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RESEARCH ARTICLE

Assessing Indicators of Mental Health Distress Among New Jersey High School Teachers During the COVID-19 Pandemic

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ABSTRACT

Background: Due to the COVID-19 pandemic, New Jersey K-12 schools closed, and teachers were required to conduct classroom lessons and school-sponsored activities online. Since spring 2020, teachers and students have experienced the physical, mental, and emotional stress COVID-19 has had in the United States.

Methods: To better understand potential mental health effects COVID-19 has had on New Jersey teachers, the New Jersey Safe Schools Program implemented the Kessler Psychological Distress Scale (K6+) self-assessment survey as a workplace violence related activity during one of the four required trainings New Jersey Safe Schools offers for New Jersey career-technical education workbased learning supervisor certification (N=313). The K6+ is intended to measure distress over four weeks prior to administration. The K6+ was conducted using Mentimeter and included Likert scales, multiple choice, and two-character open response questions.

Results: Between January 2022-June 2023, of 336 teachers, 313 completed the K6+. Overall, 239 teachers (76%) and 235 teachers (75%) expressed feeling "nervous" and "restless or fidgety," respectively, during the past 30 days from when the survey was administered. Of 313 teachers, 38 teachers (12%) received a total score between 13-24, suggesting or indicating potential mental distress, in response to the first item of the K6+.

Conclusion: This preliminary study presents insights concerning potential mental health effects the COVID-19 pandemic has had on New Jersey teachers. These data recognize the feelings expressed by New Jersey teachers working during the pandemic and can provide guidance to schools to better address identified needs, including employee wellness and positive social and emotional school environments.

Keywords: Employee Wellness, Mental Distress, Mental Health, Schools, Social and Emotional Climate, Teacher Wellness

Introduction

According to the United Nations Office for Disaster Risk Reduction, a disaster is defined as a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of susceptibility or exposure, vulnerability, and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts. The term emergency is sometimes used interchangeably with the term disaster, for example, in the context of biological and technological hazards or health emergencies like the COVID-19 pandemic.¹

Since 2005, the New Jersey Safe Schools Program (NJSS) has provided State of New Jersey (NJ) code required safety and health (S&H) trainings plus resources to NJ secondary or high schools for use by students and education professionals. For example, NJSS leads the required trainings for work-based learning (WBL, formerly known as school-sponsored structured learning experiences), permitting certified teachers to supervise students in schoolsponsored work placements.²⁻³ In spring 2020, NJ schools transitioned to online and hybrid teaching, and in-person work placements were suspended until further notice due to the COVID-19 pandemic.⁴ Teaching, and learning, existed in a transitional environment, even as discussion of school reopening continued.⁵ During the COVID-19 pandemic through the present, NJSS continued to offer S&H trainings online and disseminated pertinent COVID-19 related resources to NJ schools via monthly enewsletters and the NJSS website.

Research to date has had a prevalent focus on student well-being and mental health needs or resources provided during the COVID-19 pandemic.⁶⁻¹⁸ United States (U.S.) based studies have reported many factors increased rates of poor mental health during the COVID-19 pandemic, including: challenges within the family (parents working from home, financial issues, and increased rates of mental disorders among adults), domestic violence, socio-demographic factors, excessive social media use, and excessive media exposure.6 The COVID-19 pandemic has had a disproportionally high impact on students of color, students in low socio-economic status⁷, students with special needs or disabilities, students with existing mental health and trauma-related problems, and migrant students.⁸ Lockdown related distresspredicting anxiety and depression symptoms-can include feeling lonely, being bored, feeling abandoned by teachers, worrying about the future, fearing death, experiencing difficulty connecting with others, and having increased negative

thoughts.¹² Overall, studies suggest a decrease in mental health among students.⁶⁻⁸

Teachers have also navigated and continue to the transitional school teaching navigate environment. As students returned to in-person schooling, teachers and education professionals were expected to address challenges students were bringing with them from months of online learning and social distancing. Those challenges ranged from suicide ideation and depression to anxiety or detachment from learning. Teachers interact with hundreds of students every school year, and are sometimes required to provide mental health guidance to students as teachers are usually the first to identify problems within the classroom.¹⁹ Teachers and education professionals supported students while facing unprecedented challenges themselves.²⁰

A project conducted by the CDC Foundation revealed teachers were twice as likely to report mental health distress after the pandemic when compared to before the pandemic.²¹ In March 2021, 27% of teachers reported symptoms consistent with clinical depression and 37% reported symptoms consistent with general anxiety disorder.²¹ In comparison to U.S. adults in August 2020-February 2021, the percentage of adults with recent symptoms of an anxiety or a depressive disorder increased from 36.4% to 41.5%, and the percentage of those reporting an unmet mental health care need increased from 9.2% to 11.7%.22 Additionally, teachers with students completely engaged in virtual learning models experienced higher rates of depression and anxiety when compared to other teachers teaching in-person or in hybrid models.²¹

