

1 **Title: COVID-19 and Worker Mental Distress**

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44 **COVID-19 and Worker Mental Distress**

45 **Abstract**

46 Background

47 This analysis posits that worker mental distress may be different for those continuously
48 employed and for those who faced temporary job loss.

49

50 **Methods**

51 Mental distress during COVID-19 is characterized using two nationally representative surveys,
52 the American Trend Panel (ATP) and the Household Pulse Survey (HPS). A mental distress
53 scale is created. Using a probit model, we examine workplace perceptions for the mentally
54 distressed in the ATP sample. We use graphical analysis to identify barriers to seeking mental
55 healthcare using the 2021-2022 HPS sample.

56

57 **Results**

58

59 In October 2020, the probability of mental distress increased between 7.1 and 9.1 percentage
60 points in response to worsening work-life balance, lowered job security, lowered work-
61 productivity, and lowered work-satisfaction. Workers' perception of advancement denial and
62 poor connectivity with coworkers increased the probability of mental distress by 3.0 to 5.8
63 percentage points. In October 2021, over 40 percent of workers who had experienced job-loss
64 reported mental distress as compared to 20 percent of those with jobs. Only 25 percent of those
65 with mental distress sought counseling. These high levels of mental distress continued into
66 October 2022.

67

68 **Conclusions**

69 Worker mental health mitigation strategies should include prosocial nudges, attention to
70 employment history, managerial sensitivity and worker resilience training.

71

72 COVID-19 and Worker Mental Distress

73 Introduction

74 Little is known about how COVID-19-related mental distress shapes worker perceptions of job
75 and performance.¹⁻⁵ The American Psychological Association 2023 Work in America Survey
76 (APA-2023-WAS) concluded that mental health among workers is a high priority. The results
77 from their survey show that 77% of workers reported work-related stress, 57% experienced
78 burnout symptoms such as emotional exhaustion (31%), lowered desire to be prosocial (25%),
79 desire to quit (23%), and lowered productivity (20%). In the same study, 19% described their
80 workplace as toxic, 30% experienced harassment, and 22% experienced verbal abuse.⁶

81 Against the background of persistent elevated worker mental distress discussed in the APA-
82 2023-WAS, this paper brings attention to worker mental distress among the continuously
83 employed during COVID-19, from the October 2020 to October 2021 time period. The APA-
84 2023-WAS study found that 26% of workers felt isolated and lonely at their workspaces, even if
85 the workers had frequent contact with coworkers and clients. Specifically, 35% of workers
86 engaged in customer/client/patient services reported feelings of loneliness versus 23% in office
87 work, or 22% in manual labor.^{6,7} For those who may have suffered job-loss, there is scant
88 evidence of their sense of loneliness, isolation, anxiety, or depression. A recent commentary
89 suggests that pro-sociality should be a public health priority for those who are vulnerable to
90 feelings of isolation and loneliness.⁸ Investments in developing non-clinical pathways that
91 improve the sense of belonging and feeling supported in workplaces might improve mental
92 health outcomes.⁶⁻⁸ Related literature argues that mental distress may limit a worker's ability to
93 maintain healthy emotions, thus leading to conditions like absenteeism or presenteeism.⁹⁻¹²

94 Additionally, workers in mental distress may experience cognitive fatigue and these effects may

95 have enduring effects on employment.¹³⁻¹⁵ Thus, simple interventions like creating a culture of
96 caring, training managerial staff to be sensitive to post-pandemic workplace conditions, short
97 breaks of kindness/compassion mindfulness practice, or promoting friendly competition among
98 work-based teams may restore a sense of connection to work.⁸

99 Using two nationally representative surveys, this paper investigates how mental distress
100 varied for the employed and unemployed during COVID-19, a year, and two years after the
101 pandemic. It explores a rear-view perspective into the potential sources of mental distress among
102 employed and pandemic related unemployed workers.

