

Asthma

Asthma is defined as ‘an inflammatory disease of the airways’.¹ Identifying the risk factors for asthma remains important in addressing the needs of those stricken by the disease. While the cause of the increasing morbidity is not specifically known, some common allergens and irritants have been identified. Among these allergens are dust mites, roaches, rodents, tobacco smoke, molds, and pets.^{2,3,4,5} In addition to these allergens, some housing conditions can also contribute to the severity and prevalence of asthma. These household conditions include dampness, water damage, humidifiers, gas stoves, carpeting, double-glazed windows, and exposure to volatile organic compounds.^{3,6}

While asthma affects many individuals, a disproportionate number of those affected are low-income and members of minority groups.^{2,3,4,5,7} It is important to note that even when statistical analyses control for socioeconomic status, differences between racial and ethnic groups persist.⁷ Minorities are not only represented in disproportionate numbers among those suffering from asthma, but also in hospitalization and emergency room visits. According to researchers African Americans are up to four times more likely than Whites to visit the emergency room, require hospitalization, and experience mortality.^{8,9} This highlights the possibility that there is a relationship between demographic characteristics and the prevalence of asthma.

Public Health Initiatives/Planning/Policy

A variety of measures are currently employed to assess the disparities that are seen in asthma. The Federal Department of Health and Human Services (HHS) has developed an asthma strategy that consists of two components.¹⁰ The first component, *Healthy People 2010*, focuses primarily on treating asthma. The second, *Action Against Asthma*, lists the prevention and tracking goals of HHS. It is important to note that neither of these components seeks to prevent asthma or attempt to stop its rate of growth. As noted earlier, many of the causes/irritants of asthma are preventable.

Other programs seek to provide sufferers and their caregivers with knowledge to help them deal with the effects of the disease. Many of these educational programs include home environmental assessments, individual action plans, and follow-up visits.^{3,4} Other programs seek to form community partnerships. These partnerships seek to create an official liaison between the community and hospital officials.¹¹ Finally, programs often encourage patients to become more involved in their care.⁵ These programs help patients identify their symptoms and possible causes. Researchers suggest that this increased knowledge will empower the patients and help them manage the disease effectively.

Behavioral Factors

Although little evidence exists that point to behavioral factors as a cause of asthma, research does show that the disease can be affected by stress, anxiety, and sadness.¹² These researchers find that airways are reactive not only to physiological factors, but also psychological ones. Green et al.² indicate that maintaining a smoke-free environment, eating a balanced diet, and avoiding lead exposure are important factors in controlling asthma. Many researchers point to patient management of asthma as a primary concern. However, it is important to note that minorities may visit the emergency room more because of their lack of insurance coverage and inability to afford medications prescribed by their doctors.

National and State Prevalence

Nationwide, 11.2% of adults reported having been diagnosed with asthma in the 2001 Behavioral Risk Factor Surveillance System survey. (This was the median percentage out of 54 states.) In Tennessee, 9.3% had been diagnosed with asthma.¹³

Nationwide, the median percentage of people who still had asthma was 67.8% of those who had ever been diagnosed with asthma. In Tennessee, 74.2% of those ever diagnosed still had asthma.¹³

Healthy People 2010

The Healthy People 2010 goal with respect to respiratory diseases is: "Promote respiratory health through better prevention, detection, treatment, and education."

The Healthy People 2010 asthma objectives are:

- Reduce asthma deaths and reduce hospitalizations for asthma,
- Reduce hospital emergency department visits for asthma,
- Reduce activity limitations for asthma,
- Increase the proportion of persons with asthma who receive formal patient education,
- Increase the proportion of persons with asthma who receive appropriate asthma care according to the NAEPP guidelines.¹⁴