In a nationwide study conducted in the U.S. in summer 2020, interviews with school staff revealed how ten of thirteen different school re-entry plans included strategies to address student mental health needs, while only three plans addressed the provision of staff mental health resources.²³

In a U.S. study conducted in New Orleans, Louisiana,²⁴ a needs assessment revealed teachers who experienced more stressors reported both worse mental health and more difficulty to cope and teach, whereas experiencing more protective factors was associated with finding it easier to cope and teach. Lack of connection and online teaching challenges were cited as the most difficult aspects of teaching during the COVID-19 pandemic, while support from coworkers and administrators were noted as the most helpful.²⁴ Another nationwide U.S. study compared mental health outcomes during the pandemic between prek-12 teachers and other professionals in other occupations, as well as the prevalence of mental health outcomes between in-person and remote teachers. Findings indicated U.S. teachers reported a greater prevalence of anxiety symptoms than those in other professions and how teachers working remotely reported significantly higher levels of distress than those who were teaching in-person.²⁵

The Kessler Psychological Distress Scale (K6) is a commonly used and validated measure of mental distress. In this paper, K6, as used by other authors cited, focused on how often study participants had six different feelings or experiences using a 5-point Likert scale. K6+, as used in this study and defined in the methods section below, includes the item asked in the K6, in addition to five other questions.

One study aimed to document the impact of the COVID-19 pandemic on mental distress among U.S. adults by comparing 2018 National Health Interview Survey (NHIS) data with K6 data from a nationally representative online sample in April 2020.²⁶ Compared to the 2018 NHIS sample, U.S. adults in April 2020 were eight times more likely to fit criteria for serious mental distress (27.7% vs. 3.4%) and three times more likely to fit criteria for moderate or serious mental distress (70.4% vs. 22.0%).²⁶ The K6 has also been used on an international level. One study in Japan used the K6 to investigate psychological distress among school teachers in 2010-2011. At that time, a total of 55 teachers (8.2%) were classified as having psychological distress.²⁷

To date, most studies pertaining to school mental health focused on students at a collegiate/university post-secondary level, not K-12 students and not teachers or education professionals, including those working with adolescents in secondary or high schools. Teachers and education professionals are vulnerable to stress, anxiety, and burnout due to the nature of the job and the roles and responsibilities in working with students, especially during the COVID-19 pandemic as students transitioned to online learning and then back to in-person schooling.23 In addition, teachers experienced the rising inflation rate in the U.S, resulting in a sharp rise in price increases in energy, food, and overall cost of living. The annual inflation rate, as measured by the Consumer Price Index, was 1.7% in February 2021, rose to over 5.0% in June 2021, and continued rising, peaking at about 9.0% in June 2022.28 Furthermore, teacher shortages that existed prior to 2020 persisted and increased during the COVID-19 pandemic.29

This study assessed the feelings and experiences expressed by NJ high school teachers working January 2022-June 2023 during the COVID-19 pandemic, and as the U.S. transitioned into a postpandemic period. These data can provide guidance to schools to better address gaps in planning and execution of mental health resources for teachers and education professionals, and other identified needs, including promoting employee wellness and a positive social and emotional school environment.

Methods

To better understand potential mental health effects COVID-19 has had on NJ teachers, NJSS implemented the Kessler Psychological Distress Scale (K6+) self-assessment survey³⁰⁻³² as outlined by the Harvard Medical School.³³ The K6+ was conducted as an activity of the workplace violence prevention portion of the online "OSHA 10 Plus for General Industry" training, one of four required trainings NJSS offers towards WBL supervisor certification in NJ. The K6+ is a self-reported measurement tool intended to measure distress over a period of four weeks prior to administration of this survey. The K6+ is a valid and reliable scale due to its brevity and strong psychometric properties and can be used in general-purpose health surveys.³⁴

PARTICIPANTS

During ten cohorts of the "OSHA 10 Plus for General Industry" training between January 2022-June 2023, 336 NJ teachers (course participants) took part in the course's two-hour virtual live session. Data from 313 NJ teachers (93% response rate) were collected during the course's virtual live session activities. Based on participants' course registrations, there was statewide representation by the study sample. Of the 21 NJ counties in north, central, and south NJ, all 21 were represented.

INSTRUMENTATION

The NJSS training titled "OSHA 10 Plus for General Industry" includes a two-hour virtual live session with course trainers to allow additional time for course content, material discussion, activities, and participant questions. One section of the training's live session focuses on workplace violence prevention. During that portion, NJSS conducted the K6+ self-assessment survey as an activity on Mentimeter (Mentimeter North America Inc., Toronto, Canada), an online-based software that allows for the creation of interactive presentations and real-time feedback via survey-like questions. Participants could use any device with internet capability (cellphone, tablet, desktop, etc.) to complete the activity hosted on Mentimeter.

