

Special education staff well-being and the effectiveness of remote services during the COVID-19 pandemic

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Abstract

Since March 2020, many school districts across the country have employed remote learning procedures in response to the COVID-19 pandemic. During the pandemic, schools continued to provide special education services, yet little is known about how services were adapted for remote or hybrid learning during the height of the pandemic in the United States. In the current study, 332 respondents completed a web-based survey that asked what special education services were provided remotely, whether services were deemed effective, and how remote learning has influenced their well-being. Most respondents identified as White (79.5%), females (92.4%), and worked as special education teachers (52.9%) and school psychologists (35.4%). In compliance with federal guidelines, most respondents continued to hold individualized education plan meetings, conduct assessments, and provide interventions and related services. There was a significant decrease in respondents' reports of efficacy and sense of school connectedness during remote and hybrid learning. Respondents' identification as a person of color, along with reports of higher school connectedness and self-efficacy were positive predictors of their perceived effectiveness of remote special education service delivery. Recommendations are made for school districts to inform decisions regarding their approach to special education services and staff support during remote or hybrid learning.

KEYWORDS

professional issues, special education, survey methodology, technology, well-being

1 | INTRODUCTION

In response to the COVID-19 pandemic, schools had to make rapid decisions on whether to hold in-person instruction, remote learning, or a combination of both (hybrid learning; Gordon et al., 2020). Remote learning describes any physical or geographical separation between students and teachers that may require instruction through electronic or other technological means (Moore & Kearsley, 1996). The shift to remote learning posed unique difficulties for students with disabilities, who require additional services and support to enact their right to a free appropriate public education (FAPE; Gordon et al., 2020). Special education teachers and related service staff, such as school psychologists, had to quickly adapt services to comply with legal guidelines of the Individuals with Disabilities Education Act of 2004. Unfortunately, the lack of formal guidance on how to shift special education services during remote or hybrid learning has made it difficult for school districts across the country to determine the most effective approach to support students and remain in compliance with federal and state legal codes (Gordon et al., 2020). The purpose of this study was to investigate the impact of remote learning on the self-reported well-being of staff who are heavily involved in the special education process (e.g., special education teachers and school psychologists), their perceptions of the effectiveness of remote service delivery, and the relationships among these variables.

1.1 | Special education services during remote learning

Many major decisions regarding special education service delivery are left to the discretion of state educational agencies and local educational agencies, which makes it difficult to determine how schools adjusted their special education services and programs in response to remote or hybrid learning. According to the US Department of Education (ED), all schools are required to have individualized education plans (IEPs) in effect and provide FAPE to students with disabilities (ED, 2020). Schools were expected to follow IDEA timelines for all IEPs including, but not limited to, initial eligibility evaluations, annual reviews, and triennials/reevaluations. However, the methods for meeting these requirements varied across states and school districts. Given the wide variety of IEP guidelines provided by states, it is important to understand how schools may have adapted their services for remote learning and whether these changes effectively support vulnerable students.

During March and April 2020, the US ED and the Office for Civil Rights (OCR) released multiple questions and answer documents providing clarification on how schools could maintain compliance with special education law through remote learning. These guidelines specified that parents and guardians must be notified of how their child's IEP services would be provided during school closure and through online instruction. Although accommodations, modifications, and interventions were still federally mandated, the specific methodologies for which these services could be provided through remote learning were not specified. Rather schools were permitted to find ways to deliver alternative services through online formats. In certain circumstances in which there were delays in service provision due to the pandemic, it was left to the discretion of school districts to determine whether compensatory services would be mandated upon the reopening of in-person schooling (OCR, 2020; US, 2020).

OCR (2020) also stated that assessments for evaluation and reevaluation IEPs that did not require face-to-face contact could be administered if parental consent was obtained. Determining circumstances in which in-person assessments were permissible was left open to the school districts. As such, school districts were left with the

difficult decision to delay assessments, which could temporarily deny students access to special education services (Farmer et al., 2021). While some practitioners may have attempted to administer standardized assessments remotely, virtual delivery of psychological assessments was discouraged by researchers due to concerns of reliability and validity (Farmer et al., 2021; Schaffer et al., 2021; Wright, 2020). Given the lack of federal guidance on the delivery of online services and assessments, this study asked participants to share which assessments and services were provided to students with IEPs during remote learning.

1.2 | Special education staff's well-being during remote learning

Even before the pandemic, teaching has been rated as one of the most stressful jobs due to factors, including large workloads, unbalanced homework life, and emotional labor (Mercer & Gregersen, 2020). The instability and inconsistency of school-based programming during the pandemic further increased teachers' stress and decreased teachers' well-being worldwide. Klapproth et al. (2020) reported that more than 50% of 380 surveyed teachers in Germany experienced technological barriers and moderate to high levels of stress during initial school closures. In Canada, teachers reported increased levels of exhaustion and cynicism with negative attitudes towards change (Sokal et al., 2020). In England, teachers expressed the need for policymakers to develop effective plans for better supporting vulnerable students (Kim & Asbury, 2020). Thus, it is likely that the special education staff's well-being was negatively affected by the pandemic, which could directly affect student outcomes (Petrie, 2020). Some of these stressors include (a) shifting in-person services to technological and digital platforms, (b) supporting the socioemotional needs of students due to school closures, (c) caring for their own children and family members, and (d) building positive partnerships with parents who must not only balance their own work schedules but also assume considerable educational responsibilities for their children (Klapproth et al., 2020; Mercer & Gregersen, 2020; Petrie, 2020).

