Asthma and the influence of other chronic diseases as determinants of CAM use

Clinical and Public Health Policy Implications

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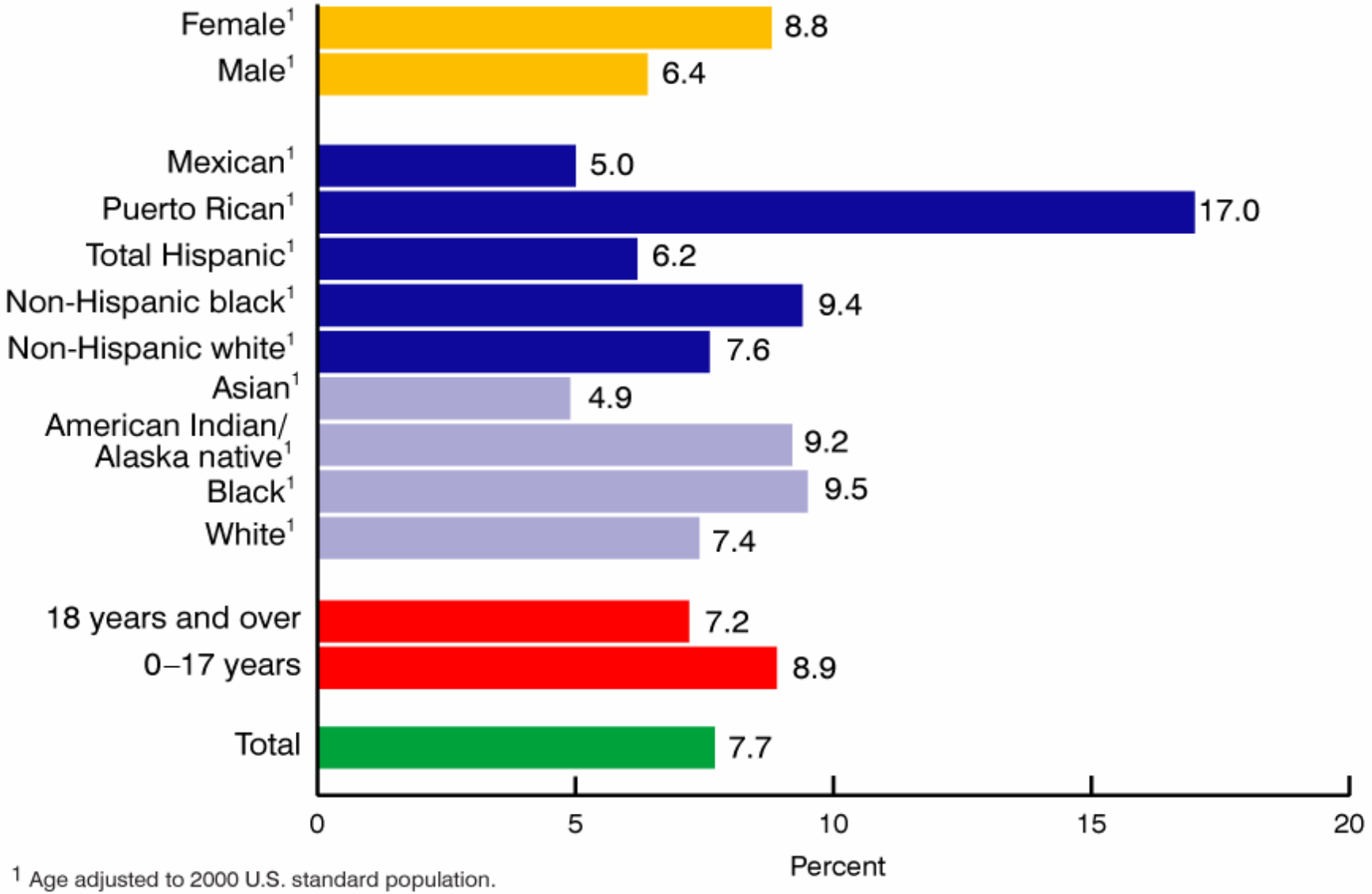
ASTHMA

CDC defined: Chronic respiratory disease characterized by episodes or attacks of inflammation and narrowing of the smaller airways and whose severity may be mild to life-threatening.

