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ORIGINAL PAPER

Perceptions of Social–Emotional Learning Among K-12 Teachers in the USA During the COVID-19 Pandemic

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Abstract

Social–emotional learning (SEL) is the process of acquiring and applying knowledge, skills, and attitudes to achieve long-term relational and emotional goals. Teachers often implement SEL strategies in the classroom; however, shifting to online schooling during the COVID-19 pandemic may have impacted teachers' perceptions of their abilities to implement SEL. This study was designed to identify whether and how teachers' perceptions of SEL changed since the onset of the COVID-19 pandemic. Teachers ($N = 637$) in the USA completed a demographic questionnaire, the Depression, Anxiety, and Stress Scale (DASS-21), and rated their beliefs about SEL during the pandemic on a modified version of the Comfort and Culture subscales of the Teacher SEL Beliefs Scale. Data were collected between September 2020 and March 2021. Teachers indicated that they felt neutral to comfortable with SEL and that they felt neutral to supported by their school culture for SEL during the pandemic. Lower depression symptoms, greater school poverty, and perceived general support (not specific to SEL) from the administration were associated with higher teacher comfort with SEL. Further, greater general support from the district and colleagues was associated with greater school culture supporting SEL during COVID-19. Results suggest that addressing teachers' internalizing symptoms and fostering a supportive work environment is important in aiding teachers in SEL implementation.

Keywords Teachers · Social–emotional learning · COVID-19

Introduction

Classroom teachers are tasked with educating K-12 students in both academics and social–emotional learning strategies (SEL; Durlak et al., 2011). Social–emotional learning is defined as the process of acquiring and applying knowledge, skills, and attitudes directed at the development of healthy identities, management of emotions, goal setting, empathy, supportive interpersonal relationships, and responsible decision making (Collaborative for Academic, Social, & Emotional Learning [CASEL], 2021a). SEL may be implemented school-wide, classroom-wide, or as a curricular add-on separate from academic instruction (DePaoli, Atwell, & Bridgeland, 2017; Hoffman, 2009). Most SEL instruction is implemented by teachers (79%) with a smaller percent (21%) implemented by non-school personnel such as consultants or researchers (Durlak et al., 2011).

Effective SEL implementation is associated with improvements in K-12 students' social and emotional skills, attitudes, behaviors, and academic performance (Durlak et al., 2011), as well as decreases in externalizing behaviors (e.g., off-task, aggression), substance abuse, and increases in positive self-image (Sklad et al., 2012). SEL implementation is also associated with increases in teacher-reported efficacy for behavior management and decreased report of burnout (Domitrovich et al., 2016). Thus, SEL is associated with benefits for both teachers and students. In fact, promoting SEL in schools is so critical to students' and teachers' well-being that more than 20 states have adopted policies that support the implementation of SEL in grades K-12 (CASEL, 2021b), underscoring the importance of investigating barriers and facilitators to effective SEL implementation.

Researchers have proposed theoretical models suggesting community, school, classroom, provider/teacher, and innovation characteristics can influence the degree to which SEL is implemented (Durlak & DuPre, 2008; Jennings &

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Greenburg, 2009). Teacher comfort with SEL and school/administration support for the implementation of SEL are critical to its implementation (Domitrovich et al., 2019; Ferreira et al, 2020; Jennings et al., 2009; Ransford et al., 2009).

Comfort with SEL During the COVID-19 Pandemic

The pandemic was a time of high stress for many, including teachers. Teachers reported a high workload, rapid transition to remote instruction, loss of control over their work, and irregular hours, among other stressors (MacIntyre et al., 2020). These numerous stressors during the pandemic negatively impacted teachers' mental health and teaching self-efficacy (MacIntyre et al., 2020; Ozamiz-Etxbarria et al., 2021; Pressley & Ha, 2021; Pressley, 2021a, 2021b) and may also have led to changes in teachers' comfort with SEL.

At the onset of the pandemic, teachers displayed differing levels of comfort with implementing SEL. Two studies found that teachers indicated that they were neither comfortable nor uncomfortable with SEL (Brackett et al., 2012; Collie et al., 2012). However, a more recent study (Collie et al., 2015) found that teachers reported higher mean levels of comfort with SEL, indicating slight variability in comfort with SEL.

Studies conducted prior to the COVID-19 pandemic indicate that greater comfort with SEL implementation was associated with less teacher-reported stress, more teaching efficacy, more job satisfaction, higher self-efficacy for classroom management, and more engagement with students (Collie, et al., 2012; Goegan et al., 2017). Further, greater teacher comfort with SEL was correlated with less anxiety in students (Poulou et al., 2018). One potential interpretation of this is that teacher comfort with SEL may be related to adaptive student outcomes. If this is the case, SEL may be especially important at times when students are experiencing widespread and chronic stress, as it may serve as a means to teach students adaptive coping methods.

School and Administration Support for SEL During the COVID-19 Pandemic

A culture of support for SEL is another important factor associated with teachers' SEL implementation (Durlak et al., 2008; Jennings et al., 2009; Ransford et al., 2009). However, during the pandemic, administrators may have been more focused on ensuring that students had access to education, rather than focusing on providing support for SEL. At the start of the pandemic, 17% of teens in the USA did not have access to a reliable computer or high-speed internet connection (Auxier & Anderson, 2020), a necessity for remote learning, and 64% of administrators in impoverished districts identified lack of technology as a barrier to learning (Herold, 2020); therefore, it is possible that support for SEL may have taken a backseat. To date, only one study examined administrator support for SEL implementation during the COVID-19 pandemic (Zieher et al., 2021). This study found that administrator support predicted fewer teacher challenges in implementing SEL remotely and more teacher-implemented SEL. However, this study was limited by its sample that included both teachers and non-instructional staff (e.g., counselors, administrators, etc.), as well as its use of few validated measures for teachers' perceptions of SEL and well-being. For example, five items on a researcher-developed questionnaire assessed educators' perceived level of school/district guidance to support SEL, school/district priority on SEL, and educators' own priority on SEL. Additionally, the measure of teachers' well-being included three items extracted from the Emotional Exhaustion subscale of the Maslach Burnout Inventory rather than a complete measure.