103 **Methods**

104 The analysis uses two nationally representative surveys that address different dimensions of
105 mental health to explain COVID-19-related worker mental distress. The American Trend Panel
106 (ATP, N = 10,332) data collected October 13 – 19, 2020, by the Pew Research Center has four
107 measures of mental health (loneliness, social support, optimism, and stress). It is an online
108 survey that includes adults 18 or older, recruited via email, phone, or mail. For the panel
109 analyzed, the response rate was 88% and offered regional variation. The Household Pulse Survey
110 was collected September 29 – October 11, 2021 (HPS, N = 49,523) and October 5 – October 17,
111 2022 (HPS, N = 36, 484) by the Census.¹⁶⁻¹⁷ The Household Pulse Survey ran continuously from
112 April 2020, originally designed as weekly surveys. As the pandemic progressed, the intervals
113 between survey weeks increased but the name “weekly release” remained. Figure 1 presents a
114 timeline for the surveys. We chose the October wave in 2021 and 2022, given our interest in
115 understanding the degree of mental distress among Americans one and two years after the ATP
116 survey. The HPS survey selects census addresses at random and invites the household members
117 to participate by mail. It had a response rate of 5 to 6%, where each wave of the survey, a million

118 people were invited, and approximately 50,000 participated per survey period. The HPS analysis
119 can be done at the US state level. The mental health variables in the HPS survey measure anxiety
120 and depression.

121

122 In the ATP survey, those who responded having full-time or part-time employment were
123 classified as employed; the unemployed included retired workers as well as those currently not
124 employed. Four ATP questions about the respondents' post-COVID-19 outbreak feelings
125 measure loneliness (for questions, see Appendix QA1a to QA1e), social support (QA1b),
126 optimism (QA1c), and level of stress or anxiety (QA1e). We calculated the arithmetic mean to
127 form an ATP-mental health scale with a Cronbach reliability of 0.69. On this scale, scores less
128 than 2 convey healthier mental states, and scores above 2 convey unhealthy mental states. Given
129 that some level of unhealthy mental states during the pandemic would be natural, we wanted to
130 focus on the group for whom the negative emotionality was more chronic and exceeded the
131 "some of the time" threshold. Respondents with mental health scores greater than 2.5 tip over to
132 experiencing mental distress "most of the time", and they were categorized as mentally
133 distressed (MD_i where ' i ' is the respondent).

134

135 Responses to ATP questions on full-time worker experiences of job security (Appendix
136 QA2a), flexibility (QA2b), work-life balance (QA2c), hours (QA2d), productivity (QA2e),
137 satisfaction (QA2f), advancement (QA3a), connectivity (QA3b), and supervisor appraisal
138 (QA3c) post-COVID-19 define exogenous independent covariates. The control variables were
139 age, education, and sex. In the absence of a true baseline, these questions directly elicit COVID-
140 19 work experience. Our probit model is given by

141
$$MD_i(x) = \begin{cases} 0, & x < 2.5 \\ 1, & x \geq 2.5 \end{cases}$$

142 where the independent variable $MD_i(x)$ is our constructed binary variable indicating mental
143 distress.

144 Our estimation equation is then given by:

145
$$MD_i = \alpha_0 + \beta_r X_{ri} + \beta_p X_{pi} + \beta_1 \text{ age group} + \beta_3 \text{ education level} + \beta_4 \text{ gender} + \epsilon_i$$

146 Where the dependent variables X_{ri} and X_{pi} = 1 if respondent ‘*i*’ has experienced a negative
147 state, and = 0 if has experienced same or positive state. We present the marginal effects of a unit
148 change of covariates on the probability of being mentally distressed.¹⁸⁻¹⁹ Results with p-values
149 less than 0.05 are considered statistically significant.

150

151 The Household Pulse Survey (HPS) mental health measures were developed in response
152 to COVID-19 in partnership with the Centers for Disease Control (CDC). In the HPS survey two
153 binary questions help determine employment status: 1) if anyone in the household experienced
154 job loss; and 2) if the respondent had worked for pay in the past seven days (Appendix Q4A).

