

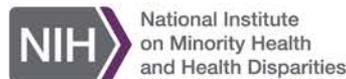
Work as a Social Determinant of Health: Challenges and Opportunities

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November 13, 2020

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Presentation Outline

- Background on work and health Disparities
- Work as a Social Determinant of Health (SDOH)
- Unequal distribution of work resources and exposures
- Literature on work and health outcomes
- Mechanisms and pathways linking work and health disparities
- Complexities in studying work and health disparities
- Opportunities for future research



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Background

- The experience of work among US adults is strongly patterned by identities we consider when measuring health disparities:
 - ✓ Race/ethnicity and Immigrant status
 - ✓ Socioeconomic status
 - ✓ Gender
 - ✓ Rural/Urban
 - ✓ Sexual minority status
- Occupational disparities research has mainly examined work as a source of hazardous exposures.
- Research on the social production of health inequities (health disparities research) has seldom considered work.

(Ahonen et al. 2018. *AJPH*, Vol.108, No.3)

- The different work experiences across populations affected by disparities present an underexplored opportunity for research



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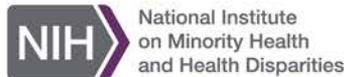
COVID-19 And Racial/Ethnic Disparities In Health Risk, Employment, And Household Composition

[Thomas M. Selden](#) and [Terceira A. Berdahl](#)

PUBLISHED: **JULY 14, 2020**

ABSTRACT

We used data from the Medical Expenditure Panel Survey to explore potential explanations for racial/ethnic disparities in coronavirus disease 2019 (COVID-19) hospitalizations and mortality. Black adults in every age group were more likely than White adults to have health risks associated with severe COVID-19 illness. However, Whites were older, on average, than Blacks. Thus, when all factors were considered, Whites tended to be at higher overall risk compared with Blacks, with Asians and Hispanics having much lower overall levels of risk compared with either Whites or Blacks. We explored additional explanations for COVID-19 disparities—namely, differences in job characteristics and how they interact with household composition. Blacks at high risk for severe illness were 1.6 times as likely as Whites to live in households containing health-sector workers. Among Hispanic adults at high risk for severe illness, 64.5 percent lived in households with at least one worker who was unable to work from home, versus 56.5 percent among Black adults and only 46.6 percent among White adults.



