

Multiple Chronic Conditions in Adults of All Ages: Asthma and Co-Morbidities in North Carolina

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Background

“The aging of the population, the continued existence of chronic disease factors (e.g., tobacco use, poor nutrition, low physical activity levels), and the marvels of modern medicine will contribute to increasing numbers of Americans with multiple chronic conditions.”¹

“Multiple chronic conditions can overwhelm individuals, their families and others who care for them, health care professional and other service providers, and our systems of care in the United States.”¹

“Several chronic comorbid conditions have been demonstrated to impede asthma management. Evidence suggests that if the conditions are treated appropriately, asthma control can improve...”²

Purpose

➤ Compare adults with current asthma with adults who never had asthma on the prevalence of chronic diseases, including chronic obstructive pulmonary disease (COPD), disability, diabetes, arthritis, high blood pressure, high cholesterol, and frequent mental distress*

Methods

Data

➤ 2007 and 2009 North Carolina Behavioral Risk Factor Surveillance System (BRFSS)

➤ Adults with current asthma (N=2,304) and adults who never had asthma (N=25,622)

Statistical Analysis

➤ Descriptive statistics of study sample demographic characteristics

➤ Prevalence rates for co-morbid chronic conditions among adults with current asthma and those who had never had asthma

➤ Risk ratios to assess the excess risk of co-morbid chronic conditions among adults with current asthma

* Self-reported response of “14 or more days” to BRFSS question, “Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?”

Results

Table 1. Selected Demographic Characteristics of Study Sample: Adults with Asthma and Adults Who Never Had Asthma, 2007 and 2009

Demographics	Asthma Status			
	Current Asthma		Never Had Asthma	
	N	%	N	%
Sex				
Male	579	37.3	9,696	49.4
Female	1,725	62.7	15,926	50.6
Total	2,304	100.0	25,622	100.0
Age				
18-44	635	50.7	7,304	50.2
45-54	465	18.7	5,005	18.6
55-64	535	14.8	5,289	14.5
65-74	417	9.5	4,392	9.2
75+	242	6.3	3,434	7.4
Total	2,294	100.0	25,424	100.0
Race				
White	1,790	71.2	20,173	71.0
African American	386	23.2	3,635	18.3
Native American	67	2.1	519	1.6
Other	52	3.5	1,158	9.1
Total	2,295	100.0	25,485	100.0
Education				
Less than High School	494	20.3	3,352	13.7
High School	712	32.8	7,629	28.9
Post High School	575	25.0	6,554	26.0
College or More	521	21.9	8,046	31.3
Total	2,302	100.0	25,581	100.0
Income				
<\$15,000	464	18.1	2,505	9.5
\$15,000-24,999	459	23.1	4,032	17.4
\$25,000-34,999	224	12.0	2,743	11.7
\$35,000-49,999	260	11.4	3,530	15.6
\$50,000-74,999	260	17.1	3,628	17.1
\$75,000+	303	18.2	5,404	28.7
Total	1,970	100.0	21,842	100.0

Table 2. Weighted Prevalence and Risk Ratios of Chronic Diseases and Health Conditions among All Adults with Current Asthma Compared to Adults Who Never Had Asthma, 2007-2009

Chronic Disease/Health Condition	Prevalence		Risk Ratio	
	With Current Asthma %	Never Had Asthma %	RR	95% C.I.
COPD	28.3	4.0	7.17	6.21-8.28
Disability	43.6	19.8	2.20	2.01-2.40
Frequent Mental Distress	22.5	10.5	2.15	1.85-2.49
Diabetes	15.5	8.8	1.76	1.51-2.05
Arthritis	44.7	26.9	1.66	1.53-1.81
High Blood Pressure	38.4	29.5	1.30	1.19-1.42
High Cholesterol	46.9	39.2	1.20	1.10-1.30

Table 3. Weighted Prevalence and Risk Ratios of Chronic Diseases and Health Conditions among Adults, Ages 18 to 44, with Current Asthma Compared to Adults, Ages 18 to 44, Who Never Had Asthma, 2007-2009

Chronic Disease/Health Condition	Prevalence		Risk Ratio	
	With Current Asthma %	Never Had Asthma %	RR	95% C.I.
COPD	15.4	2.0	7.81	5.24-11.65
Disability	30.1	11.0	2.73	2.22-3.36
Frequent Mental Distress	22.0	11.2	1.96	1.53-2.52
Diabetes	6.5	2.5	2.63	1.63-4.24
Arthritis	22.6	10.6	2.12	1.67-2.69
High Blood Pressure	18.0	12.2	1.48	1.14-1.93
High Cholesterol	30.7	23.5	1.31	1.00-1.63

➤ Except for sex, education and income, adults with current asthma were similar for age and race when compared to adults who never had asthma (Table 1).

➤ The risk of chronic diseases/health conditions (except frequent mental distress) was higher among adults ages 18-44 with current asthma compared to their counterparts (Table 3).

➤ The risk of COPD was seven times higher among all adults with asthma (Table 2), and almost eight times higher in the 18-44 years age group with asthma (Table 3).

Conclusions

➤ For each disease/condition examined, excess risk was statistically, significantly higher in the asthma population.

➤ Asthma seems to pose a risk for other chronic diseases not only for older adults, but also young adults in North Carolina.

➤ Clinical management and treatment of younger adults with asthma should include consideration of co-morbid chronic diseases and health conditions,

References

1. U.S. Department of Health and Human Services. *HHS Initiative on Multiple Chronic Conditions*. Web site: <http://www.hhs.gov/ash/initiatives.mcc/>.
2. National Heart, Lung, and Blood Institute. *Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma. Summary Report 2007*. Web site: <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>.

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