

# A Cross-sectional Study of the Association between Workplace Bullying or Harassment and Severe Psychological Distress in the US: Stratified by Age, Gender, and Race/Ethnicity

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## Research Article

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# Abstract

## Background

We examined the association between bullying/harassment and severe psychological distress (SPD), and the association was stratified by age, gender, and race/ethnicity among working Americans.

## Methods

The data for this study came from the 2015 National Health Interview Survey, the most recent data that contains the key outcome, a bullying/harassment measure. A total of 19,456 working Americans over the age of 18 were included for analysis. A dichotomous measure for SPD was constructed using the Kessler Psychological Distress Scale (K6), and bullying/harassment was dichotomized. Unadjusted and adjusted odds ratios were estimated from the logistic regression model to determine the association between bullying/harassment and SPD. Additionally, the association was stratified by age, gender, and race/ethnicity.

## Results

The study results showed that adults who experienced bullying/harassment had a higher proportion of SPD (20.3% vs 9.4%;  $p < .0001$ ). In the multivariable regression model, bullying/harassment was associated with a greater odd of SPD (AOR 1.71, 95% CI 1.38-2.11). Significant variations existed in the extent to which bullying/harassment impacts SDP across sub-population. Adults ages 18-29 (AOR 2.23, 95% CI 1.59-3.13) and 30-44 (AOR 2.04, 95% CI 1.43-2.91) showed significantly higher odds of SPD in the presence of workplace harassment or bullying experience, while those 45-59 and 60 or above did not show a considerable difference. Both men (AOR 1.93, 95% CI 1.43-2.58) and women (AOR 1.59, 95% CI 1.21-2.09) who had workplace bullying or harassment reported increased SPD. The greater SPD associated with bullying or harassment was also found in black (AOR 2.30, 95% CI 1.43-3.69) and the racial/ethnic 'minority' (AOR 2.81, 95% CI 1.50-5.28). The results show that workplace bullying/harassment disproportionately impact young adults, women, and racial/ethnic minorities.

## Conclusions

The findings increase the knowledge base on the harms of workplace misbehaviors on the worker's mental health. The study highlights the importance of workplace measures along with individuals' precautionary behaviors to mitigate prevalent workplace hazards and to make a safe and healthy work environment.

## Background

Mental illness remains an important public health issue in the United States, with approximately 1 in 5 adults above the age of 18 suffering from some type of mental health disorders [1]. The workplace represents an important arena in life for many adults and is a significant source of psychological distress

[2]. Studies showed that experiencing symptoms of adverse mental health at the workplace has become increasingly the norm [3, 4]. The fact that nearly two-thirds of Americans constitute the nation's labor force underscores the significance of a safe working environment to reduce the burden of mental health problems among working Americans [5].

Bullying and harassment, common types of workplace hazards, are widely reported causes of mental illnesses among workers [6, 7]. Bullying is defined as repetitive offensive behaviors over an extended time that victims are not able to self-defend from the mistreatment [8, 9]. Harassment is described as perceived discriminatory behaviors, psychological humiliation, and sexual harassment [10]. Although bullying and harassment are separate forms of workplace hazards, they share similarities in terms of a precursor and implications for harms posed to victimized individuals and affiliated organizations [11, 12]. Exposure to workplace bullying increases stress levels, psychological distress, and even suicidal ideation [6, 13]. Also, workplace harassment is associated with significant health consequences, including severe trauma that has long-lasting effects on the victim's mental health and adversely affects relationships with family members or colleagues and their professional careers [7]. The negative impacts of bullying and harassment even extend to physical health, including musculoskeletal problems and cardiovascular disease [14, 15]. Furthermore, these workplace misbehaviors result in substantial direct and indirect social costs, such as absenteeism of a workforce, loss of productivity, and health care costs [16, 17].

While workplace bullying and harassment pose challenges to individuals, organizations, and society overall, the efforts to prevent these hazards have been insufficient or overlooked [18, 19]. Improving the well-being of employees is often deemed as another driver of costs [20]. On the other hand, victims incline not to raise their voices because of fear of retaliatory actions.<sup>21</sup> Even as they courageously come forward, evidence shows that they may not have access to necessary institutional or social supports [19, 22]. The failure to take appropriate measures and improve safe working environments may lead to a vicious cycle of problems around the workplace.