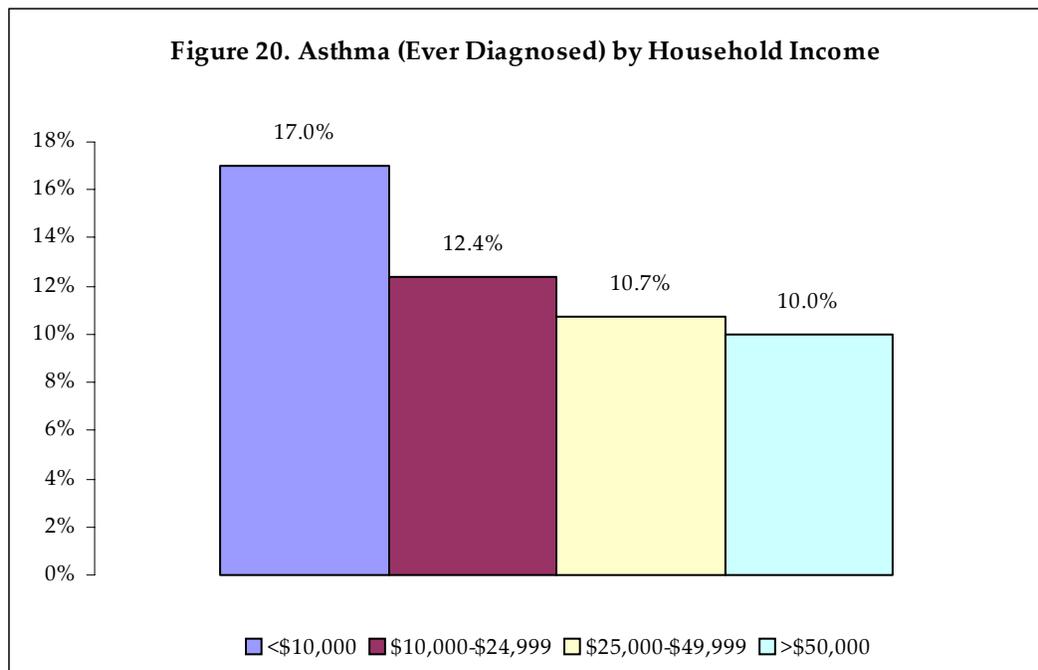
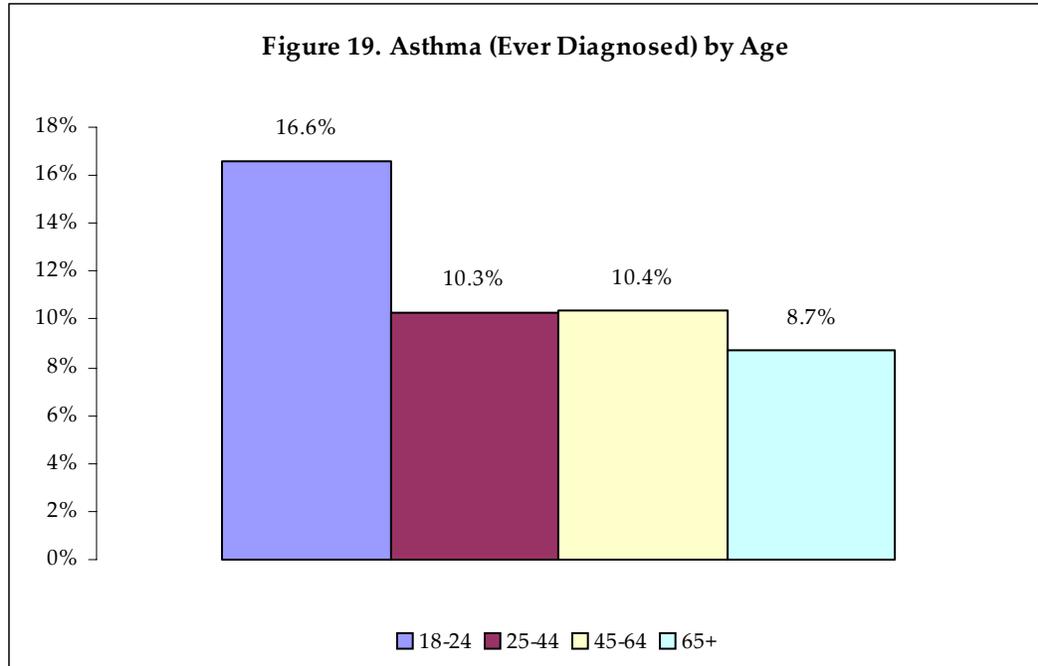
Description of Measures

The 2001 Davidson County Community Health Behavior Survey asked respondents to report on diagnoses that they had received from a physician. Two items were targeted directly at assessing the prevalence of asthma. All respondents were asked, "Did a doctor ever tell you that you had asthma?" If the answer was positive, the respondent was then asked, "Do you still have asthma?"