Similar to teacher comfort with SEL, teachers' perceptions of the school culture's support for SEL also varied at the start of the pandemic. Specifically, in Brackett et al.'s (2012) study developing the Teacher SEL Beliefs Scale, teachers indicated feeling strongly that their school culture and principal both expect and support implementation of SEL. However, in a later study, Collie et al. (2015) reported that their two samples each suggested they felt neutral to positive about their school's SEL culture. Thus, variability existed in teachers' perceived support from the school culture for SEL prior to the COVID-19 pandemic.

Correlates of Teachers' Perceptions of SEL

Numerous teacher and school characteristics are associated with teachers' perceptions of SEL (Durlak et al., 2008; Ferreira et al., 2020; Ransford et al., 2009). These include teacher social and emotional well-being, perceived general support (unrelated to SEL) from colleagues and administrators, and school poverty level.

Teacher Social and Emotional Well-Being

Higher levels of social and emotional well-being in teachers is a notable facilitator of SEL implementation (Ferreira et al., 2020; Ransford et al., 2009). Specifically, lower levels of teacher-reported burnout and higher levels of self-efficacy are associated with more SEL implementation (Ransford et al., 2009). Teachers may report lower levels of comfort with SEL during the COVID-19 pandemic because pandemic-related stress may have depleted their emotional resources to provide SEL (MacIntyre et al., 2020; Pressley, 2021a). As such, we hypothesize that teachers will report low comfort with SEL and that teacher anxiety, stress, and depression will be associated with less comfort with SEL.

Perceived General Support (Unrelated to SEL) from Colleagues and Administrators

Additionally, a climate of supportiveness in general (i.e., not only related to SEL) both among colleagues and between teachers and administrators is important for SEL implementation and could therefore be related to teachers' perceptions of SEL. Specifically, a positive work climate characterized by collegiality, trust, and effective problem-solving among teachers is a notable facilitator to SEL implementation (Durlak et al., 2008). Effective leadership and administrative support may further promote SEL implementation (Durlak et al., 2008). Support from colleagues and administrators may have been particularly important during the COVID-19 pandemic because of teachers' heightened stress (MacIntyre et al., 2020; Pressley, 2021a) and increased isolation. Because these school-level factors are critical for SEL implementation, we hypothesize that greater teacher-reported general support from colleagues and administrators will be associated with more positive perceptions of SEL among teachers.

School Poverty

Lastly, ecological models of effective implementation stress the importance of community-level factors such as funding in promoting SEL practices in schools (Durlak et al., 2008). Adequate funding is a necessary prerequisite of SEL, as effective implementation requires funding to cover expenses such as purchasing materials, hiring and training staff, and diverting time and resources from academic instruction. Compared to middle- and high-income schools, SEL implemented in low-income schools tends to be less effective in improving teacher-reported student authority acceptance, cognitive concentration, social competence (Conduct Problems Prevention Research Group, 2010), aggression, and academic achievement in elementary students (Hughes et al., 2005). There are many reasons this could be the case. Less funding may lead to teachers having less training or resources to implement SEL. It may also be that students in impoverished districts experience numerous adversities such as discrimination, poverty, and low access to mental health treatment (Simpson et al., 2005; Tobler et al., 2013; Walsh et al., 2019), all of which may put students at greater risk for psychological distress (Grant et al., 2004). These factors may contribute to teachers' varying levels of comfort with SEL and perceived support from their school culture for SEL in impoverished districts relative to higher-resourced districts.

The COVID-19 pandemic had a disproportionate negative impact on low-income students in many ways (e.g., low access to internet and frequent disconnection of utilities that could prevent students from completing online schoolwork; Memmott et al., 2022; Vogels, 2020). This may have added a disproportionate amount of stress to teachers in underserved schools, perhaps leading to low levels of comfort with SEL and perceptions of low support from their school culture during the pandemic.

The Current Study

The premise underlying the current study is that the COVID-19 pandemic may have contributed to a lack of comfort in SEL implementation for teachers and reduced school and administrative support for SEL implementation. Further, the COVID-19 pandemic was a significant stressor for teachers; therefore, the first aim of the study was to gain an understanding of teachers' level of comfort and perceived support for implementing SEL during the COVID-19 pandemic. A second purpose of the current study was to examine whether teachers' comfort with SEL and perceived support from the school culture for SEL during the pandemic were related to teacher mental health, school poverty, or teachers' perceived global level of administrator and colleague support.

Several predictions were made regarding comfort with SEL and school support for SEL. First, it was expected that the level of teacher-reported comfort and perceived support from the school culture would be low, given the stressors of the pandemic. It was hypothesized that greater perceived general support from the school district/superintendent and other teachers would be associated with greater teacher-reported comfort with SEL and greater perceived support from the school culture for SEL during the pandemic. It was also expected that higher teacher-reported internalizing symptoms and school poverty would be associated with less comfort with SEL.

Methods

Participants

Teachers (K-12th grade) were recruited from posts on online social media sites such as Facebook, Twitter, and Reddit groups/pages specifically for teachers between September 2020 and March 2021. Additionally, recruitment emails were sent to administrators of school districts and school principals to disseminate to their teaching staff, as well as to teachers' groups and unions to send to their membership. Emails were also sent directly to teachers whose email addresses were available on school/district websites.

Initial inclusion criteria included being a teacher in the USA who taught in grades kindergarten through 12th grades and being able to speak and read English. This resulted in a sample of 817 teachers being recruited. However, data from 180 teachers were excluded from analyses. The majority of

excluded participants ($N = 122$) were eliminated for having incomplete data (e.g., 92 teachers completed only the consent form, 30 provided only demographic information without completing standardized measures), 39 were excluded for skipping attention check questions (questions that were included specifically to assess whether participants were actively paying attention to survey questions) or answering at least one incorrectly, 16 were excluded for teaching students outside the specified age/grade level range (inclusion criteria stated kindergarten through 12th grade), and 3 were excluded for not teaching full-time during the pandemic. Therefore, the final sample consisted of 637 K through 12 teachers.

