

Impact of Chronic Disease on Functional Status Among Non-Elderly Adults in Los Angeles County

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Background

- **Chronic disease leading cause of premature death and disability worldwide.**
- **Most local health jurisdictions have limited data on chronic disease burden beyond mortality statistics.**
- **Increased focus on relationship between chronic disease and health-related quality of life (HRQOL).**
- **Little known about the combined impact of multiple chronic conditions on functional status and HRQOL.**

Study Objectives

- **To assess the combined impact of selected chronic health conditions on functional status among non-elderly adults (18-64 yrs) in Los Angeles County based on activity limitation days (ALDs), a validated measure of HRQOL.**
- **To examine variation in chronic disease impact by age, sex, and race/ethnicity.**

Why focus on non-elderly adults?

- **From societal perspective, the most productive years.**
- **Chronic disease burden should be low in this population.**

Methods

- **Study design**

- **Countywide random-digit-dialed telephone survey (1999 Los Angeles County Health Survey)**
- **8,354 households sampled (1 adult randomly selected from each household)**
- **Interviews offered in 6 languages (English, Spanish, Mandarin, Cantonese, Korean, and Vietnamese)**
- **Response rate 55%**
- **Data weighted to adjust for differential participation using census-based 1999 population estimates**

Methods (cont.)

- **Analysis**
 - Restricted to adults aged 18-64 (n=7,121)
 - Chronic diseases (“ever diagnosed by a health care provider”) included in the analysis:
 - ▲ heart disease, diabetes, arthritis, depression, and asthma
 - ▲ these 5 conditions among the leading causes of DALYs in the county (Kominski, et al, Public Health Rep, 2002)

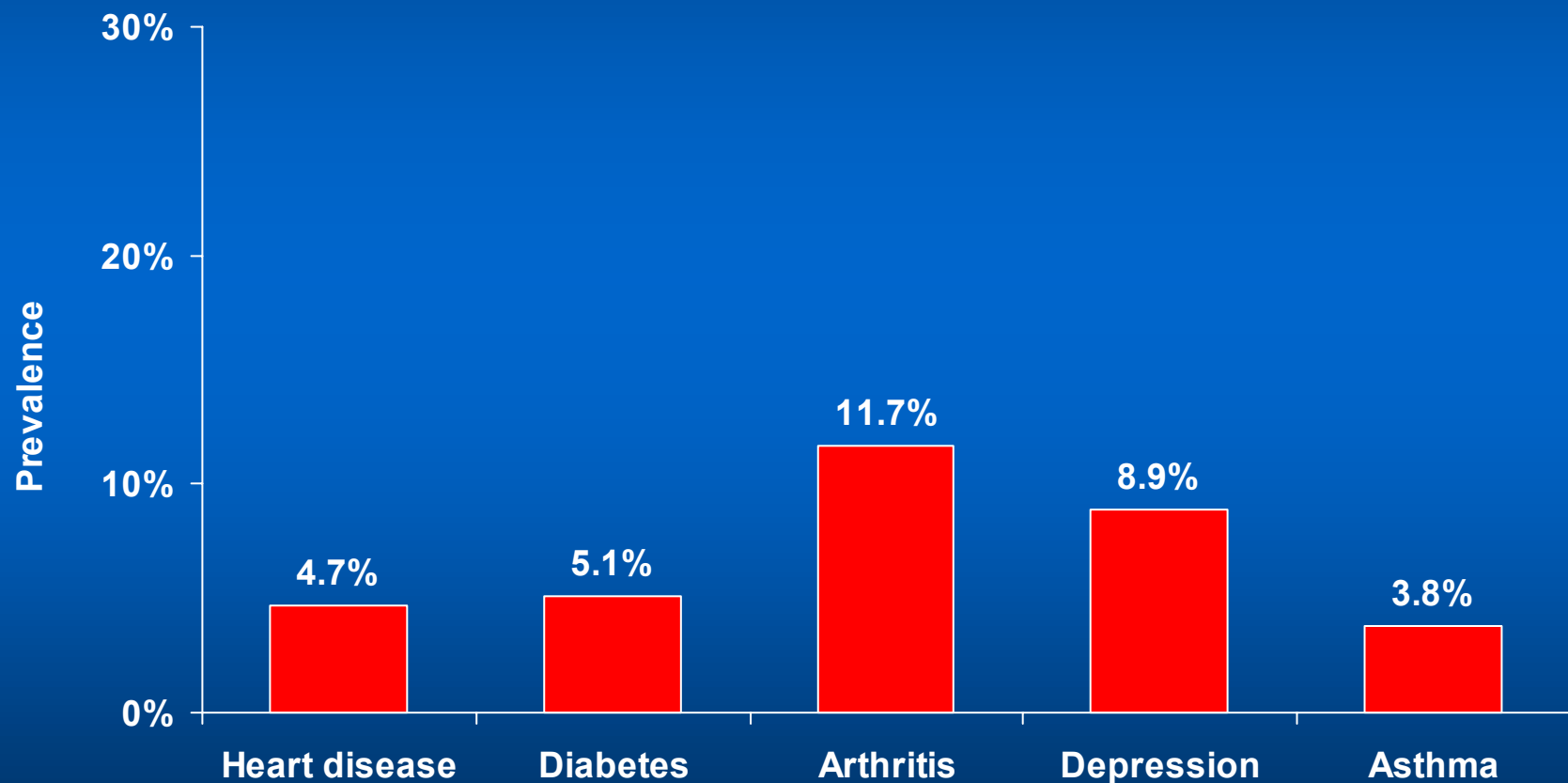
Methods (cont.)

