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Status of mental health and working conditions among workers employed in small businesses in 2018 and 2022

Heidi L Hudson, DrPH[1], **Jonathan Davis, PhD**[2]

[1]Division of Science Integration, National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, 1090 Tusculum Avenue, MS C-10, Cincinnati, OH, USA

[2]Department of Occupational and Environmental Health, College of Public Health, University of Iowa, Iowa City, IA, USA

Structured Abstract

Objective: To assess psychosocial working conditions and mental health status among U.S. workers in small businesses.

Methods: Data from the 2018 and 2022 General Social Survey's Quality of Worklife module were used to examine mental health and psychosocial working conditions among U.S. adults employed by businesses with 1-49 employees. Descriptive statistics and logistic regression analyses were conducted, adjusting for race, education, marital status, age, and job tenure.

Results. Using combined data, workers reporting low job satisfaction, lack of management priority for safety, high work–family conflict, unfair wages, and limited promotion opportunities had significantly higher odds of reporting one or more poor mental health days in the past 30 days, compared to those reporting more favorable working conditions.

Conclusions. Findings highlight modifiable workplace factors that may lead to improved mental health among small business workers.

Graphical Abstract

[1]See e.g., 45 C.F.R. part 46; 21 C.F.R. part 56; 42 U.S.C. §241(d), 5 U.S.C. §552a, 44 U.S.C. §3501 et seq.

Corresponding Author: Dr. Heidi Hudson, Division of Science Integration, National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, 1090 Tusculum Avenue, MS C-10, Cincinnati, OH 45226, hlhudson@cdc.gov.

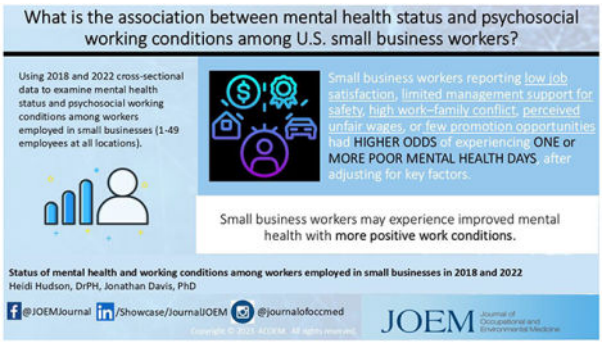
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EQUATER Network Checklist: See Checklist in Supplemental Digital Content. We adhered to the STROBE Guidelines.

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Keywords

Small Business; Mental Health; Quality of Worklife; Worker Well-being; Workplace Health; Work-related Stress

1. Introduction

Poor mental health and well-being are increasingly recognized as important concerns for workers, employers, and the economy.[1-3] Small businesses are central to economic stability and growth, both in the United States and globally. According to the International Labor Organization (ILO), micro and small enterprises (with 2-49 workers), along with self-employed workers, contribute to a substantial share of global employment, compromising approximately 70% across many countries.[4] In the U.S., small businesses employ nearly 46% of the private sector workforce and account for two-thirds of new job creation.[5] These businesses drive innovation, competitiveness, and economic opportunity. Their success and sustainability are closely tied to the overall health and well-being of their workforce.[6]

Despite their importance, there is a lack of nationally representative data on the status of mental health and working conditions of U.S. workers employed by smaller businesses. This gap limits our ability to identify workforce needs and develop targeted interventions to support this essential segment of the labor force.

Prior to 2021, about one in five U.S. adults met criteria for a diagnosable mental illness.[7] During the COVID-19 pandemic, rates of psychological distress increased significantly.[8] By early 2021, over 40% of adults reported experiencing symptoms of anxiety or depression, though not all met diagnostic thresholds.[9] The pandemic also sharpened national awareness of the connection between work and well-being. A national survey by the American Psychological Association found that 81% of workers said that how employers support mental health would be an important consideration in choosing future employment.[10] In 2022, the Surgeon General of the U.S. Public Health Service identified workplace mental health and well-being as a critical public health priority in the Surgeon General's Framework for Workplace Mental Health and Well-being.[1]

Even before the COVID-19 pandemic, several scholars expressed concern over the need to prioritize workplace mental health in smaller businesses.[2,11,12] Scholars indicated that employers of smaller businesses may face greater barriers to accessing or implementing

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programs or practices that protect the overall health and well-being of workers than their larger counterparts given more limited resources.[13,14]