This study sought to understand special education staff's perceptions of their own well-being during remote learning. Generally, accepted indicators of teacher well-being include school connectedness (Frydenberg et al., 2009) and self-efficacy (Friedman & Farber, 1992). School connectedness encompasses whether teachers feel they "belong" to their school and describe how supported teachers feel. In general, school staff who experience positive relationships with students and colleagues tend to report greater job satisfaction (Martin et al., 2012), greater commitment to the teaching profession (Collie et al., 2011), and greater personal well-being in work and life (Collie & Martin, 2016). Teaching efficacy refers to a teacher's ability to produce a desirable result in their students' outcomes. Teachers with a low level of mastery may feel more stress than those with high mastery (which may be considered a proxy for efficacy), which in turn leads to an increased likelihood of burnout (Friedman & Farber, 1992). One can imagine the immense stress that both teachers and related service providers faced when they were asked to transition to a novel form of education (i.e., remote learning) and service provision, often with little to no previous experience in that format (Petrie, 2020). This study explores whether special education staff's self-efficacy and school connectedness was affected by the conditions of remote learning.

1.3 | Effectiveness of special education service delivery during remote learning

Although research suggests remote learning can be an effective educational tool for some students, little is known about the effectiveness of remote education for children with disabilities (Petretto et al., 2021). Many children with disabilities require specialized care and services that may not translate effectively to online platforms (Cano & Aguilera, 2021). Furthermore, even if services are available online, it is unclear whether special education staff have the knowledge and training to provide these remote services effectively (Petretto et al., 2021). As a consequence of the rapid shift to remote learning, it is possible that many students in special education have not accessed services that benefit their learning and development. For example, a survey conducted with 300 parents of children with disabilities attending Los

Angeles Unified found that most parents reported their children had regressed and lost important learning and behavioral skills (Cano & Aguilera, 2021). In addition to understanding parents' perspectives, it is important to examine special education staffs' perception of remote services and the fact.

1.3.1 | Measuring perceived effectiveness of remote special education service delivery

Measuring the effectiveness of remote teaching before the pandemic has been challenging for schools as the instructional needs of students and staff responsibilities differ from general education (Elliott et al., 2014). Given that most teacher evaluations were created and normed for general education teachers, using professional standards can be a more appropriate and comprehensive way to evaluate components that are crucial for effective special education services (Woolf, 2015). The Council for Exceptional Children (CEC, 2020) proposed a list of seven such standards: (a) professional learning and practice, (b) addressing individual developmental and learning needs, (c) curricular content and specialized knowledge, (d) use of assessments, (e) effective instruction, (f) support socioemotional and behavioral growth, and (g) consultation and collaboration with team members. Measuring the efficacy of these professional standards through remote learning can provide insight into the effectiveness of remote special education service delivery.

1.4 | Current study

This study surveyed school staff who actively participated in IEP meetings during the 2020 academic year, including teachers, school psychologists, and other service providers, to explore perceived changes to special education service delivery, self-reported staff well-being, and perceived effectiveness of remote special education service delivery. The survey was developed to answer the following research questions:

Research Question 1: What special education services (e.g., IEP meetings, assessments, interventions, and other related services) were being offered remotely by respondents?

Research Question 2: How did special education staff perceive their efficacy and connectedness to their role during remote learning as compared with their typical school year? To what extent were there differences in these perceptions based on the respondent's demographic characteristics?

Research Question 3: Do factors such as respondents' personal characteristics (e.g., race, professional role), school characteristics (e.g., location, grade), and well-being (e.g., school connectedness and efficacy) predict respondents' perceptions of remote special education services as effective?

2 | METHOD

Researchers obtained approval from the Institutional Review Board at the University of California Riverside, the National Association of School Psychologists (NASP) Research Committee, and the CEC membership committee before engaging in recruitment. Participants were given the option to enter their email addresses in a separate link to enter a raffle for one of five \$10 Amazon gift cards.

2.1 | Participants

Recruitment occurred from August 2020 to December 2020. Individuals were eligible to participate in the study if they self-identified as an IEP team member during the 2019–2020 or 2020–2021 school year. According to the Individuals with Disabilities Education Improvement Act of 2004, these members include general education

teachers, special education teachers, and parents/guardians. Recommended IEP members also include students, administrators, school psychologists, and other relevant service providers.

Researchers recruited participants from members of NASP and CEC. Researchers emailed 1000 randomly selected NASP members, which included regular members, early career members, common address members, and associate members. CEC Members were recruited through two posts to their all-members forum and a newsletter advertisement that went out to all subscribers. Finally, participants were recruited through social media posts on Facebook groups designed for special education teachers and snowball sampling.

2.2 | Survey development and measures

Survey questions asked respondents to report their school's guidelines and practices during the COVID-19 pandemic, reflect on their personal well-being and rate the effectiveness of their remote special education services. A total of 58 questions were developed from a literature review of peer-reviewed articles surrounding topics on best practices and legal requirements regarding IEPs, special education service delivery, and staff well-being.

The initial pool of items for this survey was created by the research team and informed by existing literature and policy on each respective subsection of the survey listed below. The next phase of item development included expert review by the NASP Research Review board and a professor with extensive experience in special education, school psychology, and survey development. Items were adjusted according to the feedback provided by experts at this phase. The survey questions were entered into Qualtrics with branching and display logic dependent upon the participants' responses.