155 The mental health questions on HPS are taken from validated psychometric scales, specifically
156 the PHQ-Patient Health and GAD-Generalized Anxiety Disorder Questionnaire). For rapid
157 administration, these scales have been truncated to the 2-item scale of depressive disorder (PHQ-
158 2; Appendix QA4: interest and down) and generalized anxiety (GAD2; QA4: anxious and
159 worry). These four questions asked about the number of days in a week a respondent had these
160 feelings for each question. Responses to the PHQ-2 and GAD-2 were combined to create a 4-
161 item HPS-mental distress scale with a Cronbach reliability value of 0.92. Respondents with
162 scores greater than 2.5 were categorized as mentally distressed because they tipped a person just
163 over experiencing symptoms some of the days. This measure served to measure persistence in

164 mental distress. The term persistence here connotes the aggregate levels of mental distress
165 present among the US population, a year, and two years after the ATP survey. Since the
166 respondents in these surveys are not the same, they should be viewed as representative
167 individuals of overall mental health in the US. Additionally, the HPS measure of mental distress
168 captures anxiety and depression levels and not aspects of emotional well-being that are captured
169 in ATP. In the HPS 2020 survey two questions characterized use of and access to mental health
170 services: 1) did you receive counselling or therapy from a mental health professional; and 2) in
171 the last 4 week did you need counseling or therapy online or by phone and did not get it
172 (Appendix Q4A). These questions were not asked in HPS survey October 2022. Admittedly,
173 these measures are not comparable, but they do give us insights into the overall mental and
174 emotional well-being among the US population for the three time points October 2020 with ATP
175 survey, 2021, and 2022 with HPS survey. Together, the two surveys capture different dimensions
176 of mental health that permit an investigation into workplace mental wellbeing.

177

178 **Results**

179 Of the ATP respondents, 46% were fully employed, 12% were employed part-time, 26% were
180 retired, and 15% were unemployed. Simple differences in means t-testsof mental distress scores,
181 for respondents with scores greater than or equal to 2.5, showed that the employed were healthier
182 compared to the unemployed where the t-statistic was 4.6 with a df = 0.05 ($p < 0.001$; see
183 Appendix Table A2a). The mental distress scores for the unemployed in age groups 18 to 29, 30
184 to 49, and 50 to 64 were statistically significant and higher than the employed in the same age
185 groups. There was no difference in mental distress scores for the employed and unemployed for
186 ages 65 and over. Within race categories, the unemployed respondents who identified as whites

187 and ethnicity Hispanic had significantly higher mental health scores as compared to the
188 employed within the same racial groups (Appendix Table 2a). Lower differences in mean
189 mental health scores among Asians and Blacks could be a function of smaller numbers surveyed
190 and under-reporting of mental distress, especially, if they were unemployed. It was not possible to
191 separate out COVID-19-related unemployment, retirement, or underemployment. Additionally,
192 in a t-test using ATP data, the mentally distressed workers were less likely to experience work
193 satisfaction than mentally healthy workers where the t-statistic 11.8 was with $df = 0.085$
194 ($p < 0.001$; not in table).

195 Figure 1 (Appendix Table A3) presents the probit results for full-time worker mental
196 health and their work-related COVID-19 perceptions and experiences as compared to before the
197 pandemic. Overall, real or perceived worsening of work conditions increased mental distress. For
198 instance, the probability of mental distress increased by 7.4 percentage points with worsening
199 work-life-balance (95% CI: 4.4%, 10.4%; $p < 0.001$), by 9.1 percentage points with less job-
200 security (95% CI: 5.7%, 12.4%; $p < 0.001$), by 7.9 percentage points with lower work-
201 productivity (95% CI: 4.4%, 11.4%; $p < 0.001$), and by 7.1 percentage points with less work-
202 satisfaction (95% CI: 4.0%, 10.3%; $p < 0.001$). A worker's perception of being denied
203 advancement increased the probability of mental distress by 5.8 percentage points (95% CI:
204 2.2%, 9.5%; $p < 0.002$), and lower levels of connectivity with coworkers increased mental
205 distress by 3.0 percentage points (95% CI: 0.2%, 5.7%; $p < 0.036$).