PROCEDURE

In the K6+, the first item asks participants to indicate how often they have had six different feelings or experiences during the past 30 days using a 5-point Likert scale. Participants were first asked to indicate how often they have had six different feelings or experiences during the past 30 days from when the survey was administered using a 5-point Likert scale: 4 (All of the time), 3 (Most of the time), 2 (Some of the time), 1 (A little of the time), and 0 (None of the time). The feelings and experiences for the first item were the following: "nervous," "hopeless," "restless or fidgety," "so depressed that nothing could cheer you up," "that everything was an effort," and "worthless."

While the K6+ self-assessment survey was being implemented, the NJSS presenter controlled the pace at which questions were presented to participants to respond to. Participants could not skip ahead or go back to previous questions, per the presenter's discretion. Multiple choice and twocharacter open response questions assessed teachers' recent feelings pertaining to mental health distress, if professional help was sought, and the interception of physical health with mental health. All responses submitted by course participants via the Mentimeter activity were anonymous and received in aggregate.

DATA ANALYSIS

Data collected from the K6+ self-assessment survey were first exported from the Mentimeter software and then managed in Microsoft Excel. Summary descriptive statistics and cross tabs were computed using pivot tables in Excel.

Results

Overall, 239 teachers (76%) and 235 teachers (75%) expressed feeling "nervous" and "restless or fidgety," respectively, a little, some, most, or all of the time during the past 30 days from when the survey was administered. Additionally, 212 teachers (68%) reported feeling "that everything was an effort" a little, some, most, or all of the time (Figure 1).

Figure 1: During the past 30 days, about how often did you feel...



Note: Percentages may not add up to 100% due to rounding.

Previous research documented evidence of different psychological distress structures depending on different disasters experienced, for example, a natural disaster versus pandemic threat, specifically COVID-19.³⁴ Therefore, in this study, cross tabulation via the use of pivot tables were conducted to quantitatively analyze the relationship

between a few of the six feelings asked about in the first item of the survey. The first cross tab conducted analyzed responses to the feelings "nervous" and "restless or fidgety." Overall, 143 teachers (46%) chose feeling both "nervous" and "restless or fidgety" some/little of the time. All/most of the time was chosen for both feelings by 22 teachers (7%) and another 13 teachers (4%) chose "nervous" all/most of the time, but "restless or fidgety" some/little of the time. Additionally, 40 teachers (13%) responded none of the time to either feeling (Table 1).

		Nervous								
		All/Most of		Some/Little		None	of			
		the tim	е	of the	time	the tim	е	Total		
	All/Most of the time	22	7%	23	7%	3	1%	48	15%	
Restless or	Some/Little of the time	13	4%	143	46%	31	10%	187	60%	
Fidgety	None of the time	5	2%	33	11%	40	13%	78	25%	
	Total	40	13%	199	64%	74	24%	313	100%	

 Table 1: Cross Tabulation of Feeling Nervous and Restless or Fidgety

Note: Percentages may not add up to 100% due to rounding.

The second cross tab conducted analyzed responses to the feelings "hopeless" and "depressed." All/most of the time was chosen for both feelings by 27 teachers (9%) and some/little of the time was chosen for both feelings by another 36 teachers (12%). Overall, 183 teachers (58%) responded none of the time to both feelings. Similar results were observed in the third cross tab for the feelings "hopeless" and "worthless." Overall, 194 teachers (62%) responded none of the time to either feeling (Table 2).

fable 2: Cross Tabulation of Feeling Hopele	ess and Depressed, and Feeling Hopeless and Worthl	ess
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		Hopel	ess						
		All/Most of		Some/	′Little	None	of		
		the tim	e	of the	time	the tim	е	Total	
	All/Most of the time	27	9%	3	1%	1	1%	31	10%
Deveraged	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	62	20%						
Depressed	None of the time	2	1%	35	11%	183	58%	220	70%
	Total	34	11%	74	24%	205	66%	Total 31 62 220 313 27 46 240 313	100%
	All/Most of the time	24	8%	2	1%	1	1%	27	9%
\A/orthloss	Some/Little of the time	5	2%	31	10%	10	3%	46	15%
vvormess	None of the time	5	2%	41	13%	194	62%	240	77%
	Total	34	11%	74	24%	205	65%	313	100%

Note: Percentages less than 0.05% were rounded up to 1% to avoid presenting a 0 value. Percentages may not add up to 100% due to rounding.

The fourth cross tab conducted analyzed responses to the feelings "depressed" and "everything was an effort." All/most of the time was chosen for both feelings by 22 teachers (7%) and some/little of the time was chosen for both feelings by another 37 teachers (12%). Overall, 123 teachers (39%) who responded none of the time to the feeling "depressed," chose some/little of the time for the feeling "everything was an effort." Additionally, 87 teachers (28%) responded none of the time to both feelings (Table 3).

