



Introduction & Aims

Obesity is a cause of morbidity and disability in the United States with Blacks bearing a disproportionate burden of obesity-related multimorbidity. Racial differences in health care costs across the lifespan remain under investigated.

Our aims were to:

- (1) Estimate racial difference in lifetime healthcare costs (LHC) for populations with obesity-related multimorbidity; and
- (2) Examine lifetime healthcare cost differential (LCD) associated with obesity-related multimorbidity in the U.S. community living population ages ≥ 40 years.

Methods

Data: Medical Expenditure Panel Survey (MEPS), 2008-2012. Population was grouped in 48 age-gender-race subpopulations.

Obesity-related multimorbidity was defined as ≥ 2 of the four obesity-related diseases (ORDs): diabetes, hypertension, coronary heart disease (CHD), and stroke.

A published Markov model with one-year cycle and 17 health states (no ORD, any combination of the 4 ORDs, and death) was used to simulate life years and LHCs for each subpopulation. (Figure 1A).

LCD associated with obesity-related multimorbidity for a subpopulation was computed by taking the difference between LHC for members of that subpopulation with multimorbidity and LHC for members of that subpopulation with no ORD. (Figure 2A)

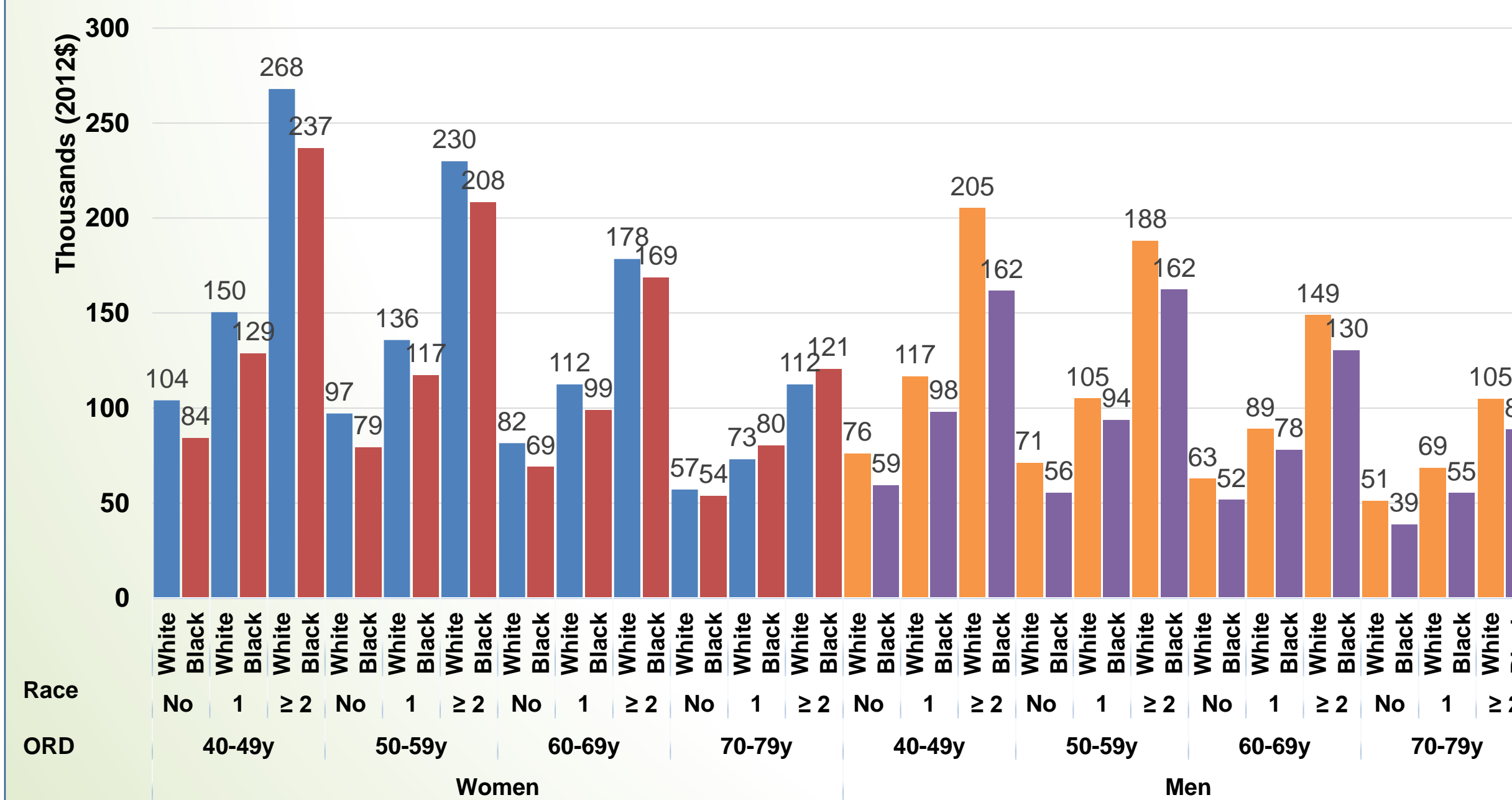
Racial differences by gender were defined as differences in LHC (Figure 1B) and LCD between white women vs. black women and white men vs, black men. (Figure 2B)

