Research and Practice in the Schools

The Official Journal of the Texas Association of School Psychologists

Volume 10, Issue 1 - December 2023

General Issue

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Publication Information:
Research and Practice in the Schools is a peer-reviewed, online journal published by the Texas Association of School Psychologists. ISSN: 2329-5783

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Research and Practice in the Schools is a publication of the Texas Association of School Psychologists (TASP). It is an online, peer-reviewed journal that provides TASP members with access to current research that impacts the practice of school psychology. The primary purpose of *Research and Practice in the Schools* is to meet the needs of TASP members for information on research-based practices in the field of school psychology. To meet this need, the journal welcomes timely and original empirical research, theoretical or conceptual articles, test reviews, book reviews, and software reviews. Qualitative and case-study research designs will be considered as appropriate, in addition to more traditional quantitative designs. All submissions should clearly articulate implications for the practice of psychology in the schools.

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General Submission Guidelines

All manuscripts should be submitted in electronic form to jeremy.sullivan@utsa.edu as an email attachment. Manuscripts should be submitted in MS Word format and labeled with the manuscript's title.

It is assumed that any manuscript submitted for review is not being considered concurrently by another journal. Each submission must be accompanied by a statement that it has not been simultaneously submitted for publication elsewhere, and has not been previously published.

Authors are responsible for obtaining permission to reproduce copyrighted material from other sources. IRB approval should have been obtained and should be noted in all studies involving human subjects. Manuscripts and accompanying materials become the property of the publisher. Upon acceptance for publication, authors will be asked to sign a publication agreement granting TASP permission to publish the manuscript. The editors reserve the right to edit the manuscript as necessary for publication if accepted.

Submissions should be typed, double-spaced with margins of one inch. All articles should meet the requirements of the *APA Publication Manual, 7th ed.*, in terms of style, references, and citations. Pages should be numbered consecutively throughout the document. Illustrations should be provided as clean digital files in .pdf format with a resolution of 300 dpi or higher. Tables and figures may be embedded in the text. A short descriptive title should appear above each table with a clear legend and any footnotes below.

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After receiving the original manuscript, it will be reviewed by the Editors and anonymously by two or more reviewers from the Editorial Board or individuals appointed on an *ad hoc* basis. Reviewers will judge manuscripts according to a specified set of criteria, based on the type of submission. Upon completion of the initial review process, feedback will be offered to the original (primary) author with either (a) a preliminary target date for publication; (b) a request for minor editing or revisions and resubmission; (c) significant revisions with an invitation for resubmission once these changes are made; or, (d) a decision that the submission does not meet the requirements of *Research and Practice in the Schools*.

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We invite proposals for special issues of the journal, with the goal of publishing one special issue each year in addition to the general issue. Special issues will include collections of papers related to some cohesive theme in the field of School Psychology, and will be edited by Guest Editors who will take the lead in soliciting contributions and coordinating the peer review process. In addition to special issues that focus on research and scholarship in School Psychology, we welcome special issues that cover important practical and applied issues in the field.

Special issue proposals should include a brief description of the theme to be covered by the issue, approximate number of articles to be included, qualifications and expertise of those who will serve as Guest Editors of the issue, and a plan for soliciting manuscripts and conducting the reviews. Proposals for special issues, and questions about the process, should be sent to jeremy.sullivan@utsa.edu.

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Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 1-13

ISSN:2329-5783

Article

The School Psychology Workforce in Texas: Updates and Trends from 2018-2023

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The United States is experiencing a critical shortage of school psychologists (NASP, 2016). Prior data indicate Texas continues to experience a shortage of school psychologists with ratios highly exceeding what is recommended by the National Association of School Psychologists (Barbre, 2019; NASP, 2020a). This article outlines updated data regarding the school psychology workforce in Texas. The number of school psychologists employed by each public school district, shared service arrangement, charter school, region, and area was examined using data collected from the staff and full-time equivalent (FTE) reports obtained from the Texas Education Agency (2023). In addition, the number of students enrolled at each entity was collected (TEA, 2023). Using this information, the respective ratios of school psychologists to student enrollment were calculated and examined over a six-year period, from 2017-2018 to 2022-2023. Results continue to indicate that the Texas school psychology workforce does not meet recommended ratios and little improvement has been made over time. Implications for the field are provided, along with recommendations to continue advocacy efforts, recruitment, and retention.

