

Teachers' Mental Health During the COVID-19 Pandemic

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With an emergence of research investigating the educational impacts of the COVID-19 pandemic, empirical studies assessing teachers' mental health throughout the pandemic have been scarce. Using a large national data set, the current study compares mental health outcomes during the pandemic between pre-K–12 teachers and professionals in other occupations. Further, we compare the prevalence of mental health outcomes between in-person and remote teachers ($N = 134,693$). Findings indicate that teachers reported a greater prevalence of anxiety symptoms than did those in other professions and that remote teachers reported significantly higher levels of distress than did those teaching in person. We summarize the policy implications of these results.

Keywords: health; policy; policy analysis; survey research; teacher research

School districts across the United States faced an unprecedented disruption during the spring of 2020 and the 2020–21 academic year due to the COVID-19 pandemic (Kamenetz, 2020). Little focus has been given to teachers' mental health during the pandemic and how the instructional modalities, and changes in them, might relate (Singer, 2020). The American Psychological Association (2022) defines *mental health* as “a state of mind characterized by emotional well-being, good behavioral adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life.” The aim of the current study is to elucidate associations between the COVID-19 pandemic and teachers' mental health, focusing on three specific outcomes: depressive symptoms, anxiety symptoms, and feelings of isolation. We first examine differences in mental health during the pandemic between teachers and professionals in other occupations. Focusing on teachers specifically, we then compare mental health outcomes during the pandemic between teachers teaching in person versus in remote modalities. Findings indicate that teachers reported a greater prevalence of anxiety symptoms than did those in other professions and that remote teachers reported significantly higher levels of distress than did those teaching in person.

Methods

Study Design and Procedures

Data come from the U.S. COVID-19 Trends and Impact Survey, a large online survey developed in collaboration between

Carnegie Mellon University's Delphi Group and Facebook (Delphi Group, 2021; Salomon et al., 2021). This daily survey invites a stratified random sample of Facebook users to respond to questions related to physical and mental health symptoms, and more (Salomon et al., 2021). We use data from adult (18 years or older) participants who responded to the survey from September 8, 2020, until March 28, 2021. Table 1 provides demographic information by job type across all employed respondents ($N = 2,775,974$) and by in-person and remote modality for teachers only ($N = 134,693$). See the online appendix for technical details of the survey instrument and design.

Measures

Three measures of mental health are examined: (a) depressive symptoms, (b) anxiety symptoms, and (c) feelings of isolation. All three items share the following question stem: “In the past 7 days, how often have you . . . ?” The three items were originally scored along a 4-point Likert scale, with responses ranging from 1 = “none of the time” to 4 = “all of the time.” Although the items demonstrate relatively strong internal consistency (Cronbach's $\alpha = 0.80$), we analyze each as a distinct outcome to understand any differential relationships among the specific indicators. We recode each item into a dichotomous indicator, where 0 = “none or some of the time” and 1 = “most or all of the time.” In an effort to

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Table 1
Sociodemographic factors for all professionals (September 2020–March 2021)

Variable	All occupations (%)		Teachers (%)	
	Teachers	Others	In-person	Remote
Sample size	135,488	2,640,486	106,000	28,693
Gender				
Female	84.1	63.9	84.1	84.3
Male	15.9	36.1	15.9	15.7
Age				
18–24	3.9	5.4	4.3	2.4
25–34	19.7	18.0	19.8	19.5
35–44	26.3	22.6	26.0	27.7
45–54	26.7	23.1	26.7	26.6
55–64	17.9	21.2	17.7	18.3
65+	5.6	9.7	5.6	5.5
Education level				
Less than high school	0.1	1.7	0.1	0.1
High school	1.5	12.9	1.6	1.1
Some college	4.9	23.4	5.3	3.4
College/professional degree	63.5	50.9	64.0	60.9
Graduate degree	30.0	11.2	29.0	34.6
Metro size				
Not adjacent to metro area	6.1	5.8	6.8	3.2
Adjacent to metro area	11.2	10.7	12.4	6.2
Fewer than 250,000 population	11.3	11.9	12.1	8.2
250,000 to 1 million population	26.4	26.6	27.1	23.4
1 million or more population	45.1	44.9	41.7	58.9
Mental health				
Depressive symptoms	23.1	18.0	23.0	23.3
Anxiety symptoms	11.4	12.2	11.3	12.0
Feelings of isolation	17.4	17.9	16.0	22.9

Source. Delphi Group (2021); Dong et al. (2020); U.S. COVID-19 Trends and Impact Survey.