Results are presented by gender, age groups (40-49, 50-59, 60-69, 70-79 years), race (White, Black), and multimorbidity status (no ORD, 1 ORD, and multimorbidity)

Table 1: Characteristics of the U.S. population, MEPS, 2008-2012 (Sample size, n=49,002, total population, N=97,229,611)

	Total	White	Black
Sample Size, n	49,002	38,076	10,926
Population Size, N	97,229,611	85,155,922	12,073,688
Population, %	100	87.6	12.4
Gender, %			
Men	49.5	50.0	45.3
Women	50.5	50.0	54.7
Age (y), %			
40-49	34.7	34.3	37.8
50-59	34.1	34.0	34.8
60-69	21.2	21.4	19.5
70-79	10.0	10.3	7.9
Multimorbidity status, %			
No obesity-related disease (ORD)	53.6	55.5	40.1
1 ORD	32.0	31.1	38.7
Multimorbidity	14.3	13.4	21.2

Figure 1A: Lifetime healthcare costs (LHC)



Results

Figure 1B: Racial difference in LHC by ORD: $LHC_W - LHC_B$

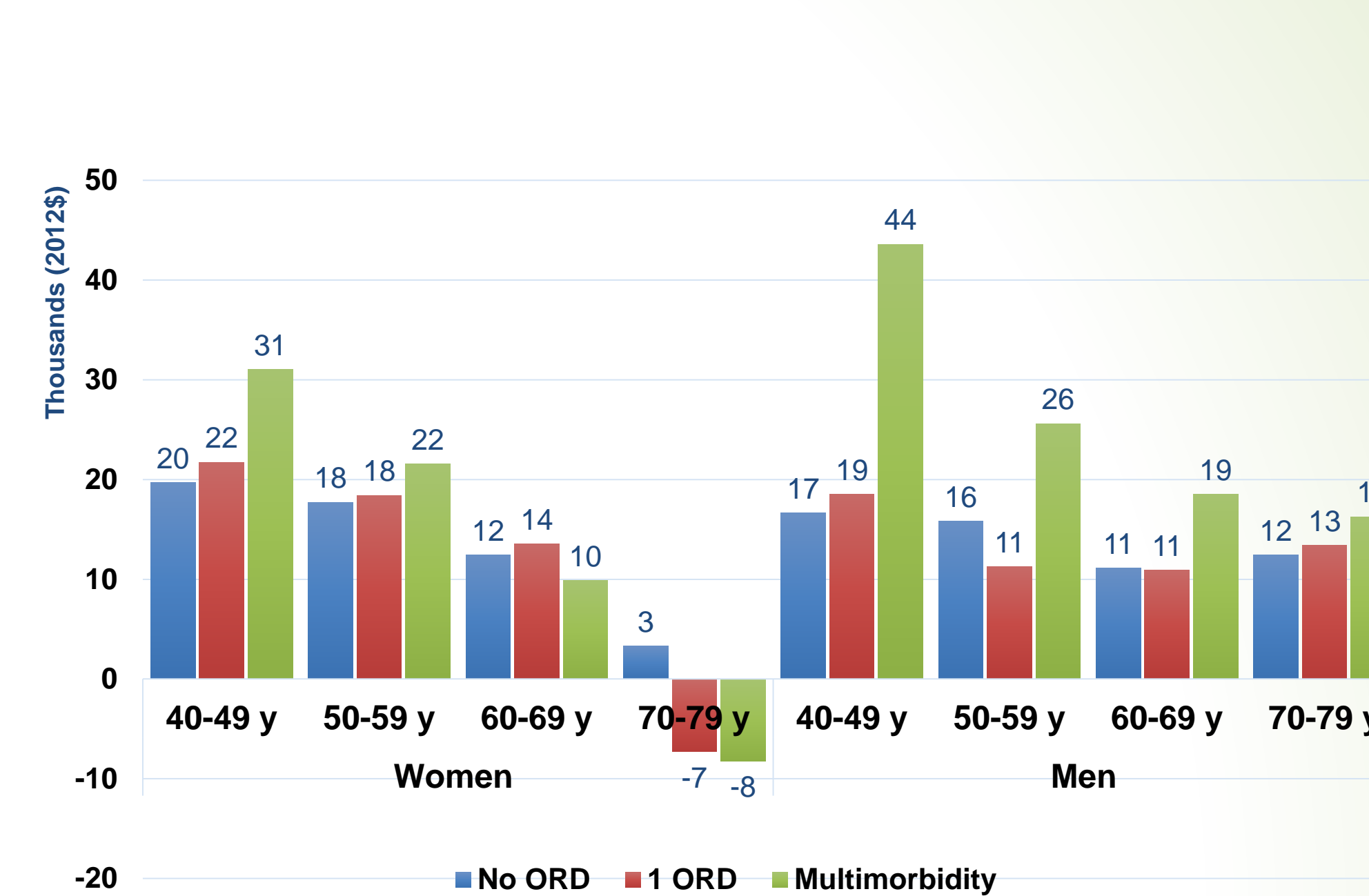


Figure 2A: Lifetime cost differential (LCD) associated with obesity-related multimorbidity

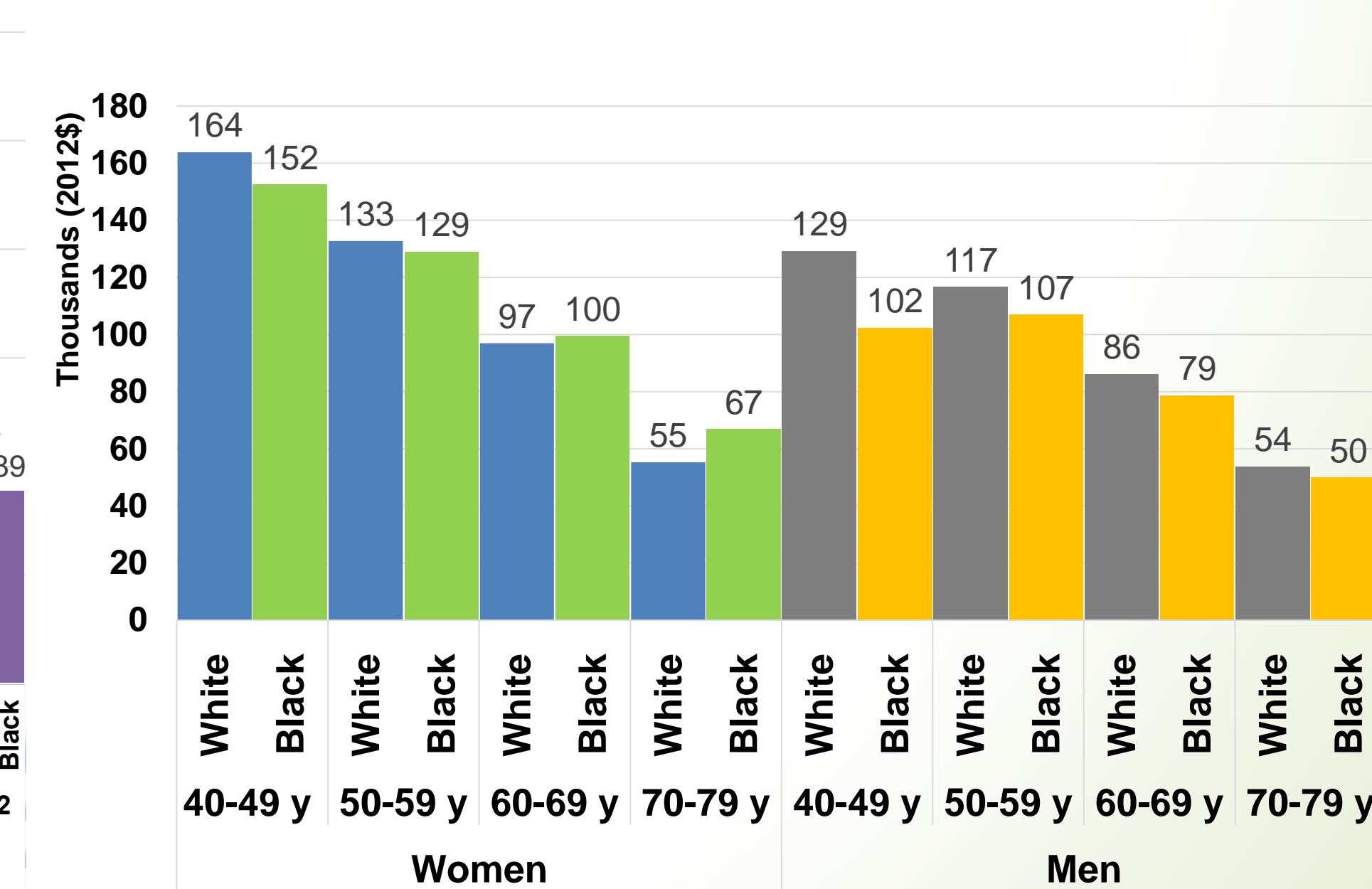
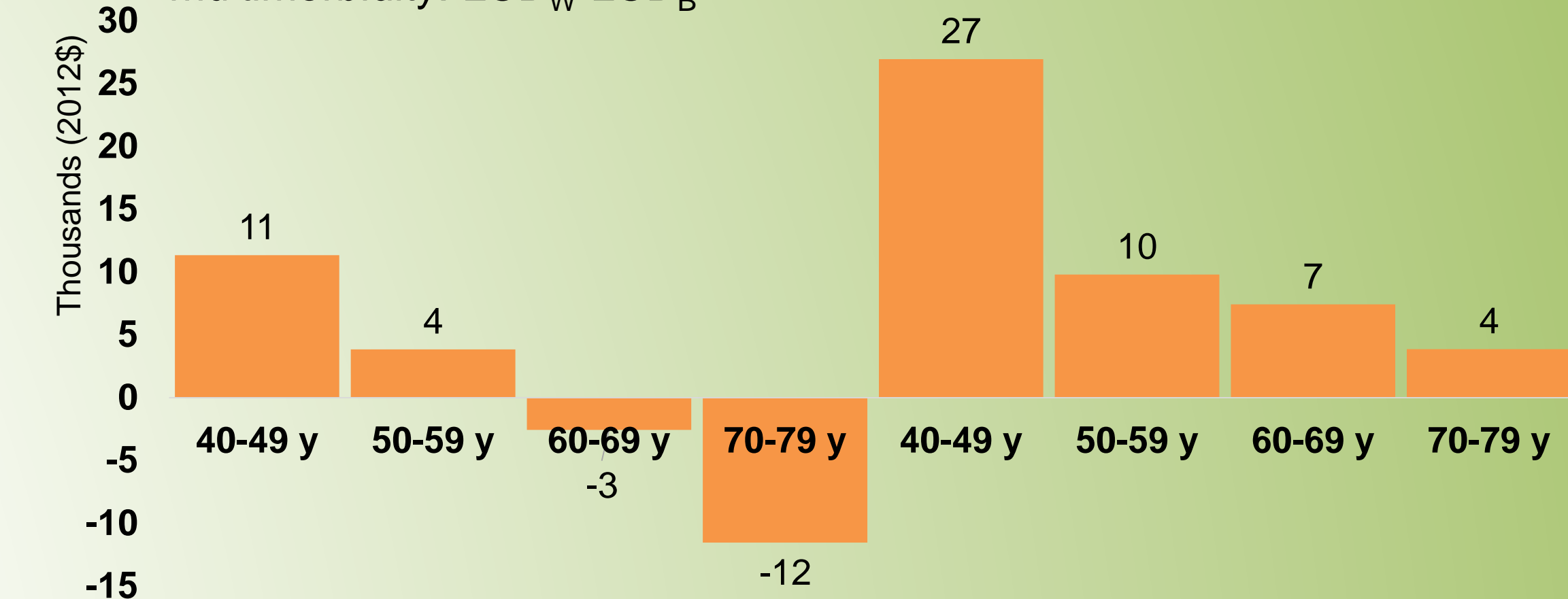