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

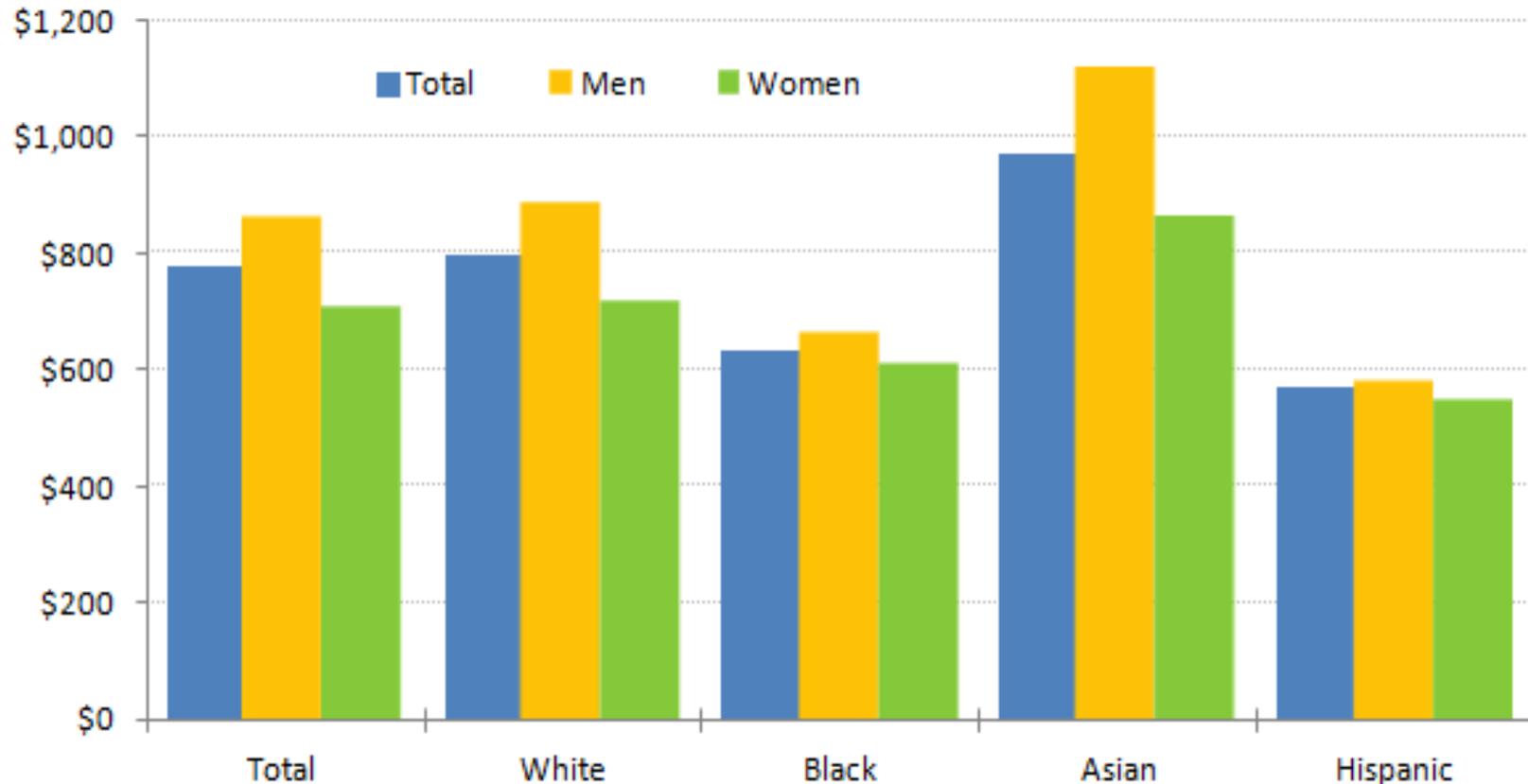


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Income Distribution by Gender and Race/Ethnicity in U.S.

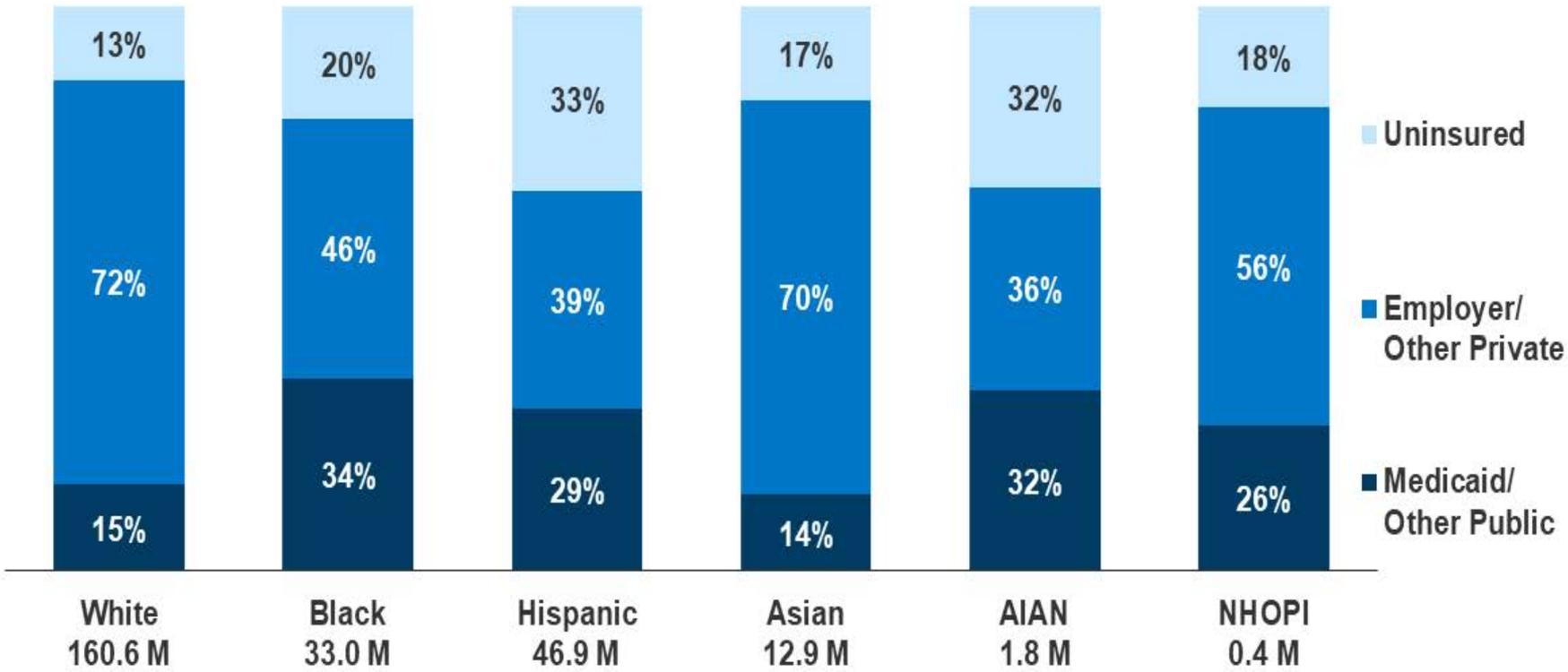
Median usual weekly earnings of full-time wage and salary workers by sex, race, and Hispanic or Latino ethnicity, second quarter 2013