206

207 In October 2021, 42% of HPS respondents who lost a job experienced mental distress for over
208 half the days of the week⁹. Among those with a job, 16.7% experienced anxiety or depressive
209 symptoms for over half the days of the week, as compared to 41.8% among those with a job-loss

210 (Figure 3). There was a significant difference in mental distress scores between the employed
211 and the unemployed respondents, with t-statistic of 11.69 with $df = 0.15$ ($p < 0.001$ Table A2b).
212 Over 35.8% of those without a job and mentally distressed did not have access to mental health
213 services, and less than 25% of them sought counseling (see Figure 3). As of October 2022, 22%
214 reported three or more days of the week in mental distress. Among those with a job loss, 45%
215 experienced mental distress, whereas this number was 20% among those with a job (Figure 3).
216 Significant differences in mental distress score between the employed and unemployed persisted
217 in 2022 with a t-statistic of 10.57 with a $df = 0.17$ ($p < 0.001$; Table A2c). Data on utilization of
218 mental health services was not collected in October 2022. All unemployed adults, including
219 potentially retired, 18 and above, in HPS surveys in October 2021 and 2022, have a significantly
220 higher mental distress score as compared to employed adults. However, in 2021, unemployed
221 adults 49 and younger showed higher scores for mental distress than the employed. This trend
222 changes slightly in October 2022, where unemployed adults ages 18 to 29 and ages 50 to 64
223 show higher mental distress scores as compared to the employed in the same age group (Table
224 A2c).

225 **Discussion**

226 **Main findings of the study**

227 The results showed that for the employed, negative appraisals of workplace conditions were
228 associated with statistically significant increases in mental distress (between 8.5 and 11.6
229 percentage points). Negative perceptions of workplace conditions were associated with mental
230 distress increases of 5.4 to 6.1 percentage points. While these results for employed workers are
231 significant, the unemployed ATP respondents' mental distress scores significantly higher by 0.05
232 points. HPS results showed significant differences in mental distress scores between the

233 employed and the unemployed with a difference of 0.15 in 2021 and a difference of 0.17 in 2022
234 and few sought counseling. The increased levels of mental distress among the unemployed and
235 employed populations are persistent across all three years and two surveys. These effects are
236 across all ages and race-ethnicity classifications, which means addressing mental distress among
237 the US adult population is a public health priority. The AWS survey results from July 2023 offer
238 support to our findings by showing that mental distress (anxiety, depression, loneliness, social
239 support, sense of belonging, and coworker cohesion) has worsened because of COVID-19.
240 Because the worsening of mental health for unemployed workers may have downstream
241 undesirable consequences to their physical health and work life, a potential solution may be for
242 employers to allocate resources to alleviate employee mental distress. The government, as well
243 as philanthropic organizations, may also need to help unemployed populations.

244

245 **What is already known on this topic**

246 Mental distress may limit a worker’s capacity to live with healthy emotions, thus leading to
247 conditions like absenteeism, presenteeism, and poor quality of life.^{2,4,9-15} Finding the right cures
248 for mental distress is often challenging for clinicians because they require identification of the
249 causes of mental distress, which gets revealed over time.⁶⁻⁸ When mental distress is coupled with
250 changing worker environments, job switches, or unemployment, the sources and effects of
251 mental distress may be different and nuanced.⁸⁻¹⁵ The pandemic added its own layer of
252 environmental causes to attenuate preexisting or new onset of mental distress. We know from
253 APS-2023-WAS that a significant proportion of the US population reports experiencing mental
254 distress across all occupations—and that mental well-being is a public health priority for the US
255 and globally.⁸ Related studies also point to public health attention to mental distress among the
256 US working population.^{9-15,20}