In the scientific literature, small businesses are characterized based on a combination of quantitative factors (e.g., number of employees, revenue)[15,16], qualitative characteristics (e.g., organizational structure, resource constraints)[17], and contextual factors (e.g., entrepreneurship, culture of organization).[18-20] While there is no standard definition, how small businesses are characterized often varies by discipline, context of the research, and geographic region. The National Institute for Occupational Safety and Health (NIOSH) typically considers U.S. small businesses as having fewer than 50 employees.[21] This is consistent with the Affordable Care Act threshold, which requires employers with 50 or more full-time employees to provide health insurance to their employees.[22] Given how small businesses are characterized in the literature, this quantitative and size-based classification is well-suited for identifying the need for occupational safety and health research in these settings. Accordingly, this study adopts NIOSH's definition of small businesses having fewer than 50 employees for analytic purposes, while using the term *"smaller business"* to reflect broader contextual considerations relevant to small enterprises.

The purpose of this study is to assess the mental health and psychosocial working conditions of U.S. adult workers employed in small firms (between 1-49 employees at all locations) in 2018 and 2022. The aims are to:

1. Describe the demographic and employment characteristics of U.S. workers employed in organizations with 1-49 employees.
2. Examine self-reported working conditions and mental health status before and during the COVID-19 pandemic.
3. Assess the relationship between specific working conditions and the number of poor mental health days in the past 30 days reported among these workers.

These findings contribute to national, cross-sectional data on self-reported mental health and working conditions of workers employed in small businesses.

2. Methods

Study Design

This study used 2018 and 2022 data from the General Social Survey (GSS) and its Quality of Worklife (QWL) Module to examine and compare self-reported mental health status and working conditions among respondents who were employed either part-time or full-time at the time of the survey. The GSS is a biannual, nationally representative, personal interview survey of U.S. households led by the National Opinion Research Center at the University of Chicago and funded by the National Science Foundation.[23] The QWL module, developed by NIOSH, contains questions on working and mental health conditions, is administered every four years, and was last administered in 2022.[25,26]

This study builds upon research originally conducted as part of the first author's doctoral dissertation, which examined how work-related mental health and well-being are

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measured among employees in smaller businesses (<50 workers), identified determinants of intervention implementation, and analyzed national trends.[33] This activity was reviewed by CDC, deemed research not involving human subjects, and was conducted consistent with applicable federal law and CDC policy[2]. We followed EQUATER Network reporting guidelines using the STROBE checklist for observational studies (Supplemental Digital Content, http://links.lww.com/JOM/C199).

Setting and Subjects

The subjects were employed U.S. adults who responded to the GSS and were identified according to their response to the number of people working in the respondent's employment organization at all locations. The sample population included workers employed in businesses composed of between 1 and 49 employees at all locations and who were regular, permanent employees. The subjects were further identified by those who responded to items from the GSS/QWL module in the GSS in years 2018 (11 items, administered via face-to-face interview) and 2022 (17 items, administered via face-to-face interview, telephone or web self-administered questionnaire). In 2018 and 2022, selected respondents included 1263 workers and 953 workers, respectively. Response rates were 59.5% in 2018 and 50.5% in 2022.

Demographic, Worker, and Employment Characteristics

Demographic and employment characteristics were selected to understand the composition of workers employed in small businesses (between 1 and 49 employees at all locations) in 2018 and 2022. Fewer than 50 employees were selected as this characterizes how NIOSH typically identifies small businesses.[19] We included employees who reported organization employee numbers of less than 50 employees in our definition of small businesses. This was identified from the GSS variables 'numorg' in 2018 and 'numorg1' in 2022. We separated contractors from our definition of workers in small businesses and excluded those whose work arrangement was indicated as "on-call." These characteristics were identified with the 'wrktype' GSS variable. During 2018 and 2022, there were 434 contractors (wrktype =1) and 1836 employees identifying any business size (numorg/numorg1 not missing). Of the 1836, there were 513 small businesses (numorg of 1-49). There were 31 people excluded because work type was on-call (wrktype=2) resulting in 482 total small business workers (283 from 2018; 199 from 2022).

