

Work as a Social Determinant of Health: Theoretical and Practical Considerations

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National Institute
on Minority Health
and Health Disparities



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What are Social Determinants of Health?

The conditions in which people are born, grow, live, work and age that shape health (Healthy People 2020).



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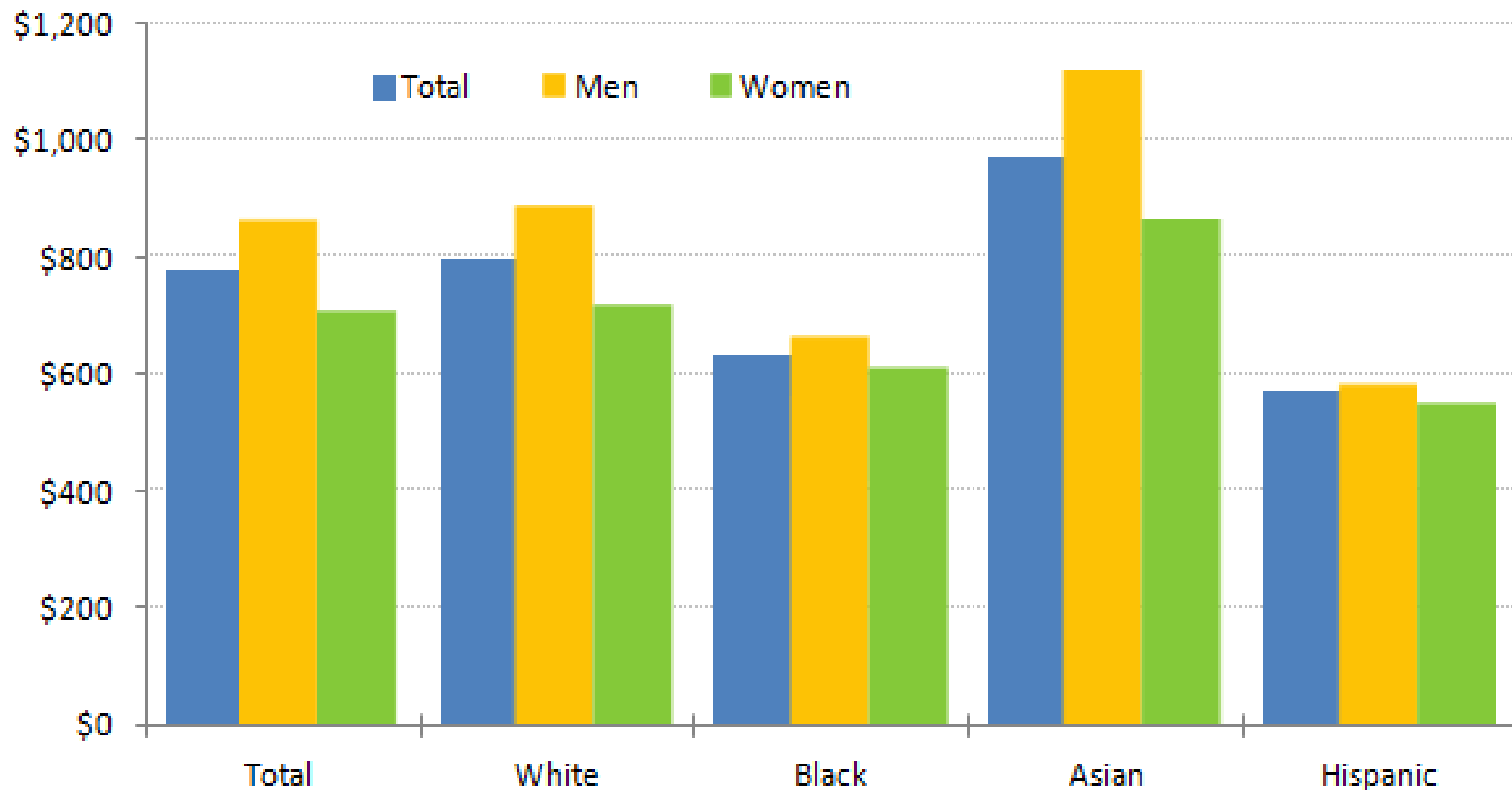
Work as a Social Determinant of Health (SDOH)

- SDOH include:
 - Socioeconomic status
 - Neighborhood and physical environment
 - Social support networks
 - Access to health care
 - Working conditions
 - Experiences of discrimination/racism
- Work is a multifaceted construct which operates as a SDOH:
 - Source of income
 - Source of health insurance
 - Occupational status/prestige/power
 - Working conditions (exposures), Work-related benefits
 - Social support networks
 - ❖ Racism/discrimination may underly the unequal distribution of all of the above