2.2.1 | Special education services during remote learning

A total of 19 questions were developed using Individuals with Disabilities Education Improvement Act of 2004 regulations for special education services and were informed by practical experiences in schools. Respondents were asked about the types of special education services that were being provided at their school during remote learning. Specifically, respondents were asked to specify the types of IEP meetings held remotely (i.e., initial, annual, triennial, amendments, and manifestation determinations). Given the legal mandates for IEP teams to update a student's IEP, respondents were asked what components of the IEP were able to be updated during remote learning (e.g., present levels, annual goals, accommodations or modifications, and transition plans). The survey also inquired about assessment practices during remote learning by asking respondents to select the types of assessments that were being used to evaluate students during remote learning at their school (e.g., parent report/interview, rating scales, direct observation, academic work samples, and progress monitoring via curriculum-based assessments). Finally, respondents were asked about the special education services that were being provided virtually (e.g., speech and language services, counseling services, and support from a paraeducator). Questions pertaining to parent engagement included attendance at IEP meetings and the provision of translation services.

2.2.2 | Perceived Effectiveness of Remote SPED Services

Respondents were asked to rate the extent to which they agreed on six items regarding the effectiveness of remote special education service delivery, based partially on the CEC (2020) professional standards. A four-point Likert-type scale was used for these questions (1 = *disagree*, 2 = *somewhat disagree*, 3 = *somewhat agree*, and 4 = *agree*). Data were subjected to factor analysis using principal component analysis with oblique rotation. The Kaiser–Meyer–Olkin (KMO) measure was 0.76 indicating the data may be sufficient for exploratory factor analysis (EFA). Bartlett's test of sphericity $\chi^2(15) = 423.72$, $p < .001$ suggested the data was suitable for factor analysis. Two

items had cross-loadings above 0.5 and were removed. Using an eigenvalue cut-off of 1.0, there was 1 factor that explained a cumulative variance of 57.36% and the factor loadings ranged between 0.59 and 0.85. A composite score was calculated by computing the factor scores as means over the variables measuring the same factor ($M = 2.43$, $Min = 1.00$, $Max = 4.00$). Cronbach's α of .74 indicated the measure had acceptable reliability. A detailed description of the items and factor loadings can be found on the project's Open Science Framework (OSF) page (https://osf.io/6mvs7/?view_only=6cddab6e549747678717214de22da4b8).

2.2.3 | Staff well-being

This study used the Teacher Subjective Well-being Questionnaire (TSWQ; Renshaw et al., 2015) to measure special education staff and related service providers' well-being during the COVID-19 pandemic. The TSWQ was initially designed to assess teachers' positive psychological functioning at work and teachers' subjective well-being. The TSWQ is an eight-item scale that uses a four-point Likert-type scale (1 = *almost never*, 2 = *sometimes*, 3 = *often*, and 4 = *almost always*). The TSWQ is a self-report questionnaire and includes two subscales: teaching efficacy and school connectedness. Teaching efficacy measures respondents' perception regarding their ability to successfully improve their students' academic outcomes. School connectedness measures respondents' perception of their support and connection to other staff (Renshaw et al., 2015). To be inclusive of all respondents, the language was changed to describe "staff member" well-being rather than "teacher" well-being. Participants were asked to complete the measure twice; they were first asked to think back to a typical school year to rate the items, and then they were asked to rate their experiences during remote learning. Data derived from the TSWQ has been validated across a variety of samples of teachers (e.g., de Biagi et al., 2017) and has been used to measure teacher well-being across grade levels (e.g., Mankin et al., 2018). In one sample of teachers who experienced classroom management challenges, the TSWQ accounted for approximately half of the variance in teacher stress and emotional burnout (Renshaw et al., 2015). Previous findings support the technical adequacy of data from the TSWQ for measuring teacher subjective well-being and recommend the measure be used by schools to screen for the necessity of intervention, to measure outcomes, and to monitor teacher progress (de Biagi et al., 2017; Mankin et al., 2018; Renshaw et al., 2015).

2.2.4 | Typical school year

Data from the TSWQ during a typical school year was subjected to factor analysis using principal component analysis with oblique rotation. The KMO was 0.91 and Bartlett's test of sphericity $\chi^2(28) = 1189.90$, $p < .001$. Using an eigenvalue cut-off of 1.0, there was a two-factor solution that explained a cumulative variance of 72.83%. Items loaded similarly to the two subscales hypothesized by Renshaw et al. (2015). The four items that loaded onto the school connectedness factor had structure coefficients that ranged from 0.80 to 0.90. The four items that loaded onto the staff efficacy factor had structure coefficients that ranged from 0.60 to 0.94. Researchers created two composites (school connectedness and staff efficacy) by summing the raw scores of all relevant variables (Cronbach $\alpha = .90$ and $.84$, respectively).

2.2.5 | Remote learning

As participants were also asked to rate these items again for remote learning, the same procedures were used to determine if factors continued to show similar patterns for the TSWQ during remote learning. The KMO was 0.86 and Bartlett's test of sphericity was $\chi^2(28) = 1472.14$, $p < .001$. Using an eigenvalue cut-off of 1.0, there was a two-

factor solution that explained a cumulative variance of 78.24%. The four items that loaded onto the school connectedness factor had structure coefficients that ranged from 0.80 to 0.92 and the items that loaded onto the efficacy factor had structure coefficients that ranged from 0.82 to 0.92. Two composites were created by summing the raw scores of all the relevant variables. Both school connectedness and staff efficacy during remote learning demonstrated strong reliability (Cronbach $\alpha = .90$ and $.91$).