Figure 2B: Racial difference in LCD associated with obesity-related multimorbidity: $LCD_W - LCD_B$



Discussion & Limitations

Racial differences in LHCs and LCD associated with obesity-related multimorbidity persist and vary considerably between subpopulations in the United States.

This study provides insight for intervention strategies and health policies targeting health equity to set up priorities for subpopulation with high disparate health burden.

Limitations include analyses on two racial populations and four ORDs only, not including ethnicity and using self-reported survey data.

Conclusions & Implications

Obesity-related disease conditions, i.e., diabetes, hypertension, CHD, and stroke are important from prevention standpoint as these are common risk factors to other costly chronic conditions such as chronic kidney disease and Alzheimer's Disease & Related Dementia with blacks being at a disadvantage for these conditions.

Future studies aimed at clinical-community interventions to prevent and manage obesity-related multimorbidity may be crucial in eliminating higher economic burden for LHCs and LCDs among older black women.

Contact

Preeti Pushpalata Zanwar, Email: Preeti.Zanwar@Jefferson.edu
Website: <https://www.jefferson.edu/academics/colleges-schools-institutes/population-health/administration-faculty-staff/faculty/Zanwar.html>
Twitter: @PreetiZanwar

Su-Hsin Chang, Email: chang.su-hsin@wustl.edu
Website: <https://changelab.wustl.edu/>
Twitter: @SuhsinChang

Acknowledgments Partial information of this work was presented at



Funding

The Foundation for Barnes-Jewish Hospital
The National Institutes of Health Grants U54 CA155496 & R21 DK110530
Agency for Healthcare Research and Quality Grant K01 HS022330