Beyond Occupational Hazards: Abuse of Day Laborers and Health

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Abstract (180 words max)

Objective: To examine the association between occupational risk factors and high-risk environments with the health of day laborers.

Methods: We use a nationally representative sample of 2,015 day laborers from the National Day Labor Survey. Stepwise logistic regression models were used to investigate the association of occupational and socioenvironmental abuses with self-rated health (SRH), PHQ-2, morbidities, and workplace injuries.

Results: Experiencing crime, business owner abuse, employer abuse, and having a dangerous job are associated with workplace injuries; employer abuse is associated with morbidities; business owner abuse, employer abuse, and having a dangerous job are associated with a positive PHQ-2 depression screening; and employer abuse is associated with fair/poor SRH.

Conclusions: Health disadvantages among our sample stem not merely from unsafe occupational conditions, but from an overlapping array of adverse experiences associated with economic vulnerability, performing dangerous work under exploitative conditions, and seeking work in harsh social environments.

Policy implications: It is necessary to develop and evaluate policy programs that protect all workers regardless of socioeconomic position and immigration status.

Work plays a central role in immigrants' experiences and their health.[1] Globally, a vast portion of the immigrant workforce perform the "3D" jobs: dirty, dangerous, and difficult.[2,3] In the United States, immigrants are overrepresented in the low skilled, informal, and unregulated sectors of the economy and are more likely to work in hazardous industries like construction and agriculture.[4] Groups with less power, including immigrants, racial and ethnic minorities, and those with lower socioeconomic position, also experience greater exposure to job insecurity[5] and work organization hazards,[6] which lead to adverse health outcomes.[7] With the increase in labor market flexibility and simultaneous escalation in worksite immigration enforcement, day labor is a common type of informal employment arrangement among the immigrant population.[8] Day laborers, who are primarily undocumented men from Latin America countries,[9] are a "structurally vulnerable population" due to a variety of global, economic, and political factors [10,11] such as immigration status, job insecurity, language and cultural barriers, and lack of a regular physical worksite.[9,12] Unsurprisingly, immigrant day laborers are exposed to more occupational hazards than non-immigrant day laborers.[13]

Day laborers face a range of stressful work and life experiences that may adversely affect their health beyond the immediate effects of occupational hazards. Although day laborers perform a series of dangerous jobs, they are often not provided personal protective equipment and occupational trainings to reduce risk from the hazards they are exposed to.[9,12,14-16] Employers frequently exploit the necessity for work as demonstrated by high rates of wage theft and accounts from day laborers of an assortment of employer abuses and violation of employment laws.[17,18] Wages are low and work is scarce and unstable, contributing to pressures for day laborers to take any occupational openings and settle for work on employers' terms – taking jobs that are unmonitored, unprotected, and unsafe.[17,19] Furthermore, the processes of seeking work in public spaces may further result in exposures to a wide range of adverse social environmental risk factors including violence, abuse, and exploitation.[12,20] Aggravating these risk factors for health, day laborers are less likely complain about work related abuses due to fear of deportation and employer retaliation.[21,22]

In addition to occupational hazards and the inherently dangerous nature of their work, day laborers also are exposed to psychosocial stressors that could unfavorably affect their health.[15] Qualitative research studies demonstrate that among day laborers poor living conditions are associated with depression [23] while discrimination and social isolation have an adverse and

significant impact on mental health.[24] The unpredictable nature of day labor,[25] separation from family,[23] inadequate housing and lack of health care[26] places these workers at increased risk for both poor physical and mental health outcomes.

Evidence indicates that workplace injustice, negatively affects the health of all workers but it principally contributes to health disparities for socially disadvantaged workers and their families.[15,27] Previous studies have qualitatively explored the occupational and psychosocial risk factors that affect day laborers.[24,26,28] Using an ecological framework, we consider how risk factors outside of the work environment impact the health of day laborers. We draw on day laborers' social conditions, social context, and sociodemographics to understand how intermediate and distal factors affect health. To our knowledge, no research study has critically examined the association between occupational risks and a dangerous environment with the mental and physical health status of a national representative sample of day laborers.