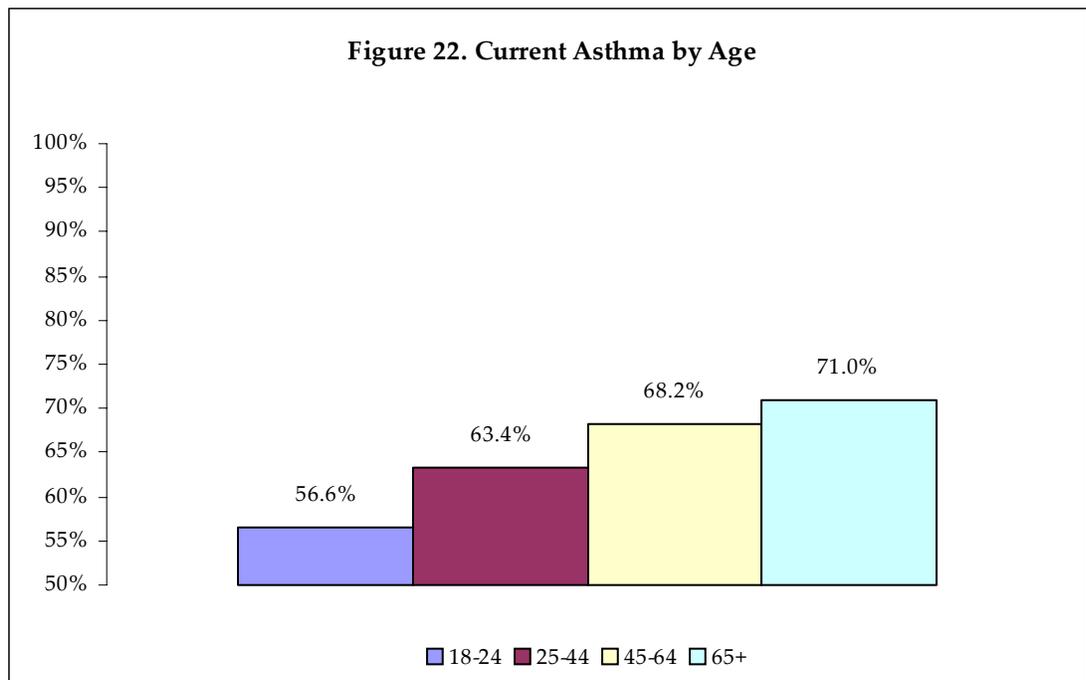
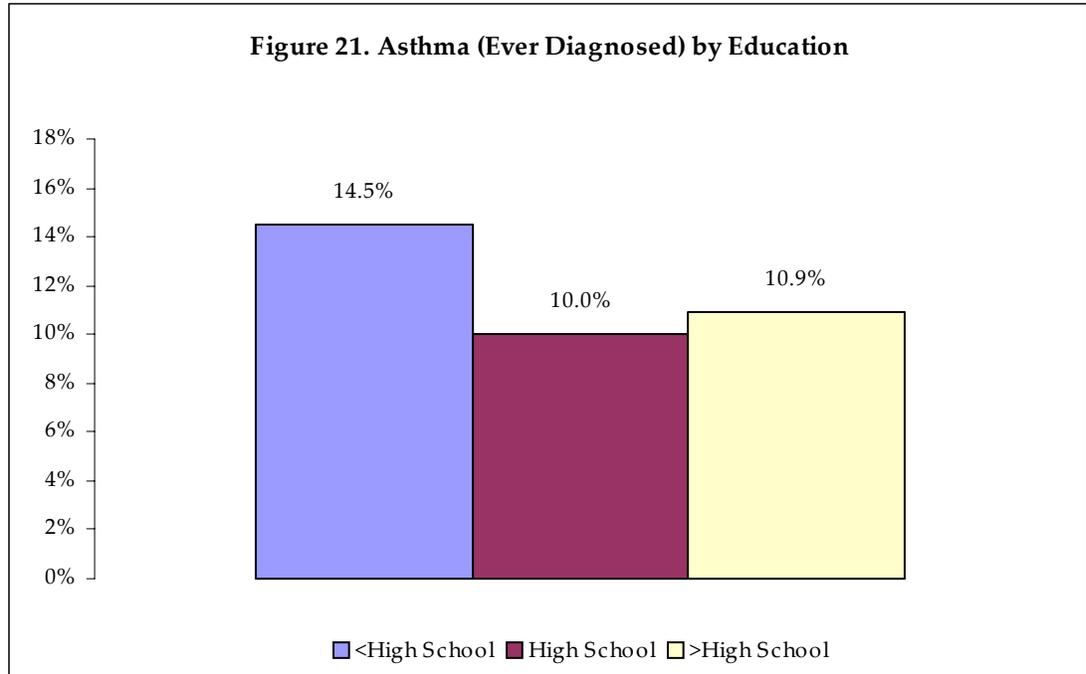
Results