Asthma Prevalence

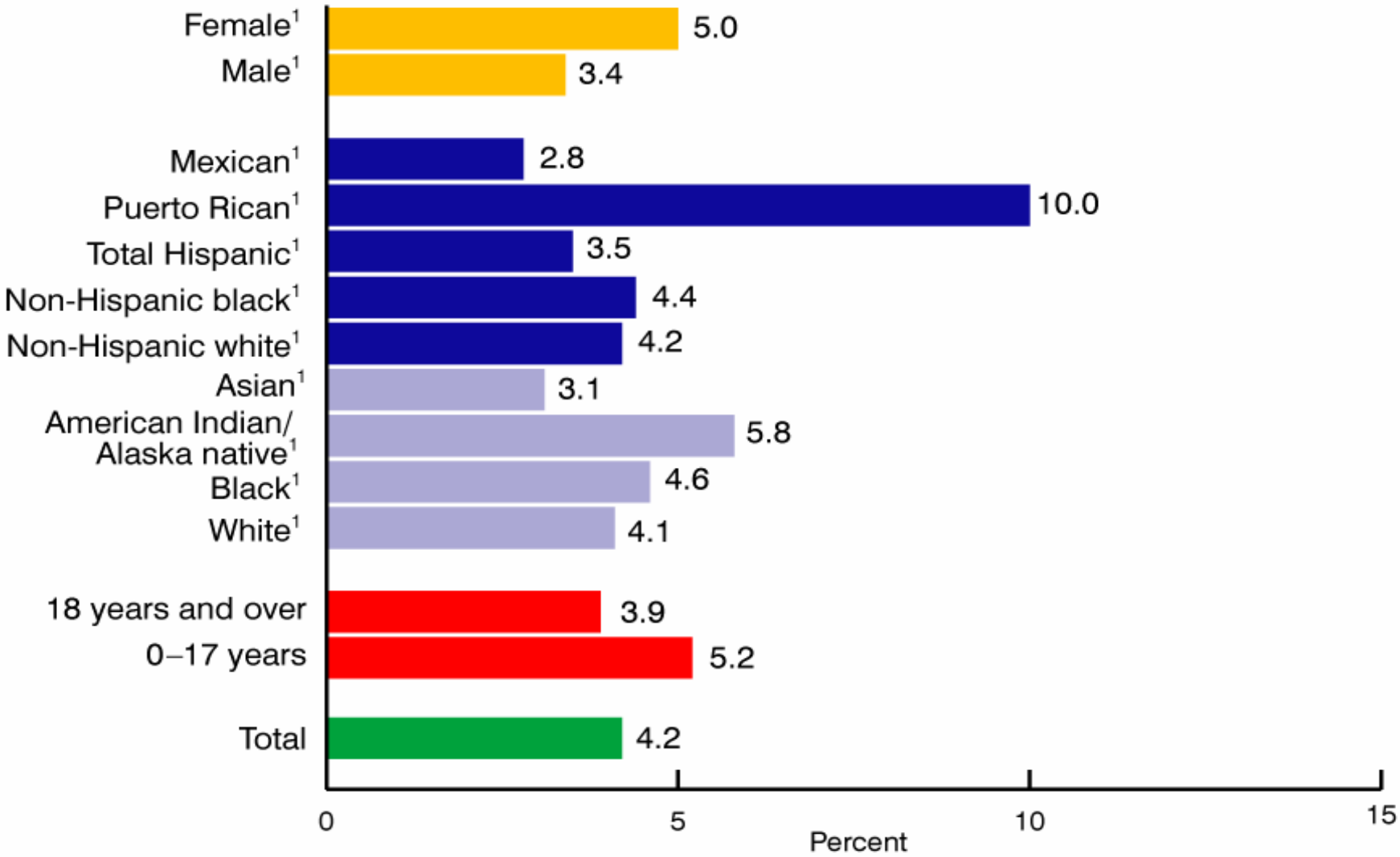
Figure1. Percent of current asthma prevalence: United States, 2005



[1] Age adjusted to 2000 U.S. standard population.
SOURCE: National Health Interview Survey, National Center for Health Statistics, CDC.

http://www.cdc.gov/nchs/products/pubs/pubd/hestats/ashtma03-05/asthma03-05.htm

Figure 2. Percent of asthma attack prevalence: United States, 2005



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Chronic Disease

Of 24 Million Americans with Asthma

- **5,965,734 have at least one other chronic condition or co-morbidity**
- ***Overall, the presence of more chronic disease predicts more CAM use***

Chronic Disease cont.

- ***Disease Severity and Chronicity***
  - ***Mason (2001), Mitzdorf (1999), Ong CK (2002)***
- ***Hypertension and Arthritis***
  - **Astin, JA (1998) *JAMA* 279: 1548-53.**
- ***Chronic care models and the need to seek alternative care***
  - ***Lind et al (2006), JACM 12(1):71***

Complementary and Alternative Medicine

CAM Definition

A group of diverse medical and health care systems, practices and products that are not presently considered a part of conventional medicine.