With identified workplace risk factors for mental health in the literature, Harvey and his colleagues proposed a unified model through a comprehensive meta-analysis that incorporates critical factors contributing to workplace bullying or harassment [23]. Our study builds on this novel model that encompasses three facets: imbalanced job design, occupational uncertainty, and lack of value and respect, to examine the relationship between workplace bullying or harassment and psychological distress. An imbalanced job includes atypical working hours and job demands. This category represents sources of job stress due to inconsistent work and insufficient time to complete tasks. Occupational uncertainty contains job insecurity associated with organizational changes or increased workload, while a lack of value and respect indicates misconduct between workforces, known as bullying, harassment, or conflicts. Additionally, the model incorporates aspects that are shared by multiple domains among the three facets: job control, temporary employment status, support, and procedural justice. Given the conceptual model, our study primarily considers disproportionality of mental health issues by sub-populations as represented in age, gender, and race/ethnicity because subsets of the population are deemed particularly vulnerable when it comes to workplace misbehaviors and mental health conditions

[24–27]. To our knowledge, however, there is scant knowledge about differences in serious mental conditions by sub-populations among working Americans.

Therefore, the current study aims to examine the association between psychological distress and bullying or harassment, stratified by age, gender, and race/ethnicity. The findings would improve our understanding of differences in mental health by sub-populations in the context of workplace misbehaviors. Identifying varying psychological distress levels could also provide important implications for policymakers and the public health community to help better respond to workplace bullying or harassment and improve the mental health of workers.

## **Methods**

### **Data**

The cross-sectional study used data from the 2015 National Health Interview Survey (NHIS), a nationally representative household survey targeting the non-institutionalized, civilian US population. The NHIS uses multistage random sampling accounting for clustering, stratification, and weights to achieve the national representation [28]. The NHIS 2015 database was the most recent data that contains the key outcome variable in the study, workplace harassment or bullying. As the current study was focused on mental health issues related to the workplace, the study population was limited to working adults ages 18 or above. A total of 19,456 individuals meeting the inclusion criteria were included in the analysis.

### ***Measures***

#### ***Outcome variable***

The key outcome was a dichotomized measure of SPD using the Kessler Psychological Distress Scale (K6). The K6 was a widely used tool for identifying severe psychological distress among general populations and was well-validated, consistent with the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) to detect DSM-IV diagnoses [29-30]. The K6 consists of six questions capturing psychological symptoms during the past 30 days. The questions are: 1) *how often did you feel - so sad that nothing could cheer you up?* 2) *how often did you feel - nervous?* 3) *how often did you feel - restless or fidgety?* 4) *how often did you feel - hopeless?* 5) *how often did you feel - everything was an effort?* 6) *how often did you feel - worthless?* Each question has five-level scores from 0 to 4, leading to a total score ranging from 0 to 24. The K6 scores equal or above the cut-point of 13 indicate SPD, representing a diagnosis of a serious mental health condition [30]. Then, the scores were dichotomized as having SPD or not.

### ***Covariates***

## Key covariate

The key independent variable for this analysis was a binary indicator of workplace bullying or harassment. The variable was based on a dichotomous response to the survey question “*During the past 12 months, were you threatened, bullied, or harassed by anyone while you were on the job?*”

## Additional covariates

Job-related characteristics were included based on the unified model [25]. Participants were asked, “Please tell me whether you strongly agree, agree, disagree, or strongly disagree with this statement? – I have enough time to get the job done”. The four responses were dichotomized for having enough time to get a job done or not. Participants further answered four-level scale questions: “The demands of my job interfere with my personal or family life”, “My job allows me to make a lot of decisions on my own”, and “I can count on my supervisor or manager for support when I need it”. Job interference with personal or family life was dichotomized. Job support was an indicator variable for having needed support in the workplace, and job control represented workers’ engagement in job-related decisions. Worktime shift had four categories of daytime, evening, night, and rotating in response to the question, “Which of the following best describes the hours you usually work?”. Additionally, hourly paid was included given it is a potential risk factor for workplace bullying [31].

The demographic characteristics included age, gender, race/ethnicity, marital status, income, and health insurance. Age was categorized as 18-29, 30-44, 45-59, and 60 or above. Race/ethnicity had four categories, such as white, black, Hispanic, and minority. Marital status was a categorical variable reflecting married, widowed/divorced/separated, unmarried couple, and unmarried. Income had three-level categories: <\$49,000, \$50,000-\$99,000, and >=100,000. Health insurance was dichotomized, insured or uninsured. Also, participants’ health behaviors and health conditions were considered. Both smoking and drinking status were categorized into never, former, and current, and physical activity was dichotomized for sufficient physical activity referring to the recommendation by the Healthy Americans [32]. The study also incorporated a series of chronic conditions in analysis, such as coronary heart disease (CHD), heart attack, chronic obstructive pulmonary disease (COPD), asthma, cancer, and diabetes.