***Keywords*: School Psychologist, LSSP, Workforce, Shortage**

School psychologists are uniquely trained in a variety of areas to support the academic, behavioral, emotional, and social well-being of children in educational settings. In 2020, the National Association of School Psychologists (NASP) adopted the Professional Standards which guide the training, preparation, service delivery model, and ethics of the profession. Specifically, NASP (2020a) advocates for psychological services in schools that are comprehensive and integrated. The Model for Comprehensive and Integrated School Psychological Services, also known as the NASP Practice Model (NASP, 2020a), outlines school psychology practice domains and professional responsibilities to support children, youth, and families within educational systems.

According to the NASP Practice Model (2020a), school psychologists provide direct intervention related to academics, instructional support, mental health, and behavior. They deliver services at the systems level to improve school-wide practices and systems that affect all students to ensure students' physical and psychological safety. Across all areas of practice, school psychologists utilize data-based decision making and accountability to ensure problems are solved objectively through ongoing monitoring and evaluation methods. They also consult and collaborate with educational and community-based partners. This includes ongoing communication and collaboration with families and coordination of services to support student learning. When providing services at the individual, school, or systems level, NASP standards (2020a) state school psychologists are committed to providing equitable practices that

Compliance with Ethical Standards:
No funding was received for the preparation of this manuscript. The authors declare that they have no conflicts of interest. Information from this manuscript was collected in collaboration with the Texas Association of School Psychologists.

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benefit diverse learners, applying evidence-based practices, and ensuring the highest level of ethical, legal, and professional practice.

For school psychologists to provide comprehensive and integrated services, school systems must consider adequate staffing ratios to support the delivery of high-quality services. NASP (2020a) recommends a minimum ratio of one school psychologist for every 500 students, noting that in some situations, this ratio may need to be lower given student, school, and community needs. Recent nationwide data from the National Center for Educational Statistics (2022), aggregated by NASP, indicate the nationwide ratio from the 2021-2022 school year was 1: 1,127, with great variability among states. Notably, states in the southern United States, including Texas and its bordering states, have the highest school psychologist to student ratios.

When states maintain higher ratios, school psychologists are forced to serve an increased number of children and schools, which limits their ability to provide timely and necessary psychological services for children and families (Eklund et al., 2020; Hendricker et al., 2022). In Texas, the Texas Association of School Boards (TASB) issued additional guidance regarding caseloads of special education staff. They state professional staff who conduct special education assessments, such as school psychologists, should have a recommended caseload benchmark of 80-85 students. However, they also note "the number of assessment staff allocated per campus is dependent on the number of students served, as well as the percentage of time assessment staff is directly performing assessment duties" (TASB, 2021). Therefore, school psychologists who function in more comprehensive roles and participate in tasks other than special education assessment may require lower caseloads.

To better understand school psychology shortages and workforce data in Texas, Barbre (2019) analyzed how many school psychologists (licensed as Licensed Specialists in School Psychology [LSSP] in Texas) were employed by Texas public schools and student enrollment data in 2017-2018. At that time, the ratio of school psychologists to students in Texas was 1: 2,792, with minimal improvement since 2014. The Texas Association of School Psychologists (TASP) has continued to collect similar data each year to provide education, awareness, and advocacy for the field.