The final sample of teachers was recruited from 49 states in the USA between September 2020 and March 2021. Most teachers identified as female, earned a Bachelor's or Master's degree, identified as White, and taught in public schools. Geographic setting of the school was balanced (i.e., 30.2% urban, 39.6% suburban, 29.5% rural), as was union membership (i.e., 50.1% union member, 49.9% nonunion). Teachers taught grades K through 3 (17.6%), 4 through 6 (12.7%), 7 and 8 (12.7%), 9 through 12 (35.4%), "other" grades (e.g., special education; 1.0%), and a combination of grade levels (20.5%). Table 1 reports demographic information for the final sample, as well as characteristics of the schools in which they teach.

It should be noted that teachers who failed to complete the study reported fewer years teaching than teachers included in the final sample, $F(1, 704) = 7.42$, $p < 0.01$. Compared to teachers included in the final sample, excluded teachers also less frequently reported earning Bachelor's or Master's degrees (χ^2 (2, 817) = 278.73, $p < 0.001$). Excluded teachers also more frequently identified as male (χ^2 (1, 716) = 8.10, $p < 0.01$) than teachers included in the final sample. Differences based on race and ethnicity could not be calculated due to small samples of teachers who identified as Black/African American, Hispanic/Latinx, Asian/Asian American, Native Hawaiian/Pacific Islander, First Nations/Indigenous/Native American, and multiracial. All results should be interpreted within the context of these sample characteristics. The study (IRB# 20201156) was approved by Case Western Reserve University's Institutional Review Board.

Procedure

After completing the informed consent process, teachers were asked to complete a Qualtrics survey that included demographic information, questions about the impact of COVID-19 on their teaching, and measures of mental health and coping. Notably, the Qualtrics survey was developed to capture a wider breadth of data than are presented below; the current study utilized only a subset of measures and data from the entire survey. At the end of the survey, teachers were informed that they could enter their contact information into a separate survey if they wished to be entered into a raffle to win a $25 gift card. If they chose to enter their contact information, this information was maintained separately from their responses to study questionnaires.

Measures

Outcome Measure

SEL Beliefs The Teacher SEL Beliefs Scale (Brackett et al., 2012) is a 12-item scale that assesses teachers' comfort with, commitment to, and school culture surrounding SEL. The scale consists of three subscales: Comfort, Commitment, and Culture; however, for the current study, the four-item Commitment subscale was not administered. The Commitment subscale measures teachers' interest in attending workshops to improve their SEL skills and their belief that all teachers should receive SEL training. Because many workshops and trainings were canceled or put on hold during the COVID-19 pandemic, we decided not to include this subscale in the survey. The four-item Comfort subscale measures teachers' perceived confidence and comfort in their own abilities to implement SEL. Lastly, the four-item Culture subscale measures teachers' perceptions of support for SEL from their principal and school. Teachers were asked to rate their agreement with each item "For the current/upcoming semester" using the standard Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

In Brackett et al.'s (2012) initial validation sample of 935 K-8 teachers in the USA, these three scales were found to have adequate internal consistency (Cronbach's α from 0.74 to 0.82) and validity. In the current study, the internal consistency of the Comfort subscale was adequate (Cronbach's $\alpha = 0.87$); however, the internal consistency of the Culture subscale was Cronbach's $\alpha = 0.68$, suggesting less than adequate internal consistency. An item analysis or inspection of the four items on the Culture subscale revealed that one item ("My school expects teachers to address children's social and emotional needs,") was poorly correlated with the scale total ($r = 0.23$). Because this item was interfering with the subscale's internal consistency, it was removed. The three-item Culture subscale had improved internal consistency (Cronbach's $\alpha = 0.74$). Collie et al. (2015) also used a three-item Culture subscale because three items was a better fit in a confirmatory factor analysis in their earlier study (Collie et al., 2012); thus, there is a precedent for a three-item Culture subscale.

Because we modified the original 12-item rating scale instructions to provide the time point of "during the current or next semester," and removed one item from the Culture subscale, we wanted to ensure that the factor structure remained consistent with the original measure. Confirmatory

Table 1 Sample characteristics ($N = 637$)

Sample characteristic	*N* (%)
Gender	
Female	519 (81.5%)
Male	113 (17.7%)
Gender non-binary/nonconforming/fluid	3 (0.5%)
Education level	
Bachelor's degree	222 (34.9%)
Master's degree	356 (55.9%)
Other[a]	59 (9.3%)
Race and ethnicity	
White	548 (86.4%)
Hispanic/Latinx	30 (4.7%)
Black/African American	18 (2.8%)
Asian/Asian American	11 (1.7%)
Native American/Indigenous/First Nations	4 (0.6%)
Native Hawaiian/Other Pacific Islander	1 (0.2%)
Multiracial/multiethnic	20 (3.1%)
Different identity not listed	2 (0.3%)
Household income	
Less than $50,000 per year	121 (19.0%)
$50,000 to $80,000 per year	182 (28.6%)
$80,000 to $100,000 per year	124 (19.5%)
$100,000 to $200,000 per year	181 (28.4%)
Greater than $200,000 per year	26 (4.1%)
Teaching format[b]	
Exclusively in person 5 days per week	70 (12.3%)
In person 1–5 days per week with additional in-person, virtual, and/or hybrid formats	83 (14.6%)
Exclusively in hybrid[c] format	120 (21.1%)
Hybrid[c] with additional in-person, virtual, and/or hybrid formats	78 (13.7%)
Exclusively online	189 (33.2%)
Online plus other in-person, virtual, and/or hybrid formats	95 (16.7%)
Exclusively teaching subsets of students in person[d]	37 (6.5%)
Teaching subsets in person with additional in-person, virtual, and/or hybrid formats[d]	62 (10.9%)
Exclusively teaching in "other" format	3 (0.5%)
Teaching in "other" format with additional in-person, virtual, and/or hybrid formats	30 (5.3%)
School setting	
Teaches in public school	447 (75.9%)
Teaches in private school	54 (9.2%)
Teaches in public charter school	43 (7.3%)
Teaches in parochial school	9 (1.5%)
Teaches in Montessori school	2 (0.3%)
Teaches in other type of school[e]	34 (5.8%)
Age *M* (SD)	38.9 (10.6)
Years teaching *M* (SD)	12.0 (8.8)