Methods

Data were from the National Day Labor Survey (NDLS), which allows for analysis of the demographic composition, occupational experiences, and health outcomes of day laborers in the U.S. The NDLS is a survey administered in 2004 to 2,660 randomly selected day laborers across 264 hiring sites, which were located in 139 municipalities in 20 states plus the District of Columbia. It is the only available nationally-representative data set on day laborers. The survey employed a rigorous sampling strategy that paid particular attention to the existence of formal and informal hiring sites and the transient nature of its target population. Interviews were conducted using a close-ended questionnaire.[9]

Our analysis was restricted to respondents from the top six countries of origin, Mexico, Guatemala, Honduras, El Salvador, Ecuador, and Peru, reducing the sample size to 2,372. Observations with missing data were excluded from the analysis, thereby reducing the sample to 2,015. Chi-square tests of the difference in key demographic and social factors between included and excluded respondents show minimal differences. Furthermore, our results were robust to the inclusion or exclusion of cases with missing values and those from other countries.

Outcomes of Interest

The outcome measures for this analysis were fair or poor self-rated health (SRH), positive Patient Health Questionnaire 2 (PHQ-2) depression screening, diagnosed morbidities, and workplace-related injuries.

Self-Rated Health

Self-rated health was based on responses to the question: “In general, would you say that your health is?” And the response options were “Excellent”, “Very Good”, “Good”, “Fair”, “Poor”, “Don’t Know/Not Sure”, or “Refused”. Responses were dichotomized into “poor/fair” and “good/very good/excellent,” consistent with prior studies.[29]

Depression Screening

The 2-item Patient Health Questionnaire depression module (PHQ-2) is the initial questionnaire used for screening depression and it is considered the "first step approach".[30] The PHQ-2 asks about the frequency of depressed mood and the inability to feel pleasure (i.e. anhedonia) over the past 2 weeks. The main question is, “Over the last 2 weeks, how often have you been bothered by any of the following problems?” The 2 items are “little interest or pleasure in doing things” and “feeling down, depressed, or hopeless.” For each item, the response options are “not at all,” “several days,” “more than half the days,” and “nearly every day,” scored as 0, 1, 2, and 3, respectively. The PHQ-2 score can range from 0-6 and the cut off is score of 3 for screening purposes. The PHQ-2 has a 97 percent sensitivity and 67 percent specificity in adults.[30] The construct and criterion validity of the PHQ-2 make it an appealing measure for depression screening.

Morbidities

Participants indicated whether they had ever been told by a doctor or other health professionals they had any of the following health conditions by endorsing “yes”, “no”, or “don’t know”: diabetes, hypertension, arthritis, heart disease, asthma, cancer, an ulcer, hernia, kidney problems, any kind of liver condition (e.g. Hepatitis), tuberculosis, or sexually transmitted infections such as HIV, chlamydia, genital herpes, gonorrhea, or syphilis. The total number of diagnosed health conditions was calculated by summing the answers to these. Those who indicated “don’t know” were included in the “no” group.

Workplace Injuries

A single item assessed workplace injuries. The question was: “As a day laborer, have you ever suffered a work-related injury?” The interviewer informed each respondent that “According to the US Department of Labor, work related injuries and illnesses are events or exposures in the work environment that caused or contributed to the condition or significantly aggravated a preexisting condition”. Participants responded either “yes” or “no”.

Covariates

The sociodemographic variables included participants' age, duration in the U.S., years of school completed, English ability, age at time of interview, and legal status. Other variables considered but not included in the analyses because of a lack of association were marital status, number of children, and region of residence in the U.S.

Deprivation: Deprivation was assessed by using an item from the Current Population Survey Food Security Supplement questionnaire. The question was: "Which of these statements best describes the food eaten in your household?"[31] And responses included "enough of the kinds of food we want to eat", "enough but not always the kinds of food we want to eat", "sometimes not enough to eat", or "often not enough to eat". Respondents who indicated always having enough food were coded as 0 and all other responses were coded as 1.

Last month's earnings were also used to assess deprivation, and it was assessed by asking "Approximately, how much did you earn in wages in the last month?" Answers were rounded to the nearest dollar. For analytic purposes, we used the log transformation of wages to meet the assumption of normal distribution.