NCCAM

NCCAM Domains

- Mind-Body Medicine
- Biologically Based Practices
- Manipulative and Body-Based Practices
- Energy Medicine
- Whole Medical Systems

Specific CAM Therapies used for Asthma

Practitioner based:

- ***Biofeedback***
- ***Chiropractic***
- ***Massage Therapy***
- ***Acupuncture***
- ***Homeopathy***
- ***Naturopathy***

Self-care based:

- ***Meditation***
- ***Guided Imagery***
- ***Progressive Relaxation***
- ***Deep breathing exercises***
- ***Energy Therapies***
- ***Biologically based therapies***

Individual therapies:

- ***Diets***
- ***Herbal***
- ***Relaxation***
- ***Vitamins***
- ***Prayer***

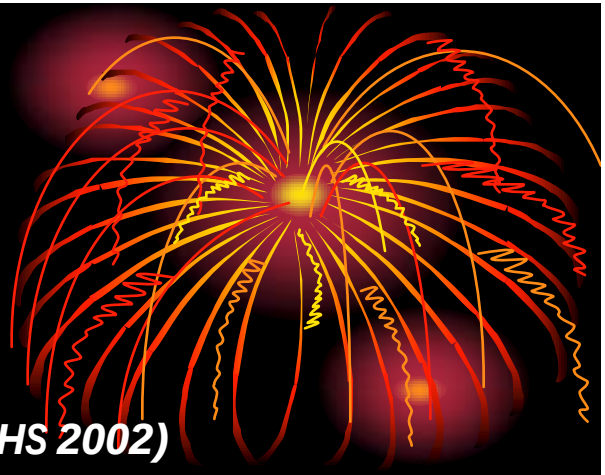
CAM Use Prevalence

- 41% of those with asthma use some form of a CAM modality (Blanc 2001)
- 62% of U.S. Population use a CAM modality (Barnes 2004)
  - **Disparities existing within:**
    - **Age**
    - **Gender**
    - **Race**
    - **Income**
    - **Educational level**

Questions of Interest

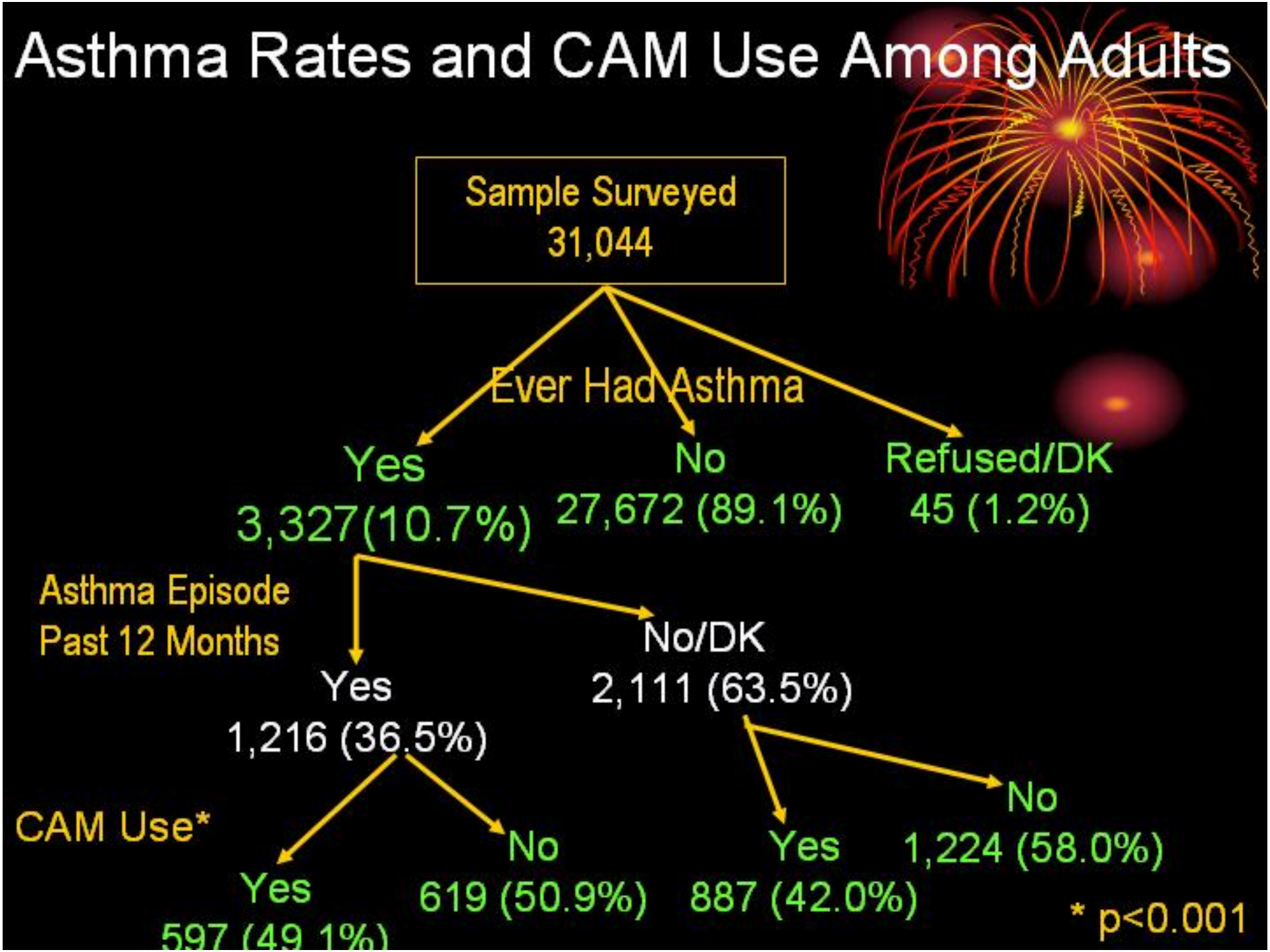
- **What is the extent of CAM use among individuals with asthma?**
- **Is CAM use related to other chronic conditions among individuals with asthma and does insurance coverage for CAM confound this relationship?**
- **Is there an interaction between uncontrolled asthma and other chronic conditions on CAM use?**