Texas Ratio and Student Enrollment Data

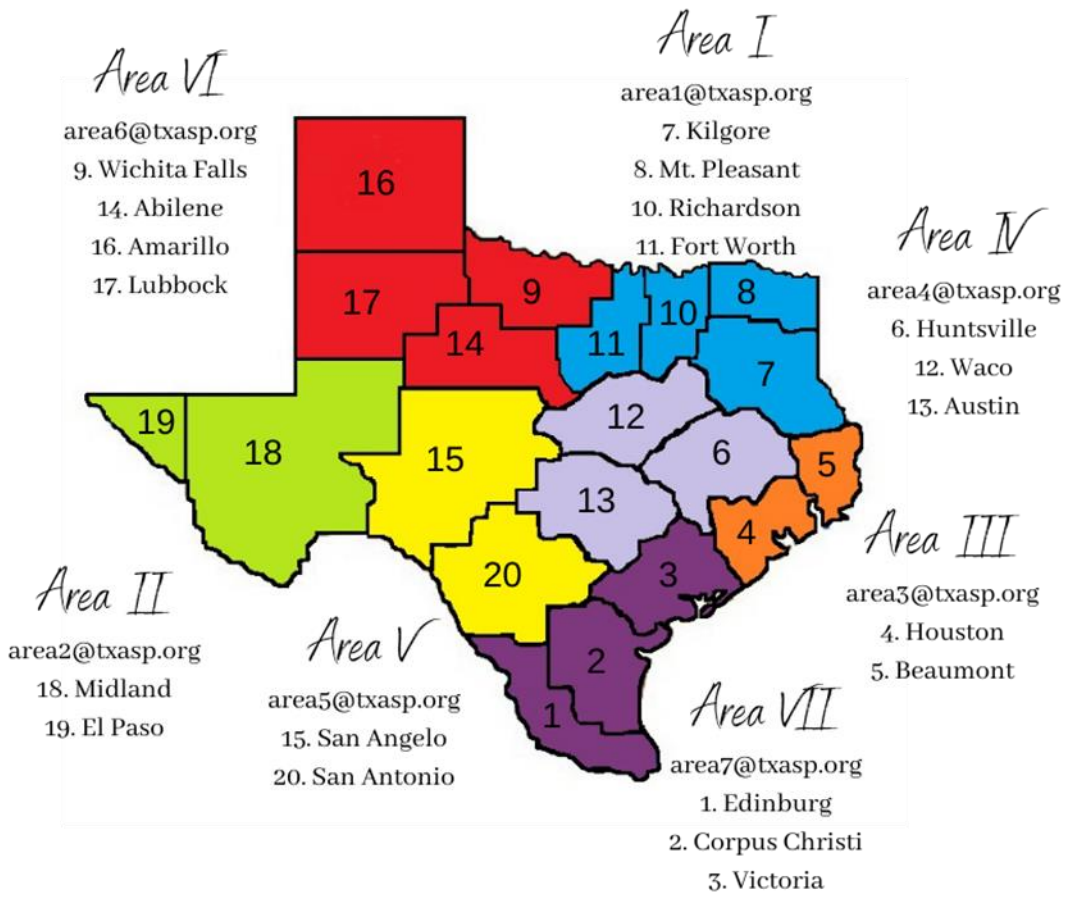
TASP examined school psychology ratios in Texas at the end of the 2022-2023 school year to understand how many school psychologists are employed in public schools compared to the number of students enrolled. Consistent with the methods outlined by Barbre (2019), information was obtained from the Public Education Information Management System (PEIMS) data reports collected by the Texas Education Agency (TEA; 2023). Specifically, staff full-time equivalent (FTE) counts, salary reports, and student enrollments were analyzed at the statewide level and within each Educational Service Center (ESC) region. During the 2022-2023 school year, school psychologists were coded as LSSPs throughout PEIMS data due to occupational titling standards in Texas at that time.

Before presenting the data, it is important to understand limitations. First, data reported by TEA only includes individuals that are employed by school districts; therefore, school psychologists who independently contract with school districts or who work in schools through professional contract agencies are not included. The number of contract employees is not included in any publicly available statewide database. If school districts are hiring contracted employees to provide psychological services, this is not accounted for in the overall ratio.

Second, Texas also employed 73.65 psychological associates during the 2022-2023 school year. According to the TEA PEIMS code definitions, a psychological associate "serves under the Licensed Specialist in School Psychology (LSSP) or psychologist to provide guidance and counseling services to students." It is possible these individuals are unlicensed school psychology interns or individuals with another license to provide mental health services, such as an LPA (licensed psychological associate). These individuals are coded separately and are not included in the LSSP totals.

Third, data does not take into account how individuals are utilized in their jobs. Some individuals may be licensed as an LSSP but may be coded differently based on their job titles or duties. For

Figure 1
TASP Area Map and ESC Regions



example, some school psychologists may hold administrative roles, such as a special education director or director of psychological services and may not function in the role of a traditional school psychologist. These individuals would not be coded as an LSSP in the PEIMS data unless that was their specific job title.

Data from the TEA website was analyzed based on the 20 ESC regions and seven TASP member areas. Figure 1 shows the TASP area map and the corresponding ESC regions. ESC region and TASP area ratio data from the 2022-2023 school year is in Table 1.