## Statistical analysis

The characteristics of the study population and bivariate differences in SPD were examined using Pearson’s Chi-Square test. In regression analyses, unadjusted odds ratios were estimated from logistic regression models and used for examining the association between SPD and workplace bullying or harassment. We subsequently fitted multivariable logistic regression models, controlling for covariates, to estimate adjusted odds ratios for SPD. Additional analysis was performed to obtain the adjusted probabilities for SPD by workplace bullying or harassment status, and estimated figures were displayed

graphically. Lastly, we calculated stratified odds ratios stratified by age, gender, and race/ethnicity using interaction effects between SPD and those three key population characteristics, while controlling for all other covariates. Data management and subsequent analyses were conducted using the Stata software, version 15.

## Results

Table 1 shows bivariate relationships of SPD with the sample characteristics. Adults who experienced workplace bullying or harassment had a markedly higher proportion of SPD (20.3% vs 9.4%;  $p < .0001$ ) compared to those who did not experience it. Adults ages 18-29 had a relatively high proportion of SPD (12.0%), while those 60 years old or above showed a low proportion (7.4%). SPD was more common among women than men (11.7% vs 8.7%;  $p < .0001$ ). However, no significant difference in SPD was found across racial/ethnic groups. SPD was significantly associated with individuals' characteristics including marital status, income, insurance, smoking, drinking, and physical activity. SPD was more prevalent among persons with chronic conditions including COPD (19.3% vs 10.1%,  $p = 0.002$ ), asthma (14.7% vs 9.6%;  $p < .0001$ ), and diabetes (12.6% vs 10.0%;  $p = 0.012$ ). All Job-related characteristics had a significant relationship with SPD. The proportion of SPD was lower for having enough time to get the job done (9.4% vs 14.8%;  $p < .0001$ ), for being allowed to make independent job-related decisions (9.5% vs 15.1%;  $p < .0001$ ), and for having necessary support in workplace (9.2% vs 16.4%;  $p < .0001$ ). Daytime shift workers reported a relatively lower proportion of SPD (9.4%), compared with workers of evening shift (12.2%), night shift (10.8%), and rotating shift (12.9%).

Table 1

Bivariate relationship between Severe Psychological Distress (SPD) and sample characteristics

Effect	SPD (n=1,982)		No SPD (n=17,474)		p-value
	n	Wt% (95% CI)	n	Wt% (95% CI)	
Demographic characteristics					
Age					<.0001
	18-29	487	12.0 (10.8, 13.3)	3,500	88.0 (86.7, 89.2)
	30-44	686	10.2 (9.4, 11.0)	5,827	89.8 (89.0, 90.6)
	45-59	599	10.1 (9.1, 11.1)	5,549	89.9 (88.9, 90.9)
	60>=	210	7.4 (6.0, 8.7)	2,598	92.6 (91.3, 94.0)
Gender					<.0001
	Men	832	8.7 (8.0, 9.4)	8,838	91.3 (90.6, 92.0)
	Women	1,150	11.7 (10.9, 12.5)	8,636	88.3 (87.5, 89.1)
Race/ethnicity					0.184
	White	1,252	10.3 (9.6, 11.0)	10,891	89.7 (89.0, 90.4)
	Black	208	8.9 (7.6, 10.2)	2,239	91.1 (89.8, 92.4)
	Hispanic	375	10.8 (9.6, 12.1)	3,038	89.2 (87.9, 90.4)
	Other	147	9.5 (7.7, 11.4)	1,306	90.5 (88.6, 92.3)

		SPD (n=1,982)		No SPD (n=17,474)		
Marital status						<.0001
	Married	740	7.6 (7.0, 8.3)	8,606	92.4 (91.7, 93.0)	
	Widowed/ divorced/ separated	408	11.2 (9.9, 12.5)	3,360	88.8 (87.5, 90.1)	
	Unmarried couple	178	12.1 (10.0, 14.3)	1,282	87.9 (85.7, 90.0)	
	Unmarried	652	13.4 (12.2, 14.7)	4,394	86.6 (85.3, 87.8)	
Income						<.0001
	<\$49,999	1,029	13.8 (12.8, 14.8)	6,678	86.2 (85.2, 87.2)	
	\$50,000-\$99,999	547	9.6 (8.6, 10.5)	5,256	90.4 (89.5, 91.4)	
	≥\$100,000	322	6.8 (6.0, 7.6)	4,298	93.2 (92.4, 94.0)	
Insurance						<.0001
	No	319	14.7 (12.7, 16.7)	2,035	85.3 (83.3, 87.3)	
	Yes	1,654	9.6 (9.1, 10.2)	15,359	90.4 (89.8, 90.9)	
Smoking						<.0001
	Never	1,189	9.3 (8.6, 9.9)	11,387	90.7 (90.1, 91.4)	
	former	357	9.5 (8.3, 10.7)	3,528	90.5 (89.3, 91.7)	