Note. Unadjusted descriptive statistics are provided. Professionals in other occupations are defined as healthcare workers (e.g., nurses, physicians, or dentists), office professionals (e.g., customer service representatives or administrative support), and “other” occupations (e.g., military, farming, legal, or any other occupational group).

understand differences in mental health outcomes among teachers versus other workers, we classify respondents into one of four groups (Standard Occupational Classification System; see <https://www.bls.gov/soc/>): (a) teachers (defined as pre-kindergarten, elementary, middle, or secondary teachers), (b) healthcare workers (e.g., nurses, physicians, or dentists), (c) office professionals (e.g., customer service representatives or administrative support), and (d) “other” occupations (e.g., military, farming, or legal). Given the context of the pandemic and different expectations and needs regarding in-person work, we are most interested in comparing outcomes between those required to be fully in person (e.g., healthcare workers) and those who could usually work from home (e.g., office workers). Teachers often straddle the line, teaching in person and remotely. These are thus particularly salient comparison groups to understand the role of in-person versus remote teaching. The distinction between in-person and remote modality is made by using each respondent’s answer to the survey question of whether they had worked outside their home during that same period.

Sociodemographic characteristics (e.g., gender, age, education level, number of children, household size, and level of financial worry) are included in the models as covariates. We also control for a set of county-level covariates—urbanicity (U.S. Census) and COVID-19 cases and deaths (lagged by 2 weeks; Dong et al., 2020)—in addition to including state and month as fixed effects.

Analyses

We first assess differences in mental health between teachers and other types of workers during the pandemic by using a logistic regression of each outcome as a function of profession and the individual- and county-level covariates. Using the same approach but fit only among teachers, we then compare differences in mental health outcomes, with in-person versus remote modality as the key predictor of interest. Each model is weighted for nonresponse and coverage bias, following the weighting scheme outlined in Salomon et al. (2021) and using the survey package in R (Lumley, 2020), with a survey design

Table 2
Logistic regression results: Mental health specific outcomes across occupations

	Anxiety			Depression			Isolation					
	OR	<i>d</i>	95% C.I.	OR	<i>d</i>	95% C.I.	OR	<i>d</i>	95% C.I.			
Model 1: All occupations												
Occupation (reference: teachers)												
Healthcare	0.696***	-0.200	0.679	0.714	0.952**	-0.027	0.922	0.984	0.957**	-0.024	0.932	0.983
Office	0.807***	-0.119	0.786	0.828	1.041*	0.022	1.006	1.076	1.198***	0.099	1.166	1.230
Other	0.778***	-0.138	0.761	0.796	1.010	0.006	0.981	1.041	1.099***	0.052	1.073	1.126
Gender (reference: female)												
Male	0.525***	-0.355	0.519	0.532	0.708***	-0.191	0.698	0.718	0.814***	-0.113	0.805	0.824
Age (reference: 18–24)												
25–34	0.697***	-0.199	0.682	0.712	0.634***	-0.251	0.619	0.649	0.697***	-0.199	0.682	0.713
35–44	0.469***	-0.418	0.458	0.479	0.406***	-0.497	0.396	0.416	0.525***	-0.355	0.513	0.537
45–54	0.305***	-0.654	0.299	0.312	0.273***	-0.716	0.266	0.280	0.379***	-0.535	0.37	0.387
55–64	0.209***	-0.862	0.204	0.214	0.196***	-0.899	0.191	0.201	0.303***	-0.659	0.296	0.310
65+	0.126***	-1.143	0.121	0.13	0.132***	-1.116	0.127	0.138	0.217***	-0.842	0.210	0.225
Education (reference: less than high school)												
High school	0.956	-0.025	0.909	1.006	0.914**	-0.050	0.864	0.967	0.875***	-0.074	0.830	0.922
Some college	1.122***	0.063	1.068	1.178	0.974	-0.014	0.922	1.029	1.076**	0.041	1.023	1.132
College/professional degree	1.095***	0.051	1.044	1.151	0.816***	-0.112	0.773	0.861	1.134***	0.069	1.078	1.192
Graduate degree	1.115***	0.060	1.060	1.173	0.770***	-0.144	0.728	0.816	1.293***	0.142	1.228	1.362
Model 2: Teachers exclusively												
Modality (reference: in person)												
Remote	1.036	0.020	0.983	1.093	1.122**	0.063	1.046	1.203	1.563***	0.246	1.479	1.652
Gender (reference: female)												
Male	0.600***	-0.282	0.564	0.637	0.880**	-0.071	0.815	0.950	0.985	-0.008	0.927	1.047
Age (reference: 18–24)												
25–34	0.786***	-0.133	0.711	0.868	0.658***	-0.230	0.582	0.744	0.674***	-0.217	0.603	0.754
35–44	0.571***	-0.309	0.514	0.634	0.485***	-0.399	0.424	0.555	0.532***	-0.348	0.473	0.598
45–54	0.409***	-0.493	0.369	0.452	0.378***	-0.537	0.333	0.429	0.414***	-0.487	0.370	0.463
55–64	0.280***	-0.703	0.252	0.311	0.290***	-0.682	0.255	0.331	0.364***	-0.558	0.324	0.409
65+	0.136***	-1.099	0.116	0.161	0.163***	-1.001	0.132	0.200	0.192***	-0.909	0.162	0.228
Education (reference: less than high school)												
High school	0.615	-0.268	0.209	1.812	0.320*	-0.629	0.120	0.853	0.311*	-0.644	0.116	0.833
Some college	0.774	-0.142	0.266	2.251	0.362*	-0.560	0.138	0.953	0.437	-0.457	0.165	1.154
College/professional degree	0.962	-0.021	0.332	2.790	0.336*	-0.602	0.128	0.879	0.431	-0.464	0.164	1.134
Graduate degree	0.936	-0.037	0.322	2.715	0.310*	-0.645	0.118	0.814	0.440	-0.452	0.167	1.159