2.2.6 | Demographics

The final questions on the survey asked respondents to self-report their demographic information. Demographic questions inquired about respondents' race/ethnicity, gender, the state they reside in, their current role (e.g., special education teacher), the grade level(s) they currently work with (e.g., preschool, elementary, middle, high school, or adult transition). Respondents were also asked to provide the number of years they have worked in their given profession and describe the characteristics of the schools they were working at the time of the survey. Questions inquired about whether the school is a Title I school, the percentage of students who received free and reduced lunch, the location of the school (e.g., urban, suburban, and rural), and the type of the school (e.g., public, private, charter, and nonpublic).

2.3 | Analyses

Researchers used branching logic in Qualtrics to prevent respondents from answering items that were irrelevant to them. Additionally, the number of responses across items varied due to the choice some respondents made to refrain from answering select questions. To avoid bias in the results completed-partial analyses were used. Percentage of cases are reported using the denominator of relevant completed responses for the respective item.

All analyses were conducted in IBM SPSS and reported based on the three distinct types of data available from the survey results: numeric, categorical, and multiple response categorical variables (MRCVs). Numeric values were produced for variables from questions such as the number of IEP meetings held remotely. Descriptive results are provided, and, in some cases, paired-sample *t*-tests are reported to detect statistically significant differences in means from the same individuals. Effect sizes are reported using repeated measures Cohen's d_m , which accounts for the correlation between two conditions. A standardized mean difference of 0.20 is considered a small effect size, 0.50 is considered a medium effect size, and 0.80 is considered a large effect size (Rosenthal, 1994). Several questions in the survey contained MRCVs. Since respondents could select multiple responses that applied to them, these data violated the assumption of independence and required select analytic techniques for descriptive analysis. The term n_m is used to distinguish MRCV data from items that only permitted one response option, which is denoted by n . MRCV data are reported in terms of the number of times a response was chosen and the percentage of total times an item was chosen by respondents who had given a response.

Given the outcome measure, *Perceived Effectiveness of Remote SPED Services*, was measured on a four-point Likert-type scale, the primary analysis used in this study was ordinal logistic regression. The model tested whether the independent variables (e.g., respondents' school connectedness and self-efficacy, school characteristics, number of remote services provided) predicted the dependent variable (i.e., *Perceived Effectiveness of Remote SPED Services*). An a priori power analysis was performed on G*Power 3.1 for sample size estimation (Faul et al., 2007). The α for the test of this model was set at .05. To achieve a power of .80 and a medium effect size ($d = 0.3$), a sample size of 208 participants was required to detect a significant model. Our actual sample size $N = 332$ was more than adequate for the main objective of this study.

3 | RESULTS

The final sample included 332 responses. Due to branching logic, MRCVs, and respondent choices, the total number of responses varied across items. As such, results are reported in terms of percentages based on the denominator of the completed response for each question. Raw data, tables, and figures are available on the project's OSF page (https://osf.io/6mvs7/?view_only=6cddab6e549747678717214de22da4b8).

3.1 | Demographic characteristics

3.1.1 | Individual

As shown in Table 1, most respondents self-identified as female ($n = 242$, 92.4%), White non-Hispanic ($n_m = 209$, 79.5%), and serve as special education teachers ($n = 139$, 52.9%) and school psychologists ($n = 93$, 35.4%). Many respondents reported working more than 20 years ($n = 79$, 30.2%) or 10–20 years ($n = 70$, 26.7%) in their current profession. Respondents worked at schools across the United States, including the Northeast ($n = 45$, 17.6%), South ($n = 45$, 17.6%), Midwest ($n = 82$, 32%), and Western regions ($n = 83$, 32.4%), with 1 respondent from Canada ($n = 1$, 0.4%).

3.1.2 | Schools

Respondents worked across a variety of age groups. Most respondents worked in public schools ($n = 243$, 92.7%) and a plurality served large student bodies on free and reduced lunch (81%–100%, $n = 69$, 26.2%). Respondents' schools were in a mix of urban ($n = 60$, 22.9%), suburban ($n = 130$, 49.6%), and rural ($n = 63$, 24.0%) settings. At the time of reporting, respondents stated that their school adhered to one of the following: traditional operations ($n = 38$, 11.5%), completely closed ($n = 1$, 0.3%), remote learning ($n = 139$, 42.0%), hybrid learning ($n = 98$, 29.6%), and other ($n = 55$, 16.6%). See Table 1 for more information regarding respondents' school characteristics.

3.2 | Research Question 1

3.2.1 | IEP meetings and documents

To better describe which special education supports were being provided remotely, respondents were asked to answer questions about the IEP-related services delivered at their school. A paired t -test showed significant differences in the number of virtual IEP meetings held during a typical school year ($M = 15.12$, $SD = 25.95$) as compared with remote learning ($M = 21.63$, $SD = 24.04$), $t(271) = -3.88$, $p < .001$, $d = 0.24$, 95% CI [0.11, 0.36]. A series of one-way analyses of variance (ANOVAs) were used to test if there were statistically significant differences in the number of remote IEP meetings held based on the location of the schools, type of school (e.g., urban and suburban), and grade levels the respondent works with. There was a statistically significant difference between groups based on grade level ($F(3, 251) = 4.04$, $p = .008$). A Tukey post hoc test showed that staff who worked at elementary schools held significantly more remote IEP meetings than staff who worked at secondary schools ($p = .035$) and adult schools ($p = .020$). There were no statistically significant differences between other grade levels.