Income Distribution by Gender and Race/Ethnicity in the US

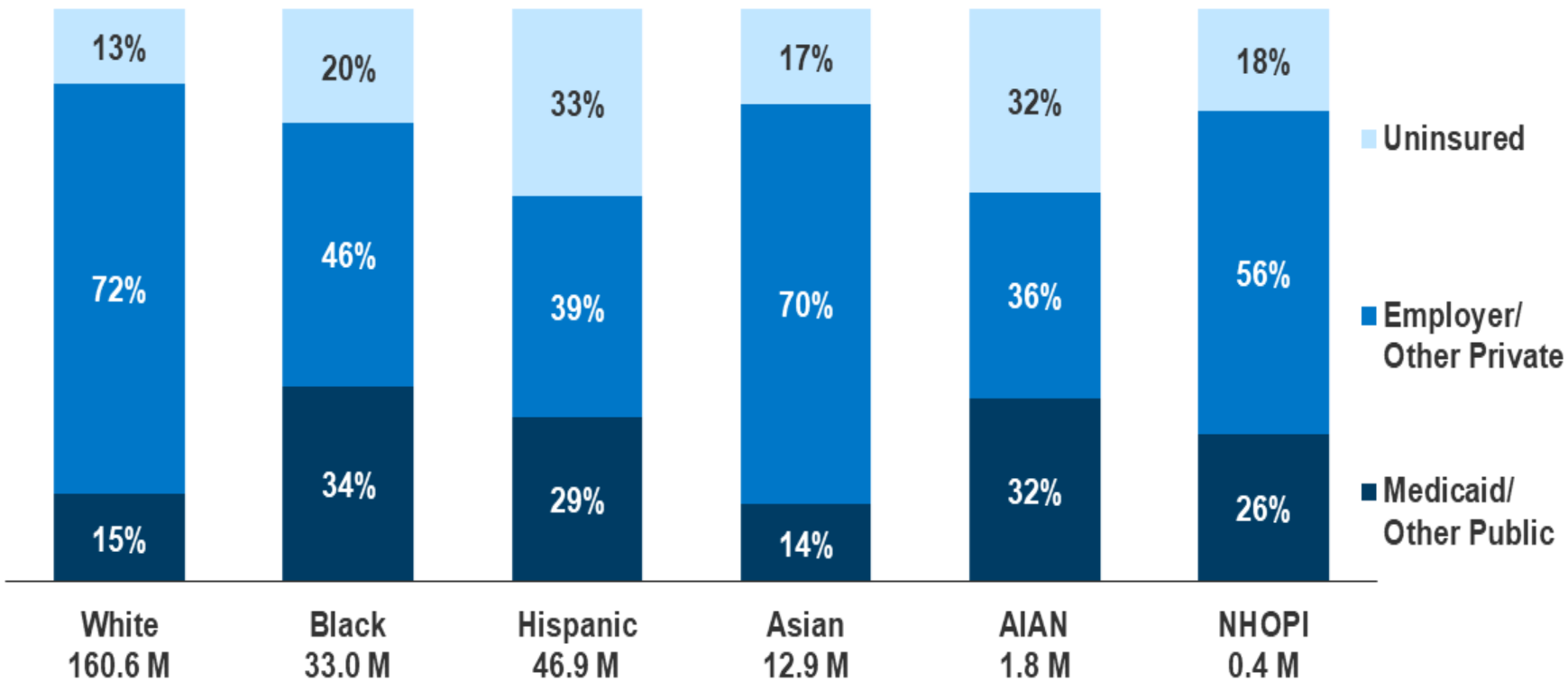
Median usual weekly earnings of full-time wage and salary workers by sex, race, and Hispanic or Latino ethnicity, second quarter 2013



Source: U.S. Bureau of Labor Statistics.


Distribution of Health Coverage by Race/Ethnicity in the US

Health Coverage of Nonelderly Individuals by Race/Ethnicity, 2010



Note: Persons of Hispanic origin may be of any race but are categorized as Hispanic for this analysis; other groups are non-Hispanic. Includes nonelderly individuals 0-64 years of age. NHOPI refers to Native Hawaiians and Other Pacific Islanders. AIAN refers to American Indians and Alaska Natives. All values have a statistically significant difference from the White population at the $p < 0.05$ level.