[a]"Other" includes associates degrees, doctoral degrees, high school/GED, some college, and endorsement of "other" levels of education

[b]Total adds up to more than 100%

[c]Teachers endorsed using a hybrid of teaching in person and online

[d]Teachers endorsed teaching a subset of students in person a few days per week and another subset of students on the other days of the week

[e]Teachers endorsed teaching in numerous types of schools (e.g., public charter and Montessori schools, private and public charter schools, parochial Montessori schools) or schools not included in the options presented (e.g., magnet schools, Tribal schools)

factor analysis (CFA) was conducted in AMOS on the Comfort and Culture subscales. All estimated parameters of the hypothesized two-factor structure were significant and resulted in a good fit based on these criteria: Root-Mean-Square Error of Approximation (RMSEA) = 0.06, at or below 0.06 indicates moderate fit; Comparative Fit Index (CFI) = 0.98 and Tucker-Lewis Index (TLI) = 0.96, for both ≥ 0.95 indicates good fit (Hu & Bentler, 1999). The chi-square examining model fit was statistically significant χ^2 (13, 415) = 39.09, $p < 0.001$. Because this test is sensitive to large sample sizes, the Chi-square is deemed an acceptable fit when the ratio between Chi-square and degrees of freedom falls below 5 (Marsh & Hocevar, 1985). Here, the ratio was 39.09/13 = 3.01, falling within the acceptable range. The results of the CFA, therefore, support the two-factor structure and the use of the Comfort and Culture subscales.

Predictor Variables

Teacher and School Information Demographic information assessed included the number of years spent teaching in schools, teacher age, race, ethnicity, annual household income, and gender. Information about teachers and their schools included geographic setting of the school (i.e., rural, urban, suburban), setting of the school (e.g., public, private, parochial, Montessori), and teacher union membership.

School Poverty School poverty was assessed with one question: "What percent of students in your school receive free or reduced-price lunch (just estimate)?" Teachers could choose one of the following: 0–19%, 20–49%, 50–74%, and 75–100%. This variable was coded such that 0–19% = 1, 20–49% = 2, 50–74% = 3, and 75–100% = 4. Several other researchers have utilized reduced price/free lunch as a measure of poverty (Bridgeland et al., 2013; Grant et al., 2004; Ransford et al., 2009).

General Colleague and District Support Perceived level of general supportiveness (i.e., not specific to SEL) received from school professionals was also assessed. More specifically, teachers were asked, "How supportive do you find the following?" and were then presented with a matrix table that included "school district/superintendent and "other teachers in your school." Teachers then rated their level of colleague support and district support on a five-point scale ranging from 0 (Not at all Supportive) to 5 (Very Supportive).

Internalizing Symptoms The Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995) was used to examine internalizing symptoms within the past week. A total score and three subscales (Depression, Anxiety, and Stress) are obtained from this scale. The Depression subscale consists of seven items that assess symptoms associated with depressed mood, such as sadness, worthlessness, and hopelessness. The seven-item Anxiety subscale measures physical arousal, panic attacks, and fear. The seven-item Stress subscale assesses tension, irritability, and heightened reactions to stressful events. The measure has good psychometric properties, including internal consistency (i.e., Cronbach's α ranging from 0.82 to 0.94 for the three subscales and 0.93 for the Total scale), construct validity (i.e., fulfilling model fit criteria for a confirmatory factor analysis, SRMR ≤ 0.08, RMSEA < 0.06), and concurrent validity (i.e., r between the Total scale and the Negative Affect and Positive Affect scales of the Positive and Negative Affect Schedule 0.69 and − 0.40 respectively; Antony et al., 1998; Clara et al., 2001; Henry & Crawford, 2005). In the current study, the internal consistencies of the DASS-21 subscales were Cronbach's $\alpha = 0.88$ (Stress), Cronbach's $\alpha = 0.85$ (Anxiety), and Cronbach's $\alpha = 0.90$ (Depression).

Potential Covariates Several variables included in the Qualtrics survey were explored as potential covariates for main analyses. These included characteristics of teachers (i.e., teacher age, years teaching, union membership, race, ethnicity, gender, education level, and grade levels taught) and their schools (i.e., public, private, or other type of school; urban, suburban, or rural location; online, in-person, or hybrid teaching format during the pandemic). Teacher age and years of teaching were used as continuous variables. Union membership was treated as a dichotomous variable (1 = union, 0 = nonunion), as was teacher ethnicity (1 = Hispanic/Latinx, 0 = not). The variables for teacher race were initially coded such that each racial identity was a dichotomous variable (e.g., 1 = Black/African American, 0 = not; 1 = Asian/Asian American, 0 = not). Although teachers reported identifying with a variety of ethnicities and racial identities, the group sizes for most groups were too small to conduct valid analyses. Therefore, preliminary analyses were not conducted with these variables.

Remaining variables were treated as categorical variables. Gender was coded such that 1 = Male, 2 = Female, and 3 = Gender nonbinary/non-conforming/fluid. Education level was coded with 1 = Bachelor's degree, 2 = Master's degree, and 3 = other (e.g., Associate's degree, Doctorate). The variable for grade levels taught was coded such that each cluster of grade levels (e.g., K-3, 4–6, 7–8, and 9–12) was given their own category and teachers endorsing multiple categories were given a separate category. School type was coded similarly, with separate groups for public schools, private schools, public charter schools, and other types of schools (e.g., Montessori, parochial, private charter schools), as well as another category for teachers who endorsed multiple school types (e.g., parochial Montessori, public charter Montessori). Similarly, the geographic location of schools had three groups (i.e., urban, suburban, rural). Lastly, five

variables assessed teaching format during the pandemic (i.e., online, in person, hybrid format, teaching subsets of students in person, and "other"). These five variables were coded such that 0 = did not teach in this format; 1 = taught only in this format, e.g., taught in person only or online only; and 2 = taught in this format but not exclusively, e.g., taught online and with a subset of students present in the classroom.

The variables assessing teacher race, school type, and grade level were coded by three trained undergraduate research assistants. The first author was the master coder who reviewed each research assistant's codes and calculated the agreement between each pair of raters. Two research assistants coded each variable, with discrepancies resolved with discussion. Raters achieved near perfect agreement for almost all variables (Cohen's κ from 0.90 to 1.00) and substantial agreement for the variable assessing "Other" grade levels taught (Cohen's $\kappa = 0.66$).