Source: U.S. Bureau of Labor Statistics.

Distribution of Health Coverage by Race/Ethnicity in U.S.

Health Coverage of Nonelderly Individuals by Race/Ethnicity, 2010



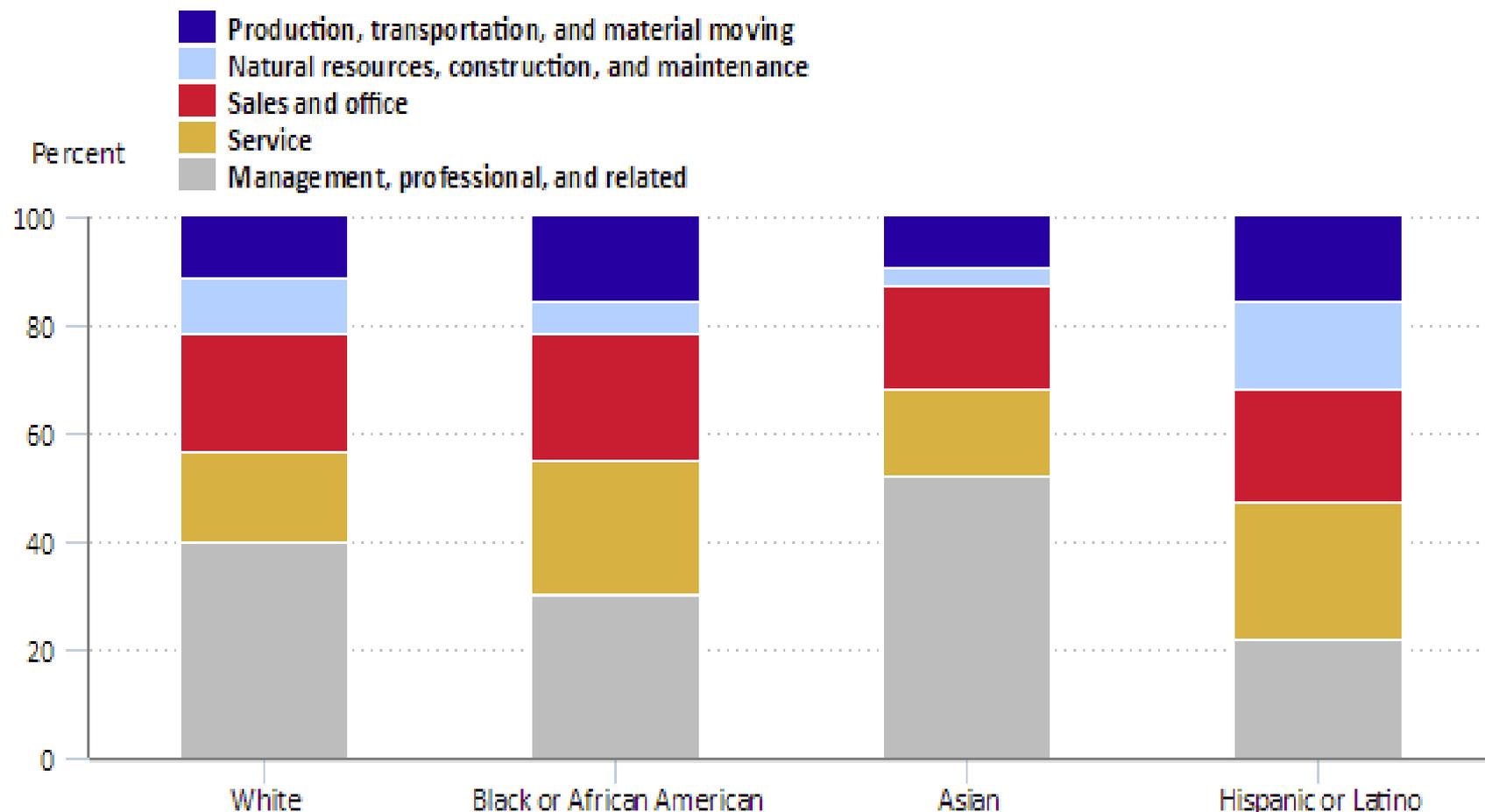
Note: Persons of Hispanic origin may be of any race but are categorized as Hispanic for this analysis; other groups are non-Hispanic. Includes nonelderly individuals 0-64 years of age. NHOPI refers to Native Hawaiians and Other Pacific Islanders. AIAN refers to American Indians and Alaska Natives. All 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.