STUDY DESIGN AND METHODS

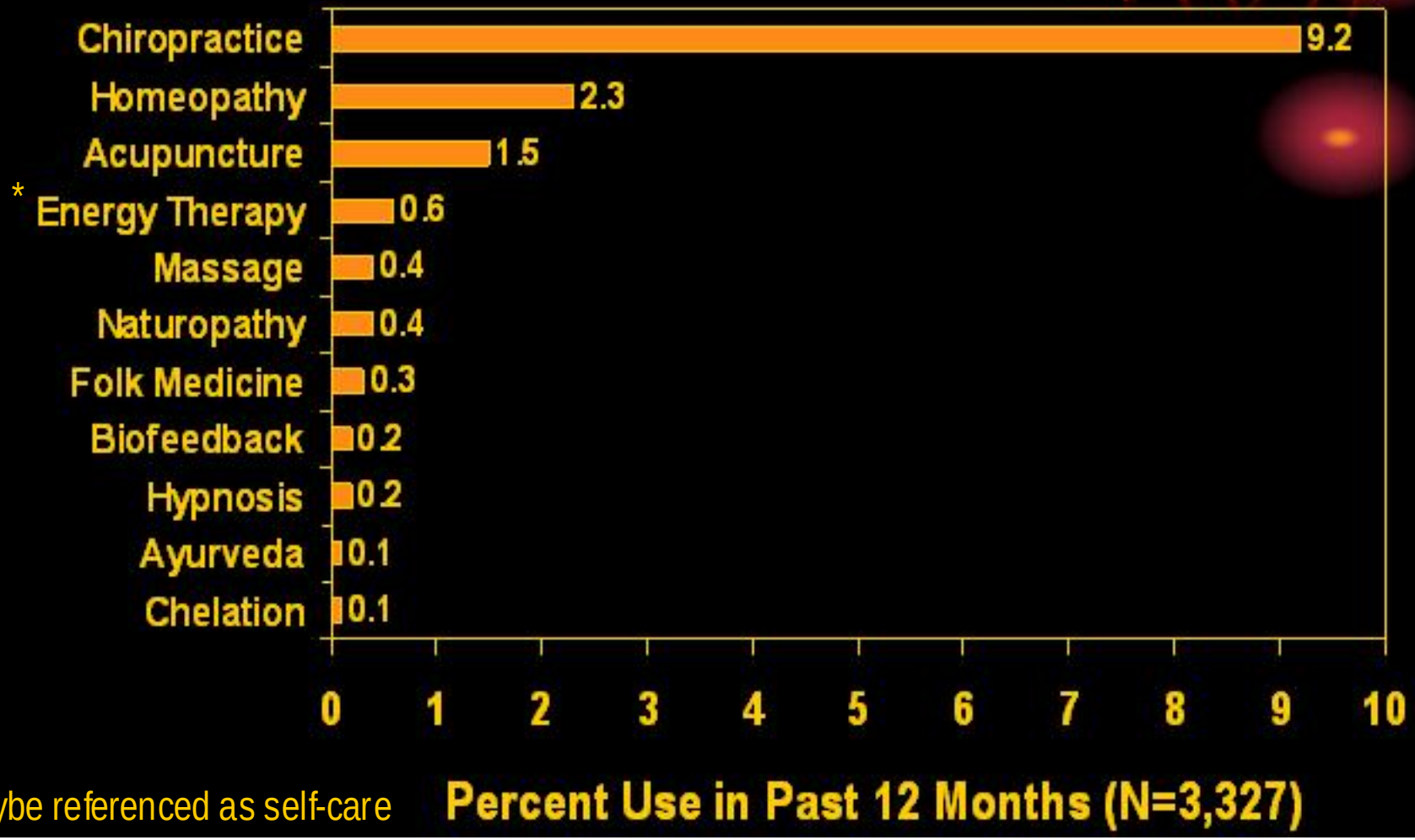


- **Population Source**
  - National Health Interview Survey *(NCHS 2002)* N=31,044
- **Research Design and measures**
  - Stratified, multi-level, probability sampling with over-sampling of blacks and Hispanics
  - Study Sample N=3327 (Ever had asthma)