Planned Analyses

Descriptive statistical analyses (e.g., means, frequencies) were conducted to understand the demographic characteristics of the sample (e.g., teacher race, ethnicity, age, years teaching), as well as characteristics of their schools (e.g., public or private, grade levels taught, rural or urban or suburban, etc.). Additionally, descriptive analyses were conducted on the Teacher SEL Beliefs Scale (Brackett et al., 2012) Comfort and Culture subscales to examine the level of teacher comfort with SEL and teachers' perceptions of the degree to which the school culture supported SEL during the COVID-19 pandemic. Further, to test assumptions for regression analyses, Pearson correlations between each outcome variable (i.e., each "for the current/upcoming semester" subscale on the modified Teacher SEL Beliefs Scale) and continuous predictor variables were conducted. Potential predictor variables included teacher-reported internalizing symptoms (the DASS-21 Depression, Anxiety, and Stress subscales), district general support, colleague general support, teacher age, years teaching, and the poverty proxy variable (teacher-reported percent of students with reduced price/free lunch). For categorical predictor variables, analyses of variance (ANOVA) were used to determine their association with the outcome variables. Categorical predictor variables include teacher gender, teacher education level, union membership, teacher household income, school geographic location (i.e., urban, suburban, rural), school type (e.g., public, private, charter, etc.), and teaching format during COVID-19 (i.e., online, in person).

To address the first aim of the study to understand the levels of teacher-reported comfort with and school culture support for SEL during COVID-19, the mean scores on the Comfort and Culture subscales of the Teacher SEL Beliefs Scale (Brackett et al., 2012) were calculated. Then, two linear regressions were conducted to test the two hypotheses that greater colleague and district support will be associated with higher Comfort and Culture scores, whereas higher teacher-reported internalizing symptoms and school poverty will be associated with lower Comfort scores. The outcome variable in the first regression consisted of the during COVID Comfort subscale. The outcome variable in the second regression consisted of the during COVID Culture subscale. In both linear regressions, hypothesized predictors included: teacher-reported internalizing symptoms as measured by the Depression, Anxiety, and Stress subscales of the DASS-21; school poverty as measured by a proxy variable of the percent of students receiving reduced price/free lunch; colleague general (i.e., not specific to SEL) support; and district general support.

Because of the numerous analyses conducted, Holm's step-down procedure was utilized to adjust target p values (Holm, 1979). While other methods of correcting for multiple comparisons are often utilized (e.g., Bonferroni correction), Holm's step-down procedure was chosen to minimize the potential for Type I error, as the Bonferroni correction does, but also to minimize the potential for Type II errors when adjusting p values. In the current study, Holm's step-down procedure was applied to "families" of p values as defined by type of statistical test. In other words, the procedure was applied to two groups of ANOVAs that were completed as preliminary analyses, and to each of the two linear regressions conducted. This method enabled us to identify statistically meaningful results while striking a balance between over- and under-identifying significant relationships.

Results

Power analyses were conducted with G*Power 3.1.9.4 to determine if primary analyses would be adequately powered. Because Holm's step-down procedure would be used, the most stringent alpha that would be applied, 0.001, was used for power analyses. For the planned multiple linear regressions with a desired medium effect size of 0.15 and with 6 predictors, a sample of 245 is required for an adequately powered analysis (i.e., $\beta = 0.95$). With the current sample, all analyses were adequately powered. Missing value analysis was also conducted, and data were found to be missing completely at random (Little's MCAR test $p = 1.00$). Listwise deletion was used for participants who missed any data that was included in analyses; therefore, the sample size for each analysis differs but is still large enough to detect effects.

Descriptive Results

The mean for the Comfort subscale of the modified Teacher SEL Beliefs Scale indicated that during the COVID-19 pandemic, teachers reported feeling neutral to comfortable with SEL, as mean scores on the Comfort subscale were 14.82 (SD = 3.49), indicating teachers selected "Neither Agree nor Disagree" or "Agree" on average. Teachers also reported a perception that their school culture had a neutral to supportive stance toward SEL, as the mean score was 11.35 (SD = 2.75), suggesting teachers also reported "Neither Agree nor Disagree" or "Agree" on average as well (see Table 2).

Table 2 Means of outcome and predictor variables

Sample characteristic	Possible range	*M* (SD)
Outcome variables		
Comfort during COVID-19	4–20	14.82 (3.49)
Culture during COVID-19	3–15	11.35 (2.75)
Predictor variables		
School poverty		
Percent receiving reduced price/free lunch[a]	1–4	2.49 (1.05)
Perceived general support		
Colleague support[b]	1–5	4.19 (0.92)
District support[b]	1–5	3.11 (1.31)
Teacher mental health		
DASS-21 Depression score	0–21	6.17 (5.11)
DASS-21 Anxiety score	0–21	4.81 (4.43)
DASS-21 Stress score	0–21	8.49 (4.96)

[a] 1 = 0–19%; 2 = 20–49%; 3 = 50–74%; 4 = 75–100%

[b] 1 = Not at all supportive; 2 = A little supportive; 3 = Moderately supportive; 4 = Quite supportive; 5 = Very supportive

Primary Results

Before the planned linear regressions were conducted, Pearson correlations were conducted to determine if hypothesized predictors (i.e., teacher internalizing symptoms, colleague support, district support, school poverty level) and potential covariates (i.e., teacher age, years teaching) were associated with the outcome variables, the during COVID-19 Comfort and Culture subscales (see Table 3). After applying Holm's step-down procedure, higher teacher-reported stress was related to lower perceived school support for SEL ($r = -0.20$, $p < 0.001$) but not comfort with SEL ($r = -0.13$, $p = 0.01$). Higher teacher-reported depressive symptoms were related to less comfort with SEL ($r = -0.21$, $p < 0.001$) and less perceived school support for SEL ($r = -0.26$, $p < 0.001$). Greater teacher-reported anxiety was not related to comfort with SEL ($r = -0.08$, $p = 0.12$) but was related to less perceived support for SEL ($r = -0.21$, $p < 0.001$). More perceived general district support was associated with greater comfort with SEL ($r = 0.20$, $p < 0.001$) and greater perceived school support for SEL ($r = 0.45$, $p < 0.001$). Similarly, more perceived colleague support was associated with greater perceived support from the school culture for SEL ($r = 0.26$, $p < 0.001$) but not comfort with SEL ($r = 0.13$, $p < 0.01$). Teacher-reported school poverty levels (as assessed by teachers' reports of the percent of students in their school receiving reduced price lunch) were not associated with teacher comfort with SEL ($r = 0.11$, $p < 0.05$) nor with school culture for SEL ($r = 0.02$, $p = 0.75$). Teacher age was also not associated with teacher-reported comfort with SEL ($r = 0.10$, $p < 0.05$) and school culture supporting