Standard demographic characteristics included age, sex, race, education, marital status, and total family income. Age, a continuous variable, was categorized based on U.S. Census groupings[26], with some categories collapsed to follow general epidemiologic practice found in the peer-reviewed, published scientific literature.[27] The age categories included 18-24; 24-44; 45-64; and equal to or greater than 65. Race of the respondent, a core GSS variable, was categorized as White, Black, and Other in both 2018 and 2022. In 2018, Other was assessed by the interviewer and the categories included American Indian/Alaskan Native, Asian, Native Hawaiian or Other Pacific Islander, or Other.[25] In 2022, the respondent had the option to self-identify.[27] Education was classified into three categories less than high

[2]See e.g., 45 C.F.R. part 46; 21 C.F.R. part 56; 42 U.S.C. §241(d), 5 U.S.C. §552a, 44 U.S.C. §3501 et seq.

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school, high school diploma or equivalent, and some college-level education. Responses to marital status were converted to separate those currently married and currently not married, where not married included widowed, divorced, separated, or never married. Total family income was categorized into four groups (<35,000, 35,000-74,999, 75,000-149,999, and ≥150,000), following previously published categorization schemes of GSS data.[28] Due to small sample size, the two highest categories for income were collapsed into one to include this variable into logistic regression analyses. Child caregiver status was selected as an additional demographic variable as childcare was disrupted during the pandemic[29], and had consequential impacts on the employment of working families, especially working mothers of young children.[30] Child caregiver status represents the number of children in the household 17 years old and younger and is a composite of three GSS variables: babies ("number of household members under 6 years old"), preteens (number of household members 6 to 12 years old), and teens (number of household member (13 to 17 years).[25] Responses were coded as 0, with no household members under 17 years old or 1, with household members between 0 and 17 years old.

Employment characteristics were selected to understand current employment circumstances among workers employed in small businesses.[31] Variables for employment characteristics included type of work arrangement, hours worked per week in past two weeks, and time at current job. Time in current job collected in the GSS was categorized using the following quartile cut points derived from responses from workers employed in small businesses: less than 1 year; 1-2 years; 3-5 years; and 6 or more years. We estimated the number and proportion of workers in small businesses by each employment characteristic. Type of work arrangement was assessed through response to the question, "How would you describe your employment arrangement in your main job?" We separated the responses into three categories: paid by temporary agency; contractor; and regular, permanent employee. Due to the limited sample sizes found in initial exploratory data analysis, we consolidated the responses of self-employed workers—including independent contractors, independent consultants, and freelance workers—along with on-call workers (those who works only when called) and individuals working for a contractor who provides workers and services to others under contract. These groups were combined and reported collectively under the category "contractor". Hours worked last week asked, "If working, full-time or part-time: How many hours did you work last week, at all jobs?" Responses were numeric ranging from 0-89. Responses were separated into three categories: 0 hours; between 1-40 hours, and 41 or more hours to reflect respondents' range of hours. Time at current job was assessed through the response to the question, "How long have you worked in your present job for your current employer?" We separated the numeric responses into four categories: less than 1 year; 1-2 years, 3-5 years; and 6 or more years.

Status of Mental Health, Activity Limitation and Working Conditions

We described self-reported, mental health status using seven items from the GSS/QWL module. For 2018 and 2022, we dichotomized count responses as none (i.e., 0 days reported) or one or more days (i.e., 1-30 days reported) for the following two items: 1) days of poor mental health in past 30 days and 2) days of activity limitation in past 30 days. One single ordinal item measured job stress and asked, "How often do you find your

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work stressful?" Responses included always, often, sometimes, hardly ever, and never. In 2022, the GSS/QWL module expanded to include additional mental health measures to better capture psychological well-being of the U.S. population,[26] especially in light of the COVID-19 pandemic. Mental health-related measures (i.e., anxiety and depression) included four single ordinal variables and asked, "Over the last 2 weeks, how often have you been bothered by the following problems: 1) feeling nervous, anxious or on edge; 2) not being able to stop or controlling worrying; 3) feeling down, depressed, or hopeless; and 4) little interest or pleasure in doing things." Responses to the ordinal variables included not at all, several days, more than half the days, and nearly every day. The individual problems that were assessed were drawn from a validated composite depression/anxiety screening scale, the Patient Health Questionnaire-4.[32]

