households with one or more adults 21 years or older were contacted. The household response rate, computed as the number of completed interviews divided by a prorated estimate of the number of eligible households, (40) was 79 percent. Of the 4,437 households contacted, 2,053 households had one or more adults with a history of back pain. One adult with back pain was randomly selected from each of these households and interviewed.

Interviewing Procedures

Both surveys were conducted by trained personnel in the UNC-SRU. Interviews for the 2006 survey were conducted from April to November. A call scheduling system was used to ensure that repeat calls were conducted at different times of the day and week. Phone numbers were withdrawn after a minimum of 10 unsuccessful call attempts with at least one day, one weekend, and one evening call. The 1992 methods were identical with the exception of using more current software.

Weighting of the Data

Sample weights and prevalence weights were created for both the 2006 and 1992 data.

2006 Data—The sample weights provided by GENESYS Sampling Systems were first adjusted to account for the differential probability of selection into our sample due to use of only a proportion of the vendor-provided numbers, the number of household landlines, and stratum-specific household non-response. To reduce bias resulting from differences in response rates among demographic subgroups, a post-stratification adjustment was made by calibrating the weighted sample to the distribution of the North Carolina population with respect to age, race/ethnicity and gender. Data from the 2005 American Community Survey (conducted by the US Census Bureau to gather demographic, economic, social, and housing information) were used for the calibration.⁽⁴¹⁾ Weights used for prevalence estimation also took into account the number of nominated back and neck pain cases in the respondent's household as well as nonresponse among nominated back and neck pain cases.

1992 Data—Sample weights were created for the 1992 data to account for the differential probability of selection, telephone coverage, and survey non-response. A post-stratification adjustment was then made to ensure the survey data were representative in terms of age, race, and gender, using data from the 1990 Census. Prevalence weights were calculated using a method identical to that used for the 2006 data.

Data Analysis

All analyses were conducted using the survey commands in Stata (ver 9.2). Prevalence estimates, 95 percent confidence intervals, and descriptive statistics on the chronic LBP respondents were generated for the 1992 and 2006 data. Two sample t-tests and chi-square tests of proportions were conducted to determine differences in the demographic, health-related, and care-seeking characteristics of the two groups. Missing data ranged from 0 to 9 percent for the variables examined in this study and were treated as such (i.e., no imputation or use of dummy variables).

RESULTS

The prevalence of chronic LBP more than doubled in the 14 year interval from 3.9 to 10.2 percent. This marked increase occurred among all gender, age, and race/ethnic subgroups. (Tables 1–3) In both years, the prevalence of chronic LBP was greater in women.

Table 4 presents demographic, health-related, and care-seeking characteristics of the 1992 and 2006 chronic back pain respondents. The groups were similar in regard to demographic characteristics, with the exception of the 2006 respondents being more educated, with a greater percentage of individuals who were 45–54 years old, and Hispanic. North Carolina has undergone a marked increase in its Hispanic population, particularly in the 0–44 year age group, over the past decade.⁽⁴²⁾ In the 1992 survey, few respondents claimed Hispanic ethnicity. There were also some differences in the insurance and employment status of the 1992 and 2006 groups. Most notably, the proportion of individuals receiving Medicare under the age of 62 (i.e., disabled through SSDI) more than doubled from 1992 to 2006 and

parallels the increase in chronic LBP prevalence. A significant proportion of individuals in both groups had a low household income. In 2006, 40 percent of the subjects reported a household income of \$20,000 or less. In 1992, 55 percent reported a household income of \$20,000 (\$29,000 in 2006 dollars) or less.

Health-related characteristics of the two groups were also similar in regard to onset of LBP, pain intensity, and health status. For individuals who reported continuous chronic pain, those in the 2006 group reported a longer duration of pain. Condition-specific functional data were only collected in 2006 using the Roland-Morris Disability Questionnaire which measures degree of functional limitation on a 0–23 scale. The mean Roland score for the 2006 group was 14.9 (14.3–15.5), indicating substantial functional impairment, similar to scores for patients considering surgery for their LBP.(43, 44) Care-seeking was significantly increased for the 2006 group, from 73.1 to 84.0 percent; the percent seeking care from a physician increased from 66.5 to 78.1 percent. Among those who sought care, there was little change in the number who had surgery or in the number of provider visits.