Occupational distribution by race/ethnicity in U.S.

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

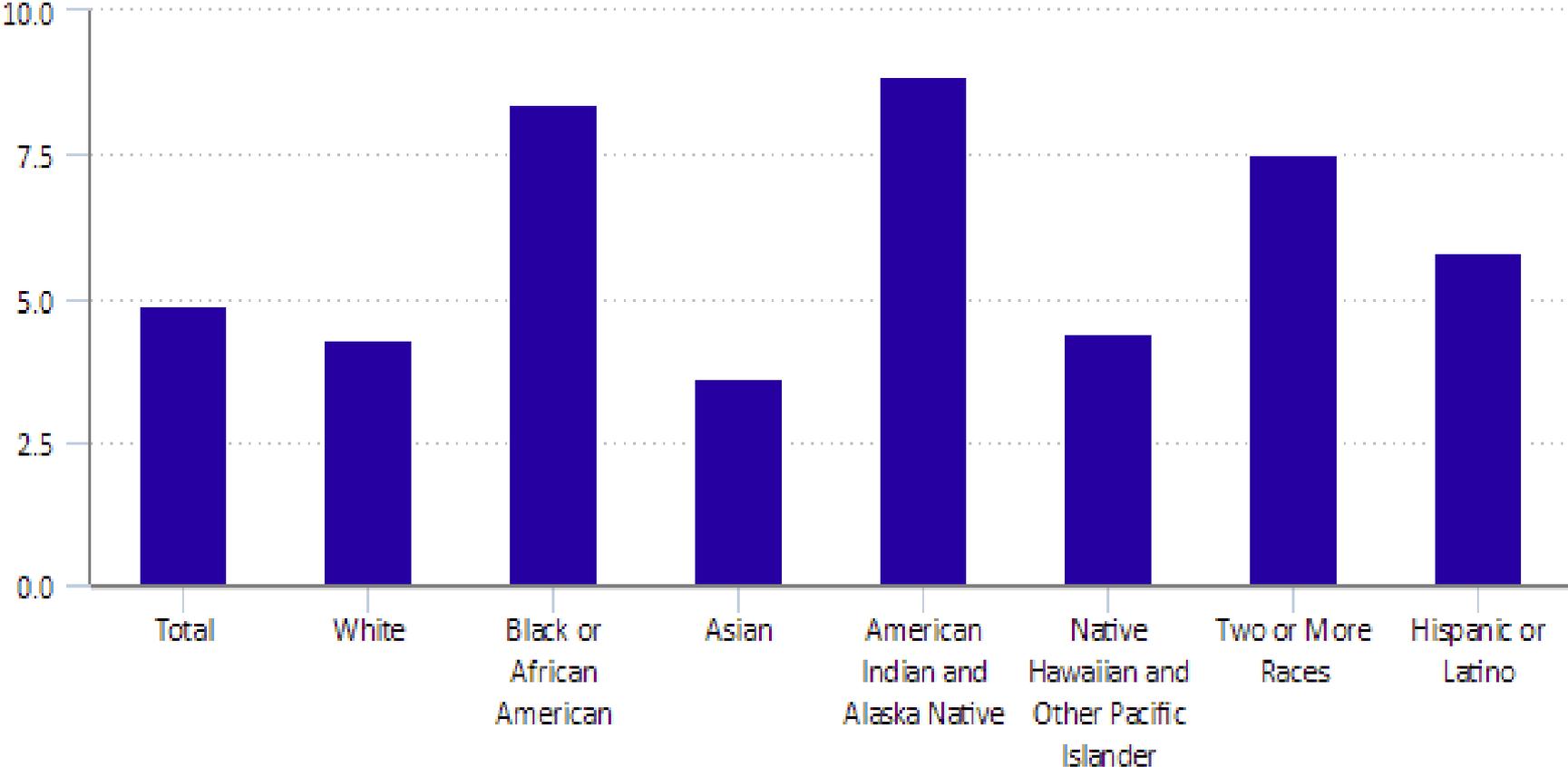


Note: People whose ethnicity is identified as Hispanic or Latino may be of any