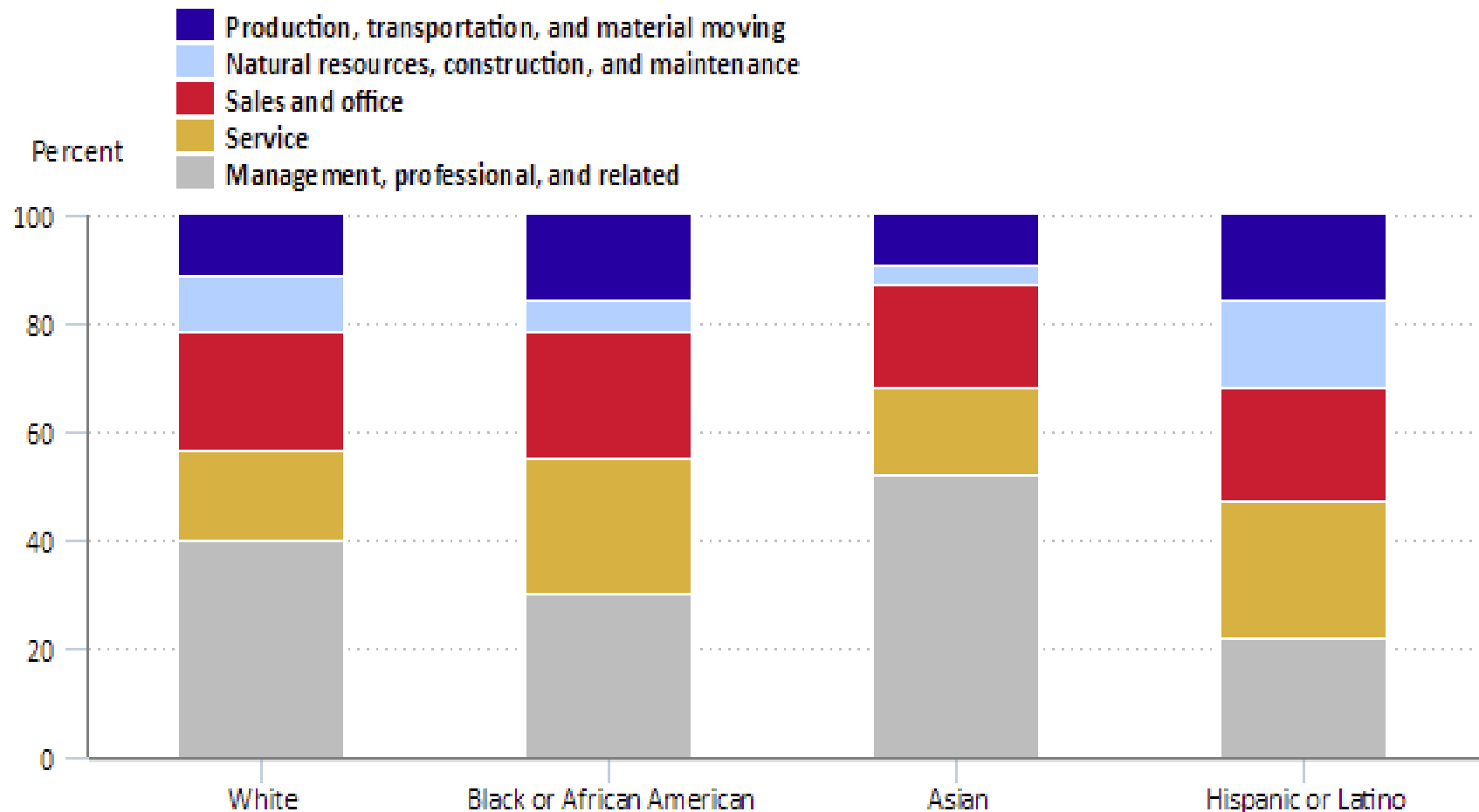
Source: KFF analysis of 2010 American Community Survey, 1-Year Estimates.



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Occupational distribution by race/ethnicity in the US

Employed People by Occupation, Race, and Hispanic or Latino Ethnicity (2016)