		SPD (n=1,982)		No SPD (n=17,474)		
	Current	431	14.9 (13.2, 16.6)	2,596	85.1 (83.4, 86.8)	
Drinking						0.002
	Never	260	8.0 (6.9, 9.2)	2,821	92.0 (90.8, 93.1)	
	former	208	11.1 (9.3, 13.0)	1,818	88.9 (87.0, 90.7)	
	Current		10.5 (9.9, 11.2)	12,593	89.5 (88.8, 90.1)	
Sufficient PA						0.002
	No	972	11.2 (10.3, 12.1)	7,896	88.8 (87.9, 89.7)	
	Yes			9,337		
Job-related characteristics						
Harassment or Bullying						<.0001
	No	1,709	9.4 (8.8, 10.0)	16,316	90.6 (90.0, 91.2)	
	Yes	268	20.3 (17.7, 22.9)	1,125	79.7 (77.1, 82.3)	
Enough time to get job done						<.0001
	No	408	14.8 (13.1, 16.6)	2,345	85.2 (83.4, 86.9)	
	Yes	1,571	9.4 (8.8, 10.0)	15,069	90.6 (90.0, 91.2)	
Worktime shift						<.0001
	Daytime	1,362	9.4 (8.7, 10.0)	12,924	90.6 (90.0, 91.3)	

	SPD (n=1,982)		No SPD (n=17,474)		
Evening	108	12.2 (9.2, 15.1)	805	87.8 (84.9, 90.8)	
Night	77	10.8 (7.9, 13.8)	650	89.2 (86.2, 92.1)	
Rotating	434	12.9 (11.4, 14.5)	3,056	87.1 (85.5, 88.6)	
Job interference with personal/family life					<.0001
No	1,304	8.8 (8.2, 9.4)	13,175	91.2 (90.6, 91.8)	
Yes	672	14.2 (13.0, 15.4)	4,230	85.8 (84.6, 87.0)	
Job control					<.0001
No	381	15.1 (13.3, 16.9)	2,174	84.9 (83.1, 86.7)	
Yes	1,597	9.5 (8.9, 10.0)	15,224	90.5 (90.0, 91.1)	
Job support					<.0001
No	291	16.4 (14.4, 18.5)	1,539	83.6 (81.5, 85.6)	
Yes	1,480	9.2 (8.7, 9.8)	14,230	90.8 (90.2, 91.3)	
Hourly paid					<.0001
No	704	8.6 (7.9, 9.4)	7,422	91.4 (90.6, 92.1)	
Yes	1,277	11.4 (10.6, 12.2)	10,006	88.6 (87.8, 89.4)	
Chronic conditions					

		SPD (n=1,982)		No SPD (n=17,474)		
CHD						0.201
	No	1,927	10.1 (9.6, 10.7)	17,126	89.9 (89.3, 90.4)	
	Yes	54	12.6 (8.4, 16.7)	330	87.4 (83.3, 91.6)	
COPD						0.002
	No	1,950	10.1 (9.5, 10.6)	17,287	89.9 (89.4, 90.5)	
	Yes	32	19.3 (11.6, 26.9)	213	80.7 (73.1, 88.4)	
Heart attack						0.227
	No	1,948	10.1 (9.6, 10.7)	17,248	89.9 (89.3, 90.4)	
	Yes	34	13.1 (7.8, 18.4)	213	86.9 (81.6, 92.2)	
Asthma						<.0001
	No	1,631	9.6 (9.0, 10.1)	15,479	90.4 (89.9, 91.0)	
	Yes	351	14.7 (13.0, 16.5)	1,982	85.3 (83.5, 87.0)	
Cancer						0.502
	No	1,868	10.1 (9.6, 10.7)	16,601	89.9 (89.3, 90.4)	
	Yes	113	11.0 (8.4, 13.6)	855	89.0 (86.4, 91.6)	
Diabetes						0.012
	No	1,799	10.0 (9.4, 10.5)	16,226	90.0 (89.5, 90.6)	

	SPD (n=1,982)		No SPD (n=17,474)	
Yes	149	12.6 (10.3, 15.0)	1,034	87.4 (85.0, 89.7)