TABLE 1 Individual and school demographic information

	<i>n</i>	%
<i>Individual</i>		
Gender		
Female	242	92.4
Male	17	6.5
Transgender	1	0.4
Prefer not to answer	2	0.8
Race and ethnicity		
White, non-Hispanic	209	79.5
Hispanic, Latino, or Spanish origin	35	13.3
Black or African American	15	5.7
Asian	4	1.5
American Indian or Alaska Native	3	1.1
Native Hawaiian or other Pacific Islander	1	0.4
Other	3	1.1
Preferred not to say	6	2.3
Region		
Northeast	45	17.6
South	45	17.6
Midwest	82	32
West	83	32.4
Canada	1	0.4
Current role		
Special education teacher	139	52.9
School psychologist	93	35.4
Administrator	7	2.7
General education teacher	4	1.5
Speech–language pathologist	3	1.1
Program specialist	3	1.1
Other	14	5.3
Years worked in profession		
0–2 years	25	9.5
3–5 years	42	16
5–10 years	46	17.6
10–20 years	70	26.7
More than 20 years	79	30.2

(Continues)

TABLE 1 (Continued)

	<i>n</i>	%
<i>School</i>		
Type		
Public	243	92.7
Charter	15	5.7
Nonpublic	3	1.1
Private	1	0.4
Location		
Suburban	130	49.6
Rural	63	24
Urban	60	22.9
Not sure	9	3.4
Grade level		
Preschool/prekindergarten	59	22.6
Elementary school	158	60.5
Middle school	98	37.5
High school	97	37.2
Adult transition (18–22)	32	12.3
Students who receive free and reduced lunch (%)		
0–20	33	12.5
21–40	42	16
41–60	47	17.9
61–80	34	12.9
81–100	69	26.2
Not sure	38	14.4

Respondents were asked whether their schools provided training on how to hold remote IEP meetings; most respondents reported that they did not receive training ($n = 208$, 63.8%), some received training ($n = 94$, 28.8%), and few were unsure ($n = 24$, 7.4%). Respondents were asked about the types of IEP meetings they have held remotely, and which parts of the IEP documents were updated during remote learning. As seen in Table 2, many respondents complied with federal requirements and were still holding mandated IEP meetings and updating key components of the IEP documents.

3.2.2 | Assessments and services

Respondents were asked about the types of special education assessments and services they were able to provide remotely. As can be seen in Table 3, when administering assessments, most respondents used informal assessments,

TABLE 2 Types of meetings held and IEP documentation updated during distance learning

Variables	Frequency	%
<i>Types of meetings held remotely</i>		
Annual review	252	89.4
Triennial review	178	63.1
Amendments to IEP	163	57.8
Initial IEP	154	54.6
"No-test" triennial review	118	41.8
Manifestation determination	11	3.9
Other	39	13.8
No remote IEP meetings held	10	3.5
<i>IEP documentation updated during distance learning</i>		
Goals	238	90.8
Accommodations	238	90.8
Present levels	229	87.4
Service minutes	228	87.0
Related services	224	85.5
Transition	172	65.6

Abbreviation: IEP, individualized education plan.

Note: This question allowed for multiple response categorical variables. A total of 15.1% of cases were removed due to missing values.

such as parent report or parent interview data ($n_m = 205$, 75.1%), academic work ($n_m = 183$, 67.0%), direct observations ($n_m = 163$, 59.7%), and student reports ($n_m = 151$, 55.3%). Fewer participants reported using formal measures, such as rating scales ($n_m = 141$, 51.6%) and standardized assessments ($n_m = 64$, 23.4%). Some reported they used other ($n_m = 30$, 11.0%) or no assessments ($n_m = 43$, 15.8%). The services most often reported as being delivered during remote learning included speech-language pathology and audiology services ($n_m = 250$, 91.2%). Respondents also reported physical and occupational therapies ($n_m = 180$, 65.7%), counseling services ($n_m = 183$, 66.8%), psychological services ($n_m = 137$, 50.0%), and paraeducator or aide services ($n_m = 183$, 66.8%) were provided remotely. A small number of respondents reported providing other ($n_m = 20$, 7.3%), or no services ($n_m = 5$, 1.8%).

3.2.3 | Parent engagement

Respondents were asked to report the number of times they held an IEP meeting without the presence of a parent/guardian during remote learning. As can be seen in Table 4, most respondents stated they never ($n = 102$, 37.9%) or rarely ($n = 108$, 40.1%) held an IEP without a parent or guardian present. A few respondents stated that they sometimes ($n = 44$, 16.4%) or often ($n = 15$, 5.6%) held a meeting without the presence of parents or guardians. Respondents were asked if, during remote learning, they had difficulty requesting and providing translation services to parents during IEP meetings. Most respondents stated that they did not have difficulty ($n = 114$, 42.4%) or did not need translation services ($n = 113$, 42.0%).

TABLE 3 Types of special education assessments and services provided during distance learning

Variables	Frequency	%
<i>Assessments provided during distance learning</i>		
Parent report or parent interview	205	75.1
Academic work	183	67.0
Direct observations	163	59.7
Student report or student interview	151	55.3
Rating scales	141	51.6
Standardized assessments	64	23.4
Other	30	11.0
No assessments administered	43	15.8
<i>Services provided during distance learning</i>		
Speech and Language	250	91.2
Counseling	183	66.8
Paraeducator or aide	183	66.8
Physical and occupational therapies	180	65.7
Psychological	137	50.0
Other	20	7.3
No services delivered	5	1.8

Note: This question allowed for multiple response categorical variables. A total of 17.8% of responses were excluded due to missing values.