257

258 **What this study adds**

259 We discuss how mental distress may be different for the temporarily or permanently
260 unemployed. Our insight reflecting on this period is that not all workers may respond to worker
261 psychological well-being initiatives in the same way. This analysis uses two nationally
262 representative survey data to offer a snapshot historical view into the causes, variation, and
263 persistence of mental distress over the period of two years post-COVID-19 public health crisis.
264 Its main contributions are 1) using the ATP survey to explain the potential sources of mental
265 distress among continuously employed workers, 2) illustrating mental distress among workers
266 with job-loss across ATP and HPS surveys, 3) using the HPS survey to illustrate the use of and
267 access to mental health services conditional on reporting mental distress in 2021, and 4)
268 illustrating the level of mental distress in the US was persistent in October 2022. We conclude by
269 suggesting that investments in social and community support for displaced workers focused on
270 the prevention of mental distress could facilitate faster reemployment and reduce long-term
271 government spending. Additionally, the paper recommends offering workplace mental health
272 support to continuously employed workers. Because COVID-19 affected both continuously
273 employed and disrupted workers, public health agents and communities should understand how
274 to provide resilience counseling across these different worker experiences.

275

276 **Limitations of this study**

277 This study suffers from several limitations. First, we did not have a baseline pre-COVID-19
278 measure for worker health. Second, we cannot analyze workplace conditions for the disrupted
279 worker. This study emphasizes the need for collecting additional data on worker history (i.e., did
280 they experience any job switches or task switches due to COVID-19?), and worker mental health

281 history to help raise public health awareness, guide governmental and community-based
282 resilience interventions, as well as mitigate mental distress. Third, we needed to use two surveys
283 to characterize the nature of mental distress across key dimensions of mental health: loneliness,
284 social support, optimism, stress, anxiety, and depression. While the surveys were nationally
285 representative, we did not have the same covariates across surveys and survey time periods
286 consequently, this analysis can point to the seriousness of mental distress but falls short of
287 offering causal analysis. Fourth, we know workers have made changes to their work
288 environment, such as increasing the number of hours worked remotely and switching to different
289 jobs or roles if these switches came because of COVID-19, but we do not currently have data
290 that inquires explicitly into work history and how that affects worker mental health and
291 performance. Future work could focus on developing more robust surveys that could identify the
292 differences in mental distress workers experience, and offer potential solutions for managerial
293 oversight and sensitivity, external pathways to mental well-being, or a combination of the two.
294