The fifth cross tab conducted analyzed responses to the feelings "depressed" and "worthless." All/most of the time was chosen for both feelings by 26 teachers (8%) and some/little of the time was chosen for both feelings by another 25 teachers (8%). Overall, 201 teachers (64%) responded none of the time to both feelings (Table 3).

Table 3: Cross	Tabulation of	Feeling D	epressed	and E	verything	was ar	n Effort,	and Feeling	Depressed	and
Worthless										

		Depressed							
		All/Most of		Some/Little None		of			
		the tim	e	of the	time	the tim	ne	Total	
Everything	All/Most of the time	22	7%	16	5%	10	3%	48	15%
	Some/Little of the time	4	1%	37	12%	123	39%	164	52%
was an	None of the time	5	2%	9	3%	87	28%	101	33%
enon	Total	31	10%	62	20%	220	70%	Total 6 48 2% 164 3% 101 0% 313	100%

		Depre	Depressed							
	All/Most of the time	26	8%	1	1%	0	0%	27	9 %	
	Some/Little of the time	2	1%	25	8%	19	6%	46	15%	
vvormiess	None of the time	3	1%	36	12%	201	64%	240	77%	
	Total	31	10%	62	20%	220	70%	313	100%	

Note: Percentages less than 0.05% were rounded up to 1% to avoid presenting a 0 value. Percentages may not add up to 100% due to rounding.

The sixth cross tab conducted analyzed responses to the feelings "everything was an effort" and "worthless." All/most of the time was chosen for both feelings by 19 teachers (6%) and another 17 teachers (5%) chose "everything was an effort" all/most of the time, but "worthless" none of the time. Additionally, 130 teachers (42%) who chose some/little of the time for "everything was an effort" chose none of the time for "worthless." Overall, 93 teachers (30%) responded none of the time to both feelings (Table 4).

The total score for the scale is computed by summing the points for the six feelings/experiences within the first item of the scale. The minimum score is 0 and the maximum score is 24. The average score of the 313 teachers was 5.9 with a standard deviation of 5.5. The median score was 4.0.

		Everything was an effort								
		All/Most of		Some/Little		None	of			
		the tim	e	of the	time	the tim	е	Total		
	All/Most of the time	19	6%	4	1%	4	1%	27	8%	
\A/arthlass	Some/Little of the time	12	4%	30	10%	4	1%	46	15%	
vvormess	None of the time	17	5%	130	42%	None of the time Total 4 1% 27 4 1% 46 93 30% 240 0 101 32% 313	77%			
	Total	48	15%	164	53%	101	32%	313	100%	

 Table 4: Cross Tabulation of Feeling Everything was an Effort and Worthless

Note: Percentages may not add up to 100% due to rounding.

According to the Science of Behavior Change (SOBC) research network at the Columbia University Medical Center, funded by the National Institute of Health (NIH), for clinical purposes, the severe mental illness range is 13-24.³⁰⁻³² This current study assessed the sum of participant responses to the first item of the K6+, but did not account for sensitivity, specificity, and total classification accuracy within the study population. For the purposes of this current study, any participant's total score is for informational purposes only, given deidentified data were analyzed and clinical follow-up was neither planned nor conducted. Of 313 teachers, 38 teachers (12%) received a total score between 13-24 in response to the first item of the K6+.

The next item of the K6+ self-assessment survey assessed the extent to which these feelings were typical for the participant. Those who responded "none of the time" to all six feelings in question one (n=28) were asked to pick "about the same as usual" as outlined in the K6+ instructions³³; five participants did not do this and selected other responses, and one participant did not submit a response to the question. Approximately half of the teachers (n=172, 55%) reported the feelings expressed in the first item occurred "about the same as usual" during the past 30 days from when the survey was administered. Additionally, 91 teachers (29%) reported the feelings expressed occurred "more often than usual" in varying degrees (a little, some, a lot). A total of 17 participants did not answer this question.

The remaining items in the K6+ self-assessment survey assessed to what extent these experiences led to functional impairment. The third and fourth items specifically assessed how many days one was completely unable to work and how many days productivity was at least halved due to the feelings/experiences. Those who responded "none of the time" to all six feelings in question one (n=28) were told they could choose not to answer the remaining survey items.

Most teachers (n=248 of 313, 79%) stated they were completely able to work or carry out their normal activities because the reported feelings were for zero days during the past 30 days from when the survey was administered. On average, teachers were unable to work only about $\frac{3}{4}$ of a day (0.74, standard deviation of 3.0). A total of 13 participants did not answer this question.