DISCUSSION

To our knowledge, this is the first population-based study in the US that has examined trends in the prevalence of chronic LBP using similar survey methods and identical definitions of chronic LBP. We found an alarming increase in the prevalence of chronic LBP from 1992 to 2006 in North Carolina, which occurred across all demographic subgroups. We also found that acute episodes of LBP (defined as pain that limited usual activities for at least one day, but less than 3 months; or less than 25 episodes of LBP that limited activities) in the past year increased from 7.3% (6.6–8.1) to 10.5% (9.5–11.4). Although the cross-sectional nature of our data prevents any firm conclusions, the smaller increase in prevalence of acute versus chronic LBP is consistent with a greater percentage of acute cases transitioning to chronic cases.

Reasons for the increase in chronic LBP are unclear. Changes in the age composition of the state do not explain the increase since the rise in prevalence was similar across all age strata. Ethnic differences also do not explain the increase. As our data indicate, the Hispanic population has a lower prevalence of chronic LBP which is likely due to their younger age. Over 50 percent of the Hispanic individuals surveyed in our study were 21–34 years old. Individuals in this age group, relative to older groups, have a lower prevalence of LBP. An increase in the rate of smoking, a potential risk factor for LBP,(45, 46) is also not a likely explanation for the increase in chronic LBP since rates of smoking in North Carolina adults have decreased slightly over the past decade (26% in 1995, 22% in 2006).(47)

One potential reason for the increase may be increasing rates of obesity. North Carolinians have grown considerably more obese (BMI \geq 30) over the period we examined (13.4% in 1992 to 26.6% in 2006).(47) Whether obesity is a risk factor for LBP, however, is still unclear.(48–50) Changes in psychosocial and physical work demands, risk factors for LBP, (51) may have also contributed to the increase in prevalence. The workforce in North Carolina has changed over the past 15 years with decreases in the percentage of

manufacturing jobs and increases in the percentage of construction and service industry jobs. (52)

Increases in back pain prevalence may also be due to increases in depression prevalence. Rates of major depression in the US more than doubled from 3.33 percent in 1991–1992 to 7.06 percent in 2001–2002 (53); and longitudinal studies suggest that major depression increases the risk of developing future chronic pain.(54–56) Individuals with major depression are almost three times more likely to develop incident chronic back pain within two years relative to non-depressed individuals.(56)

Others have speculated that increases in back pain prevalence may be due to increased symptom awareness and reporting.(33, 57) Increasing public knowledge of LBP via medicalization, the media, and the internet have likely made back pain a more prominent part of life over the past two decades. Current care for chronic LBP often includes the use of multiple health care professionals which, some argue, encourages the further medicalization and persistence of chronic LBP.(57, 58) Recent analyses of data from several German health surveys indicate that immediately after reunification, rates of back pain prevalence were roughly 10 percentage points less in the East relative to West; but were essentially the same 10 years later.(59) While selective migration and differences in rates of unemployment may have contributed to rising prevalence rates in the East, the authors hypothesized that much of the increase in prevalence was due to dissemination of back-related attitudes and beliefs from the more “medicalized” West to the East. When we tried to assess whether our respondents were simply labeling ongoing back symptoms as functionally impairing, we found that 2006 back pain sufferers were functioning either similarly or worse than in 1992, with decreased employment, greater use of disability insurance, and continued high pain scores.

Although we attempted to apply identical methods for the two surveys, it remains possible that minor sampling or measurement issues may have accounted for some of the difference in prevalence between the two years. Differences in survey methods, however, would likely not explain all of the increase in prevalence. While direct comparisons are not possible, our estimates and trends are similar to data from the National Health Interview Survey. In 2006, 8.3% (7.8–8.7) of adults 21 years and older reported difficulty with one or more of 12 functional activities (i.e., walking ¼ mile; climbing 10 steps; standing for 2 hrs; sitting for 2 hrs; stooping, bending, kneeling; reaching overhead; grasping small objects; lifting/carrying 10 lbs; pushing/pulling large objects; going out to events, participating in social activities; relaxing at home) because of chronic back or neck problems. In 1997 3.2% of adults reported difficulty with these activities because of chronic back or neck problems.(60) National data indicates that the proportion of Social Security Disability Income (SSDI) awardees claiming ‘musculoskeletal disease’ as their cause of disability has also increased markedly, from 15.2% in 1992 to 28.2% in 2006.(61) In 1983 musculoskeletal disorders were the fourth leading diagnostic group in disability awards; in 2003, they were the leading diagnostic group.(62). While the musculoskeletal disease classification includes conditions other than back pain, this national trend is consistent with our data on Medicare recipients under 62 years of age with chronic LBP.

Some have hypothesized that the increases in the use of health care services for chronic LBP are due to increased care-seeking by those with the condition.(11, 12, 29, 63) Our data, however, suggest that increased prevalence may be the primary factor contributing to this phenomenon. In fact, as we illustrated, there was only a moderate increase in care-seeking from 1992 to 2006 with little change in total number of visits to physicians, physical therapists, and chiropractors, conditional on one visit. The proportion of individuals who had surgery was also similar across the two years.