The unadjusted odds ratios are shown in Table 2. SPD was noticeably high among adults who reported bullying or harassment experience (OR 2.45, 95% CI 2.05-2.93). Working adults below the age of 60 were more likely to experience SPD, with the highest odds for those in the ages 18-29 (OR 1.72, 95% CI 1.37-2.16), and SPD was more prevalent among women (OR 1.38, 95% CI 1.23-1.55). Low-income levels and current smoking or drinking were associated with higher odds of SPD, while being insured (OR 0.62, 95% CI 0.53-0.73) and sufficiently engaging in physical activity (OR 0.83, 95% CI 0.74-0.93) showed lower odds of SPD, respectively. Job-related factors, such as not having enough time to get the job done (OR 1.68, 95% CI 1.44-1.96), job interfering with personal or family life (OR 1.72, 95% CI 1.53-1.93), hourly paid (OR 1.36, 95% CI 1.20-1.55) all revealed greater odds of SPD. Similarly, workers who are not allowed to make job-related decisions (OR 1.70, 95% CI 1.46-1.98) or do not have needed support at work (OR 1.93, 95% CI 1.64-2.27) reported higher odds of SPD.

Table 2  
Odds ratios for Severe Psychological Distress (SPD)

Effects		Unadjusted	Adjusted
		OR (95% CI)	OR (95% CI)
Demographic characteristics			
Age			
	18-29	1.72 (1.37, 2.16) ‡	1.45 (1.06, 1.97) *
	30-44	1.42 (1.15, 1.76) †	1.43 (1.10, 1.86) †
	45-59	1.41 (1.13, 1.76) †	1.42 (1.08, 1.86) *
	60>=	1	1
Gender			
	Men	1	1
	Women	1.38 (1.23, 1.55) ‡	1.33 (1.17, 1.51) ‡
Race/ethnicity			
	White	1	1
	Black	0.85 (0.72, 1.02)	0.68 (0.56, 0.83) ‡
	Hispanic	1.06 (0.91, 1.23)	0.89 (0.73, 1.08)
	Other	0.92 (0.73, 1.15)	1.10 (0.86, 1.39)
Marital status			
	Married	1	1
	Widowed/divorced/separated	1.54 (1.32, 1.79) ‡	1.21 (1.00, 1.47) *
	Unmarried couple	1.68 (1.35, 2.09) ‡	1.20 (0.92, 1.56)
	Unmarried	1.88 (1.65, 2.16) ‡	1.50 (1.24, 1.81) ‡
Income			
Note: * <.05, †<.01, ‡<.001			

Effects		Unadjusted	Adjusted
		OR (95% CI)	OR (95% CI)
	<\$49,999	2.19 (1.90, 2.52) ‡	1.74 (1.40, 2.17) ‡
	\$50,000-\$99,999	1.44 (1.23, 1.70) ‡	1.29 (1.06, 1.57) *
	>=\$100,000	1	1
Insurance			
	No	1	1
	Yes	0.62 (0.53, 0.73) ‡	0.78 (0.64, 0.94) *
Smoking			
	Never	1	1
	former	1.02 (0.87, 1.21)	1.01 (0.83, 1.23)
	Current	1.71 (1.48, 1.99) ‡	1.27 (1.07, 1.51) †
Drinking			
	Never	1	1
	former	1.44 (1.12, 1.84) †	1.34 (1.00, 1.79) *
	Current	1.35 (1.15, 1.59) ‡	1.48 (1.23, 1.77) ‡
Sufficient PA			
	No	1	1
	Yes	0.83 (0.74, 0.93) †	0.89 (0.78, 1.02)
Job-related characteristics			
Harassment or Bullying			
	No	1	1
	Yes	2.45 (2.05, 2.93) ‡	1.71 (1.38, 2.11) ‡

Note: \* <.05, †<.01, ‡<.001

Effects		Unadjusted	Adjusted
		OR (95% CI)	OR (95% CI)
Enough time to get job done			
	No	1.68 (1.44, 1.96) ‡	1.49 (1.23, 1.79) ‡
	Yes	1	1
Worktime shift			
	Daytime	1	1
	Evening	1.34 (1.01, 1.78) *	1.04 (0.77, 1.42)
	Night	1.17 (0.86, 1.61)	0.84 (0.60, 1.18)
	Rotating	1.44 (1.22, 1.69) ‡	1.14 (0.94, 1.39)
Job interference with personal/family life			
	No	1	1
	Yes	1.72 (1.53, 1.93) ‡	1.54 (1.34, 1.78) ‡
Job control			
	No	1.70 (1.46, 1.98) ‡	1.29 (1.07, 1.57) **
	Yes	1	1
Job support			
	No	1.93 (1.64, 2.27) ‡	1.29 (1.06, 1.57) *
	Yes	1	1
Hourly paid			
	No	1	1
	Yes	1.36 (1.20, 1.55) ‡	1.23 (1.04, 1.45) *
Chronic conditions			