Perceived working conditions were measured using ten items from the GSS/QWL module. For 2018 and 2022, eight of the ten items assessed working conditions and included job satisfaction; supervisor cares about the welfare of those under them; safety of workers is a high priority for management; trust in management; job demands interfere with family; fair earnings; chances for promotion; and job autonomy. The question for job satisfaction asked, "All in all, how satisfied would you say you are with your job?", with response options of very satisfied, moderately satisfied, a little satisfied, and very dissatisfied. To measure if their supervisor cares about the welfare of those under them, respondents answered "My supervisor is concerned with the welfare of those under him or her", with response options of very true, somewhat true, not too true, and not at all true. To assess whether the safety of workers is a high priority for management, respondents responded to the statement "The safety of workers is a high priority with management where I work.", with response options of strongly agree, agree, disagree, and strongly disagree. To examine trust in management, respondents were asked to respond to the statement, "I trust the management at the place where I work.", with response options of strongly agree, agree, disagree, and strongly disagree. Work-family conflict was assessed with the question, "How often do the demands of your job interfere with your family life?", with response options of always, often, sometimes, hardly ever, and never. Chances for promotion was assessed by asking for a response to "Chances for promotion are good.", with response options of very true, somewhat true, not too true, and not true at all. Fair earnings was measured by asking "How fair is what you earn on your job in comparison to others doing the same type of work you do?", with response options of much less than you deserve, somewhat less than you deserve, about as much as you deserve, somewhat more than you deserve, and much more than you deserve. Job autonomy was assessed by asking "I am given a lot of freedom to decide how to do my own work.", with response options of very true, somewhat true, not too true, and not at all true. Two of the ten items assessing working conditions were new items for 2022. The two variables assessed management support for psychological health, asking for a response to "senior management considers psychological health to be as important as productivity", with response option of strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree, and assessed meaningful work, asking for a response to "I find my work to be very meaningful", with the response options of strongly agree, agree, disagree, and strongly disagree.

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Analyses

We accounted for the complex survey design of the GSS by including variables for sample weights, sample strata, and primary sampling unit in the analysis using the SAS 9.4 SURVEYLOGISTIC (SAS Institute Inc., Cary, NC, USA) procedure. The study used weighted data from 2018 and 2022 GSS, so that the marginal distributions of the data align with the U.S. working population.[24,25] Unweighted and weighted sample sizes for each analysis were reported.

Descriptive Analyses: Descriptive analyses were conducted on the data for U.S. workers employed in small businesses in 2018 and 2022. These analyses assessed the composition by selected demographic and employment characteristics and self-reported working conditions and mental health status. All analyses used frequencies, weighted percentages, and 95% confidence intervals.

Logistic Regression Analyses: To examine the relationship between perceived working conditions and mental health outcomes, we included ten psychosocial working conditions from 2018 and 2022 GSS/QWL module. Each variable was dichotomized to reflect unfavorable or “low-ranking” versus favorable or “high-ranking” conditions, with favorable responses serving as the reference category in all analyses. For example, job satisfaction, was categorized such that respondents who reported being “a little satisfied” or “very dissatisfied” were grouped together and coded as having low job satisfaction. The reference group included those who reported being “very satisfied” or “moderately satisfied.”

Weighted logistic regression models were used to estimate the odds of reporting at least one poor mental health day (versus none) in the past 30 days, comparing respondents with low-ranking working conditions to those with high-ranking conditions. All models adjusted for sex, race, education, marital status, age, and years in a job. Sample sizes varied slightly by model due to item-level nonresponses for specific working condition variables.

To explore potential effect modification related to the COVID-19 pandemic, survey year (pre- vs. post-2020) was examined as an effect modifier using interactions terms between year and workplace characteristics. No significant interactions were observed. Therefore, logistic regression models included 2018 and 2022 data without an interaction term.

3. Results

Demographic and Employment Characteristics

In 2018, the total number of workers employed in small businesses (1-49 employees at all locations) included in this study was 283. Among the highest percentages of demographics reported for these workers, 52.1% (95% CI: 44.3-59.9) were men; 39.1% (31.2-47.1) were between the ages of 45-64 years; 76.6% (69.2-84.0) were white; 46.1% (38.6-53.6) received some college-level education53.9% (46.0-61.9) were not married; 32.6% (26.3-39.0) received a total family income between 35,000-74,999; and, 72.6% (66.6-78.5) were not caregivers to children ages 0-17 years. For employment characteristics, 92.6% (88.1-97.0) were regular, permanent employees; 60.9% (54.1-67.7) worked between

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1-40 hours in the week prior to completing the survey; and 38.6% (32.3-44.8) worked six or more years at their current job.