  - Cross-sectional study to predict CAM utilization based upon level of disease severity, presence of selected co-morbidities, and the role of potential confounders including presence of health insurance coverage for CAM.

RESULTS

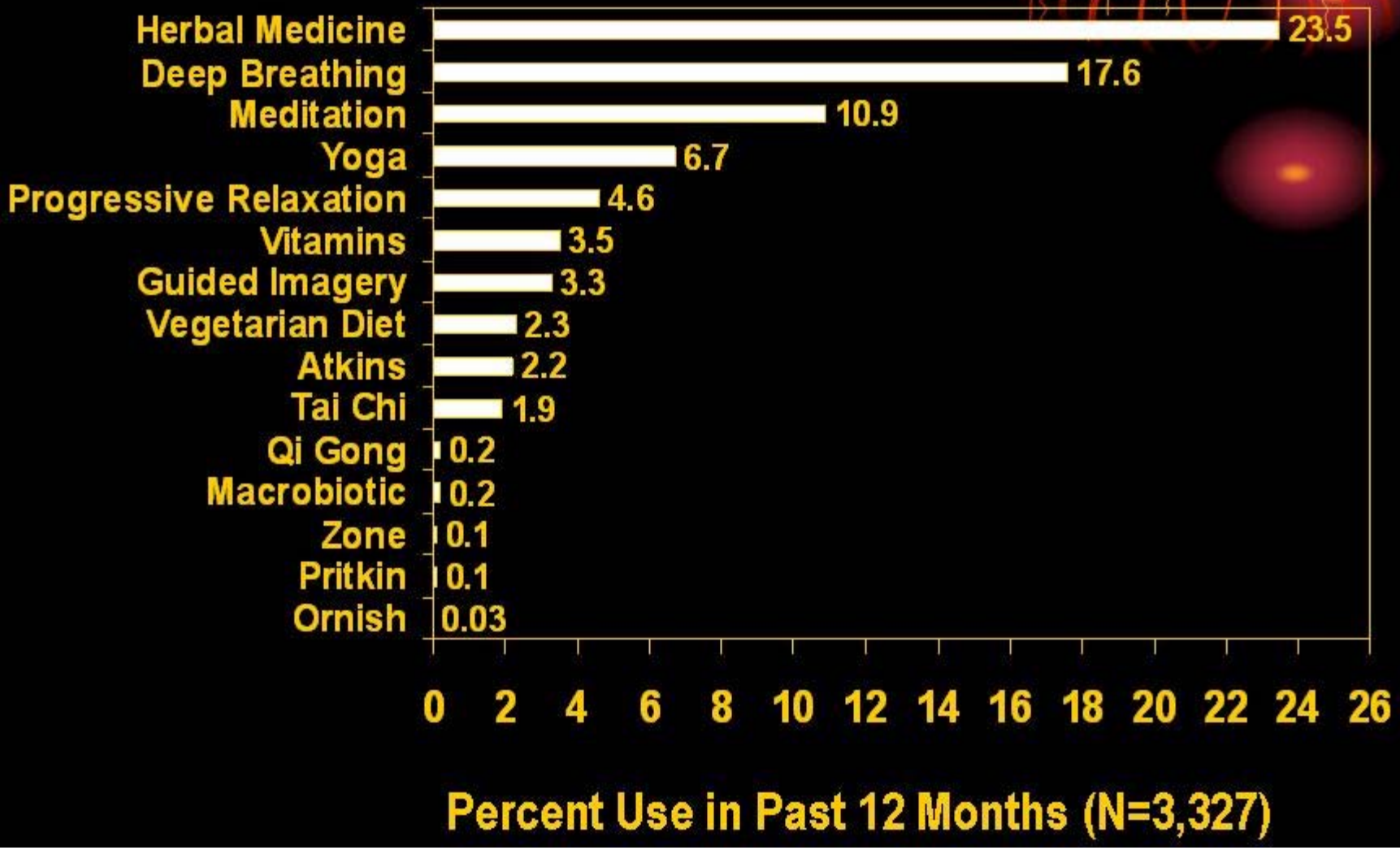


CAM Use Among Individuals with Asthma
(Practitioner Guided Utilization)