Work risks – Danger & Employer Abuse

Danger was assessed by asking respondents: "Do you consider any of the jobs you do as a day laborer dangerous?" The response options were "yes" or "no".

Employer abuse was measured using the following main question: "How often have you experienced the following types of abuses from employers as a day laborer during the last two months?" The 7 items were: "Non-payment/ bad check", "Paid less than agreed", "Abandoned at work site", "No food, water, or breaks", "Violence", "Insulted or threatened", "Worked more hours than agreed". For each item, the frequency of abuses was recorded: 0 indicated "Never", 1 indicated "1-5 times", 2 indicated "6-10 times", and 3 indicated "11+ times". A sum score was calculated by adding the corresponding items. Missing responses were replaced with the mean. To create the binary variable from the sum score, the cutoff for having experienced abuse was the median. Thus, those above the median were coded as 1.

Socioenvironmental Risks

Business abuse was measured using the following main question: "How often have you experienced the following types of abuses from business owners near the sites during the last two months?" The 5 items include "Insulted/harassed", "Threats", "Violence", "Were refused

services", and "Have called the police on you". For each item, the frequency of abuses was recorded and a sum score was calculated by adding the corresponding items. Business abuse was coded in the same manner as described for employer abuse.

Police abuse was measured using the following main question: "How often have you experienced the following types of abuses from the police while looking for work or working as a day laborer during the last two months?" The 7-item list includes: "Insulted/harassed", "Arrested", "Cited", "Confiscated papers", "Forced to leave the site", "Asked about your immigration status", "Photographed/ videotaped?" For each item, the frequency of abuses was recorded and a sum score was calculated by adding the corresponding items. Police abuse was coded in the same manner as described for employer abuse.

Victimization was assessed by the following main question: "While looking for work or working as a day laborer, have you been a victim o the following?" The 5-item list includes "Theft", "Assault", "Robbery", "Beatings/fighting", and "Sexual abuse/Harassment". Responses were "yes" or "no". A sum score was calculated by adding the answers to these items. The binary variable for victimization was 0 for those who never experience any crime and 1 for respondents who have.

Organizational Activity was assessed by asking respondents two questions: "Do you belong to or frequent a worker center?" and "Do you have any organizing experience?" Responses for each item were "yes" or "no".

Statistical Analysis

Descriptive statistics were calculated for sociodemographics, deprivation, work risks, socioenvironmental risks, organizational activity, and outcomes using means and standard deviations. Bivariate associations were also carried out to inform the model development.

Using a stepwise approach, logistic regression models were used to examine the association of (1) sociodemographics, (2) deprivation, (3) work risks, (4) socioenvironmental risks, and (5) organizational activity with our four outcomes of interest, self-rated health, PHQ-2 depression screening, diagnosed morbidities, and workplace injuries. Six different models were evaluated for each outcome. The first model included sociodemographic characteristics, including English ability, education, age, duration in the U.S., and legal status. Adding on to this, Model 2 included deprivation by using food inadequacy and last month's wages. Model 3

assessed work risks by incorporating employer abuse and the binary variable from the danger index sum score. Model 4 assessed the socioenvironmental risks in the form of abuse by business owners and the police and victimization, while controlling for workplace injuries. The final model used for reporting results is Model 5, which assessed organizational activity, including worker center membership and experience organizing. Model 6 is identical to the Model 5 but only uses respondents who do not belong to a worker center.

Using these models, odds ratios and corresponding 95% confidence intervals were produced to show the association of deprivation, work risks, socioenvironmental risks, organizational activity with our outcomes of interest. All data analyses were performed using Stata 15.

In addition to these models, we tested the robustness of our results by 1) testing models with and without excluded cases, 2) running weighted regressions that adjust for the higher probability of sample selection among individuals who seek more day labor more frequently (and who thus may be more exposed to certain risks), 3) testing alternate cut-points for dependent variables, and 4) testing alternate specifications for danger/abuse scales (e.g. full indices instead of dummies, combined indices), 5) introducing controls for region of interview/residence, country of origin, month of interview and interviewer code.