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298

299 **References**

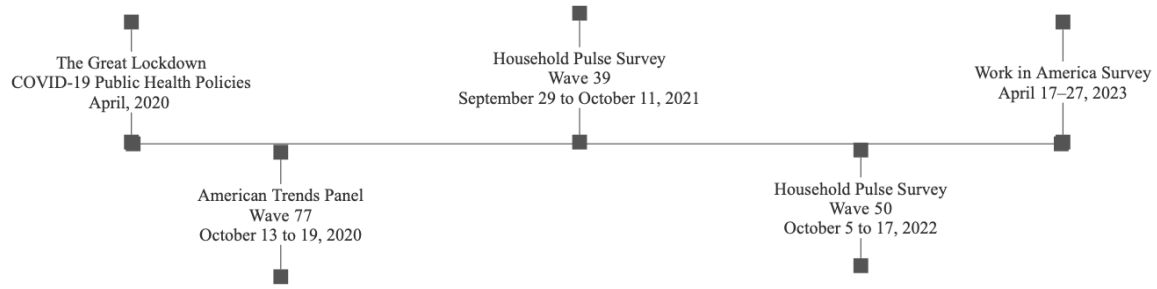
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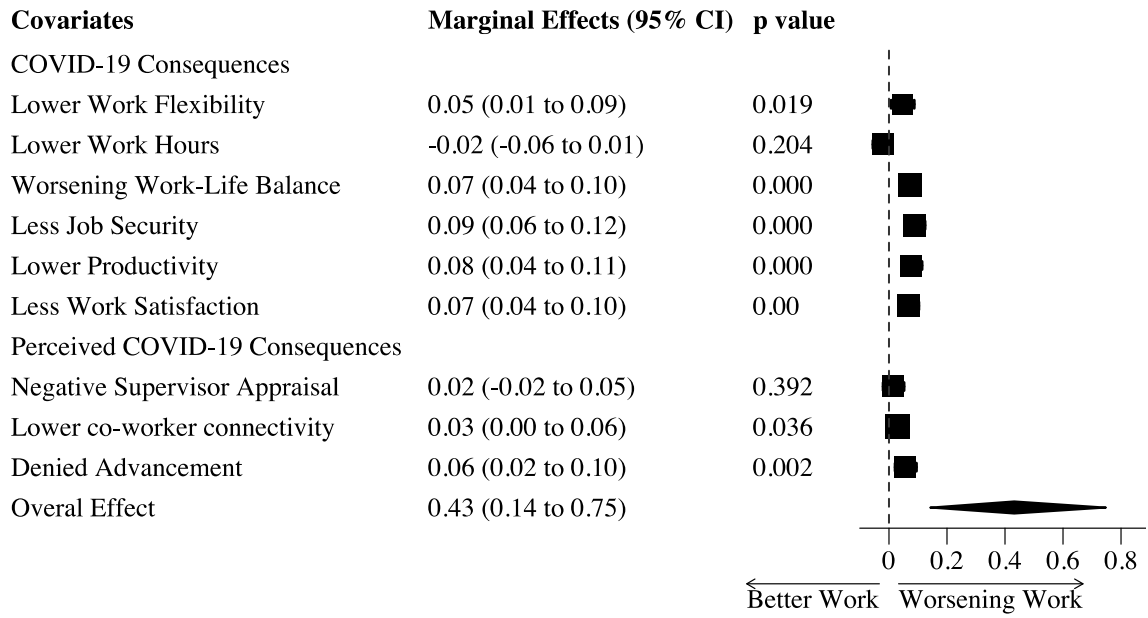
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361 **Figure 1: COVID-19 Great Lockdown, ATP, and HPS Survey Timelines**