**Maybe referenced as self-care

CAM Use Among Individuals with Asthma
(Self-Care Utilization)



Demographic Characteristics of Adults with Asthma And Prevalence of CAM Use (NHIS 2002, N=3,327)

			CAM Use	
Age:	**N**	**%**	**n**	**%**
Mean age 44.9 years (±16.9)				
18-54 years	2390	71.8	1112	46.5
55-64 years	453	13.6	207	45.7
65 years and older	484	14.6	165	34.1
Race/Ethnicity:				
Hispanic	419	12.6	172	41.1
Non-Hispanic White	2268	68.2	1072	47.3
Non-Hispanic Black	521	15.7	179	34.4
Non-Hispanic Other	119	3.6	61	51.3

Demographic Characteristics of Adults with Asthma And Prevalence of CAM Use (NHIS 2002, N=3,327)

			CAM Use	
Gender:	**N**	**%**	**n**	**%**
Male	1193	35.9	444	40.6
Female	2134	64.1	1000	46.9
Education:				
Below High School	519	15.6	127	24.5
HS Degree/GED	938	28.2	358	38.2
Some College	1125	33.8	559	49.7
College degree	465	14.0	269	57.8
Post-graduate/Prof.	257	7.7	165	64.2
Unknown	23	0.7	6	26.1

Demographic Characteristics of Adults with Asthma And Prevalence of CAM Use (NHIS 2002, N=3,327)

			CAM Use	
Marital Status:	**N**	**%**	**n**	**%**
Never married	833	25.0	371	44,5
Married/living w/ partner	1526	45.9	683	44.8
Widowed/divorced/separated	958	28.8	423	44.2
Unknown	10	0.3	7	70.0
Current Work status:				
Working	1948	58.6	949	48.7
Retired/Not working	1229	36.9	500	40.7
Never worked	140	4.2	32	22.9
Unknown	10	0.3	3	30.0

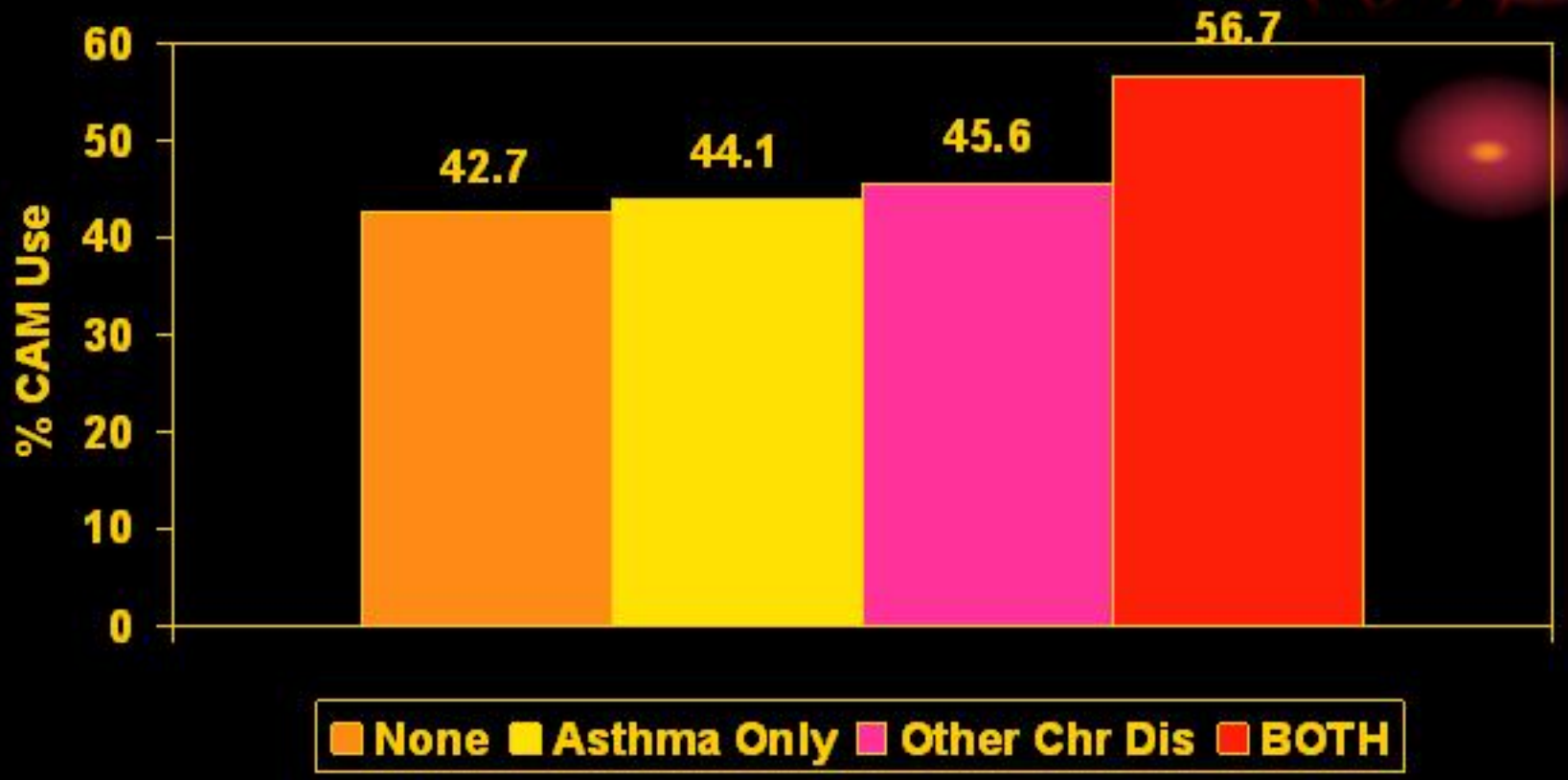
Demographic Characteristics of Adults with Asthma And Prevalence of CAM Use (NHIS 2002, N=3,327)