Note: \* <.05, †<.01, ‡<.001

Effects		Unadjusted	Adjusted
		OR (95% CI)	OR (95% CI)
CHD			
	No	1	1
	Yes	1.28 (0.88, 1.86)	1.34 (0.78, 2.30)
COPD			
	No	1	1
	Yes	2.13 (1.30, 3.48) †	1.73 (1.00, 3.01)
Heart attack			
	No	1	1
	Yes	1.33 (0.83, 2.14)	1.14 (0.56, 2.30)
Asthma			
	No	1	1
	Yes	1.63 (1.40, 1.90) ‡	1.44 (1.22, 1.70) ‡
Cancer			
	No	1	1
	Yes	1.10 (0.84, 1.44)	1.04 (0.74, 1.46)
Diabetes			
	No	1	1
	Yes	1.31 (1.06, 1.61) *	1.07 (0.83, 1.38)
Note: * <.05, †<.01, ‡<.001			

Many of the associations found in the unadjusted analysis remained consistent in the multivariable regression analysis (Table 2). Age, gender, marital status, income, and smoking status were significantly associated with SPD. However, although being insured and engaging in sufficient physical activity showed lower odds, these estimates were not statistically significant. The adjusted odd for SPD among workers experiencing bullying or harassment was especially marked (AOR 1.71, 95% CI 1.38-2.11). Job-related factors, such as insufficient time to get the job done (AOR 1.49, 95% CI 1.23-1.79), job interfering

with personal or family life (AOR 1.54, 95% CI 1.34-1.78), not being allowed to make a decision (AOR 1.29, 95% CI 1.07-1.56) or no support (AOR 1.29, 95% CI 1.06-1.57), and hourly paid (AOR 1.23, 95% CI 1.04-1.45) were significantly associated with higher odds of SPD.

The adjusted probabilities for varying effects of bullying or harassment on SPD across subpopulations - age, gender, and race/ethnicity are displayed in Figure 1. While women experienced a higher probability of SPD than men overall, both genders showed elevated SPD when harassed or bullied, with men from 8.4–14.7% and women from 11.0–16.1%. Adults in the age of 18-29 (9.8–19.0%) and 30-44 (9.8–17.7%) had a sharp increase in SPD respectively, while other age groups had no significant increase. Also, SPD surged substantially across racial/ethnic groups when experienced bullying or harassment by 4.9% (from 10.3–15.2%) for white, 7.4% (from 7.0–14.4%) for black, and 13.4% (from 10.5–23.9%) for the racial/ethnic 'minority', respectively.

Table 3 shows stratified odds ratios by age, gender, and race/ethnicity in the association between SPD and severe psychological distress. Adults ages 18-29 (AOR 2.23, 95% CI 1.59-3.13) and 30-44 (AOR 2.04, 95% CI 1.43-2.91) showed significantly higher odds of SPD in the presence of workplace harassment or bullying, while those 45-59 and 60 or above did not show a considerable difference. Both men (AOR 1.93, 95% CI 1.43-2.58) and women (AOR 1.59, 95% CI 1.21-2.09) who had workplace bullying or harassment reported increased SPD. The higher SPD for bullying or harassment was also found in white (AOR 1.59, 95% CI 1.22-2.06), black (AOR 2.30, 95% CI 1.43-3.69), and the racial/ethnic 'minority' (AOR 2.81, 95% CI 1.50-5.28) but not Hispanic.

Table 3  
Stratified Odds Ratios for Severe Psychological Distress (SPD) with  
bullying/harassment – gender, and race/ethnicity

Effects	AOR (95%CI)		
	Bullying or Harassment		
	No	Yes	
Stratified by Age			
	18-29	1	2.23 (1.59, 3.13) ‡
	30-44	1	2.04 (1.43, 2.91) ‡
	45-59	1	1.07 (0.74, 1.55)
	60>=	1	1.67 (0.88, 3.17)
Stratified by Gender			
	Men	1	1.93 (1.43, 2.58) ‡
	Women	1	1.59 (1.21, 2.09) †
Stratified by Race/ethnicity			
	White	1	1.59 (1.22, 2.06) †
	Black	1	2.30 (1.43, 3.69) †
	Hispanic	1	1.53 (0.97, 2.42)
	Other	1	2.81 (1.50, 5.28) †
* Note: Analysis controlled for all other covariates. * <.05, †<.01, ‡<.001			