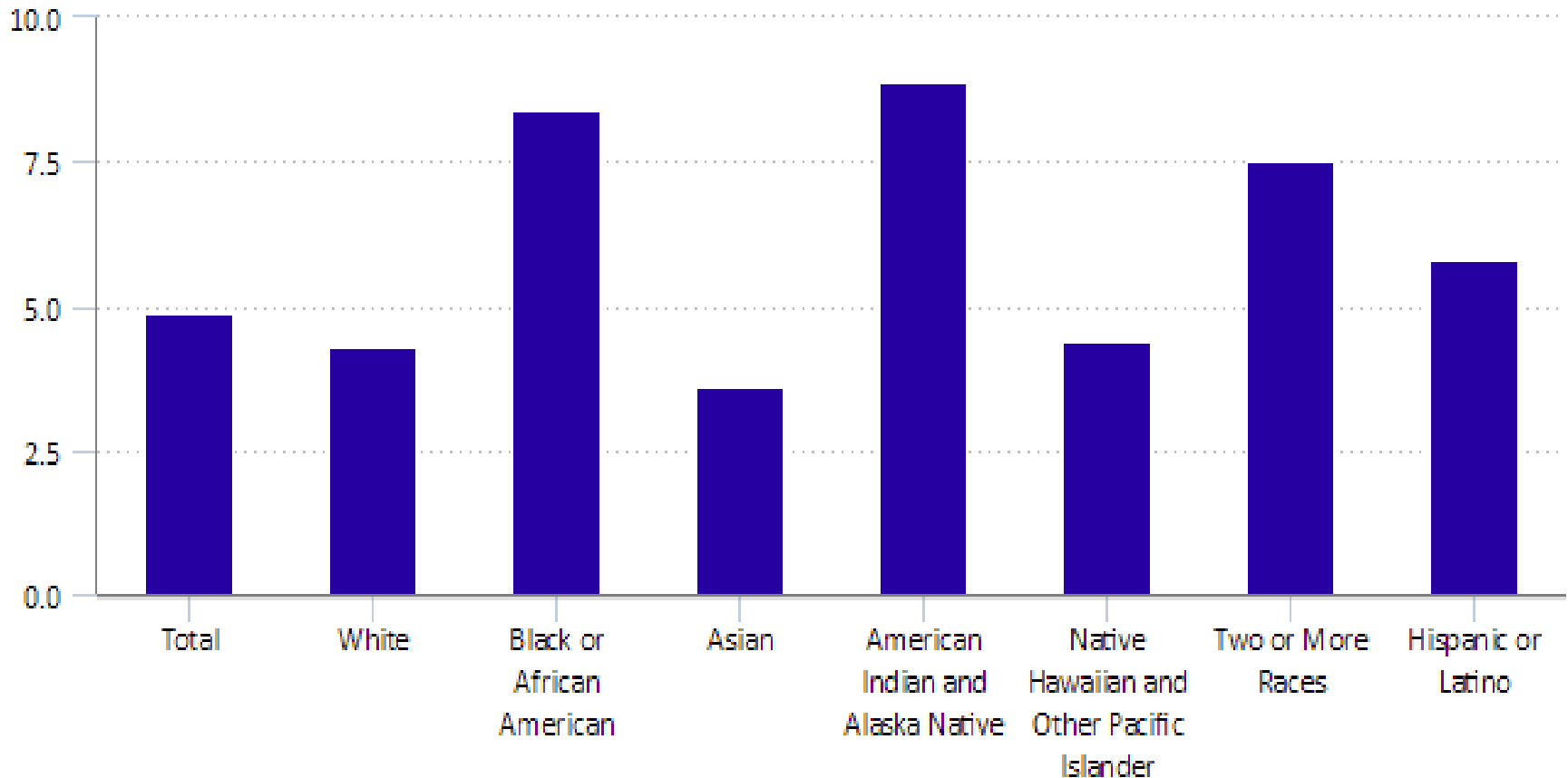


Note: People whose ethnicity is identified as Hispanic or Latino may be of any race. Data may not sum to 100 percent because of rounding.

Source: U.S. Bureau of Labor Statistics, Current Population Survey (CPS).

Distribution of Unemployment Rates by Race/Ethnicity

Unemployment Rates by Race, and Hispanic or Latino Ethnicity (2016)