In 2022, the total number of workers employed in small businesses included in the study was 199. Approximately 51.4% (41.1-61.4) were women; 51.0% (38.9-63.2) were between the ages of 25-44 years; 77.0% (68.1-85.8) were white; 46.6% (36.6-56.7) received some college-level education; 57.6% (44.6-70.5) were married; 31.7% (20.1-43.4) received a total family income between 75,000-149,999; and 62.8% (50.4-75.1) were not caregivers to children ages 0-17 years. For employment characteristics, 95.3% (91.3-99.4) were regular, permanent employees; 63.8% (53.5-74.1) worked between 1-40 hours in the week prior to completing the survey; and 35.5% (23.9-47.1) worked less than one year at their current job. Supplemental Table 1 (http://links.lww.com/JOM/C200) illustrates all the demographic and employment characteristics of workers employed by small businesses for 2018 and 2022. All results were reported using 95% confidence intervals.

Mental Health Status and Working Conditions

Supplemental Table 2 (http://links.lww.com/JOM/C201) presents the descriptive results on mental health status and working conditions in 2018 and 2022. The days missed in the prior 30 days due to mental health that were reported by small businesses workers ranged from 0 to all 30 days. The mean and median for days of poor mental health in past 30 days in 2018 and 2022 is reported in Supplemental Table 2 (http://links.lww.com/JOM/C201).

In 2018, 44.6% [36.6-52.6] of small business workers reported one or more days of poor mental health and 17.9% [11.8-24.0] reported one or more days of activity limitation in past 30 days. In 2022, 54.8% [43.3-66.2] reported one or more days of poor mental health and 29.0% [18.9-39.2] reported one or more days of activity limitation in past 30 days. In 2018, 66.8% of small business workers reported work as stressful (always (2.9% [0.7-5.2]), often (21.7% [15.4-28.0]), and sometimes (42.2% [34.5-49.9])). In 2022, 65.9% of small business workers reported work as stressful (always (9.8% [3.8-15.8]), often (23.7% [13.8-33.6]) and sometimes (32.4% [22.7-42.1])). Among two of four categorical variables on mental health symptoms new for 2022, over 16% of small business workers reported higher levels of feeling nervous, anxious or on edge in the past two weeks (more than half the days, 8.8% [3.1-14.5]; nearly every day, 7.9% [2.1-13.8]) and not being able to stop or control worrying in the past two weeks (more than half days, 10.4% [4.9-16.0]; nearly every day, 5.9% [1.1-10.6]). Over 30% of small business workers reported feeling down, depressed or hopeless in the past two weeks (several days, 23.4% [16.3-30.5]); more than half days, 6.8% (0.3-13.3); and, nearly every day, 2.1% [0.2-4.0] and having little interest or pleasure in doing things (several days, 24.2% [15.3-33.2]; more than half days, 8.2% [2.6-13.8]; and nearly every day, 1.4% [0.0-2.7]).

In 2018, 93.1% of small business workers reported they were either very satisfied (50.3% [42.5-58.1]) or somewhat satisfied (42.8% [34.9-50.8]) with their job. In terms of job autonomy, 95.3% responded very true (64.3% [57.6-71.0] to somewhat true (31% [24.3-37.7]) to question asking I am given a lot of work freedom to decided how to do my own work. When reporting perceptions of management, 92.8% reported that they strongly agree (35.5% [28.3-42.7]) or agree (57.3% [49.4-65.3]) that worker safety health is

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a management priority; 87.9% reported that their supervisor cares about the welfare of those under him or her (very true, 48.4% [41.2-55.7] and somewhat true, 39.5% [31.7-47.4]); and 89.9% reported they trust the management at the place where they work (strongly agree, 27.7% [21.1-34.3]) and agree, 62.2% [54.2-70.1]). Among small business workers responding in 2018, 37.0% reported that job demands interferes with family life often (10.6% [5.8-15.4]) and sometimes (26.4% [19.3-33.5]). Almost 50% of small business workers reported earning less than they deserve compared to those doing the same work (much less than you deserve, 8.8% [5.0-12.7] and somewhat less they you deserve, 29.5% [21.6-37.5]). In terms of chances for promotion, 56.6% indicated very true (18.1% [11.9-24.2] to somewhat true (38.5% [30.7-46.3] in response to chances for promotion are good.