Results

Means and standard deviations of all measures used in the model are presented in Table 1. Only 10.2% were either U.S. citizens or Lawful Permanent Residents; the remaining were either undocumented, held Temporary Protected Status, a tourist/student visa, or refugee/asylum status. The mean age of respondents was 34 years old and the mean years of education was 6.9. The average duration in the U.S. was 7.8 years, with a large share (57.8%) have been in the US less than 5 years. Eighty-two percent of respondents reported low limited English Proficiency (i.e. spoke English either a little or none). Average wages for the previous month were just $841.33 dollars. As another indicator of deprivation, 70.6% of respondents had experienced a degree of food inadequacy within the last 30 days of the interview.

Approximately 32% of participants reported fair or poor health. Moreover, 10.2% (206) had a PHQ-2 score that screened positive for depression. About a fifth of the participants (21.0%) had ever suffered a work-related injury. Approximately a quarter of participants (24.5%)

had a diagnosed chronic condition (i.e. diabetes, hypertension arthritis, heart disease, asthma, cancer, kidney disease), an ulcer, tuberculosis, or a sexually transmitted disease.

In terms of working conditions, 75% of respondents consider any of their jobs as a day laborer dangerous. Over half (51.2%) of have experienced at least one form of employer abuse. Thirty-eight percent have experienced at least one form of business abuse. Almost half (49.1%) have endured at least one form of police abuse. Additionally, 12.6% have been victims of a crime (i.e. theft, assault, robbery, beatings, or sexual abuse/harassment) while looking for work or working as a day laborer. Lastly, 20.5% of respondents belong to a worker center and 12.8% report having any organizing experience.

Table 2 presents the models analyzing the factors that predict self-rated health (SRH), a positive PHQ-2 screening, diagnosed morbidities, and experiencing workplace injuries.

Undocumented legal status is positively associated with injury (OR 1.9, $p<0.001$), but not with other factors. While English ability has a strong association to health status for Latino immigrants more broadly, we find no association of English language ability to SRH, PHQ or morbidities. We do observe that those with limited English experience fewer occupational injuries (OR 0.7, $p <0.05$). While this result could reflect differential reporting patterns by linguistic ability, our results suggest instead that the relationship may result from the tendency for English speakers to work more, and thus be exposed to more injury, and for English speakers to gain access to the most lucrative employment opportunities, which also happen to be the most dangerous.[19]

Indicators of risk and abuse were associated with various outcomes. To illustrate the role of different abuses on poor health outcomes, Figure 1 presents the odds ratios from the final logistic regression models. Respondents who considered any of their jobs as day laborers dangerous had a higher odds of positive PHQ-2 screening (OR 1.9 $p < 0.01$) and reporting workplace injury (OR 1.8 $p < 0.001$). Abuse by employers was significantly associated with higher odds of all negative health outcomes. Those who experienced any employer abuse in the last two months at the time of the interview had a 1.3 odds ($p <0.05$) of worse SRH, 1.8 odds ($p < 0.01$) of a positive PHQ-2 screening, 1.3 odds ($p < 0.05$) of having a diagnosed morbidity, and a 2.4 odds ($p < 0.001$) of having experienced a workplace injury. Abuse by business owners in and around the worksites was significantly associated with a higher odds of positive PHQ-2 screening (OR 1.8, $p < 0.01$) and workplace injury (OR 1.3, $p < 0.05$). Participants who had been

a victim of a crime while looking for work or working as a day laborer had a higher odds (OR 2.5, $p < 0.001$) of workplace injury. Finally, respondents who had suffered a workplace injury had a higher odds of fair/poor SRH (OR 1.4, $p < 0.01$), positive PHQ-2 screening (OR 1.6, $p < 0.01$), and morbidity (OR 1.5, $p < 0.001$).

Indicators of risk and abuse are strongly associated with poor health outcomes, particularly positive PHQ-2 screening, with several having an odds ratio for positive PHQ-2 screening greater than 2.0. To better illustrate the role of these different dimensions of abuse, Figure 2 presents the significantly associated bivariate risks of positive PHQ-2 screening for each of the individual items contained in the indexes of employer abuse, business abuse, police abuse, crime victimization along with single-item indicators of dangerous employment, workplace injury and food insecurity. These risks are sorted by the OR, with the prevalence of each risk indicated to the right. Individually, each of these risks is positively associated with positive PHQ-2 screening. When comparing across risk type, workplace abuse/injury, food insecurity and crime victimization emerge as having the greater relative importance, with workplace risks and food insecurity also having very high frequency.