- **Analysis (cont.)**
 - **Functional status assessed using activity limitation days (ALDs) measure:**
 - ▲ **“During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, or recreation?” (CDC, 1994)**
 - **Mean number of ALDs in past month assessed by chronic disease status (individual conditions and combined effect of multiple diagnoses)**

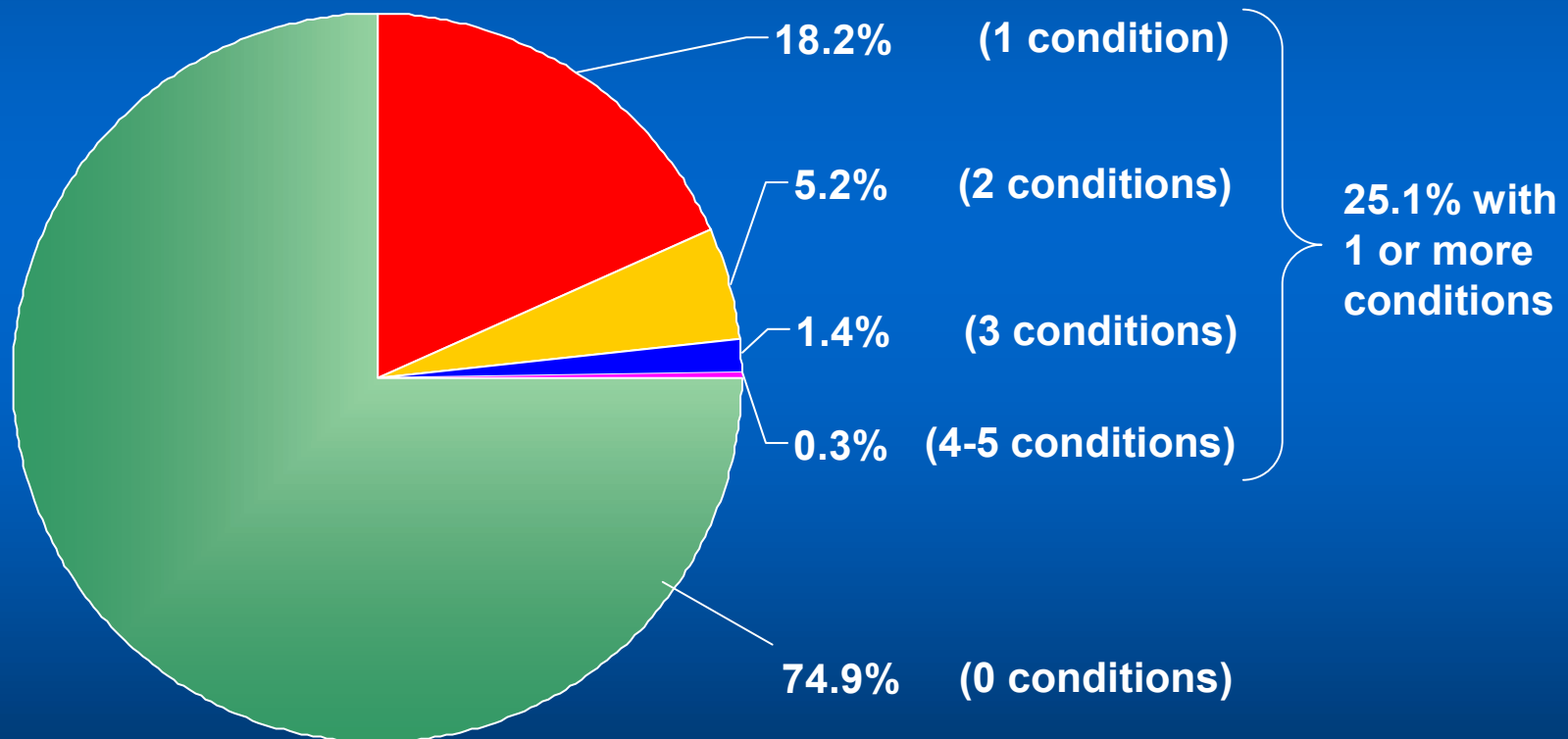
Methods (cont.)