Ever diagnosed with asthma

- Eleven percent (95% confidence interval, 10.4% - 11.7%) of those interviewed said they had been told they had asthma. This is similar to the national rate and higher than the statewide rate.
- A significantly higher percentage of residents 18-24 years of age reported having been diagnosed with asthma (16.6%). The three older groups were not significantly different from each other. (Figure 19)
- A similar pattern was seen between income groups, with those making less than \$10,000 a year more likely to be diagnosed with asthma than those with household incomes of \$25,000 or more a year. (Figure 20)

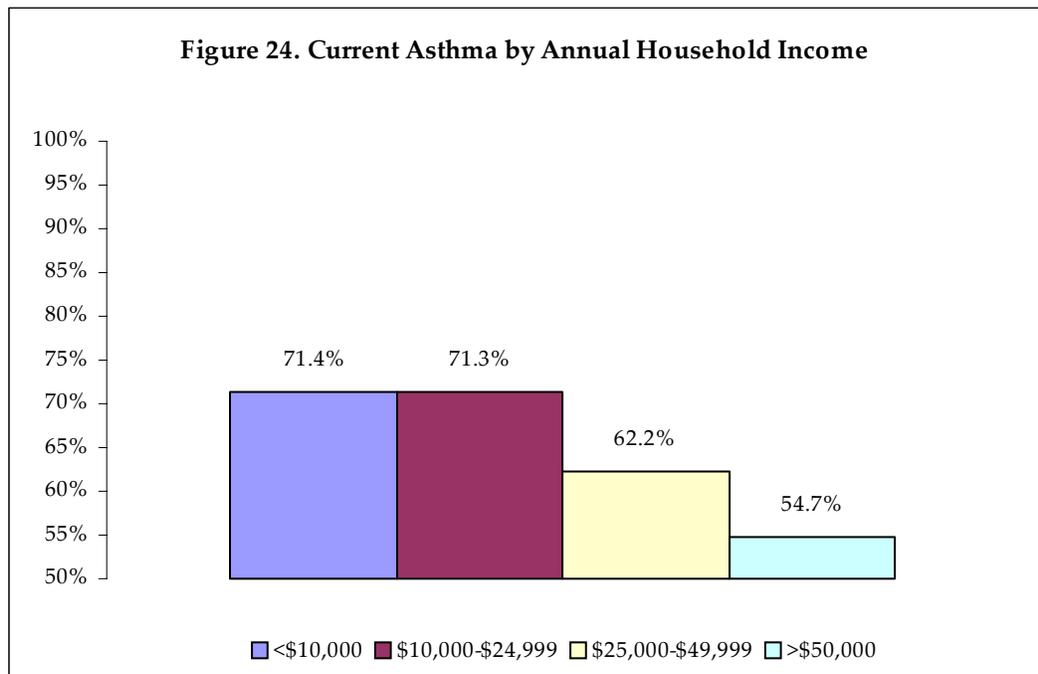
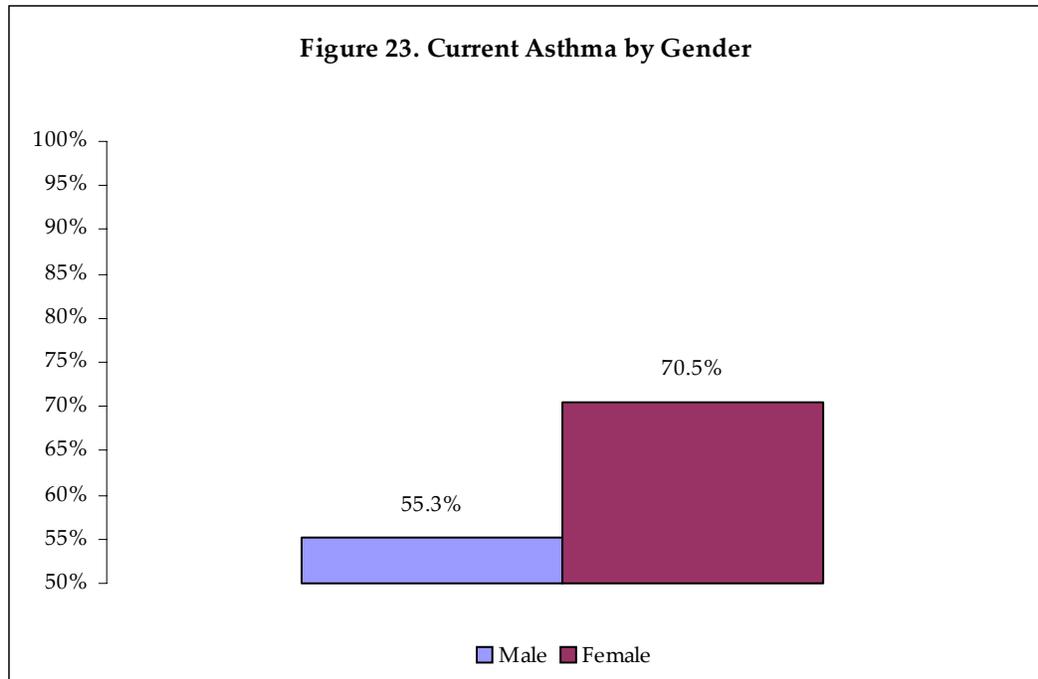