Occupational injuries have been highlighted as a key short-term concern facing day laborers, and these results suggest that they also carry sustained consequences for PHQ-2 (OR 2.5 $p < 0.001$) as well as SRH and morbidities. While the importance of injury itself may be unsurprising, our results suggesting that the perception of danger is both far more common (75% prevalence, compared to 21% reporting injury) and an even strong predictor of positive PHQ-2 (OR 2.7). Wage theft has rated as a major economic concern facing day laborers, with 65% of this sample reporting underpayment. Our results are among the first to point to the long-term consequences of wage theft, which has a 1.9 OR for positive PHQ-2. Even insults and threats by employers, reported by 38% of respondents, are a strong predictor of PHQ-2. While day laborers endure many employment-related risks in order to earn wages, they nonetheless face persistent risks associated with low wages and food insecurity, which are both highly prevalent and strongly associated with positive PHQ-2 screening.

Crime victimization is a less well-documented risk associated with seeking day labor that appears to carry substantial consequences for poor health above and beyond socioeconomic and workplace burdens. While the experience of individual crimes is low compared to employer

abuse, the rates are exceptionally high compared to other disadvantaged populations, and these risks carry and individual and aggregate association with positive PHQ-2 screening.

Discussion

This study uses an ecological framework to consider how factors outside of the workplace impact the health of nationally representative sample of day laborers. Specifically, we assessed large scale factors (i.e. immigration status, economic vulnerability), local context (i.e. abuse by police and business owners, victims of crime), workplace context (i.e. employer abuse, performing dangerous work), and individual-level factors and their association with SRH, PHQ-2, morbidities, and workplace injuries. In accordance with a pilot study examining allostatic load among 30 Latino day laborers, we find that stressors in the contexts of work, society, and economics contribute to adverse health and cumulative strain. [32] Our findings are consistent with previous studies examining the adverse health impacts of job insecurity and an abusive work environment.[33,34] Moreover, previously published literature considering the association between health and multiple sources of discrimination among immigrant workers was primarily conducted in Europe using qualitative research methods.[3,35-37] No quantitative study was found that had been conducted among a nationally representative sample of day laborers. The examination of multi-level sources of discrimination is important given the significant and multidimensional role of abuse in driving variation in the health of day laborers.

Our results demonstrate how health disadvantages among day laborers stem not merely from unsafe occupational conditions, but from an overlapping array of adverse experiences associated with economic vulnerability, performing dangerous work under exploitative conditions, and seeking work in harsh social environments. This is important given that an absence of or weak social protection policies may amplify the adverse health implications of differential exposure to work-related abuses and high-risk environments and differential vulnerability by gender, socioeconomic position, and immigration status.[38,39]

This paper constitutes the first effort to quantify the determinants of poor health among a nationally-representative sample of day laborers and may indeed be the first study in the U.S. to understand the life course health conditions of any group experiencing highly vulnerable employment patterns. In spite of being relatively young, physically active and treatment-naïve, the sample experiences relatively high levels of positive PHQ-2 screening, fair/poor SRH,

morbidity and injury compared to the general population, much less the foreign-born Latino population who tend to experience better-than-average outcomes.

Our study involved some limitations. For example, the prevalence of employment-related risks and socioeconomic risks is so universally high among the entire study population that we were initially unsure whether any individual risk or combination of risks would be truly predictive of poor health outcomes. The survey was cross-sectional, thus there is no evidence of a temporal relationship between exposure and outcome. Nevertheless, given that our respondents are generally young migrant workers, they need to be healthy in order to successfully migrate. Also, duration in the U.S. is associated with higher odds of a workplace injury, suggesting an exposure-dose response to precarious employment.

The intersection of various stressors and abuses in tandem with the current political climate leads to a multifaceted web of consequences for marginalized workers and their families.[12] While these risks have always been present for day laborers, the rising tide of anti-immigrant rhetoric and action, by public authorities and private citizens, raises concern over the association between occupational and social-environmental exposures and the health status of day laborers and other immigrant workers. Despite a patchwork of worker protection laws in states like California, for example, further research is needed to determine if existing legislation and regulation translate into improvements in worker health and safety nationally.