Note. Only estimated coefficients for occupation and sociodemographic covariates are shown. Logistic regression models are also adjusted for number of children and elders in the household, financial worry, urbanicity, the number of COVID-19-positive people respondents knew, county-level COVID-19 cases and deaths (lagged by 2 weeks), and fixed-effects for U.S. state and month. OR = odds ratio; *d* = Cohen's *d*; 95% C.I. = 95% confidence interval.

p* < .05. *p* < .01. ****p* < .001.

stratified by state (see the appendix for more details). In an effort to avoid the limitations of significance testing due to the large sample size and to provide substantively meaningful estimates, we report odds ratios and standardized estimates by using Cohen's *d* (Borenstein et al., 2009).

Results

Comparison of Outcomes Among Teachers and Other Professionals

Logistic regression results indicate that, relative to teachers, healthcare workers (odds ratio [OR] = 0.70, *d* = -0.20), office workers (OR = 0.81, *d* = -0.12), and other workers (OR = 0.78, *d* =

-0.14) were significantly less likely to report anxiety symptoms. Similarly, in comparison to teachers, healthcare workers were less likely to report depression symptoms (OR = 0.95, *d* = -0.03) and feelings of isolation (OR = 0.96, *d* = -0.02), although we note that the effect sizes may be considered "small." It is worth noting that, relative to teachers, office workers (OR = 1.20, *d* = 0.10) and other workers (OR = 1.10, *d* = 0.05) were significantly more likely to report feelings of isolation. Additional subgroup analyses reveal that men were significantly less likely to report anxiety symptoms (OR = 0.53, *d* = -0.36), depression symptoms (OR = 0.71, *d* = -0.19), and feelings of isolation (OR = 0.81, *d* = -0.11) than were women. Similar findings hold true for older workers (see Table 2 for results).