			CAM Use	
Annual Family Income:	N	%	n	%
<$20,000	1009	30.4	367	36.4
=>20,000	2154	64.7	1050	48.7
Unknown	164	4.9	67	40.9
CAM Use Covered by Insurance				
Yes	216	6.5	216	100.0
No/No Insurance	3111	93.5	1268	40.8

Chronic Disease Conditions of Adults with Asthma And Prevalence of CAM Use (NHIS 2002, N=3,327)

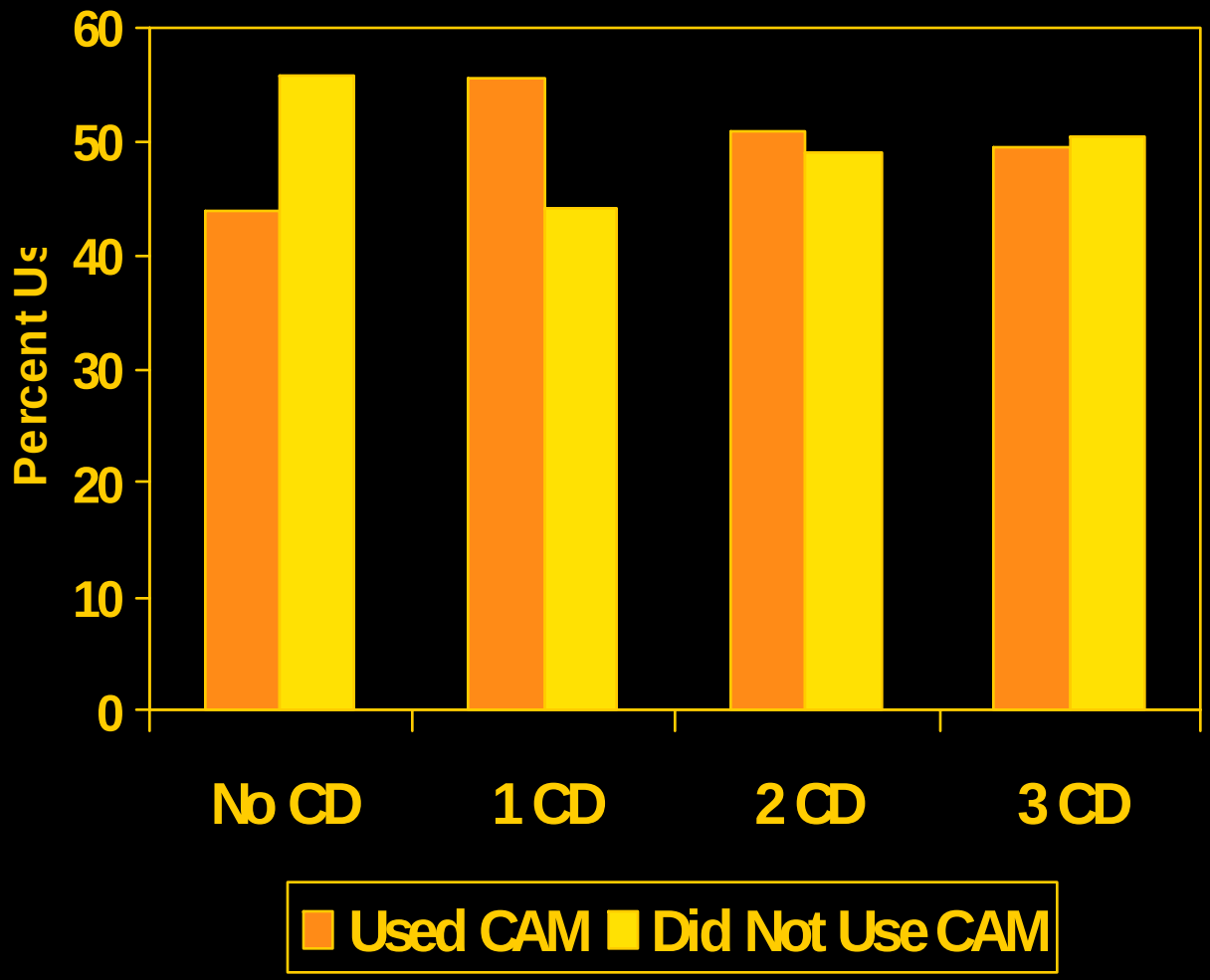
			CAM Use	
Chronic Diseases	**N**	**%**	**n**	**%**
Arthritis	1037	31.2	520	50.1
Heart Condition	342	10.3	176	51.5
Stroke	112	3.4	38	33.9
Hypertension	1014	30.5	446	44.0
Diabetes	357	10.7	141	39.5
Cancer	290	8.7	141	48.6
Total No. Chronic Diseases 0	1576	47.4	657	41.7
1	856	25.7	422	49.3
2+	895	26.9	405	45.3