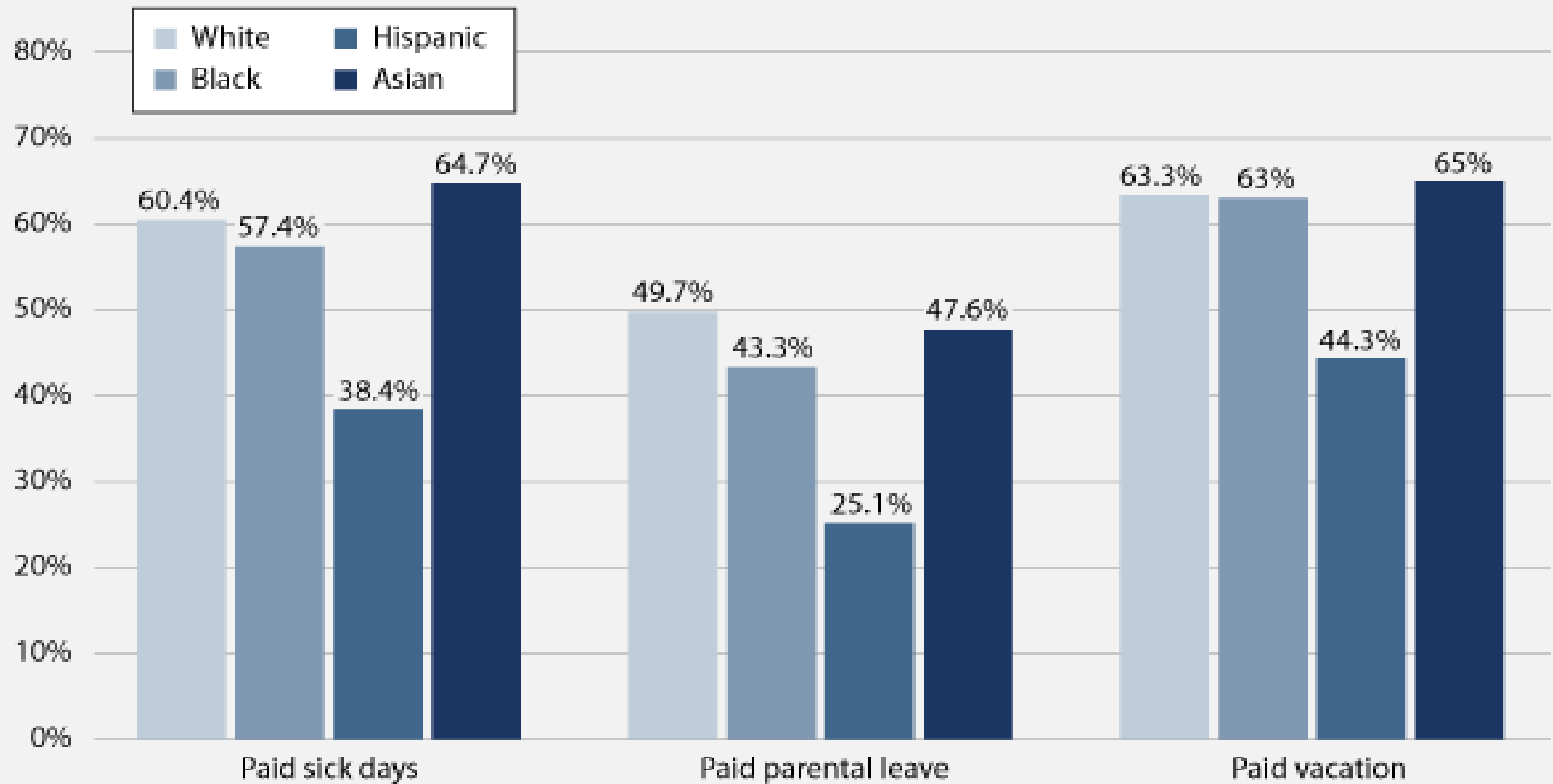
Click legend items to change data display. Hover over chart to view data.

Source: U.S. Bureau of Labor Statistics.

Distribution of Work Benefits by Race/Ethnicity

Latinos least likely to have access to paid sick days or paid parental leave

Percentage of workers age 18 and older with access to paid leave by race and ethnicity, 2011