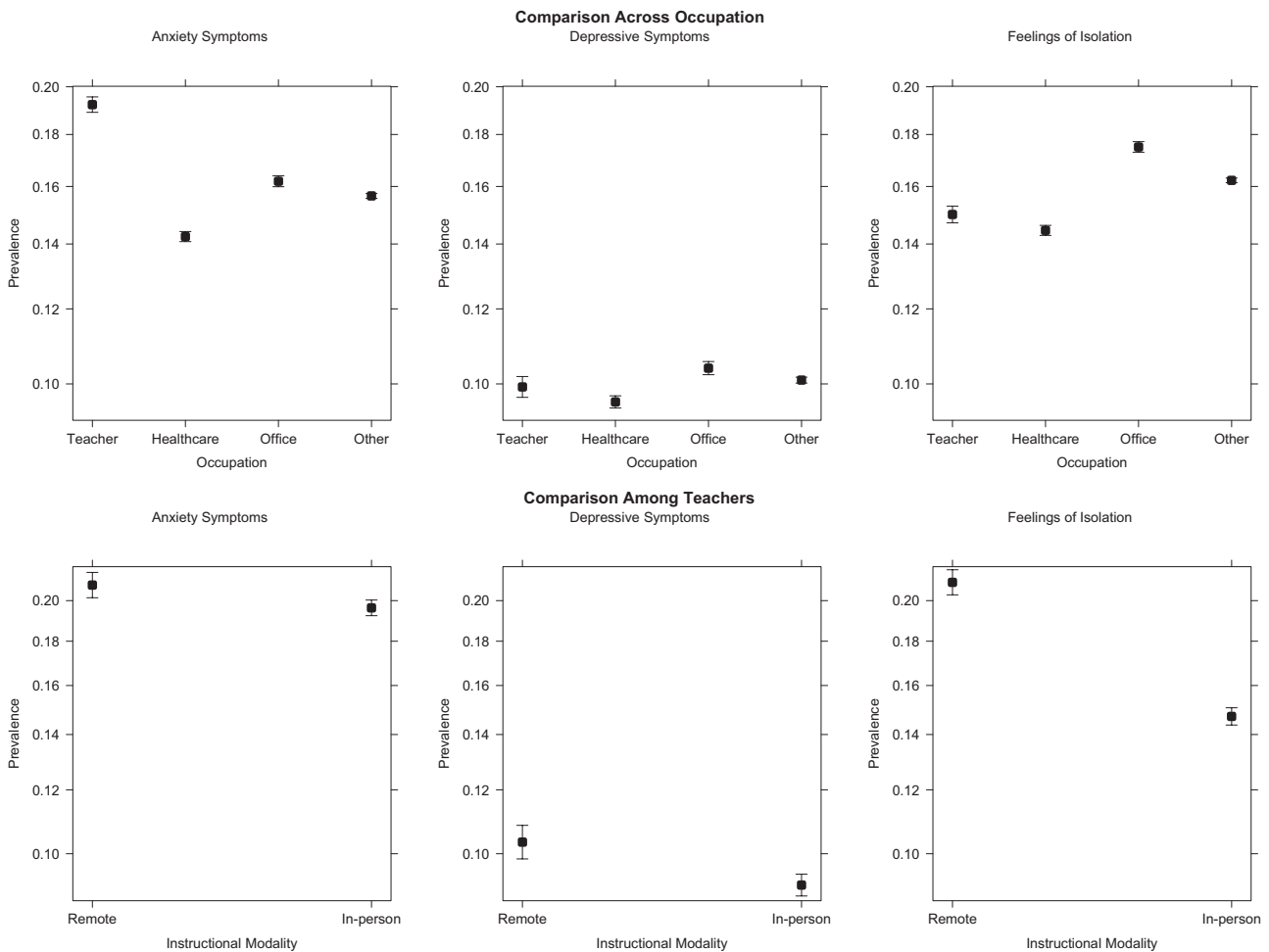


FIGURE 1. *Model-adjusted probabilities of mental distress.*

Comparison of Outcomes Among In-Person and Remote Teachers

Among teachers, those teaching remotely were significantly more likely to report depressive symptoms (OR = 1.12, $d = 0.06$) and feelings of isolation (OR = 1.56, $d = 0.25$) than those teaching in person. See Figure 1 for a depiction of the model-adjusted probability of mental distress across the four occupation groups (top panel) as well as a comparison of those teaching in the different modalities (bottom panel).

Discussion

Our study indicates that teachers showed a significantly higher prevalence of negative mental health outcomes during the pandemic when compared to healthcare and office workers. Further, those teaching remotely reported significantly higher levels of distress than did those teaching in person for all three mental health items considered in the study, even when controlling for individual sociodemographic variables and county-level COVID-19 spread. In particular, professionals in other work categories were significantly less likely to report anxiety symptoms than teachers. Focusing on teachers exclusively, those teaching remotely were significantly more likely to report feelings of isolation than were those teaching in person. However,

office and other workers indicated a higher prevalence of isolation symptoms than did teachers, highlighting that all work environments are not equal. Future research should consider examining occupation-level factors or contexts that may contribute to or explain such differences. This study is not without its limitations: Notably, the cross-sectional nature of the data precludes any comparison of baseline measures of pre-pandemic mental health outcomes to current measures. More high-quality data and analyses are needed to assess the extent to which such heightened mental health distress, as well as its disparity between in-person and remote teachers, might be long lasting.

Although various guidelines have been proposed for safe and supportive learning environments as schools reopen (U.S. Centers for Disease Control and Prevention, 2021), these reports often fail to consider the magnitude and scope of possible negative effects on mental health outcomes among teachers, nor do they propose appropriate alternative methods and interventions to address such troubles. Following Rossi et al. (2018), we argue that incorporating information gathered from multiple stakeholders (including teachers) into decision-making processes is paramount for effective learning environments. Further, tools and programs are needed to support and safeguard the mental health of teachers during and potentially after the pandemic, as such measures have the potential to improve working conditions, teacher retention, and, ultimately, student learning outcomes.

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