## Discussion

Our study examined severe psychological distress (SPD) with an emphasis on workplace bullying or harassment among working Americans. Approximately, 10.0% of the study population reported being harassed or bullied, and 20% of these people reported SPD. The findings show that workplace misbehaviors have significant adverse impacts on the mental health of the victims [33–35]. Our study suggests that both men and women experience a greater risk of SPD when exposed to workplace misconduct. A substantial increase of SPD was observed among adults ages 18-29 and 30-44 with workplace harassment or bullying. Furthermore, most racial/ethnic groups had an increased SPD associated with bullying or harassment, and the finding was more pronounced among racial/ethnic minorities. Our findings suggest that while workplace bullying and harassment are important contributors to working adults' mental health, they may pose disproportionate risks across subpopulations.

Mental health issues are among the major public health concern for working Americans. SPD, severe psychological distress, represents various forms of psychological symptoms from anxiety disorder and depressive symptoms to severe functional impairments [36]. Our finding that workplace bullying or harassment is a significant predictor for SPD is consistent with what was observed in the literature [2, 37]. Our study reaffirms that bullying or harassment remains a serious threat to safe and healthy working conditions for working Americans [25]. We also confirmed that gender matters when it comes to mental health issues [38]. While no significant difference between racial/ethnic groups was found, a high prevalence of SPD was also found among adults younger than 60 years old.

The primary interest of our study was the varying effects of bullying or harassment on SPD by sub-population, such as age, gender, and race/ethnicity. Our findings from our stratified analysis showed that while SPD was more common among women with no harassment or bullying, men and women both revealed a surge of SPD with experiencing workplace misbehaviors, consistent with findings in the literature [39]. However, age and race/ethnicity showed different patterns in SPD with exposure to harassment or bullying. Adults ages 18-29 and 30-44 had a mounting risk of SPD when they reported workplace harassment or bullying, while those older did not show such patterns. The findings may suggest that adults younger than 45 years old are particularly susceptible in terms of maintaining good mental health given harassment or bullying. While we were not able to identify specific types of workplace misconduct associated with SPD across age groups, the literature suggests that verbal abuse and sexual harassment are common contributors to mental health problems among young and middle-aged adults [40]. A majority of racial/ethnic groups also showed increased SPD as being harassed or bullied. The increased SPD was especially marked among blacks and the racial/ethnic 'minority'. The literature found that racial/ethnic minorities suffer greater adverse health outcomes, including poor psychological health under workplace injustices, such as harassment, bullying, or abuse [19]. The current study suggests that compromised workplace justice may exacerbate working conditions and mental health problems among racial/ethnic minorities. Our findings note that workplace bullying or harassment are pressing, and a stratified strategy is critical to effectively prevent and manage workplace hazards for the well-being of working adults in the United States.

Our study is not without limitations. First, the study is cross-sectional using single-year data due to the availability of our key independent variable. Although we believe that our findings provide important evidence for SPD, analysis with data collected consistently over a longer period would strengthen the findings. Second, while the study found the varying associations of the mental health issue with harassment or bullying, we were not able to identify specific types of misbehaviors that adults may experience in their workplace. Understanding these types would help explain why mental health issues with workplace experiences vary across the layers of the population. Lastly, our data is based on self-reported responses. Given the nature of bullying or harassment that participants are generally reluctant to report, the survey might not have fully captured workplace harassment or bullying from study participants.

Despite the limitations, our study contributes to the literature in several ways. We identified evidence of comparatively higher susceptibility to mental health among subpopulations with workplace harassment or bullying experience. Given our data is nationally representative, we believe that our findings can provide implications for policymakers at local, state, and national levels in their efforts to improve working conditions and the health of working Americans. Also, our findings warrant further research on specific types of workplace misbehaviors across populations. Identifying those specifics and their effects on mental health would be a significant contribution to the body of knowledge on improving the health of working Americans.

## **Conclusion**

The current study investigated varying risks of SPD among working Americans. The study findings showed variations in SPD with workplace bullying or harassment – a significant increase among young and middle-aged adults and racial/ethnic groups, especially among blacks and the racial/ethnic ‘minority’. While women relative to men are consistently susceptible concerning their mental health, genders both showed a significant increase in SPD with the workplace mistreatment. The study findings are important evidence for improving the knowledge base about the harms posed by workplace misbehaviors to the worker’s mental health. They also provide practical implications for policymakers for making a safe and healthy work environment.