When asked how many days in the past 30 days teachers were able to do only half or less of what they would normally have been able to, 197

teachers (63%) responded zero. The average number of days teachers were able to do only half or less of what they would normally have been able to do was about one and a half days (1.4, standard deviation of 3.8). A total of 22 participants did not answer this question.

The fifth item asked how many times teachers saw a health professional about the reported feelings. Most participants (n=254, 81%) said they did not see a doctor or other health professional about these feelings during the past 30 days from when the survey was administered. Of participants who submitted a response other than "0," the average number of days in which teachers saw a health professional during the past 30 days was about two (2.2, standard deviation of 1.4). A total of 19 participants did not answer this question. While participants were instructed to only provide a response between 0-30 that applies to them, one teacher provided a written response to this question stating, "The doctor visits are what made me nervous."

The final item of the K6+ self-assessment survey asked how often physical health problems seemed to be the primary cause of the feelings/experiences. Most teachers (n=188, 60%) responded none of the time. Approximately one in five teachers (n=66, 21%) responded a little of the time. Additionally, 34 teachers (11%) responded some or most of the time. A total of 17 participants did not answer this question.

Discussion

This ongoing research recognizes the feelings expressed by teachers working during the COVID-19 pandemic and can provide insight of potential mental health effects this pandemic has had on NJ teachers. Previous research has documented how the COVID-19 pandemic has effected the mental health of students and the ongoing effort to provide mental health services and resources.⁶⁻¹⁸ Teachers and school education professionals are uniquely positioned with the roles to identify, refer and provide support for their students with mental health needs.^{19,35} It is critical to also recognize the mental health of teachers and the support they require as they aim to take care of themselves and their students, not only during an ongoing pandemic, but post-pandemic as well.

Few to no studies have been published on K6+ survey implementation among U.S. K-12 teachers. One study in Japan used the K6 to investigate psychological distress among school teachers in 2010-2011.²⁷ At that time, a total of 55 teachers (8.2%) were classified as having psychological distress, which was lower than the 12% reported among this study's participants during the COVID-19 pandemic. Unlike this study, the Japanese study was not conducted during the pandemic in 2010-2011.

A national U.S. study aimed to document the impact of the COVID-19 pandemic on mental distress among U.S. adults by comparing 2018 National Health Interview Survey (NHIS) data with K6 data from a nationally representative online sample in April 2020.²⁶ Compared to the current study's data, U.S. adults in April 2020 (within about a month of the formally recognized start of COVID-19 pandemic) were more than two times more likely to fit criteria for serious mental distress (27.7% vs. 12%).

The NJ State Health Assessment Data (SHAD) from the NJ Department of Health was used to compare the mental health of adults in NJ to the study population. Query-based datasets from the NJ Behavioral Risk Factor Survey Data (NJBRFS), specifically "Mental Health Past 30 Days - Crude Rates" were used. The most recent year of survey data available, from 2020, was gueried for adults ages 24-64 about frequent mental distress, defined as "14 or more days of the past 30 days not good," with some college education or a college graduate and employed for wages. These filters applied within the NJ SHAD aligned with the study population we surveyed. Overall, according to the 2020 NJBRFS data, 11.3% of NJ adults reported frequent mental distress.³⁶ This NJ SHAD query conducted using 2020 data reported more frequent mental distress among NJ adults within the applied filters than among the current study's population of NJ teachers who responded with 14 days or greater (n=7, 2%), when asked, "How many days in the past 30 were you able to do only half or less of what you would normally have been able to, because of these feelings?"

In February 2022, the NJ Department of Education released the "New Jersey Comprehensive School-Based Mental Health Resource Guide," designed to highlight components to consider in school-level wellness planning. The Guide includes information on mental health needs assessments, resource mapping, universal support, targeted interventions, self-care practices, and funding for mental health supports in schools.³⁵

There has been a significant increase in the use of school-based mental health services by adolescents in 2019 vs. 2018, and each prior year 2009-2018, yet fewer than 1-in-5 adolescents across the U.S.

use school-based mental health services.³⁷ This brings up the question, do students across the U.S. have proper access to school-based mental health services? Likewise, do teachers and education professionals separately have access to appropriate and applicable mental health services and resources? Future studies may consider researching active school-based mental health services and their effectiveness with the goal of implementing an equitable distribution of these services throughout the U.S.