To further explore the relationship between prevalence and use of surgery, we conducted an age-adjusted analysis of change in lumbar spine surgery rates in North Carolina, using state inpatient and ambulatory surgery data housed at our center. From 1997 to 2005, surgeries per person among the North Carolina population increased 157 percent. This increase parallels the increase we saw in prevalence. Others have also reported increasing surgery rates using state and national data.(12, 14, 63, 64) The rates of surgery among our survey respondents, individuals *with* chronic LBP, were similar in 1992 and 2006. These findings suggest that increasing prevalence of chronic LBP may be the contributing factor to increased surgery rates rather than increased use of surgery by those with chronic LBP, at least in the state of North Carolina.

This study has limitations. The cross-sectional nature of the analysis prevents us from making firm conclusions regarding causality. In addition, because we did not collect data on risk factors, our hypotheses regarding the causes for the increase in prevalence are speculative. It is also possible that there was some underreporting of pain in the surveys since a household member was asked to identify all household members with a history of back or neck problems. Finally, the study was conducted in only one state.

The major strength of this study is that we used similar methods and identical definitions of chronic LBP to examine trends in prevalence over time. While our data come from only one state, the lack of comparable national or other state data on trends in the prevalence of chronic LBP elevate their significance. This study provides valuable and timely information on a common, disabling, and increasingly costly condition.

We found an alarming increase in the prevalence of chronic LBP in North Carolina with moderate increases in already high utilization. These findings suggest that increases in health care costs on a population basis may be due to increased prevalence of this condition, more so than increased utilization by those afflicted. Efforts to improve function and constrain costs of back pain will need to address issues of causality and self-management if we are to adequately address this health and health care challenge.

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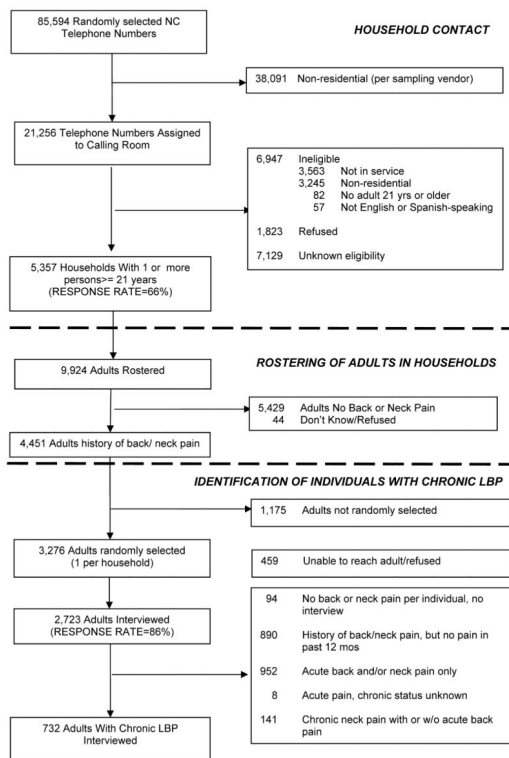


FIGURE 1.
2006 Sample Selection

Table 1

Prevalence of Chronic Low Back Pain in North Carolina, 1992 and 2006

Characteristic	1992 (n=8,067)	2006 (n=9,924)	% Increase	PRR ^a (2.5 – 97.5% CI)
	Prevalence, % (95% CI)	Prevalence, % (95% CI)		
Total	3.9 (3.4 – 4.4)	10.2 (9.3 – 11.0)	162%	2.62 (2.21 – 3.13)
Sex				
Male	2.9 (2.2 – 3.6)	8.0 (6.8 – 9.2)	176%	2.76 (2.11 – 3.75)
Female	4.8 (4.0 – 5.6)	12.2 (10.9 – 13.5)	154%	2.54 (2.13 – 3.08)
Age, y				
21 – 34	1.4 (0.8 – 2.0)	4.3 (3.0 – 5.6)	201%	3.01 (1.95 – 5.17)
35 – 44	4.8 (3.3 – 6.3)	9.2 (7.2 – 11.2)	92%	1.92 (1.35 – 2.86)
45 – 54	4.2 (3.0 – 5.5)	13.5 (11.4 – 15.7)	219%	3.19 (2.29 – 4.59)
55 – 64	6.3 (4.2 – 8.3)	15.4 (12.8 – 17.9)	146%	2.46 (1.73 – 3.50)
65 and over	5.9 (4.5 – 7.3)	12.3 (10.2 – 14.4)	109%	2.09 (1.62 – 2.84)
Race/Ethnicity				
Non-Hispanic White	4.1 (3.5 – 4.7)	10.5 (9.4 – 11.5)	155%	2.55 (2.13 – 3.05)
Non-Hispanic Black	3.0 (2.0 – 4.0)	9.8 (8.2 – 11.4)	226%	3.26 (2.32 – 4.96)
Hispanic	*	6.3 (3.8 – 8.9)		
Other	4.1 (1.4 – 6.8)	9.1 (6.0 – 12.0)	120%	2.20 (1.16 – 6.99)