3.3 | Research Question 2

To explore how remote learning might have impacted staff well-being, respondents were asked to complete the TSWQ twice. First, they were asked to think back to their well-being during a typical school year and were asked to think about their well-being during remote learning. A paired-sample *t* test indicated that efficacy scores were significantly lower during remote learning ($M = 10.58$, $SD = 3.18$) as compared with a typical school year ($M = 13.51$, $SD = 2.31$), $t(249) = 15.37$, $p < .001$, $d = 0.96$, 95% CI [0.81, 1.11]. Respondents also reported a lower mean of school connectedness during remote learning ($M = 11.55$, $SD = 3.81$) as compared with a typical school year ($M = 12.71$, $SD = 2.91$), $t(249) = 9.26$, $p < .001$, $d = 0.59$, 95% CI [0.45, 0.72]. Together, these results suggest remote learning was negatively associated with impacted respondents' self-efficacy and school connectedness. A series of one-way ANOVAs were conducted to determine if there were statistically significant differences between groups based on factors such that their current role, race, school location, state location, and so forth. None of the results was statistically significant, indicating that respondents may have rated the items similarly.

3.4 | Research Question 3

The outcome variable, respondents' perception of the effectiveness of remote special education service delivery, was analyzed using ordinal logistic regression with the results of the model displayed in Table 5. An Odds Ratio (OR) equal to 1.00 indicated no change in the odds of respondents' effectiveness rating, a value less than 1.00 indicated a

TABLE 4 Questions regarding parent engagement during distance learning

Variables	Frequency	%
<i>During distance learning, how often did you hold an IEP meeting without the presence of a parent or guardian?</i>		
Often	15	5.6
Sometimes	44	16.4
Rarely	108	40.1
Never	102	37.9
<i>Please state if you experienced difficulty accessing translation services for IEP meetings</i>		
Experienced difficulty	42	15.8
Did not experience difficulty	114	42.4
No translation services needed	113	42.0

Note: There were a total of 19% cases excluded due to missing responses.

decrease in the likelihood of respondents' effectiveness rating, and a value greater than 1.00 indicated an increase in the likelihood of respondents' effectiveness ratings (McHugh, 2009). The model demonstrated adequate fit as shown by the $-2 \log\text{-likelihood}(-2LL)$ statistic $\chi^2(12) = 1029.16, p < 0.001$, and the Nagelkerke $R^2 = .26$.

Respondent's identification as a person of color (POC) was statistically significant within the model ($\beta = .82$, Wald $\chi^2 = 7.31, p < .01$); respondents who identified themselves as a POC had 2.28 times increase in their odds of perceiving remote special education services as effective as compared with respondents who identified as White. School connectedness was statistically significant ($\beta = .10$, Wald $\chi^2 = 4.40, p < .05$) and the OR indicated the odds of perceiving remote special education service delivery as effective were 1.10 times greater for respondents who reported greater school connectedness. Efficacy was statistically significant ($\beta = .24$, Wald $\chi^2 = 24.42, p < .001$), and the OR indicated the odds of perceiving remote special education service delivery as effective were 1.39 times greater for respondents who reported higher self-efficacy.

4 | DISCUSSION

IEP services were federally mandated to be provided during the COVID-19 pandemic (OCR, 2020), but few studies have given information regarding the specific practices used by special education teams when conducting remote IEP services and whether those services were deemed effective (Hirsch et al., 2021; Jenkins & Walker, 2021). This study sought to fill this gap by investigating staff perspectives on changes to special education service delivery during the COVID-19 pandemic. We first examined what services were being provided regarding IEP procedures, including meetings, assessments, and specialized support. We then explored how remote learning has influenced respondents' school connectedness and efficacy. Finally, we examined which factors predicted the likelihood that staff perceived their remote special education service delivery as effective.

4.1 | What special education services were delivered?

Despite the conditions and school closures caused by the pandemic, schools were expected to abide by the substantive requirements of the IEP process, which included parent/guardian notification and participation, adherence to timelines, inclusion of required components of the IEP, and IEP implementation (Individuals with

TABLE 5 Ordinal logistic regression results for participant's likelihood of rating effective remote special education service delivery ($N = 227$)

	B (SE)	OR [CI]
<i>Race</i>		
White	-	-
POC	0.82** (31)	2.28 [1.25, 4.14]
<i>Position</i>		
Special education teacher	-	-
School psychologist	0.31 (30)	1.34 [75, 2.47]
Other staff	0.11 (43)	1.11 [48, 2.57]
Years worked in profession	-0.01 (10)	0.99 [82, 1.19]
<i>School location</i>		
Urban	-0.54 (34)	0.58 [30, 1.14]
Suburban	-0.48 (30)	0.62 [35, 1.10]
Rural	-	-
<i>Grade</i>		
Preschool	0.13 (54)	1.14 [40, 3.31]
Elementary	-0.19 (26)	0.83 [50, 1.38]
Adult	0.58 (40)	1.79 [81, 3.94]
Secondary	-	-
Number of remote IEPs	0.01 (01)	1.01 [1.00-1.02]
<i>Well-being</i>		
School connection	0.10* (05)	1.10 [1.02, 1.20]
Efficacy	0.24*** (05)	1.27 [1.15, 1.39]

Note: The variable secondary includes middle and high school students combined. The (-) indicates the reference group. Statistically significant as measured by Wald's test. There were 31.62% missing cases.