## **Declarations**

## **Ethics approval and consent to participate**

All methods were carried out in accordance with relevant guidelines and regulations

## **Consent for publication**

Not applicable

## **Availability of data and materials**

The public database is available from the National Health Interview Survey (<https://www.cdc.gov/nchs/nhis/data-questionnaires-documentation.htm>).

## **Competing interests**

The authors declare no potential conflicts of interest with respect to the research, authorship, and publication of this manuscript.

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# Author's contribution

JL conceived and drafted the manuscript. WM contributed to the interpretation of the data and manuscript revisions. MO performed data management and analysis. All authors have read and approved the final manuscript.

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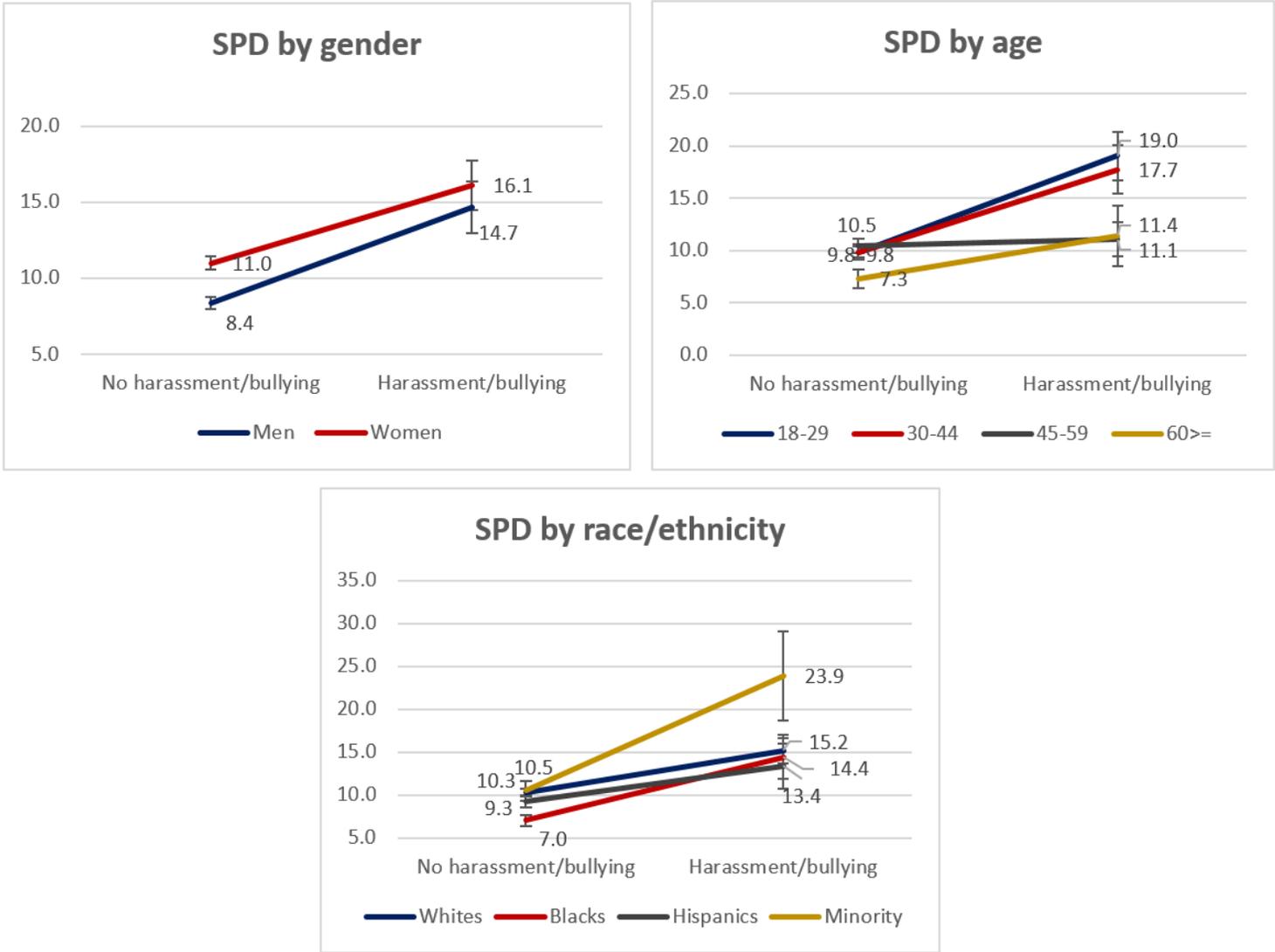
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## Figures



**Figure 1**

Adjusted probabilities for Severe Psychological Distress (SPD) with and without harassment/bullying: gender, age, and race/ethnicity