In 2022, over 90% of small business workers reported they strongly agreed (43.3% [33.8-52.8]) or agreed (48.0% [36.6-59.4]) workplace safety and health is a management priority; moderate to high levels of job satisfaction (somewhat satisfied, 41.3% [30.8-51.8] (very satisfied, 49.3% [40.0-58.6]); meaningful work (strongly agree, 32.1% [22.9-41.1] and agree, 58.7% [47.7-59.7]); and work freedom (very true, 53.0% [41.6-64.4]); somewhat true, 38.3% [25.9-50.7]). In terms of work to family conflict, 35.3% of small business workers reported job demands interfere with family life often (11.9% [5.6-18.2] and sometimes (23.4% [15.4-31.3]). In terms of promotion potential, 25% [14.1-36.0] of small business workers reported that chances for promotion are good were very true and 35.7% [24.7-46.7] responded somewhat true. For fair earnings, 9.7% [4.4-15] of small business workers reported earning much less than they deserve and 39.8% [28.8-50.8] reported somewhat less they deserve. Nearly 23% of small business workers reported that they strongly disagree (10.7% [4.7-16.7]) or disagree (12.1% [5.5-18.7]) that senior management considers psychological health to be as important as productivity, a new GSS/QWL variable for 2022. Among additional perceptions on management, 86.9% of small business workers reported that their supervisor cares about the welfare of those under him or her (very true, 55.7% [44.2-67.2] and 31.2% [18.5-43.9]) and 88.0% reported they trust the management at the place where they work (strongly agree, 34.8% [25.3-44.4]) and agree, 53.2% [43.3-63.2]).

Association of Working Conditions and Odds of Reporting One or More Poor Mental Health Days in Past 30 days

Supplemental Table 3 (http://links.lww.com/JOM/C202) reports odds ratios from logistic regression models assessing the association between low-ranking vs. high-ranking working conditions and the odds of reporting one or more poor mental health days in the past 30 days versus none using combined data from 2018 and 2022. For each unfavorable working condition, the table includes weighted percentages, as well as unadjusted and adjusted odds ratios (aORs) comparing the odds of reporting one or more poor mental health days in the past 30 days versus none. The adjusted odds of reporting one or more poor mental health days in the past 30 days were significantly higher among workers who reported the following unfavorable conditions:

- **Low job satisfaction** (n = 450): Workers dissatisfied with their jobs had more than four times the unadjusted odds of experiencing poor mental health

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days compared to those with higher satisfaction (OR = 4.42; 95% CI: 1.62–11.88). After adjusting for sociodemographic characteristics, the odds remained significant (aOR = 3.62; 95% CI: 1.29–10.15).

- **Worker safety is not a management priority** (n = 450): Workers who perceived that management did not prioritize worker safety had significantly higher odds of reporting one or more poor mental health days in the past 30 days compared to those who felt safety was a priority (OR = 3.40; 95% CI: 1.45–7.93). This association remained significant after adjusting for demographic and job-related factors (aOR = 3.26; 95% CI: 1.40–7.63).
- **Work-family conflict** (n = 449): Workers who reported that job demands often interfered with their family life had significantly higher odds of reporting one or more poor mental health days in the past 30 days compared to those who reported less interference (OR = 2.25;95% CI: 1.24–4.08). This association remained significant after adjusting for covariates (aOR = 2.12; 95% CI: 1.13–3.96).
- **Perceived unfair wages** (n = 444): Workers who believed they earned less than they deserved compared to others in similar roles had significantly greater odds of reporting one or more poor mental health days in the past 30 days compared to those who believe they were paid fairly (OR = 2.80; 95% CI: 1.62–4.86). This association remained significant after adjusting for demographic and employment characteristics (aOR = 2.55; 95% CI: 1.45–4.49).
- **Low chances for promotion** (n = 444): Workers who perceived limited opportunities for promotion had significantly higher odds of reporting one or more poor mental health days in the past 30 days compared to those who felt they had a good chance for promotion (OR = 1.84; 95% CI: 1.18–2.88). This association remained significant after adjustment for covariates (aOR = 1.90; 95% CI: 1.16–3.10).

In the unadjusted models, workers who reported their work was not meaningful had significantly higher odds of reporting poor mental health (OR = 3.70; 95% CI: 1.34-10.23) compared to those reporting their work was meaningful. Though this association was no longer significant after adjusting for covariates (aOR = 2.66; 95% CI: 0.84-8.41). Because these data are cross-sectional, causal relationships cannot be inferred.

In a multivariable model including confounding demographic variables and each of these work characteristics was built, as these factors may co-occur for some workers. The magnitude of the effect of each factor was similar to the single factor models, but only not earning a fair wage (OR=2.20, 95% CI: 1.20- 4.02) and work interfering with family (OR = 1.84, 95% CI: 1.01-3.37) remained statistically significant.