Abbreviations: CI, confidence interval; IEP, individualized education plan; OR, odds ratio; POC, person of color.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Disabilities Education Improvement Act of 2004). To determine schools' compliance to FAPE during remote learning, respondents were asked to complete survey questions regarding IEP meetings, documentation, and parent participation. In compliance with federal guidelines, many respondents reported holding annual IEP meetings, triennial and no-test triennial review meetings, amendments, and initial IEP meetings. Most reported they continued to update key components of IEP documents, including present levels of performance, annual goals, accommodations/modifications, transition goals and services, and service minutes. Most participants also reported they never or rarely held an IEP meeting without the presence of a parent or guardian and most respondents reported they did not have trouble accessing translators when necessary. These findings align with previous research that found special education teachers continued to update key components of IEPs during the pandemic and were able to continue holding IEP meetings with parents present (Hurwitz et al., 2021; Jenkins & Walker, 2021). Hurwitz et al. (2021) found that special education teachers in Indiana adjusted goals and service minutes in students' IEPs, as well as specified how services would be provided through remote or hybrid learning

environments. In a mixed-method study, Jenkins and Walker (2021) asked special education teachers in Virginia to share their perspectives on the effectiveness of IEP procedures, including developing IEPs, scheduling and conducting meetings, and including key members of the team. Results from their survey indicated that most special education teachers rated all these components to be somewhat effective or effective and their qualitative descriptions showed that many teachers found the use of remote platforms useful for writing, scheduling, and conducting IEP meetings. There is also evidence to suggest that many school districts found remote IEP meetings to be preferable to in-person meetings, as remote meetings are more accessible to parents who may have barriers to attending in-person meetings due to work, transportation, and other challenges (Steed et al., 2021).

While some educators reported virtual meetings to be effective (Steed et al., 2021), many special education teachers and school psychologists reported challenges on delivering remote assessments (Hass & Leung, 2021; Jenkins & Walker, 2021). Given that many standardized assessments have not been validated for virtual use (Hass & Leung, 2021; Farmer et al., 2021), it is likely that many school professionals relied more heavily on assessments that can be conducted virtually. Furthermore, while federal regulations permitted evaluations that did not require face-to-face contact if given parental consent (OCR, 2020), there was less guidance on when and if face-to-face assessments should be administered, which may have further impacted professionals' choice on their use of assessments (Hass & Leung, 2021). Our study found that most respondents reported administering informal assessments, such as parent reports/interviews, academic work, observations, and student reports. Hirsch et al. (2021) surveyed educators on supports offered to children with emotional and behavioral disorders during the pandemic and also found that educators relied predominantly on informal assessment measures, including anecdotal parent reports, academic work, and student self-reports. Generally, findings from previous studies suggest that educators found remote assessments to be ineffective and wanted more guidance in this area of the IEP process (Hass & Leung, 2021; Jenkins & Walker, 2021).

Given that most schools had not previously provided teleservices, it was also important to investigate which special education services were transitioned to remote service delivery. The services most often reported as being delivered during remote learning included speech-language pathology and audiology services and physical and occupational therapy services. More than half of IEP team members reported their schools provided students counseling services and about half of IEP team members reported their schools provided psychological services during remote learning. The large number of providers delivering counseling and psychological services aligns with previous studies, which found that school psychologists reported increasing the percentage of time spent providing mental health and consultation services and a decrease in assessments as compared with prepandemic times (Reupert et al., 2021; Schaffer et al., 2021). The shift in school psychologists' roles may have been due to the barriers in administering assessments remotely and the increase in mental health service needs for children as a result of the pandemic (Schaffer et al., 2021). As such, school psychologists' training in crisis prevention and intervention may have been further utilized during the pandemic (Reupert et al., 2021).

4.2 | Staff Well-Being

Respondents' self-reports of their teaching efficacy and school connectedness during a typical school year as compared with remote learning were significantly different. In this sample, remote learning was negatively associated with (a) respondents' feelings of support and relations to other school personnel, and (b) respondents' beliefs that they could be successful in their work considering environmental demands. These findings are consistent with the few studies that have examined teacher stress, burnout, and well-being since the onset of the COVID-19 pandemic (Alves et al., 2021; MacIntyre et al., 2020). As such, close examination of school staff well-being is important given added external stressors caused by the COVID-19 pandemic. These results align with previous reports from teachers during the COVID-19 pandemic, suggesting that the pandemic has reduced teachers' perception of their personal well-being and professional future (Alves et al., 2021).

4.3 | Effectiveness of special education service delivery

This study examined whether respondents' personal characteristics, school characteristics, number of remote IEP meetings, and well-being predicted their likelihood to rate their remote special education service delivery as effective. Results suggested that a person's identification as a POC increased the likelihood that they viewed remote special education services as effective. It is possible that prepandemic differences existed in this sample, where POC perceived their services as more effective than White respondents. Alternatively, school staff who belong to minoritized populations might more closely monitor interactions with students (Hollins et al., 1994; Irizarry & Raible, 2011), which may increase their ability to attune to students' needs even in a virtual environment.