This study's findings are critical in considering the future implications of adult mental health services and resources available in schools. This current study asked how many times participants saw a health professional about reported feelings/experiences. Most participants (81%) said they did not see a doctor or other health professional about these feelings during the past 30 days from when the survey was administered. One participant provided a written response to this question stating, "The doctor visits are what made me nervous." In NJ and in other states with, or considering implementing school-based mental health services, this study can shape how future services are structured regarding the offering of mental health services and the availability of on-site resources for teachers and education professionals. Additionally, other depending on the type of disaster experienced, trauma-focused interventions may need to be augmented, with specific components directed at depression and/or anxiety.³⁴

School education professionals across the U.S. continue to experience high levels of stress and anxiety. Through interviews with school staff across the U.S., resources have been identified to support school education professionals. Understanding school staff concerns in the context of the Whole School, Whole Community, Whole Child (WSCC) model can aid schools and districts to address ongoing gaps and needs as schools continue to recover from the effects of the COVID-19 pandemic.³⁸ This can include a WSCC team to address the health of everyone in a school, including teachers and other education professionals.23 Additionally, school-based health centers (SBHC) provide on-site care and an array of services delivered by a multidisciplinary team, including mental health care, and are often available during and after school hours and frequently during the summer.³⁹ While the focus of SBHC is to overcome health care access barriers to address student health, well-being and academic success³⁹, the mission of SBHC can be more widely transformed across the U.S. to also address the needs of teachers and education professionals as well.

Strengths

This study had known strengths. The survey questions collected primary data from teachers on recent feelings and experiences pertaining to mental health distress, if professional help was sought, and the interception of physical health with mental health from a statewide sample of NJ teachers and education professionals who have worked during the COVID-19 pandemic. Additionally, the K6+ survey was conducted in real-time with teachers. This allowed NJSS to maximize the number of teacher participants and still confirm results were reviewed in aggregate and later analyzed as part of a deidentified database. Data and studies regarding teacher mental health are limited when compared to student mental health. This study thus helps address an important research gap in examining the well-being and mental health of teachers, especially during a pandemic. This study's use of the K6+ self-assessment can be replicable elsewhere.

Limitations

This study also had known limitations. First, data were collected in aggregate and participants were not asked to provide identifying demographic information due to the sensitivity of the survey questions and to maintain anonymity. Survey responses were self-reported and were not verified with any other school or clinical records to confirm responses. Additionally, teachers were asked to submit responses to the K6+ self-assessment survey at a controlled presenter's pace during a training activity using Mentimeter. Teachers could not move through the survey at their own pace or go back to questions they may have missed or would have liked to resubmit a different answer to.

Furthermore, the ten training cohorts took place January 2022-June 2023, two and half years since the start of the COVID-19 pandemic. During that time, teachers have had time to develop and gain experience transitioning to teaching online and managing various facets of teaching responsibilities in a transitional environment. Study results may have been different if conducted early on during the pandemic, such as spring 2020. Also, it must be noted how during that time, the end of the COVID-19 public health emergency was declared on the state and federal level. On March 4, 2022, Governor Murphy signed NJ Executive Order 292 lifting the COVID-19 public health emergency in NJ.⁴⁰ Over a year later on May 11, 2023, the end of the federal COVID-19 public health emergency was declared in the U.S.⁴¹ As a result, the present study could not compare 2022-2023 data with early months or the first full year of the COVID-19 pandemic.

This study was conducted January 2022-June 2023, during various months of the school year and changing seasons. Data and measurements of mental health distress reflect the overall general findings of our two school years sample. Future research could focus on the effects of seasonality on the mental health of teachers and education professionals.

Conclusion

The COVID-19 pandemic has had an impact on the mental and emotional health of students and teachers in the U.S. Given the roles and responsibilities teachers have in working with, molding, and developing school-aged children, it is important for schools to prioritize the mental health of teachers, educational support professionals, and students to create a school environment where students can learn and thrive in a nurturing and stable environment. Likewise, teachers can continue to fulfill their responsibilities in the workplace as well as in their home life with the proper support and resources in place. This is especially important when added stressors like inflation, rising commodity prices, and teacher shortages have an impact on society, as seen during the COVID-19 pandemic.

This preliminary study presents reported feelings pertaining to mental health distress, seeking professional help, and indicators of concurrent physical health with mental health from a statewide sample of NJ education professionals who have worked during the COVID-19 pandemic. This preliminary study recognizes the responsibilities teachers possess working in schools and with students daily and can provide guidance to schools and districts for how to provide essential support and better address identified needs, including promoting employee wellness, total worker health, and a positive social and emotional school environment. Future studies across the U.S. should further examine teacher mental distress not only during pandemics, but routinely post-pandemic.

Conflict of Interest

The authors have no conflicts of interest to declare.