- **Analysis (cont.)**
 - Results stratified by age, sex, and race/ethnicity (whites, blacks, and Latinos)
 - Overall impact assessed by calculating:
 - ▲ the number and rate of ALDs attributable to these 5 chronic diseases
 - ▲ fraction of total ALDs in the non-elderly adult population attributable to these 5 diseases (attributable fraction)

Prevalence of Selected Chronic Diseases Among Adults Aged 18-64 years, Los Angeles County, 1999



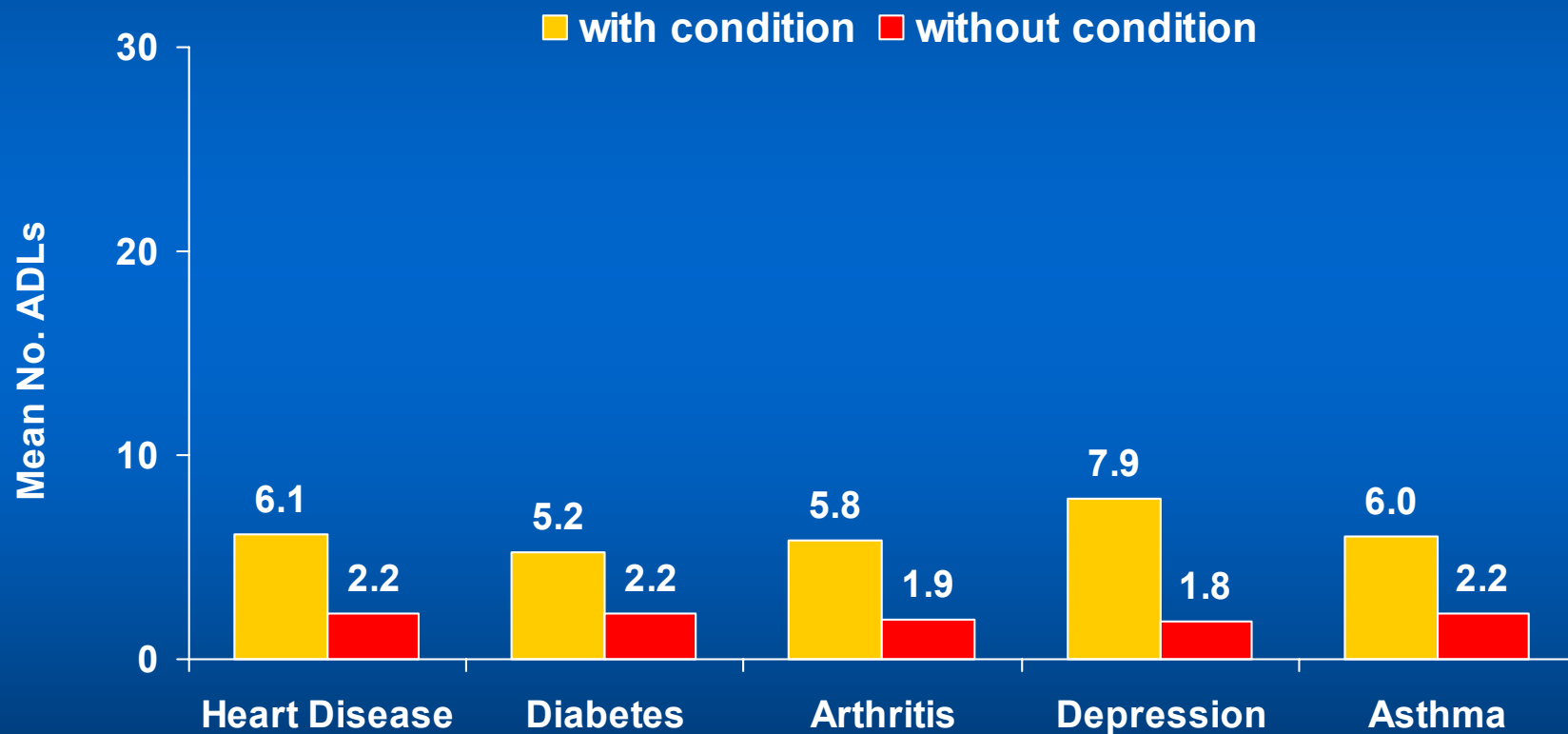
Distribution of Non-Elderly Adults by Number of Diagnosed Chronic Diseases