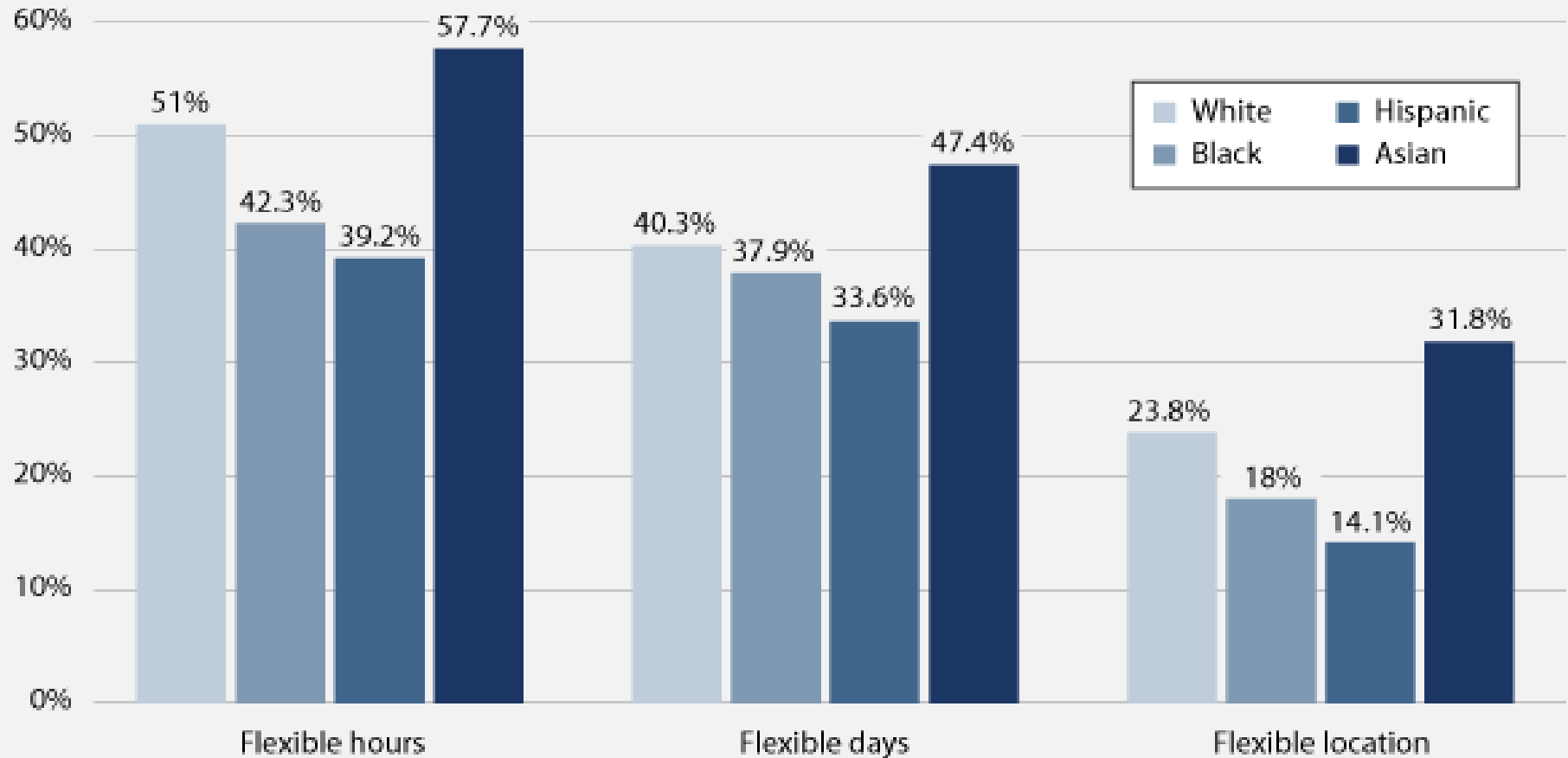


Source: Authors' analysis of the Bureau of Labor Statistics' American Time Use Survey, 2012.

Access to Workplace Flexibility by Race/Ethnicity

Only about half of all workers have access to workplace flexibility

Percentage of workers age 18 and older with access to workplace flexibility by race and ethnicity, 2011



Source: Authors' analysis of the Bureau of Labor Statistics' American Time Use Survey, 2012.

Distribution of Physical Demands by Race/Ethnicity

The American Working Conditions Survey (2015)

	White N (%)	Black N (%)	Hispanic N (%)	Asian/Pacific Islander N (%)	Other N (%)	P Value
Tiring/Painful positions						0.000
Half the time/more	279 (22.06)	56 (29.95)	117 (32.68)	8 (12.70)	14 (35.90)	
1/4th the time/less	986 (77.94)	131 (70.05)	241 (67.32)	55 (87.30)	25 (64.10)	
Lifting/Moving People						0.000
Half the time/more	107 (8.46)	34 (18.18)	72 (20.11)	7 (11.11)	4 (10.26)	
1/4th the time/less	1158 (91.54)	153 (81.82)	286 (79.89)	56 (88.89)	35 (89.74)	
Carrying/Moving Heavy Loads						0.000
Half the time/more	220 (17.38)	57 (30.48)	121 (33.80)	9 (14.29)	10 (25.64)	
1/4th the time/less	1046 (82.62)	130 (69.52)	237 (66.20)	54 (85.71)	29 (74.36)	
Sitting						0.009
Half the time/more	899 (71.01)	137 (73.26)	239 (66.76)	56 (88.89)	27 (69.23)	
1/4th the time/less	367 (28.99)	50 (26.74)	119 (33.24)	7 (11.11)	12 (30.77)	
Repetitive Hand/ Arm Movements						0.000
Half the time/more	719 (56.84)	133 (71.12)	260 (72.83)	36 (57.14)	25 (64.10)	
1/4th the time/less	546 (43.16)	54 (28.88)	97 (27.17)	27 (42.86)	14 (35.90)	

Distribution of Chemical Exposures by Race/Ethnicity

The American Working Conditions Survey (2015)