* unable to estimate due to small cell count (n<5)

^a prevalence rate ratio, standard errors estimated via bootstrapping, 97.5% confidence interval reported rather than assume normality

Table 2

Prevalence of Chronic Low Back Pain By Age and Sex

		1992		2006			
Age Group (y)	Sex	Prevalence, % (95% CI)	Prevalence, % (95% CI)	% Increase	PRR ^a (2.5 – 97.5% CI)		
21 – 34	Male	1.6 (0.8 – 2.5)	3.5 (1.8 – 5.2)	115	2.15 (0.96 – 5.16)		
	Female	1.2 (0.5 – 1.9)	5.1 (3.2 – 7.0)	320	4.20 (2.19 – 9.19)		
35 – 44	Male	3.4 (1.2 – 5.6)	6.5 (3.9 – 9.2)	92	1.92 (0.93 – 5.28)		
	Female	6.1 (4.0 – 8.2)	11.9 (8.8 – 15.0)	96	1.96 (1.28 – 3.02)		
45 – 54	Male	2.6 (1.2 – 4.0)	10.3 (7.6 – 13.1)	293	3.93 (2.25 – 7.89)		
	Female	5.8 (3.7 – 7.8)	16.5 (13.1 – 19.9)	187	2.87 (1.99 – 4.62)		
55 – 64	Male	5.7 (3.1 – 8.4)	13.7 (9.9 – 17.5)	139	2.39 (1.45 – 4.66)		
	Female	6.7 (3.9 – 9.5)	16.9 (13.2 – 20.5)	152	2.52 (1.68 – 4.44)		
65	Male	3.7 (1.9 – 5.5)	9.7 (6.6 – 12.7)	159	2.59 (1.48 – 5.55)		
	Female	7.3 (5.3 – 9.4)	14.3 (11.2 – 17.4)	95	1.95 (1.37 – 2.87)		

^a prevalence rate ratio, standard errors estimated via bootstrapping, 97.5% confidence interval reported rather than assume normality

Table 3

Prevalence of Chronic Low Back Pain By Race and Sex

		1992	2006		
Race/Ethnicity	Sex	Prevalence, % (95% CI)	Prevalence, % (95% CI)	% Increase	PRR ^a (2.5 – 97.5% CI)
White	Male	3.0 (2.1 – 3.8)	8.3 (6.9 – 9.8)	177	2.80 (2.05 – 3.94)
	Female	5.1 (4.2 – 6.1)	12.4 (10.8 – 14.0)	143	2.42 (1.96 – 3.00)
Black	Male	2.5 (1.2 – 3.8)	7.3 (5.1 – 9.4)	192	2.89 (1.65 – 6.37)
	Female	3.5 (2.0 – 5.0)	11.7 (9.3 – 14.0)	234	3.37 (2.14 – 5.67)
Other	Male	3.3 (0.0 – 6.9)	7.0 (3.1 – 10.9)	112	2.12 (0.70 – 16.35)
	Female	5.0 (0.5 – 9.5)	11.8 (7.0 – 16.5)	136	2.34 (1.02 – 14.21)
Hispanic	Male	*	2.7 (0.6 – 4.7)		
	Female	*	11.7 (6.2 – 17.1)		

* unable to estimate due to small cell count (n<5)

^a prevalence rate ratio, standard errors estimated via bootstrapping, 97.5% confidence interval reported rather than assume normality

Table 4

Demographic and Clinical Characteristics of 1992 and 2006 Chronic Low Back Pain Samples