- A higher percentage of respondents with less than a high school education reported having been diagnosed with asthma. High school graduates with and without further education were similar in percentage of asthma diagnosis. (Figure 21)

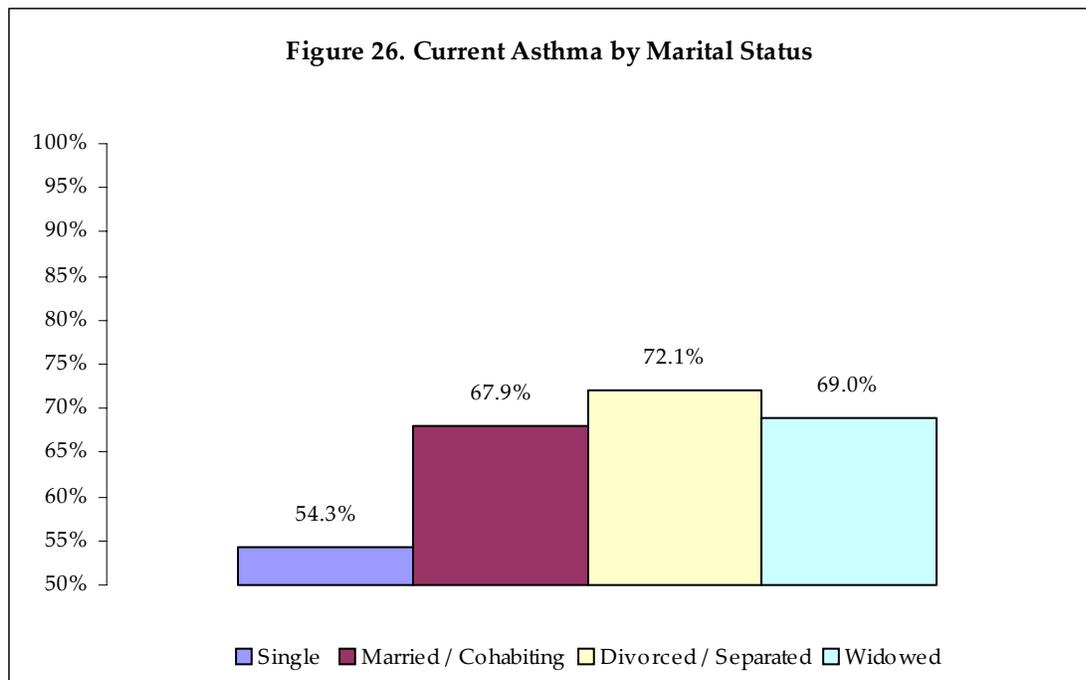
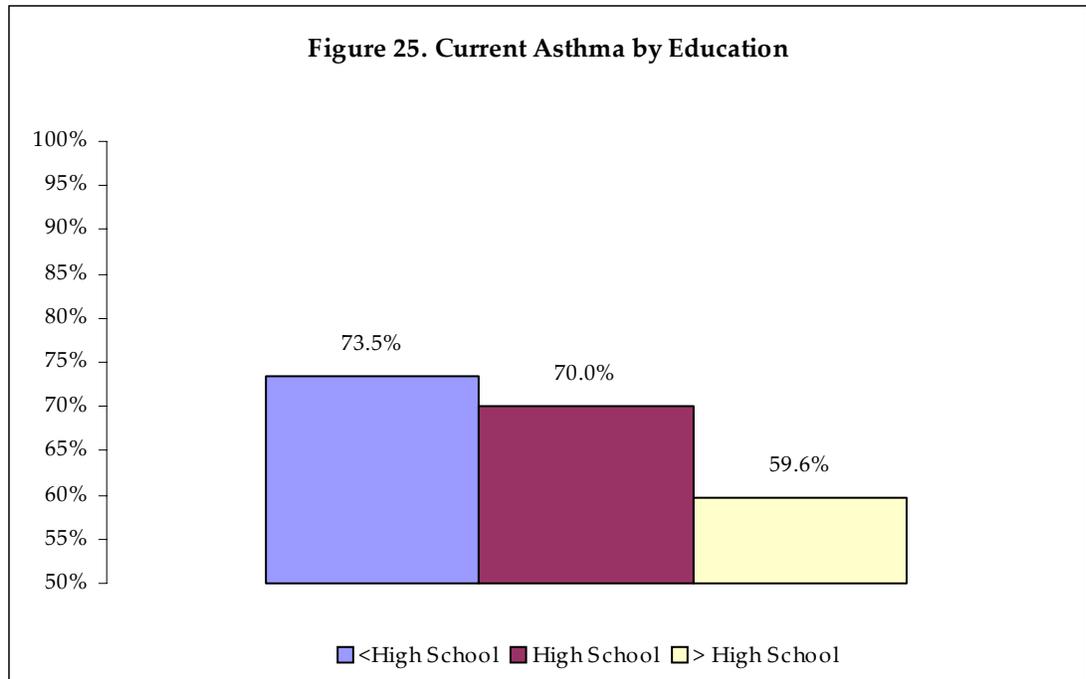