We address these relationships in the context of the National Day Laborer Survey (NDLS), a nationally-representative survey 2,015 day laborers living in 139 cities across the US conducted in 2004. No recent survey can match either the sample size and representativeness or the depth of questions on both health, economic conditions, employment, and the social environment. Our analysis provides an important baseline for understanding the drivers of health disadvantage among day laborers prior to the current era, and they may telegraph some of the potential risks facing the 11 million undocumented immigrants currently living in the US as many are forced into increasingly precarious or inadequate employment arrangements.

Table 1: Descriptive statistics for outcome variables and covariates (N=2,015)

Variable	Label	Mean/ %	SD	Min.	Max
Outcomes					
SRH	Fair/poor self-rated health	32.3%	-	0	1
PHQ-2	Positive PHQ2 screening for depression	10.2%	-	0	1
Morbidities	Diagnosed with any morbidities	24.5%	-	0	1
Workplace Injuries	Ever suffered a work-related injury	21.0%	-	0	1
Sociodemographics					
Age	Age of day laborer at time of interview	34.25	10.98	15	90
Duration	Duration in the US	7.77	8.57	1	73
Education	Years of school completed	6.85	3.77	0	18
English Ability	Lower limited English proficiency	82.1%	-	0	1
Legal Status	Not US Citizen or Lawful Permanent Resident+	90.8%	-	0	1
Deprivation					
Wages	Last month's wages	841.33	1.49	0	8.99
Food inadequacy	Experienced food inadequacy and food shortage.	70.6%	-	0	1
Work Risks					
Danger	Considers any of his jobs as a day laborer dangerous	96.2%	-	0	1
Employer Abuse	Experienced employer abuse	51.3%	-	0	1
Socioenvironmental Abuse					
Business Abuse	Experienced business owner abuse	37.6%	-	0	1
Police Abuse	Experienced police abuse while looking for work	12.6%	-	0	1
Victimization	Has been a victim of crime	49.1%	-	0	1
Organizational Activity					
Worker Center	Belongs to or frequents a worker center	20.5%	-	0	1
Organizing Experience	Has any organizing experience	12.8%	-	0	1

+ Includes respondents who are either undocumented, have Temporary Protected Status, a tourist/student visa, or refugee/asylum status.
Note: Means are in percentages for dichotomous variables.

Table 2: Odds ratios from logistic regression models predicting fair/poor SRH, positive PHQ2 screening, diagnosed morbidities, work place injury

VARIABLES	(1) Fair/Poor SRH	(2) Positive PHQ2 Screening	(3) Diagnosed Morbidities	(4) Work Place Injury
Age (years)	1.00	0.98	1.02**	0.998
	(0.00)	(0.00)	(0.00)	(0.00)
Duration in the US (years)	1.00	1.02	0.99	1.03***
	(0.01)	(0.01)	(0.01)	(0.01)
Education (years)	0.94***	0.95*	0.97*	0.98
	(0.01)	(0.02)	(0.01)	(0.02)
Limited English Ability- lower proficiency	0.98	0.91	0.89	0.69*
	(0.14)	(0.19)	(0.13)	(0.11)
Undoc/TPS/Other	0.89	1.54	0.75	1.87**
	(0.17)	(0.51)	(0.15)	(0.45)
Last Month's Wages Logged	0.97	0.88**	1.01	1.03
	(0.03)	(0.04)	(0.04)	(0.05)
Food Insecure	1.43**	1.86**	1.25	1.19
	(0.16)	(0.38)	(0.16)	(0.16)
Danger Indicator	1.10	1.89**	0.96	1.82***
	(0.13)	(0.45)	(0.13)	(0.31)
Employer Abuse	1.32*	1.80**	1.34*	2.42***
	(0.14)	(0.33)	(0.16)	(0.33)
Business Abuse Indicator	1.20	1.76**	1.27	1.31*
	(0.14)	(0.31)	(0.15)	(0.17)
Victim of Crime Indicator	0.91	1.46	1.04	2.54***
	(0.19)	(0.29)	(0.17)	(0.39)
Police Abuse Indicator	1.23	0.77	1.17	1.23
	(0.13)	(0.14)	(0.14)	(0.16)
Ever Suffered a Work-Related Injury	1.41**	1.57**	1.53***	
	(0.172)	(0.270)	(0.198)	
Belongs to or frequents a worker center	1.00	1.69**	1.45**	1.34*
	(0.12)	(0.30)	(0.18)	(0.19)
Has Organizing Experience	0.81	1.239	1.060	1.55**
	(0.12)	(0.26)	(0.17)	(0.25)
Constant	0.45*	0.06***	0.17***	0.03***
	(0.17)	(0.04)	(0.07)	(0.02)
Observations	2015	2015	2015	2015
Pseudo R-squared	0.032	0.091	0.037	0.123
AIC	2486.0	1240.6	2192.4	1845.2
BIC	2575.8	1330.3	2282.1	1929.3
Log Likelihood	-1227.0	-604.3	-1080.2	-907.6
Degrees of Freedom	15	15	15	14