Prevalence of Non-Elderly Adults with Diagnosed Chronic Diseases by Age, Sex, and Race/Ethnicity

		Prevalence of ≥ 1 condition (%)	Prevalence of ≥ 2 conditions (%)
Age Group			
	18-39	16.2	3.1
	40-49	29.3	8.2
	50-64	45.6	16.3
Sex			
	Male	20.2	4.8
	Female	30.1	9.1
Race/Ethnicity			
	White	32.4	9.0
	Black	31.7	9.6
	Latino	19.7	5.4

Mean Number of Activity Limitation Days (ALDs) in Past Month by Chronic Health Condition



Prevalence of Chronic Disease and Mean Number of ALDs in Past Month by Number of Diagnosed Conditions

No. of Conditions	Prevalence (%)	Mean No. ALDs
0	74.9	1.4
1	18.2	3.9
2	5.2	6.7
3	1.4	11.1
4-5	0.3	19.3

Mean Number of ALDs in the Past Month by Number of Chronic Disease Diagnoses, Age, Sex, and Race/Ethnicity

	No. of Chronic Disease Diagnoses				
	0	1	2	3	4-5
Age Group					
18-39	1.4	3.9	3.9	12.2	8.5*
40-49	1.5	4.1	9.9	10.3	23.4*
50-64	1.2	3.8	6.4	10.9	18.4*
Sex					
Male	1.4	4.1	6.0	13.9	21.3*
Female	1.4	3.8	7.2	9.9	18.6
Race/Ethnicity					
White	1.4	4.1	6.9	10.6	26.1*
Black	2.1	4.9	10.1	8.4*	12.8*
Latino	1.3	3.4	6.5	12.8	13.3*

* Statistically unstable estimate (cell size <20)

Annual Number, Rate and Fraction of ALDs Attributable to the 5 Chronic Diseases in the Total Population and by Age Group

Age Group (yrs)	Number (million)	Rate (days/person-yr)	Attributable Fraction (%)
18 - 39	18.5	5.4	24.0
40 - 49	22.3	15.5	45.7
50 - 64	27.5	22.7	61.6
Total	67.4	11.1	39.5

Annual Number, Rate, and Fraction of ALDs Attributable to the 5 Chronic Diseases, by Sex and Race/Ethnicity

		Number (million)	Rate (days/person-yr)	Attributable Fraction (%)
Sex				
	Male	26.7	8.6	33.9
	Female	40.7	13.6	44.4
Race/Ethnicity				
	White	33.6	15.5	48.3
	Black	10.3	16.5	40.4
	Latino	19.4	7.9	33.9

Limitations

- **Analysis does not account for those with undiagnosed conditions.**
- **Conditions may be underreported.**
- **Some important chronic conditions not included (e.g., cancer, HIV/AIDS, Alzheimer's disease, and anxiety disorders).**
- **Sampling frame did not include those without telephones.**
- **Other non-participation may have introduced selection bias.**
- **ALDs not a complete measure of functional status.**

Conclusions

- **At least one in four non-elderly adults in Los Angeles County has been diagnosed with a chronic disease.**
- **Although prevalence of adults with multiple chronic conditions is relatively low, this group accounts for a disproportionately high burden of ALDs.**
- **The five chronic conditions included in this analysis account for 40% of all ALDs in the non-elderly adult population (likely a minimum estimate of chronic disease impact).**

Conclusions (cont.)

- **Disparities observed by age, sex, and race/ethnicity.**
 - **Chronic disease impact increases with age.**
 - **Higher impact among women than men.**
 - **Lower impact among Latinos; may reflect younger age distribution and higher level of undiagnosed disease.**
- **Significant opportunities to reduce chronic disease burden in the non-elderly adult population.**
- **Results have implications for estimating the economic as well as perceived burden of chronic disease.**

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