Still asthmatic (of those who had been previously diagnosed)

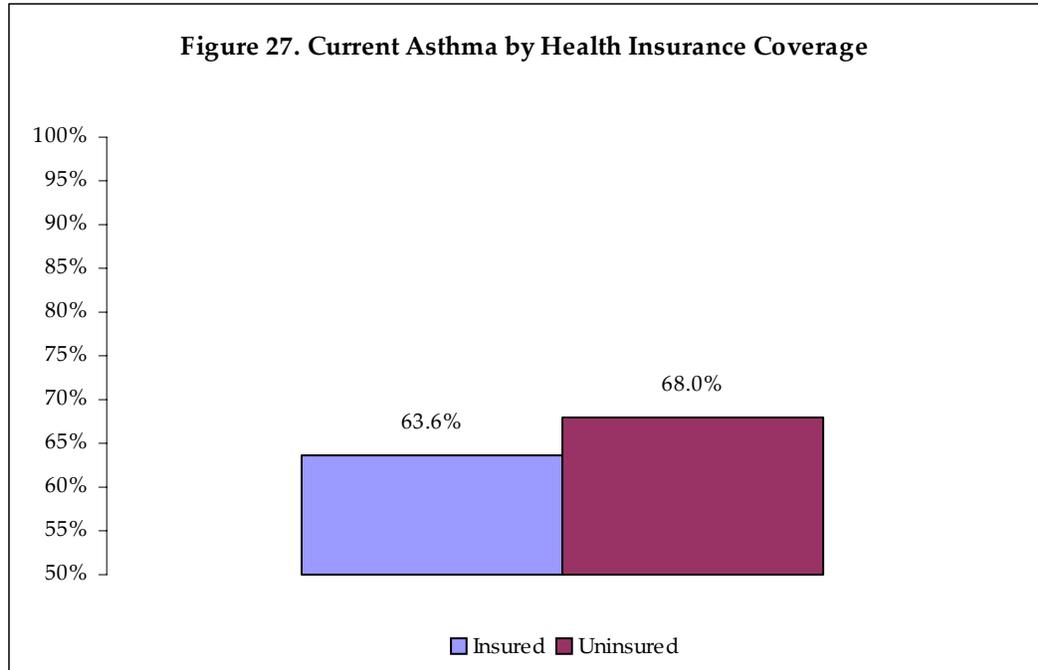
- Of survey respondents who had ever been diagnosed with asthma, 64.0% (95% confidence interval, 62.9% - 65.0%) still had asthma.
- The likelihood of reporting currently having asthma increased with age. (Figure 22)