race. Data may not sum to 100 percent because of rounding.

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)



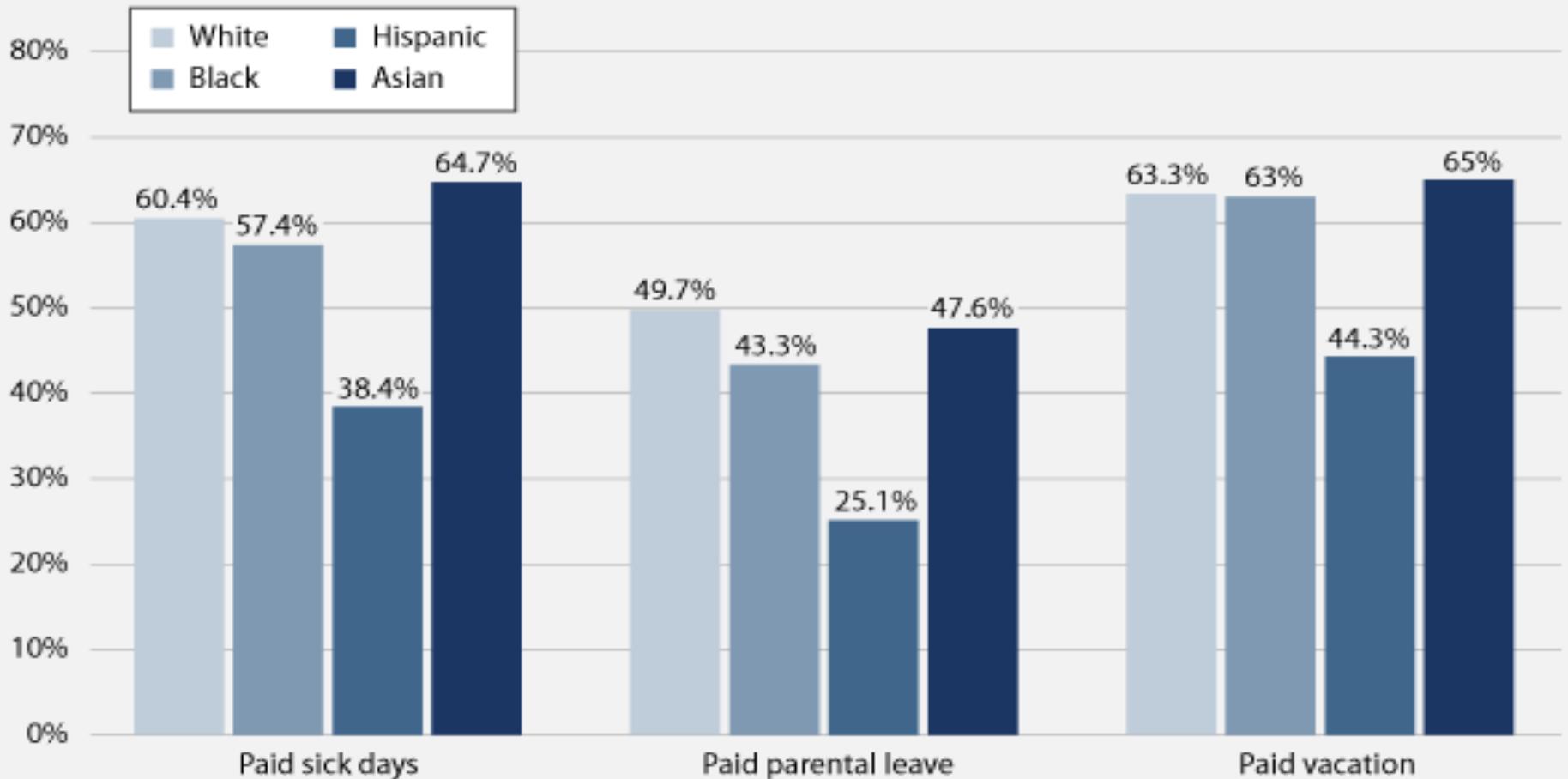
Click legend items to change data display. Hover over chart to view data.