	White N (%)	Black N (%)	Hispanic N (%)	Asian/Pacific Islander N (%)	Other N (%)	P Value
Breathe Smoke/ Fumes/Powder/Dust						0.010
Half the time/more	70 (5.53)	22 (11.83)	30 (8.38)	4 (6.35)	1 (2.63)	
1/4th the time/less	1195 (94.47)	164 (88.17)	328 (91.62)	59 (93.65)	37 (97.37)	
Breathe Tobacco Smoke						0.000
Half the time/more	44 (3.48)	27 (14.52)	28 (7.82)	3 (4.76)	2 (5.26)	
1/4th the time/less	1222 (96.52)	159 (85.48)	330 (92.18)	60 (95.24)	36 (94.74)	
Breathe Vapors						0.003
Half the time/more	63 (4.98)	22 (11.83)	30 (8.38)	3 (4.76)	3 (7.89)	
1/4th the time/less	1202 (95.02)	164 (88.17)	328 (91.62)	60 (95.24)	35 (92.11)	
Handle Chemical Products						0.000
Half the time/more	113 (8.93)	28 (15.05)	58 (16.20)	2 (3.23)	5 (13.16)	
1/4th the time/less	1152 (91.07)	158 (84.95)	300 (83.80)	60 (96.77)	33 (86.84)	
Handle Infectious Materials						0.008
Half the time/more	127 (10.03)	33 (17.84)	52 (14.53)	6 (9.52)	3 (7.89)	
1/4th the time/less	1139 (89.97)	152 (82.16)	306 (85.47)	57 (90.48)	35 (92.11)	

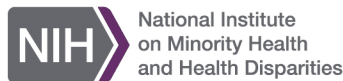
Relationship between Work Variables and Health

Occupational Status/Prestige:

- The Whitehall study which assessed over 10 years the health and longevity of British civil servants found:
 - ✓ at each successive drop in occupational grade level, mortality rates increased (Rossum et al. 2000)
- A U.S. national study found that higher occupational prestige was associated with better self-rated health, controlling for SES, job strain, support, and satisfaction (Fujishiro et al. 2010)

Occupational Segregation:

- Working in segregated occupations was associated with poor self-rated health, even after adjusting for age, gender, income, education, and geographic region (Chung-Bridges et al. 2008)
- Working in an occupation with a higher share of immigrants is associated with higher odds of poor physical and psychological health (Fan & Qian, 2017)



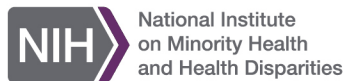
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Relationship between Work Variables and Health (cont.)

Work Policies/Benefits:

- Lack of paid sick leave is associated with lower use of recommended cancer screening services, higher likelihood of occupational injuries, and increased duration of flu outbreaks at work (Peipins et al. 2012; Asfaw et al. 2012; Drago et al. 2010)
- Increased duration of paid parental leave has been found to be associated with decreases in perinatal, neonatal, post-neonatal, infant, and child mortality in OECD and non-OECD countries (Heymann et al. 2011; Tanaka, 2005),
- Decreased duration of maternity-leave taking has been associated with higher risk of postpartum depression (Chatterji & Markowitz, 2012; Dagher et al. 2014), reduced breastfeeding initiation and duration (Dagher et al. 2016), lower childhood immunizations, and increases in children's externalizing behavior problems (Berger et al. 2005)
- Greater levels of job flexibility have been associated with less self-reported stress and strain, and better physical health (Butler et al. 2009, Grzywacz et al. 2008), lower risk of postpartum depression (Dagher et al. 2011), and increased hours of sleep and physical activity (Grzywacz et al. 2007)



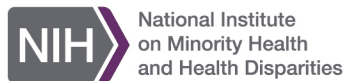
Relationship between Work Variables and Health (cont.)

Hazardous Occupational Exposures:

- Attributable fraction for work-related cancer is 8.4% of all cancer deaths (Takala et al. 2012)
- CVD risk factors in the workplace include: arsenic, carbon sulfide, carbon monoxide, methylene chloride, industrial solvents, and lead; excessive heat or cold, noise, and physical exertion (Price, 2004)

Work Organization/Employment conditions:

- Job strain is consistently associated with CVD (Slopen et al. 2012), depression (Hausser et al. 2010, Dagher et al. 2009), and obesity (Choi et al. 2014)
- Heavy physical jobs, more precarious work, limited healthcare benefits linked with higher prevalence of opioid overdose deaths (Shaw et al. 2020)
- Workplace discrimination and precarious employment are linked to poor mental health and problem drinking (Rospenda et al. 2009; van Aerden et al. 2016)



Why is Work an Important Variable in the Study of Health Disparities in the U.S.?

- Vast literature relating work resources and exposures to health
- Profound occupational segregation in the US labor force
- Large disparities in access to beneficial work policies/benefits
- Large disparities in workplace exposures
 - ✓ Physical, chemical, biological, and mechanical exposures
 - ✓ Psychosocial exposures
- ❖ Structural racism/discrimination could be an important mechanism through which work contributes to health disparities



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Mechanisms and Pathways Linking Work to Health Disparities

Occupational Segregation:

Unequal distribution across occupations according to certain demographic characteristics such as race/ethnicity, gender, immigration status, and others.