Exponentiated coefficients; Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Figure 1: Odds ratios from logistic regression model predicting for fair/poor SRH, positive PHQ-2 screening, morbidities and workplace injuries (N=2,015)

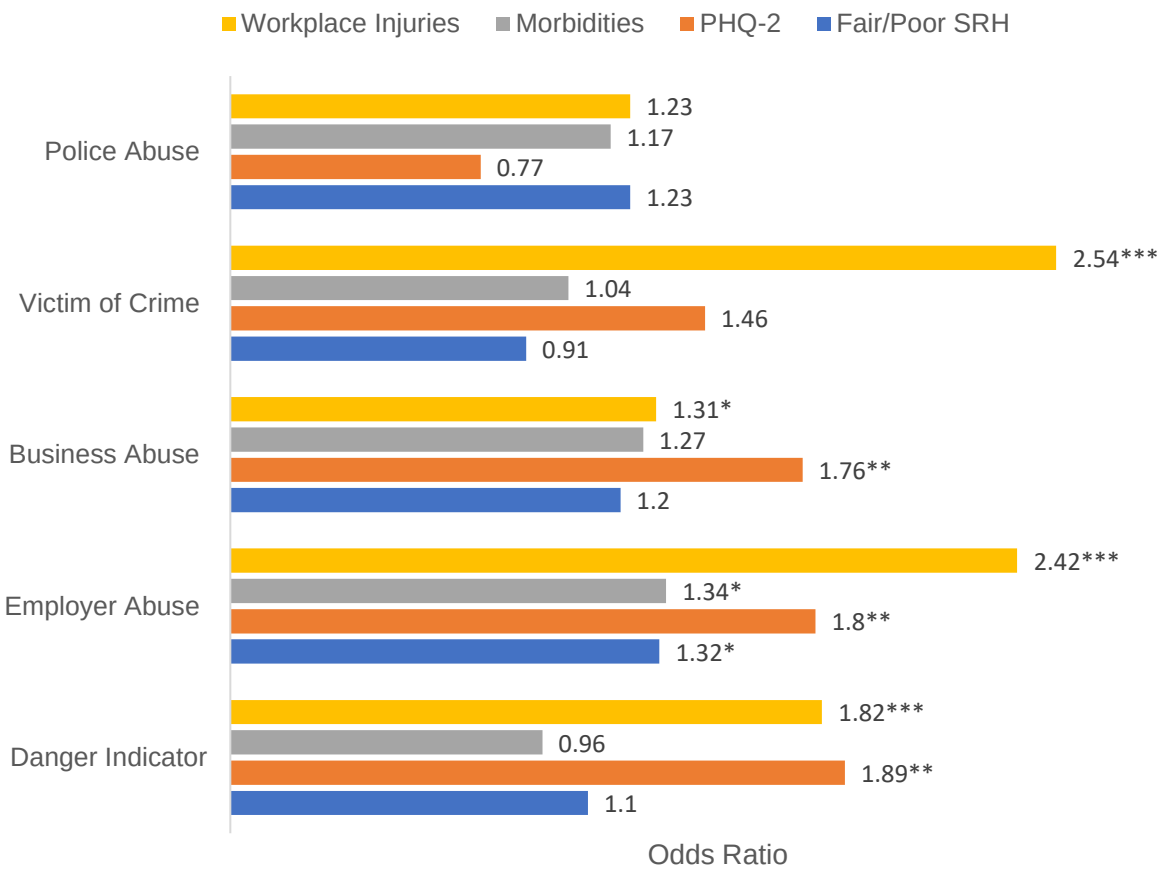
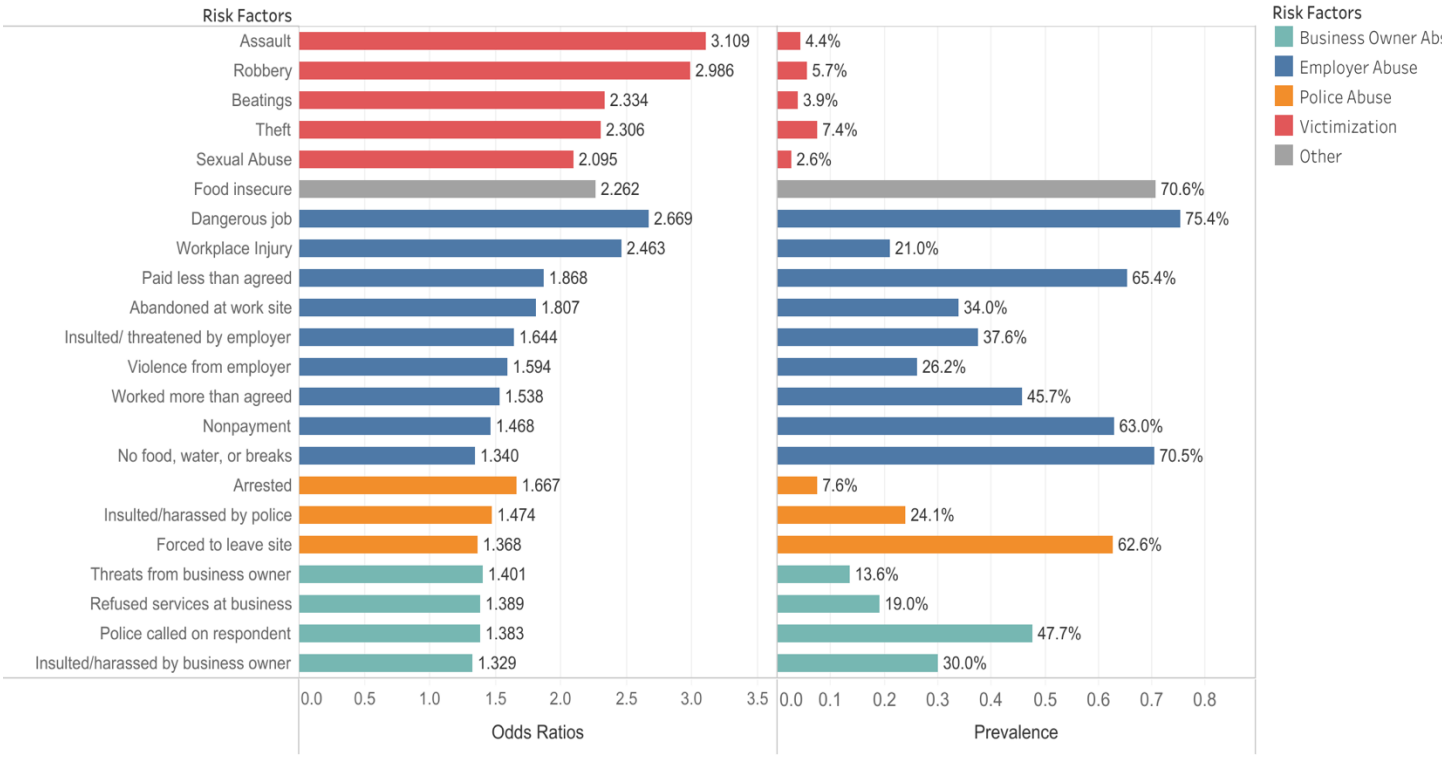


Figure 2: Prevalence of risk factors and odds ratio for positive PHQ-2 depression screening (N=2,015)



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