	1992 (n=269)	2006 (n=732)	
CHARACTERISTIC	Estimate (95% CI)	Estimate (95% CI)	Difference <i>P</i> value
Age, mean	52.3 (50.2 – 54.5)	53.1 (51.9 – 54.3)	.55
Age Category, %			
21 – 34 yrs	11.9 (8.2 – 17.2)	10.6 (8.1 – 13.8)	
35 – 44 yrs.	26.9 (20.3 – 34.6)	18.3 (15.3 – 21.8)	
45 – 54 yrs.	15.2 (11.2 – 20.4)	26.7 (23.2 – 30.4)	.007
55 – 64 yrs.	19.5 (13.6 – 27.1)	22.7 (19.5 – 26.2)	
65 and over	26.5 (20.6 – 33.4)	21.7 (18.6 – 25.2)	
Sex, %			
Female	65.9 (58.3 – 72.8)	62.2 (58.1 – 66.2)	.39
Race/Ethnicity, %			
Non-Hispanic White	81.1 (74.6 – 86.3)	70.5 (67.0 – 73.8)	
Non-Hispanic Black	16.4 (11.4 – 22.9)	18.7 (16.3 – 21.4)	
Other	2.6 (1.2 – 5.3)	5.5 (3.7 – 8.0)	.14
Hispanic	*	4.7 (3.2 – 6.9)	
Miss	0.6 (0.1 – 2.4)	0.7 (0.2 – 1.9)	
Education, %			
<High school	34.0 (27.3 – 41.4)	20.2 (16.9 – 24.0)	
High school/GED	36.0 (29.1 – 43.6)	31.6 (27.7 – 35.7)	<.001
>High school	30.0 (23.1 – 37.9)	48.3 (44.0 – 52.6)	
Insurance[‡], %			
Medicare	28.2 (22.1 – 35.1)	37.9 (33.8 – 42.1)	.02
<62 years [‡]	12.8 (7.2 – 21.6)	33.2 (27.7 – 39.2)	<.001
Medicaid	8.7 (5.1 – 14.2)	16.4 (13.5 – 19.7)	.02
Worker's Compensation for LBP	12.6 (8.8 – 17.5)	6.9 (5.0 – 9.3)	.01
Private/Other	65.8 (58.5 – 72.5)	56.1 (51.7 – 60.3)	.02
No Health Insurance	14.9 (10.5 – 20.7)	14.5 (11.5 – 18.2)	.92
Employment, %			
Currently employed	41.5 (34.2 – 49.2)	31.8 (27.9 – 35.9)	.02
Employed in past year	48.9 (41.1 – 56.7)	42.1 (37.8 – 46.4)	.13
Missed work days past year [§]	20.6 (12.5 – 28.6)	17.7 (11.5 – 23.9)	.58
Pain Duration & Intensity			
Years since LBP began, mean	14.4 (12.6 – 16.2)	14.7 (13.6 – 15.8)	.78
Years with chronic pain, mean	5.9 (4.8 – 7.0)	9.8 (8.9 – 10.7)	<.001
Pain severity ^{//} past 3 mos, mean	7.2 (6.8 – 7.5)	6.8 (6.6 – 7.0)	.06
Pain in one or both legs, %	76.1 (67.6 – 83.0)	68.4 (64.5 – 72.1)	.10

	1992 (n=269)	2006 (n=732)	
CHARACTERISTIC	Estimate (95% CI)	Estimate (95% CI)	Difference <i>P</i> value
Self-Reported Health Status, %			
Excellent	8.4 (5.3 – 12.9)	5.5 (3.9 – 7.8)	
Very Good	12.0 (8.4 – 17.0)	18.2 (15.1 – 21.7)	
Good	26.7 (20.2 – 34.3)	32.3 (28.4 – 36.4)	.06
Fair	30.8 (24.0 – 38.5)	27.0 (23.4 – 30.8)	
Poor	22.2 (16.8 – 28.6)	17.1 (14.2 – 20.4)	
Care-Seeking			
Ever hospitalized for LBP, %	40.8 (33.3 – 48.7)	32.0 (28.3 – 35.9)	.04
Ever had surgery for LBP, %	22.3 (16.8 – 28.9)	24.8 (21.5 – 28.5)	.48
Had surgery in past yr, %	10.4 (6.1 – 17.2)	6.8 (5.0 – 9.2)	.17
Sought care in past yr, %	73.1 (65.2 – 79.8)	84.0 (80.8 – 86.8)	.003
Saw physician in past yr, %	66.5 (58.5 – 73.6)	78.1 (74.4 – 81.3)	.003
Saw physical therapist past yr, %	21.2 (15.9 – 27.6)	25.0 (21.6 – 28.7)	.28
Saw chiropractor in past yr	18.0 (13.5 – 23.6)	22.6 (19.2 – 26.3)	.16
Visits to MD, PT, DC in past yr	19.5 (14.5 – 24.5)	19.4 (17.0 – 21.7)	.97

* unable to estimate due to small cell count (n<5);

† Categories not mutually exclusive;

‡ Conditional on receiving Medicare;

§ Conditional on being employed in past year;

// On a 0–10 scale