Worksite Segregation:

Unequal distribution within the workplace according to certain demographic characteristics such as race/ethnicity, gender, immigration status, and others.

Intergenerational Transmission:

Transmission of social assets and liabilities from one generation to the next.

System-level factors: Upstream policies, system-level trends, bi-directional feedback loops, and systemic patterns that influence the relationship between work and health disparities.



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Gee & Ford (2011). *Du Bois Rev.* 8(1): 115–132.



Complexities in studying work and health disparities

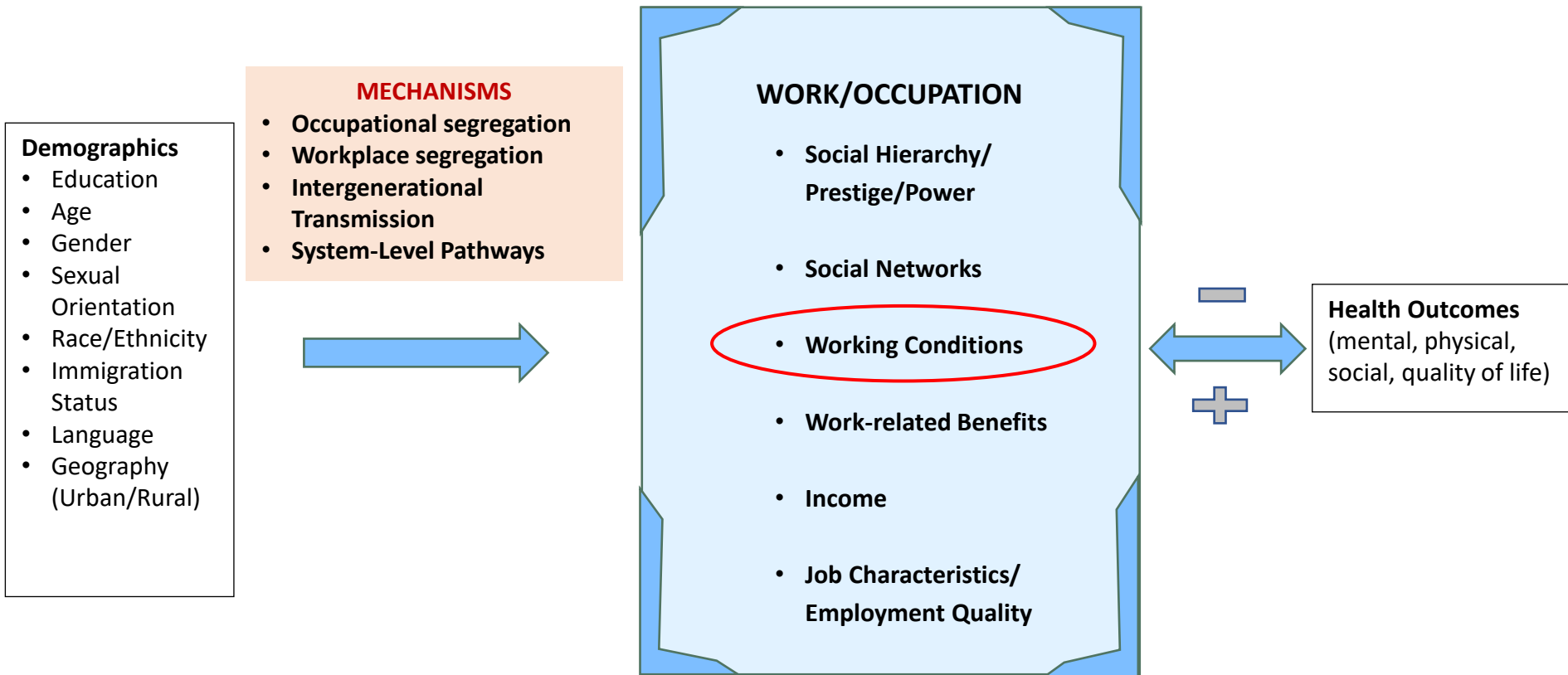
- US researchers have mainly used education and income as indicators of SES and rarely occupation (Ahonen et al. 2018)
- Work and health outcomes have a complex relationship as work can be a source of Harmful exposures **But also** Health-enhancing factors (Ahonen et al. 2018)
- Bi-directionality of the work and health relationship
- Health surveys have scarce data on work and vice versa
- How to conceptualize work
 - What to use: occupation, working conditions, employment relationship, job characteristics, etc. (Ahonen et al. 2018)
 - Tease apart exposures and risk/protective factors, social position/status in society, socioeconomic status
- ❖ We need conceptual models, measures, data sources, and analytical approaches to investigate work as an SDOH



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Thank You!



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