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

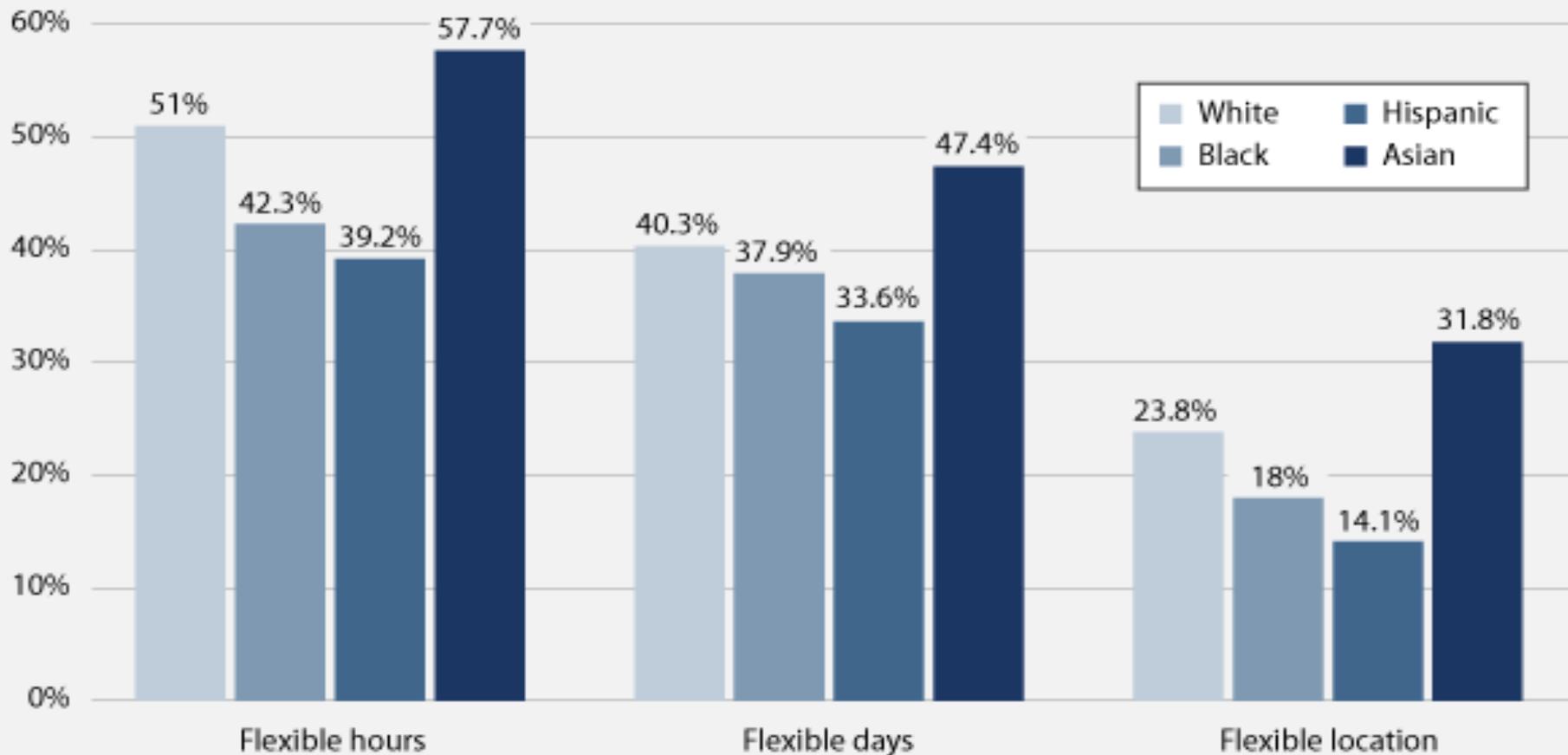


Source: Authors' analysis of the Bureau of Labor Statistics' American Time Use Survey, 2012.