- Over seventy-one percent (71.5%) of women were currently asthmatic, while only 55.3% of men were current sufferers. (Figure 23)
- In addition, residents who reported lower levels of income were more likely to currently have the disease, than those reporting higher income levels. (Figure 24)



- Respondents with no education past high school were more likely to still have asthma. (Figure 25)
- Single respondents were substantially less likely than others to currently have asthma. (Figure 26)



- Respondents without insurance coverage were more likely to still have asthma than those with health coverage. (Figure 27)

Discussion

The results found in the Davidson County BRFSS were similar to those found Nationwide and throughout Tennessee for diagnosing asthma and current sufferers. Racial and income disparities existed and were consistent with current research findings. Previous research indicated that minorities and individuals with low income were disproportionately represented among those suffering from asthma. Davidson County residents were not an exception to this nationwide trend.

References

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Table 4. Asthma. Results of the 2001 Community Health Behavior Survey in Davidson County, Tennessee Weighted by Council District, Age, Sex, and Race (95% Confidence Interval)

<i>Demographics</i>	<u>Asthma Diagnosis</u>	<u>Still Asthmatic (of those ever diagnosed with asthma)</u>
<u>Total</u>	11.1% (10.4 - 11.7)	64.0% (62.9 - 65.0)
<u>Age</u>		
18-24	16.6% (9.6 - 24.4)	56.6% (52.7 - 60.5)
25-44	10.3% (13.7 - 19.5)	63.4% (61.7 - 65.1)
45-64	10.4% (9.3 - 11.4)	68.2% (66.2 - 70.3)
65+	8.7% (7.2 - 10.3)	71.0% (68.6 - 73.5)
<u>Race</u>		
African American	12.5% (10.9 - 14.0)	69.7% (67.5 - 71.8)
White	10.6% (9.8 - 11.4)	62.8% (61.5 - 64.1)
Other	11.0% (6.7 - 15.2)	53.3% (46.6 - 60.1)
<u>Gender</u>		
Male	10.0% (8.9 - 11.2)	55.3% (53.4 - 57.2)
Female	12.0% (11.1 - 12.9)	70.5% (69.2 - 71.8)
<u>Income</u>		
< \$10,000	17.0% (12.7 - 21.4)	71.4% (66.1 - 76.6)
\$10,000 - \$24,999	12.4% (10.9 - 13.9)	71.3% (69.2 - 73.4)
\$25,000 - \$49,999	10.7% (9.5 - 11.9)	62.2% (60.3 - 64.1)
> \$50,000 or more	10.0% (8.6 - 11.4)	54.7% (52.4 - 57.1)
<u>Education</u>		
< High School	14.5% (12.2 - 16.9)	73.5% (70.6 - 76.4)
High School	10.0% (8.7 - 11.4)	70.0% (68.0 - 72.0)
> High School	10.9% (10.0 - 11.9)	59.6% (58.2 - 61.1)
<u>Marital Status</u>		
Single	11.5% (9.8 - 13.1)	54.3% (52.5 - 56.1)
Married/Cohabiting	13.2% (11.7 - 14.7)	67.9% (65.5 - 70.4)
Divorced/Separated	9.8% (8.7 - 10.8)	72.1% (70.1 - 74.1)
Widowed	9.0% (7.1 - 10.9)	69.0% (65.8 - 72.1)
<u>Insurance Coverage</u>		
Insured	11.1% (10.4 - 11.9)	63.6% (62.4 - 64.7)
Uninsured	10.4% (8.7 - 12.1)	68.0% (65.5 - 70.6)