Table 3 Correlations among outcome variables and predictor variables

	1	2	3	4	5	6	7	8	9	10
1. Comfort	1	.372**	− .125*	.077	− .205**	.197**	.132**	.109*	.100*	.085
2. Culture		1	− .202**	− .210**	− .262**	.446**	.261**	.016	.117*	.096
3. DASS Stress			1	.717**	.724**	− .281**	− .192**	.031	− .178**	− .183**
4. DASS Anxiety				1	.678**	− .183**	− .181**	.031	− .177**	− .197**
5. DASS Depression					1	− .322**	− .223**	.017	− .192**	− .236**
6. District general support						1	.231**	− .080	.215**	.164**
7. Colleague general support							1	− .058	.108*	.119**
8. % of students in school receiving reduced price lunch								1	− 0.30	− .075
9. Teacher age									1	.814**
10. Years teaching										1

**$p < 0.01$ before Holm's step-down procedure

*$p < 0.05$ before Holm's step-down procedure

SEL ($r = 0.12$, $p < 0.05$). Lastly, years teaching in a school was associated with neither comfort ($r = 0.09$, $p = 0.08$) nor culture ($r = 0.10$, $p = 0.05$).

To determine whether there were differences in the Comfort or Culture subscale based on teacher or school characteristics, one-way analyses of variance (ANOVA) were conducted on categorical predictor variables (e.g., gender, degree, teacher income, school geographic setting, grade level taught, and teaching format). After Holm's step-down procedure, no differences emerged between male and female teachers on the Comfort ($F(1, 412) = 4.54$, $p = 0.03$, partial $\eta^2 = 0.01$) nor Culture subscale ($F(1, 411) = 0.58$, $p = 0.45$, partial $\eta^2 = 0.00$). There were also no differences based on teacher degree (i.e., Comfort: $F(2, 413) = 1.41$, $p = 0.25$, partial $\eta^2 = 0.01$; Culture: $F(2, 412) = 1.17$, $p = 0.31$, partial $\eta^2 = 0.01$), teacher union membership (Comfort: $F(1, 389) = 3.59$, $p = 0.06$, partial $\eta^2 = 0.01$; Culture: $F(1, 387) = 2.22$, $p = 0.14$, partial $\eta^2 = 0.01$), and teacher household income (Comfort: $F(6, 408) = 1.02$, $p = 0.41$, partial $\eta^2 = 0.02$) Culture: $F(6, 407) = 0.73$, $p = 0.63$, partial $\eta^2 = 0.01$).

Additionally, no differences emerged in either Comfort ($F(2, 409) = 2.47$, $p = 0.09$, partial $\eta^2 = 0.01$) nor Culture ($F(2, 408) = 2.69$, $p = 0.07$, partial $\eta^2 = 0.01$) based on school geographic location (i.e., urban, suburban, rural). Further, ANOVAs were conducted to investigate differences based on school type (public, private, public charter, etc.). No differences emerged based on school type for the Comfort ($F(4, 410) = 0.04$, $p = 1.00$, partial $\eta^2 = 0.00$) and Culture ($F(4, 409) = 0.77$, $p = 0.55$, partial $\eta^2 = 0.01$) scales. No differences emerged on the Comfort ($F(4, 409) = 1.35$, $p = 0.25$, partial $\eta^2 = 0.01$) and Culture ($F(4, 408) = 2.16$, $p = 0.07$, partial $\eta^2 = 0.02$) scales based on grade levels taught.

Further, ANOVAs investigated if the Comfort and Culture scales differed by teaching format. After Holm's step-down procedure, all ANOVAs conducted on teaching format variables indicated no differences on teacher-reported Comfort and Culture scores (all $p > 0.05$). In the ANOVA analyzing group differences based on teaching in person, the assumption of homogeneity of error variance was violated. Given that the group sizes were sharply unequal, Welch's test and the Games–Howell post hoc tests were completed and also found no group differences. Because none of the analyses examining the Comfort or Culture subscales based on teacher or school characteristics yielded significant results, they were not included as covariates in main analyses.

After testing assumptions and identifying covariates, two linear regressions were conducted to determine characteristics of teachers associated with comfort with and school culture for SEL after the onset of COVID-19 (Table 4). Predictor variables included teacher-reported depression, anxiety, and stress, colleague general support (not specific to SEL), district general support (not specific to SEL), and school poverty. In the regression using comfort with SEL as the outcome variable, the overall model was significant ($F(6, 357) = 8.01$, $p < 0.001$, $R = 0.34$, $R^2 = 0.12$). After applying Holm's step-down procedure, greater general district support (not specific to SEL; $B = 0.45$, SE $B = 0.14$, $\beta = 0.18$, $p = 0.001$), higher school poverty, ($B = 0.51$, SE $B = 0.17$, $\beta = 0.15$, $p = 0.002$) and lower teacher-reported depression ($B = -0.13$, SE $B = 0.05$, $\beta = -0.20$, $p = 0.01$) were associated with higher comfort with SEL during the COVID-19 pandemic. Unexpectedly, higher self-reported anxiety ($B = 0.04$, SE $B = 0.06$, $\beta = 0.05$, $p = 0.49$), stress ($B = 0.01$, SE $B = 0.05$, $\beta = 0.02$, $p = 0.83$), and colleague general support ($B = 0.40$, SE $B = 0.21$, $\beta = 0.10$, $p = 0.05$) were unrelated to comfort with SEL during COVID-19.