CAM Use Among Individuals with Asthma AND other Chronic Diseases



p<0.001

CAM Use Among Individuals with an Episode of Asthma in past 12mos AND Other Chronic Diseases



- Those with only 1 CD show greater use of CAM than those with ≥2 CD.
- Chi2 (3) 10.89 p<0.05

Relationship Between Asthma Episode, Other Chronic Diseases and Overall CAM Use

Multiple Regression* Results

Main Effects

Regression Models		O.R.	95% CI	p value
Asthma	Unadjusted	1.33	1.15;1.53	0.001
Asthma	Adjusted*	1.28	1.09;1.50	0.001
Chronic Condition	Unadjusted	1.19	1.13;1.24	0.001
Chronic Condition	Adjusted*	1.55	1.46;1.64	0.001
Asthma	Adjusted(1)	1.31	1.13;1.51	0.001
Chronic Condition	Adjusted(1)	1.23	1.07;1.47	0.001
Asthma	Adjusted(2)	1.25	1.07;1.46	0.001
Chronic Condition	Adjusted(2)	1.62	1.37;1.92	0.001

Chronic Condition: Any Chronic Condition, CAM: Overall CAM Use

* 2:Adjustment factors: Age, gender, race, education. marital status, employment, income, Insurance for CAM

1. Single factor adjustment

Relationship Between Asthma Episode, Other Chronic Diseases and Overall CAM Use

Multiple Regression* Results

Interaction Effects

Regression Models		O.R.	95% CI	p value
Asthma only	Adjusted (1)	1.06	0.87;1.28	NS
Chronic Condition	Adjusted(1)	1.12	0.93;1.36	NS
Asthma AND Chronic Condition	Adjusted(1)	1.69	1.33;2.14	0.001
Asthma only	Adjusted (2)	0.87	0.70;1.08	NS
Chronic Condition	Adjusted(2)	1.12	0.91;1.37	NS
Asthma AND Chronic Condition	Adjusted(2)	1.62	1.25;2.11	0.001

Chronic Condition: Any Chronic Condition, CAM: Overall CAM Use

* 2:Adjustment factors: Age, gender, race, education. marital status, employment, income, Insurance for CAM
1. Single factor adjustment

Strengths and Limitations

- Strengths
  - Robust sample size
  - Possibly generalized to larger population
- Limitations
  - Secondary data set
  - Cross-sectional design

CONCLUSION

- **Almost half (44.6%) individuals with a diagnosis of Asthma used CAM in the past year.**
- **CAM use among individuals with asthma who had one or more other chronic conditions was 12.8%.**
- **Individuals with uncontrolled asthma and one or more chronic diseases had the greatest percent of CAM use.**

CONCLUSION, cont.

In multiple regressions where demographic and health care coverage factors were controlled, individuals who had an asthma episode in the past 12months **AND** one or more chronic diseases, had the greatest odds of CAM use ($p<0.001$).

Public Health Significance and Policy Implications

- Potential role in primary prevention
- Potential to deal with the 'effectiveness gap' and its role as adjunctive therapy and secondary prevention.

Public Health Significance and Policy Implications

Providing Health insurance coverage for CAM use for those with multiple chronic conditions, including asthma, may improve quality of life.

In our analysis, we observed that every individual (100%) who had a health insurance coverage for CAM, reported a CAM modality use

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