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)	
¼ th 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)	
¼ th 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)	
¼ th 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)	
¼ th 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)	
¼ th 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)	
¼ th 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)	
¼ th 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)	
¼ th 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)	
¼ th 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)	
¼ th 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

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)



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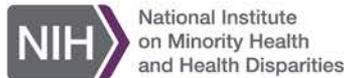
Relationship between Work Variables and Health

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
- ❖ Work is amenable to intervention—can be modified



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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.



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



Mechanisms and Pathways Linking Work to Health Disparities: System-Level Factors

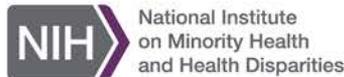
Upstream Policies: Labor, economic, education, agriculture, health insurance, workers' compensation policies,...

Occupational Safety and Health Regulations (OSHA)

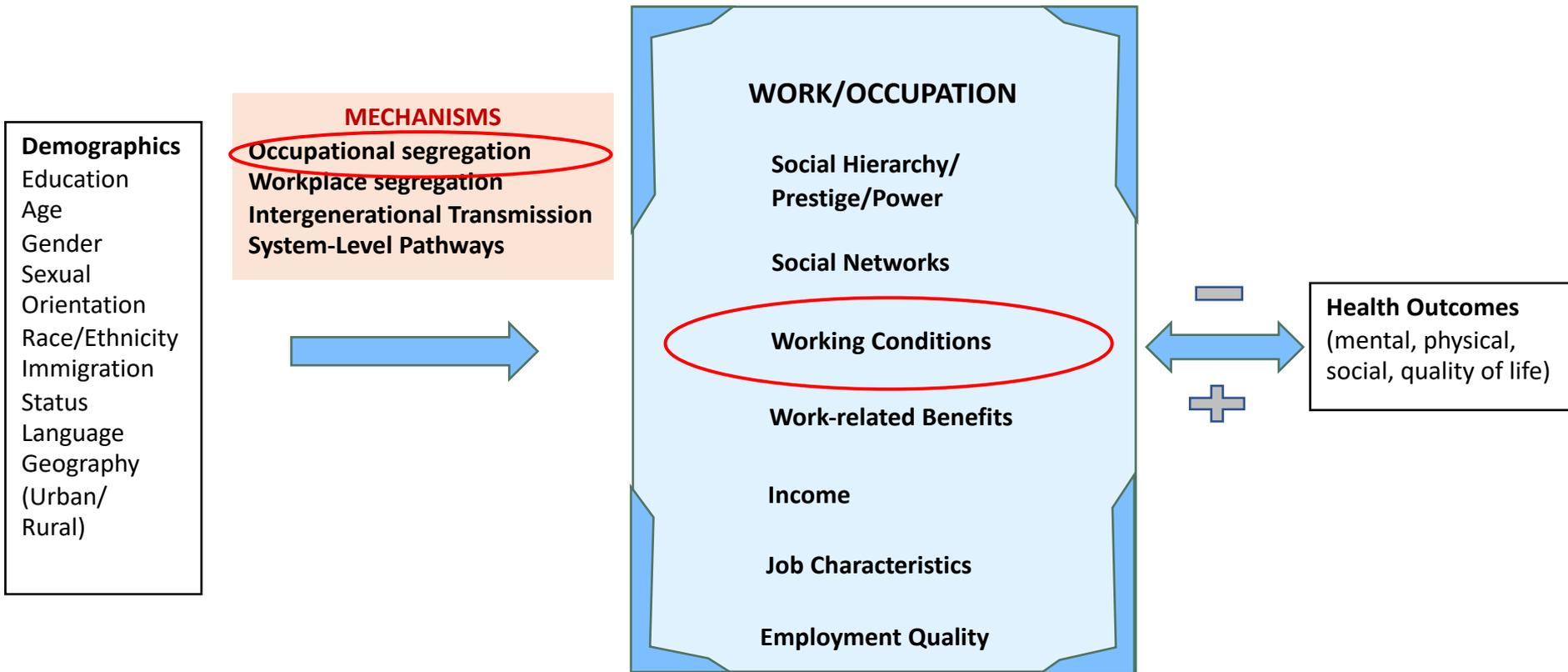
- Loss of regulatory enforcement

System-Level Trends

- The Demise of Labor Unions in the U.S.
- The Globalization of Production and Deregulation of Markets
- Increases in Job Loss and Unemployment Spells (Recessions)
- Increases in Precarious Jobs
- Increases in the Percent of Immigrants in Labor Force
- Impact of Pandemics and Natural Disasters



Work as a Social Determinant of Health

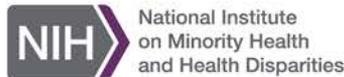


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Research on Mechanisms Linking Work and Health Disparities

- African Americans are more likely to work in jobs with lower substantive complexity than Whites and Hispanics, which contributes to their increased all-cause mortality rates (Fujishiro et al. 2017)
- Lower work hazards mediated the association between higher education and lower mortality among White men, and higher complexity of work explained the association between higher education and lower mortality among Black men and White women (Fujishiro et al. 2020)
- About 11 to 22% of the differences in cognitive function by education were explained by occupational complexity.
 - Among White men, the higher the education, the greater the mediation effect.
 - Among Black men and women of both races, the higher the education, the smaller the mediation effect.



(Fujishiro et al 2019)



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
- How to conceptualize work
 - What to use: occupation, working conditions, employment relationship, job characteristics, etc. (Ahonen et al. 2018)
 - Tease apart or look holistically at work as a social position/status in society, work as a source of beneficial resources, a source of exposures and risk/protective factors, work as an indicator of socioeconomic status