In the second regression, the outcome variable was teachers' perceptions of the degree to which there was a school culture supportive of SEL during COVID on the Teacher SEL Beliefs Scale, with predictor variables remaining the same. The model for this regression was also significant ($F(6, 358) = 21.41$, $p < 0.001$, $R = 0.51$, $R^2 = 0.26$). After Holm's step-down procedure was applied, greater general district support (not specific to SEL; $B = 0.83$, SE $B = 0.10$, $\beta = 0.40$, $p < 0.001$) and colleague general support ($B = 0.57$, SE $B = 0.15$, $\beta = 0.18$, $p < 0.001$) were associated with greater school culture supporting SEL during COVID-19. School poverty ($B = 0.22$, SE $B = 0.12$, $\beta = 0.08$, $p = 0.07$)

Table 4 Unstandardized and standardized beta coefficients and standard error of regressions with comfort with SEL and SEL culture as outcome variables[a]

	B	SE *B*	*β*
Comfort with SEL[b]			
Reduced lunch	0.51	0.17	0.15**
District support	0.45	0.14	0.18**
Colleague support	0.40	0.21	0.10
DASS Depression	− 0.13	0.05	− 0.20*
DASS Anxiety	0.04	0.06	0.05
DASS Stress	0.01	0.05	0.02
SEL Culture[c]			
Reduced lunch	0.22	0.12	0.08
District support	0.83	0.10	0.40***
Colleague support	0.57	0.15	0.18***
DASS Depression	− 0.03	0.04	− 0.06
DASS Anxiety	− 0.08	0.04	− 0.12
DASS Stress	0.04	0.04	0.07

[a]Teachers were not included in analyses if they had missing data for predictor or outcome variables

[b]$F(6, 357) = 8.01$, $p < .001$, $R = 0.34$, $R^2 = 0.12$

[c]$F(6, 358) = 21.41$, $p < 0.001$, $R = 0.51$, $R^2 = 0.26$

***$p < 0.001$

**$p < 0.01$

*$p < 0.05$

and teacher-reported depression ($B = -0.03$, SE $B = 0.04$, $\beta = -0.06$, $p = 0.39$), anxiety ($B = -0.08$, SE $B = 0.04$, $\beta = -0.12$, $p = 0.08$), and stress ($B = 0.04$, SE $B = 0.04$, $\beta = 0.07$, $p = 0.35$) were not associated with teacher-reported school support for SEL during COVID-19.

Discussion

The sudden onset of the COVID-19 pandemic led to changes in K-12 education for students and teachers (MacIntyre et al., 2020; Pressley, 2021a; Tan, 2021). Because the pandemic has placed new demands upon teachers (MacIntyre et al., 2020) and perhaps restricted the already limited time teachers had for implementing SEL (DePaoli et al., 2017), we believed that the outbreak of COVID-19 may have impacted teachers' perceptions of SEL. Therefore, the first goal of this study was to evaluate teachers' reports about their comfort with and support for SEL during the pandemic.

Teachers indicated feeling neutral to comfortable with SEL during the pandemic. This is consistent with two pre-pandemic studies that found means in the same range (Brackett et al., 2012; Collie et al., 2012). However, one study (Collie et al., 2015) found teachers indicating a higher mean level of comfort with SEL. In spite of this, the current results suggest that teachers' comfort with SEL has not changed drastically since the onset of COVID-19. While this may be an unexpected finding, especially given the numerous stressors and changes to their teaching (Jones et al., 2022; MacIntyre et al., 2020), it nonetheless bodes well for SEL implementation that teachers' comfort with SEL remained unwavering in the face of the pandemic.

Similarly, in the current study, teachers also reported feeling neutral to supported by their school culture for SEL. This finding is also consistent with pre-pandemic literature, as teachers reported similar means in one study (Collie et al., 2015). However, the mean level of school culture for SEL found in the current study is slightly lower than another pre-pandemic study (Brackett et al., 2012). This suggests that there may be room for administrators to increase the degree to which they foster teachers' use of SEL in schools, especially during times of high stress. In an earlier study, educators who perceived greater school/district guidance to support SEL during the COVID-19 pandemic showed greater SEL implementation with students during distance learning and greater use of social–emotional strategies themselves (Zieher et al., 2021). Less support and implementation of SEL in schools has the potential to negatively impact students' behavior and social–emotional development as well as teachers' job satisfaction and well-being (Collie et al., 2015; Goegan et al., 2017). Therefore, it is imperative that administrators foster a culture of SEL in their schools and support teachers in their SEL implementation during times of heightened stress, such as the pandemic, closures due to natural disasters or flu outbreaks, or in response to community or global tragedies. This can be accomplished through SEL training for teachers and increased school budget resources devoted to SEL (DePaoli et al., 2017), as well as through encouraging teachers to use adaptive coping strategies to address their own stress to promote teacher wellness and help teachers model the use of wellness techniques to their students.

After establishing the nature of teachers' comfort with SEL during the COVID-19 pandemic, an investigation of the variables that were associated with teachers' perceptions of their comfort with SEL and school culture supporting SEL was undertaken. Lower depression was associated with greater comfort with SEL, as was higher general district support and greater school poverty. The associations between teacher depression, higher general district support, and comfort with SEL underscore the importance of schools providing a supportive environment that emphasizes the well-being of teachers and prevents teacher psychological symptoms and burnout. Lower teacher-reported burnout and higher self-efficacy have been associated with more SEL implementation in previous research (Ransford et al., 2009). Teachers who are experiencing their own psychological distress may have fewer internal resources to implement SEL and may also benefit from training in standardized SEL administration techniques, SEL resources, administrative support, and resource lists for making referrals when children's needs exceed that which may be addressed through SEL during the school day (Cahill et al., 2020). Further, as Durlak and colleagues (2008) suggested, teachers may benefit from continued supervision with an expert in SEL administration, such a school counselor, who can provide additional training, help teachers to troubleshoot when challenges arise, and provide support to teachers. These additional resources may be helpful for all teachers but may be especially beneficial to implement in the future during difficult circumstances when teachers may be experiencing their own psychological distress.