Although there is limited research regarding school staff of color's perceptions of remote learning, previous studies have described trends that suggest racially minoritized students who are taught by a teacher of the same race obtain better academic outcomes compared with students who are taught by a teacher of a different race (Gershenson et al., 2018). Teachers of color have demonstrated more culturally responsive practices such as linking classroom content to students' experiences, focusing on the whole child, and incorporating culturally compatible communication into their interactions with both students and parents (Hollins et al., 1994; Irizarry & Raible, 2011). As such, it is possible that both teachers of color and related school staff have used remote learning as an opportunity to explore solutions that meet the diverse needs of their students (Kulkarni, 2020).

Both well-being indicators included in the model, school connectedness and efficacy, were statistically significant. Respondents who felt more connected to their school were more likely to rate their remote services as effective and respondents with a higher sense of efficacy were also more likely to rate their remote services as effective. These results were in line with previous findings that suggest the more connected staff feel to their students and colleagues, the more likely they are to be satisfied with their jobs and performance (Martin et al., 2012; O'Brennan et al., 2017). Furthermore, school staff who report higher efficacy in their profession, also report more effective student outcomes (Friedman & Farber, 1992).

4.4 | Limitations

Some limitations of the current work should be noted. These data rely on participants' accounts of retrospective personal experiences from the first few months of the pandemic. Therefore, data may be subject to biases like overestimation of well-being before the pandemic given the many challenges participants likely faced during the pandemic (Kopcha & Sullivan, 2007). Additionally, professionals' evaluation of remote learning and remote delivery of services may be confounded by the backdrop of the continually changing circumstances brought on by the pandemic.

There are also factors that limit the generalizability of our findings. Since methods of recruitment included snowball sampling, email solicitation, and posts in newsletters, we were unable to determine the response rate for the survey. Furthermore, the demographic data reflected a mostly homogeneous population with many respondents working as special education teachers, school psychologists, and identifying as White, non-Hispanic females. However, these demographic data do align with the current state of the field as the majority of special education teachers and school psychologists are White (non-Hispanic) and females (DataUSA, 2021). Perspectives from other IEP team members may have provided additional insight. Items were measured on a four-point ordinal scale, but the space between each choice cannot be considered equal. As such, the results cannot be considered a true measure of respondents' feelings toward the items (Albaum, 1997).

Finally, while we attempted to incorporate key information regarding special education service delivery within a reasonable survey length, there are several other pieces of information that would have been informative to collect. Given that the effectiveness of interventions or ability to support students during the pandemic may be tied to the disability status of the student, it would have been useful to collect information about the types of disabilities

service providers' students typically are identified with. Future research should investigate the influence of remote learning on special education students' outcomes, such as student engagement, grades, behavior, and socioemotional well-being.

5 | IMPLICATIONS AND RECOMMENDATIONS

Despite these limitations, our findings hold important implications for future research and policy. This study found that respondents reported their efficacy and school connectedness were significantly lower during remote learning and that both measures were significantly related to respondents' perceived effectiveness of remote special education services. In terms of increasing staff efficacy, in an experimental study conducted by Pozo-Rico et al. (2020), groups of primary school teachers were trained in information and communications technology in areas like lesson planning, evaluation, and classroom engagement. Teachers assigned to the training reported greater decreases in exhaustion and increases in personal accomplishment compared with the control group. As such, professional development training may be a promising solution to improving special education staff's self-efficacy and effectiveness of services. Districts should consider providing professional development to meet staff where they are on the continuum of technological mastery.

Given the stress and isolation the pandemic may have brought onto school staff combined with the uncharted territory of remote learning, it is imperative teachers develop and maintain strong social and professional connections in their schools. Experts in the field of teacher well-being have recommended schools promote social support, or connectedness, among teachers during the pandemic by listening to teachers' needs, understanding issues from teachers' perspectives, seeking teachers' input in decision making, and providing rationales for tasks required by teachers (Collie & Martin, 2020). Alves et al. (2021) recommend schools develop training around emotional management for staff, which may consist of informal meetings to discuss strategies around emotional regulation. Additionally, Castro et al. (2010) found collaboration amongst colleagues was not only a helpful strategy for teachers to navigate work challenges but also an important means for increasing their connectedness to their school. As such, the promotion of school- and district-wide support to improve staff well-being may help staff to perceive remote services as more effective, potentially boosting the benefit that students receive from the specialized supports delivered.

6 | CONCLUSION

The rapid shift to remote learning during the onset of the COVID-19 pandemic has drastically changed the way schools deliver support to students. This study examined perceptions of teachers and related service providers regarding how schools adapted special education services remotely and whether staff deemed those services effectively. Most respondents reported adhering to the procedural requirements of IEPs, including updating documentation, holding IEP meetings, and soliciting parent participation. Many respondents also reported special education services, such as speech-language and psychological services, continued to be delivered through remote learning. However, many respondents relied on informal testing measures, such as interviews and work samples, rather than standardized assessments, many of which were not designed or normed through remote delivery (Farmer et al., 2021). More research and policy guidance is needed around remote assessment delivery to ensure adequate data are being collected for special education eligibility and placement recommendations.

In addition to investigating the special education services offered, our study also examined special education staffs' well-being through measures of self-efficacy and school connectedness. Respondents generally reported lower levels of school connectedness and self-efficacy in their roles during remote learning as compared with a typical school year. Importantly, respondents perceived their remote special education services as being more

effective when they had a stronger sense of school connectedness and efficacy in their role. As such, education stakeholders, policymakers, and researchers should continue their efforts to disseminate information about best practices in remote special education service delivery and best practices for supporting staff well-being during remote instruction .

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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