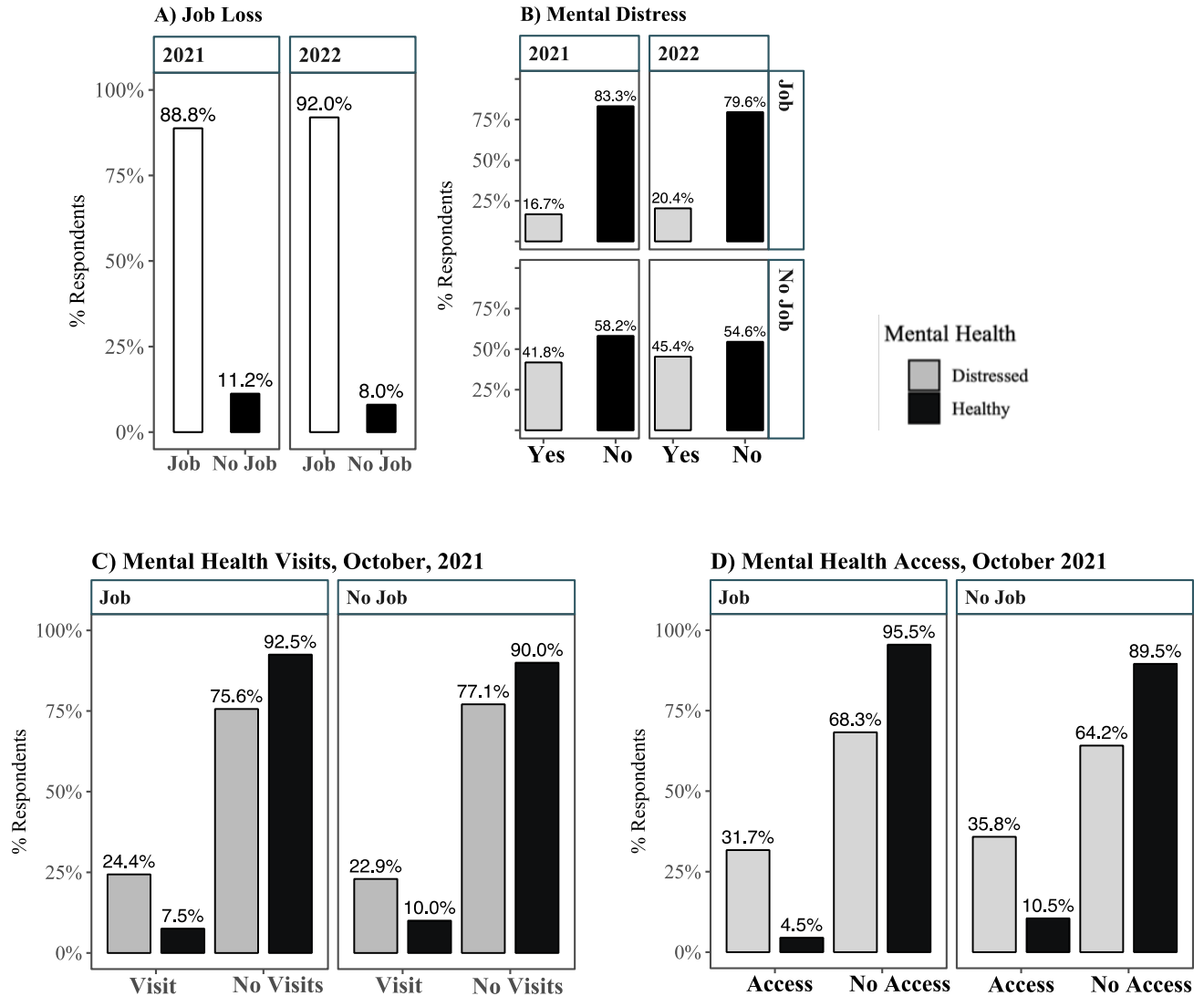
362
363 The figure walks the reader through the sequencing of COVID-19 public policies in April 2020,
364 the snapshot views the ATP, October 2020, and HPS survey analyzed October 2021, 2022. The
365 end point in this figure shows the Work in America Survey conducted in April 2023.
366

367 **Figure 2: Employee Mental Distress and Workplace Conditions¹**
 368 **(Independent binary variable ATP-mental distress [0,1])**



369 **Source:** PEW, Own estimation using American Trend Panel Wave 77 October 13 to 19th, 2020.
 370 This figure plots the individual effects of the probit regression of MD_i on the covariates. The overall
 371 effect sums each individual effect. It should be interpreted with as if a worker experienced each of these
 372 then their cumulative workplace experience would be worse by 43% points.
 373
 374

375 **Figure 3. Job Loss, Mental Health Status, Access to Mental Health, and Visits to Mental Health**
 376 **Services** (Household Pulse Survey October, 2021, N=49,523 and October 2022, N=33,598)
 377



378 Source: Household Pulse Survey waves October 2021 (week 39) and October 2022 (week 50). Mental
 379 health scale was calculated as $\sum(\text{anxious} + \text{worry} + \text{interest} + \text{down})/4$. Respondents were classified
 380 as mentally distressed if their scores were greater than 2.5 as it tips a person over experiencing mental
 381 disturbances some of the time. In week 39, there were questions about utilization of mental health
 382 services and access to mental health services; the week 50 survey did not ask the same questions.
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