Further, greater teacher-reported school poverty as measured by a proxy variable (i.e., percent of students who receive a free/reduced price lunch) was also associated with greater teacher-reported comfort with SEL during the COVID-19 pandemic. There are many reasons why this may be the case. Prior to the pandemic, low-income youth were particularly at-risk for emotional and behavioral problems due to increased exposure to adverse childhood experiences, lower access to resources, and more experiences of discrimination (Grant et al., 2004; Simpson et al., 2005; Tobler et al., 2013; Walsh et al., 2019). In addition, COVID-19 had a disproportionate impact on low-income youth. Specifically, low-income youth are more likely to contract COVID-19 than wealthier children (Goyal et al.,

2020), face more barriers to completing schoolwork remotely than wealthier children (Vogels, 2020), and have parents who experienced more instrumental and financial hardships (e.g., reduced pay, job loss) than higher-income parents (Chen et al., 2021). Teachers may have recognized the disproportionate impact of COVID-19 on low-income students and rose to the challenge by implementing SEL more frequently for these students. Alternatively, teachers in impoverished schools may have more training in SEL programs and strategies to meet the complex needs of their students, therefore leading to greater teacher comfort with SEL during the pandemic.

Lastly, greater perceived support from the school district and colleagues generally (i.e., not specific to SEL) was associated with greater perceived support from the school culture for SEL. This is consistent with literature suggesting that a positive work climate is a critical facilitator to SEL implementation (Durlak et al., 2008). Although this finding was expected, this highlights the necessity of a positive and supportive workplace environment for teachers in their journey toward SEL implementation, especially in the context of notable stressors (e.g., resurgences in the COVID-19 pandemic, natural disasters, etc.).

Importantly, these findings should be taken with a degree of caution as the significant predictors accounted for a small portion of the variance in these regressions (i.e., $R^2 = 0.12$ and 0.26), which suggests that other factors that we did not examine explain teacher-reported comfort with and culture supporting SEL during the pandemic. Specifically, other factors that may be associated with teachers' perceptions of SEL include the amount of prior training teachers received in SEL, the type of SEL implementation in the school (i.e., school-wide or just in one classroom; administered to all students or only high-risk students), SEL resources provided to teachers, teachers' own social–emotional skills (Goegan et al., 2017; Poulou et al., 2018), cultural factors (Poulou et al., 2018), school, county, and state educational policies about SEL implementation, and the behaviors and social–emotional competence of their students (Poulou et al., 2018).

Notably, teacher-reported internalizing symptoms were unrelated to their perceived support from their school culture for SEL. Though these were related in preliminary analyses, this relationship became non-significant when other variables were included in the model. Even if teacher internalizing symptoms are associated with their view of school culture, this association may be suppressed by other more meaningful factors such as administrator supportiveness. For example, teacher depression, anxiety, and stress may be less impactful or perhaps even remediated by administrator support in their view of the school's support for SEL.

Limitations and Future Directions

The present study contains some limitations that warrant attention. Specifically, the sample was predominantly White (86.4%) and included mostly female teachers (81.5%). Additionally, numerous demographic differences emerged between teachers excluded versus those included in the study. However, the representativeness of the final sample is largely consistent with national averages (National Center for Education Statistics, 2020). Future studies should include more racially diverse samples. Additionally, listwise deletion was used to manage missing data in the present study. While this is not ideal, the data missing completely at random and large sample size are strengths that potentially account for any bias introduced into the data by using this method.

Another limitation is that perceived general support from the district and colleagues was measured with a single item rather than a standardized measure, thus leaving an important future direction for researchers. The measure of school poverty was also assessed by teacher report. Other studies used publicly reported information about their school districts to assess poverty level; however, those studies were limited to few school districts, whereas the present study utilized a larger, more representative nationwide sample, thus impairing our ability to use any other means of assessing the poverty levels in participants' schools. Further, teachers provided their own perceptions of the degree to which principals and school administrators expected them to implement SEL; however, we have no data on how accurate these perceptions were.

Additionally, the current study did not collect data on teachers' training in SEL or the extent to which an SEL curriculum is implemented school-wide. Future studies should investigate how teachers were trained in the implementation of SEL both in the classroom and during distance learning. Because this study focused exclusively on teachers, no data were collected on student outcomes, limiting our ability to draw conclusions about the relationship between teachers' perceptions of SEL and students' well-being during the COVID-19 pandemic. Future studies should measure student outcomes. Further, it remains unclear to what extent SEL policy facilitated teacher perceptions of SEL or shaped the administrative culture of SEL during COVID-19. While this would have been a valuable avenue to investigate, this was outside the scope of the present study. Future researchers may wish to investigate the impact of state and local policy on teachers' perceptions of SEL, especially in the wake of the pandemic.

In contrast to these limitations, the current study included several strengths. The large sample size and representation of teachers from various regions of the

USA, school settings, grade levels, and years of experience increases confidence in the generalizability of results. Further, the present study utilized validated measures to assess teacher mental health and perceptions of SEL and included only teachers actively instructing students in K-12 classrooms during the pandemic. These strengths address limitations of prior research (Zieher et al., 2021) and increase confidence in construct validity and reliability of results.

Conclusions

A large sample of U.S. teachers reported feeling neutral to comfortable with SEL and neutral to supported by the school culture for SEL during the COVID-19 pandemic. Teachers who reported higher depression symptoms reported less comfort with SEL during the COVID-19 pandemic, underscoring the need for attending to teachers' psychological well-being in times of heightened stress generally (e.g., school closures due to flu outbreaks, natural disasters, or in response to community or global tragedies). Teachers who taught in more impoverished schools and those who felt more general support from their school district/superintendent reported greater comfort with SEL, while those feeling more general support from their fellow teachers and school district/superintendent also reported more support from their school culture for SEL. Because teachers' perceptions of SEL are critical to both student and teacher outcomes, school administrators may wish to foster an environment that is not only supportive of SEL implementation, but of teacher well-being as well. The necessity of providing this supportive environment is a valuable lesson learned from the COVID-19 pandemic that can be carried forward to support teachers in their SEL implementation in times of future stress.

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Declarations

Conflict of interest The authors declared that they have no conflict of interest.

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