4. Discussion

This study examined mental health status and psychosocial working conditions among U.S. workers who reported working for organizations with between 1-49 employees at all

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locations in 2018 and 2022. Such research is critical as research focusing on the mental health of U.S. workers employed in smaller businesses is underrepresented in occupational safety and health literature.[33-36] This research contributed to an emerging body of research that examined pre-COVID-19 pandemic and pandemic trends in mental health status and working conditions among U.S. workers in smaller businesses.[37-39]

When examining the composition of US. small business workers in 2018 and 2022 using GSS data, we observed differences from 2018 to 2022 in the demographic variables (i.e., sex, age, marital status, family income, and caregiver status) and employment characteristic variables (i.e., type of work arrangement, hours worked last week, time in current job). Because the sample sizes are small for both 2018 and 2022, this information should be interpreted with caution. However, it is worth noting there are limited national data on small businesses and that broader workforce data indicate a steady increase in female participation in the workforce from 2018 to 2022.[30-31] Further research may be helpful in understanding context-specific research on demographic and employment characteristics of smaller businesses.[19,35]

Between 2018 and 2022, the proportion of small business workers reporting one or more poor mental health days in the past 30 days increased from 44.6% (95% CI: 36.6–52.6) to 54.8% (95% CI: 43.3–66.2). Although there is considerable overlap in the confidence intervals, this pattern may still suggest a potential upward shift in the prevalence of poor mental health Similarly, the proportion reporting one or more days of activity limitation rose from 17.9% (95% CI: 11.8–24.0) in 2018 to 29.0% (95% CI: 18.9–39.2) in 2022, with less overlap in the confidence intervals, indicating a clearer increase. Together, these findings point toward a possible worsening trend in both mental health and activity limitations among small business workers over this period. These findings suggest a worsening trend in both mental health and activity limitations among small business workers over this period. While it is difficult to ascertain what caused these shifts, it is conceivable to suggest that they may be related to the lingering effects of the COVID-19 pandemic such as varying state-level guidance on protections,[39] financial and job insecurity[40] and limited workplace resources on mental health.[2]

Given the overlap in confidence intervals, however, these results should be interpreted with caution, and additional research with larger sample sizes and longitudinal data is warranted to confirm whether these represent true population-level increases. In addition, in 2022, over 30% of workers reported negative responses to mental health indicators relevant to nervous, worry, depression, and little interest or pleasure in doing things in the previous two weeks. These four indicators were added to the GSS/QWL in 2022 and, as such, cannot be compared to earlier years; however, they provide valuable baseline data for future monitoring of worker mental health.

We found that U.S. workers employed in small businesses in 2018 and 2022 maintained high levels of perceived job satisfaction, autonomy, supervisor support, and trust in management. However, in both 2018 and 2022, more than 30% of these workers reported more unfavorable ratings for work-family conflict, fair earnings, and chances for promotion. In 2022, new survey items identified that over 80% of these workers reported high

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perceptions of meaningful work and over 20% reported low perceptions of management support for psychological health. Our findings are consistent with another study among small businesses that highlights organizational resources, like autonomy and meaningful work, help to sustain worker well-being despite job demands.[41] Similarly, our study found high levels of perceived psychosocial support but concerns about compensation, promotion, and work-family conflict. This supports the Job Demands-Resource Model, where strong job resources can buffer demands, though unaddressed structural issues may still impact overall worker well-being.[42]

Among small business workers, those reporting poorer quality working conditions—such as low job satisfaction, lack of prioritization of worker safety, work-family conflict, perceived unfair wages, and limited opportunities for promotion—had greater odds of reporting one or more poor mental health days in the past 30 days compared to those with more favorable working conditions. These findings highlight possible areas where interventions may help protect and promote the mental health and well-being of one of the largest and diverse segments of the U.S workforce. They also contribute to a foundational understanding of work-related psychosocial risk factors (e.g. low trust in management, worker safety not a management priority) and protective factors (e.g., job satisfaction, meaningful work) as perceived by workers. This evidence provides a practical starting point for identifying modifiable working conditions (e.g., prioritize worker safety and health, provide fair wages, reduce work-family conflict) that could improve mental health outcomes in these settings. Given the disproportionate impact of the COVID-19 pandemic on small businesses—such as financial instability, workforce reductions, and increased job demands—there is a critical need for research and evidence-based recommendations specifically aimed at supporting the mental health and well-being of workers in these environments.[35-41,43]