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References

- Disaster. United Nations Office for Disaster Risk 1. 2007. Reduction. August 30, Accessed November 20, 2023. https://www.undrr.org/terminology/disaster
- 2. Shendell DG, Hemminger LE, Campbell JK, Schlegel B. Supervising Structured Learning Experiences for Students in New Jersey: Trainina Teachers in School-Based Occupational Health and Safety Practice. Public Health Reports. 2009;124(4_suppl1):74-82. doi:10.1177/00333549091244S109
- 3. New Jersey Department of Education. Office of Career Readiness. Work-Based Learning. 9, 2022. Accessed September https://www.nj.gov/education/cte/secondary /wbl/
- 4. Office of the Governor. Governor Murphy Announces Aggressive Social Distancina Measures to Mitigate Further Spread of COVID-19 in New Jersey. March 16, 2020. Accessed September 2022. 9, https://www.nj.gov/governor/news/news/56 2020/20200316c.shtml
- 5. Goldhaber-Fiebert JD, Studdert DM, Mello MM. School Reopenings and the Community During the COVID-19 Pandemic. JAMA Health Forum. 2020;1(10):e201294.

doi:10.1001/jamahealthforum.2020.1294

- 6. Panchal U, Salazar de Pablo G, Franco M, et al. The impact of COVID-19 lockdown on child and adolescent mental health: systematic review. Eur Child Adolesc Psychiatry. August 18, 2021. https://doi.org/10.1007/s00787-021-01856-w
- 7. Gazmararian J, Weingart R, Campbell K, Cronin T, Ashta J. Impact of COVID-19 Pandemic on the Mental Health of Students From 2 Semi-Rural High Schools in Georgia. J Sch Health. 2021; 91(5), 356-369. https://doi.org/10.1111/josh.13007
- 8. Fegert JM, Vitiello B, Plener PL, Clemens V. Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality. Child Adolesc Psychiatry Ment Health. 2020; 14(20). https://doi.org/10.1186/s13034-020-00329-3
- 9. Shepherd HA, Evans T, Gupta S, et al. The Impact of COVID-19 on High School Student-Athlete Experiences with Physical Activity, Mental Health, and Social Connection. Int. J. Environ. Res. Public Health. 2021; 18(7), 3515. http://dx.doi.org/10.3390/ijerph18073515

- 10. Rao ME, Rao DM. The Mental Health of High COVID-19 School Students During the Pandemic. Front. Edu. 2021; 6. https://doi.org/10.3389/feduc.2021.719539
- 11. Hawrilenko M, Kroshus E, Tandon P, Christakis D. The Association Between School Closures and Child Mental Health During COVID-19. JAMA Netw Open. 2021: 4(9):e2124092. doi:10.1001/jamanetworkopen.2021.24092
- 12. Giannopoulou I, Efstathiou V, Triantafyllou G, Korkoliakou P, Douzenis A. Adding stress to the stressed: Senior high school students' mental health amidst the COVID-19 nationwide lockdown in Greece. Psych Res. 2021; 295, 113560.

https://doi.org/10.1016/j.psychres.2020.113 560

13. Ueda M, Nordström R, Matsubayashi T. Suicide and mental health during the COVID-19 pandemic in Japan. J Public Health. 2021; 44(3).

https://doi.org/10.1093/pubmed/fdab113

- 14. Liang L, Ren H, Cao R, et al. The Effect of COVID-19 on Youth Mental Health. Psychiatric Quarterly. 2020; 91(3), 841-852. https://doi.org/10.1007/s11126-020-09744-3
- 15. Zhang C, Ye M, Fu Y, et al. The Psychological Impact of the COVID-19 Pandemic on Teenagers in China. J Adolesc Health. 2020; 747-755. 67(6), https://doi.org/10.1016/j.jadohealth.2020.0 8.026
- 16. Yang D, Swekwi U, Tu CC, Dai X. Psychological effects of the COVID-19 pandemic on Wuhan's high school students. Child Youth Serv Rev. 2020; 119, 105634. https://doi.org/10.1016/j.childyouth.2020.10 <u>563</u>4
- 17. Qi M, Zhou SJ, Guo Z. The Effect of Social Support on Mental Health in Chinese Adolescents During the Outbreak of COVID-19. J Adolesc Health. 2020; 67(4), 514-518. https://doi.org/10.1016/j.jadohealth.2020.0 7.001
- 18. Fisher HH, Hawkins GT, Hertz M, Sliwa S, Beresovsky, ٧. Student and School Characteristics Associated With COVID-19-Related Learning Decline Among Middle and High School Students in K-12 Schools. J Sch Health. August 21, 2022; 92(11). https://doi.org/10.1111/josh.13243
- 19. Ali A. As student stress grows, so does pressure on teachers. NJ Spotlight News. January 28, 2022. Accessed August 18, 2022. https://www.njspotlightnews.org/2022/01/as

<u>-student-stress-grows-so-does-pressure-on-teachers/</u>

20. US Department of Health and Human Services. Office of the Surgeon General. Protecting Youth Mental Health: The U.S. Surgeon General's Advisory. 2021. Accessed August 18, 2022.

https://www.hhs.gov/sites/default/files/surge on-general-youth-mental-health-advisory.pdf