 - How to incorporate intragenerational and intergenerational trajectories
 - How to take into account embeddedness in families, communities, ...
 - What about unpaid and informal work?



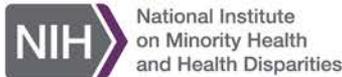
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Complexities in Studying Work and Health Disparities

- What study designs to use:
 - Cross-sectional
 - Longitudinal
 - Natural Experiments
 - Qualitative Studies
 - Aggregate-level studies (Occupational Surveillance)

- What measures to use:
 - Self-report vs. Objective measures
 - Single vs. Multi-time measurements, Multiple levels of aggregation
 - Latent vs. Observed variables



Complexities in Studying Work and Health Disparities

➤ Data Challenges

- Health surveys have scarce data on work and vice versa
- Secondary vs. Primary data
 - Secondary datasets may not have all the work and health measures
 - Possible linkages to other datasets (e.g. O*NET)
 - Quality of work and health measures
 - Primary data collection can be expensive

➤ Analytical Challenges

- Omitted Variables/Confounders
- Reverse Causality (including Healthy Worker Effect)
- Mediation Analysis
- Correlations among work variables
- Changes over time in occupations, work conditions, employment characteristics, etc.



Opportunities for Future Research

- Use intersectional approaches that consider the different identities that shape work experiences and their interactions (e.g., gender, race/ethnicity, social class, sexual orientation, etc.)
- Utilize a life course perspective that considers work and health trajectories and transitions over time
- Take into consideration the different contexts in which individuals are embedded (e.g., having an essential job during COVID and recession)
- Evaluate impact of policies and system-level trends on the relation between work and health disparities to inform future interventions
- Examine the intergenerational transmission of health disparities through work; contribution of worksite segregation to disparities



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Opportunities for Future Research

- Disparities in Maternal Mortality
 - Do different working conditions and unequal access to leave benefits contribute to increased maternal mortality among African American women?
- Disparities in Opioid Use Disorder (OUD)
 - Does occupational segregation and differential patterning of unemployment rates contribute to disparities in OUD?
- Disparities in COVID-19 severe illness and deaths
 - Could the unequal distribution of essential jobs by race/ethnicity and unequal access to job flexibility contribute to these disparities?
- Work, allostatic load, and health disparities
 - Could differences in allostatic load by race/ethnicity reflect differential exposure/vulnerability to work stressors and thereby be a mechanism that links work to health disparities?



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Thank You!



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