When interpreting the findings of this study, it is important to recognize that workers in smaller businesses faced distinct and often under-addressed occupational safety and health challenges. These workers are more likely to experience overlapping vulnerabilities, such as psychosocial stressors, limited access to benefits, fewer workplace protections, which place them at heightened risk for adverse health outcomes.[45] Unlike larger organizations, small businesses often lack dedicated occupational health staff, formal safety programs, and the infrastructure to implement workplace health promotion initiatives.[46,47] These constraints can result in delayed identification and mitigation of work-related hazards, particularly related to mental health and well-being. Future research should also consider mental health along a continuum to better capture the range and complexity of workers' experiences.

These findings underscore the importance of multi-level, systems-based interventions that take into account the broader context in which small organizations function, including physical, psychological, social, and economic aspects.[48] Such interventions are vital for addressing health outcomes, reducing injuries and disabilities, and managing costs (both direct and indirect), and supporting overall business sustainability.[44,48] Designing effective interventions that address the well-being of these workers requires a deeper understanding of contextual factors unique to smaller businesses, such as wage structures, benefits provisions, workforce characteristics, organization of work; and management and leadership styles.[18-20]

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There are several limitations to this study. As this is a cross-sectional study, we cannot ascertain temporality—that is whether the reported working conditions preceded the experience of poor mental health days. Although the mental health status was measured based on the prior 30 days and most respondents had been in their current jobs for over a year, suggesting that the workplace context preceded the outcome for many, we cannot rule out the possibility that poor mental health days may have existed prior to that period. Additionally, we lack information on when workplace conditions may have changed such as hiring a new manager or starting a new worker well-being program. Therefore, results should be interpreted as hypothesis-generating rather than indicative of causal relationships.

GSS data are subjective measures and subject to information biases. For instance, given the sensitive nature of questions relating to mental health and work, some workers may underreport poor mental health days. Because mental health was measured independent of workplace context this misspecification is expected to be non-differential and would most likely bias our results towards the null. Two limitations occurred due to 2022 changes in the survey. Comparisons among six QWL measures (i.e., feeling nervous, control worry, feeling down, no interest, meaningful work, and management support for psychological health) were not possible as these measures were new in 2022, and it was expected to have fewer observations. In 2018, the GSS was conducted through face-to-face interviews, whereas in 2022, three modes (i.e., face-to-face interviews, telephone interviews, and online administration) were used to administer the survey. The differences in the data collection methods as well as changes in how race/ethnicity was measured (interviewer-assessed in 2018 vs. self-reported in 2022), might have influenced response rates and may partially explain differences in mental health outcomes observed across the years.

Despite these limitations, we observed associations of several working conditions with worker mental health and well-being. These findings highlight the importance of studying protective and risk factors of mental health and working conditions in the context of age, gender, race, and other work-related factors (e.g., years in the job). An approach that examines contextual differences among relationships between work-related mental health outcomes and working conditions is supported in social research.[49]

Conclusion

This study contributes to a foundational understanding of the burden of mental health and well-being among U.S. workers employed in smaller business. The findings highlight several modifiable working conditions, such as job satisfaction, work-family conflict, and perceptions of fairness and support, that are associated with poorer mental health outcomes. Given the distinct vulnerabilities that may be faced by small business workers, including limited access to occupational health resources and structural supports, these results underscore the importance of developing targeted, scalable interventions. Addressing psychosocial risks in the work environment and organizational capacity may lead to improved mental health and enhanced overall well-being for this predominant segment of the workforce.

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Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Conflicts of Interest:

HLH is employed by the Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH). JD is employed by the University of Iowa, College of Public Health. JD conducted this work as part of an assignment under the Intergovernmental Personnel Act. The authors declare no conflict of interest. There is no external funding authority involved and hence the funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

Data Availability:

The data used in this paper are publicly available and can be downloaded free of cost from the University of Chicago NORC website http://gss.norc.org/

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Bulleted Learning Outcomes

- To discuss psychosocial working conditions and mental health status of U.S. workers employed in U.S. small businesses using data from 2018 and 2022 General Social Survey – Quality of Worklife (GSS-QWL) modules.
- To examine associations between psychosocial working conditions and mental health among workers employed in small businesses based on GSS-QWL data.