- 21. CDC Foundation. Mental Health Impact of the COVID-19 Pandemic on Teachers and Parents of K-12 Students. May 2021. Accessed September 29, 2022. <u>https://www.cdcfoundation.org/mentalhealth-triangulated-report?inline</u>
- 22. Vahratian A, Blumberg SJ, Terlizzi EP, Schiller JS. Symptoms of anxiety or depressive disorder and use of mental health care among adults during the COVID-19 pandemic — United States, August 2020–February 2021. MMWR Morbidity and Mortality Weekly Report. 2021;70(13):490-494.

doi:10.15585/mmwr.mm7013e2

- Hoke AM, Pattison KL, Molinari A, Allen K, Sekhar DL. Insights on COVID-19, school reopening procedures, and Mental Wellness: Pilot Interviews With School Employees. J Sch Health. August 15, 2022; 92(11). https://doi.org/10.1111/josh.13241
- 24. Baker CN, Peele H, Daniels M, et al. The experience of covid-19 and its impact on teachers' mental health, coping, and teaching. School Psychology Review. 2021;50(4):491-504.

https://doi.org/10.1080/2372966X.2020.18 55473

- 25. Kush JM, Badillo-Goicoechea E, Musci R J, Stuart EA. Teachers' Mental Health During the COVID-19 Pandemic. Educational Researcher. 2022;51(9), 593-597. https://doi.org/10.3102/0013189X221134 281
- 26. Twenge J, Joiner TE. Mental distress among U.S. adults during the COVID-19 pandemic. Journal of Clinical Psychology. 2020;76(12):2170-2182. <u>https://doi.org/10.1002/jclp.23064</u>
- Miyamae Y, Miyatake N, Miyamae J, et al. A pilot study evaluating the factors associated with psychological distress of school teachers in Kagawa Prefecture, Japan. Health. 2013;05(06):985-988.

doi:10.4236/health.2013.56130

28. Vasquez L. Unpacking the causes of pandemicera inflation in the US. National Bureau of Economic Research. September 9, 2023. Accessed November 20, 2023. https://www.nber.org/digest/20239/unpacking-causes-pandemic-era-inflation-us

- 29. Bill K, Bowsher A, Malen B, Rice JK, Saltmarsh JE. Making matters worse? covid-19 and teacher recruitment. *Phi Delta Kappan*. 2022;103(6):36-40. doi:10.1177/00317217221082808
- 30. Kessler psychological distress scale (K6+). Science Of Behavior Change. (n.d.). Accessed August 18, 2022. https://scienceofbehaviorchange.org/measure s/kessler-psychological-distress-scale-k6/
- Kessler RC, Barker PR, Colpe LJ, et al. Screening for serious mental illness in the general population. Archives of General Psychiatry. 2003; 60(2), 184-189. <u>https://doi.org/10.1001/archpsyc.60.2.184</u>
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, 32, 959–976.
- 33. K10 and K6 Scales. Harvard Medical School. Accessed December 15, 2021. https://www.hcp.med.harvard.edu/ncs/k6 sc ales.php
- 34. Levin Y, Rahel B, Goodwin R, Ben-Ezra M. Symptoms network analysis of serious mental illness: A cross disasters comparison. *medRxiv*. Published online 2021. doi:10.1101/2021.04.10.21255242
- 35. New Jersey Department of Education. New Jersey Comprehensive School-Based Mental Health Resource Guide. 2022. Accessed August 18, 2022. https://www.nj.gov/education/safety/wellnes

https://www.nj.gov/education/satety/wellnes s/mh/docs/NJDOE MentalHealthGuide.pdf

- New Jersey Department of Health. New Jersey State Health Assessment Data. Accessed August 22, 2022. <u>https://www-doh.state.nj.us/dohshad/topic/MentalHealth.html</u>
- Wilk AS, Hu J, Wen H, Cummings JR. Recent Trends in School-Based Mental Health Services Among Low-Income and Racial and Ethnic Minority Adolescents. JAMA Pediatr. 2022; 176(8):813–815.

doi:10.1001/jamapediatrics.2022.1020

- 38. Pattison KL, Hoke AM, Schaefer EW, Alter J, Sekhar DL. National Survey of School Employees: COVID-19, school reopening, and student wellness. J Sch Health. 2021; 91(5): 376-383. https://doi.org/10.1111/josh.13010
- Love HE, Schlitt J, Soleimanpour S, Panchal N, Behr C. Twenty Years of school-based health care growth and expansion. *Health Affairs*. 2019; 38(5), 755–764. <u>https://doi.org/10.1377/hlthaff.2018.05472</u>

- 40. Executive order no. 292. March 4, 2022. Accessed November 20, 2023. <u>https://www.nj.gov/infobank/eo/056murphy</u> <u>/pdf/EO-292.pdf</u>
- 41. End of the federal COVID-19 public health emergency (PHE) declaration. Centers for

Disease Control and Prevention. May 11, 2023. Accessed November 20, 2023. https://www.cdc.gov/coronavirus/2019ncov/your-health/end-of-phe.html