No ESC region or TASP area meets the NASP recommended ratio of 1: 500. ESC regions faring the worst are ESC Region 5 (Beaumont), ESC Region 8 (Mt. Pleasant), and ESC Region 18. These ESC regions are operating at nearly 16-28 times that of the NASP recommended ratio. Each ESC region employs a very low number of LSSPs, despite healthy student populations. For example, ESC Region 5 (Beaumont) employs only 6 LSSPs who aim to serve over 84,000 students.

It appears there are distinct differences when analyzing rural and urban parts of the state. When looking at TASP areas, areas with better ratios include the more urbanized areas of San Antonio, Austin, and Houston. The exception is TASP Area 1 (Dallas), which is the 5th worst ratio area in the state. While these urban areas are doing better than the rural areas, they are still at approximately 3-5 times the NASP recommended ratio.

Differences are apparent within the TASP areas, again pointing to distinctions between urban and rural areas. TASP Area 5 has a rural (ESC Region 15- San Angelo) and urban (ESC Region 20- San Antonio)

Table 1
Student Enrollment and Employed LSSPs by Area and Region for 2022-2023 School Year

Area/Region	Student Enrollment	Employed LSSPs	Ratio	Average Salary
Area 1	1,730,790	508.65	1: 3,403	$71,316.75
Region 7-Kilgore	181,949	57.32	1: 3,174	$66,927.00
Region 8- Mt. Pleasant	55,907	5.29	1: 10,568	$71,286.00
Region 10- Richardson	895,391	237.79	1: 3,766	$72,094.00
Region 11- Fort Worth	597,543	208.25	1: 2,869	$74,960.00
Area 2	257,649	38.90	1: 6,623	$75,789.50
Region 18- Midland	91,871	11.00	1: 8,352	$73,166.00
Region 19- El Paso	165,778	27.90	1: 5,942	$78,413.00
Area 3	1,337,339	563.38	1: 2,374	$72,635.50
Region 4- Houston	1,252,934	557.38	1: 2,248	$76,329.00
Region 5- Beaumont	84,405	6.00	1: 14,068	$68,942.00
Area 4	784,945	385.89	1: 2,034	$69,755.00
Region 6- Huntsville	219,595	82.93	1: 2,648	$76,864.00
Region 12- Waco	177,783	53.41	1: 3,329	$65,306.00
Region 13- Austin	387,567	249.55	1: 1,553	$67,095.00
Area 5	555,434	350.92	1: 1,583	$68,985.50
Region 15- San Angelo	50,253	14.54	1: 3,456	$68,167.00
Region 20- San Antonio	505,181	336.38	1: 1,502	$69,804.00
Area 6	268,278	75.78	1: 3,540	$63.895.00
Region 9- Wichita Falls	36,941	8.50	1: 4,346	$66,128.00
Region 14- Abilene	66,801	22.29	1: 2,997	$63,534.00
Region 16- Amarillo	81,327	21.82	1: 3,727	$64,323.00
Region 17- Lubbock	83,209	23.17	1: 3,591	$61,595.00
Area 7	583,997	185.37	1: 3,150	$71,510.67
Region 1- Edinburg	439,336	134.07	1: 3,277	$74,247.00
Region 2- Corpus Christi	96,042	28.81	1: 3,334	$69,897.00
Region 3- Victoria	48,619	22.49	1: 2,162	$70,388.00
Statewide Totals	5,518,432	2,108.89	1: 2,617	$72,244.00

makeup. While TASP Area 5 has the best ratio in the state, ESC Region 20 has 10 times the student enrollment of ESC Region 15 yet employs 24 times more LSSPs. Similar distinctions between rural and urban areas yield similar patterns in TASP Area 4 (Austin vs. Waco/Huntsville); TASP Area 3 (Houston vs. Beaumont); and TASP Area 1 (Fort Worth/Richardson vs. Mt. Pleasant).

TASP Area 7 represents the newest area and includes ESC Region 1 (Edinburg), ESC Region 2 (Corpus Christi) and ESC Region 3 (Victoria), all located in the southernmost part of the state. ESC Region 1 is the largest region in southern Texas and

enrolls more students than all the ESCs that comprise TASP Areas 2 and 6. Despite large student enrollment numbers similar to Austin and San Antonio, ESC Region 1 employs only 134.07 LSSPs. This number is nearly double in Austin and nearly triple in San Antonio.

Rural areas in West Texas (TASP Areas 2 and 6) have the highest ratios in Texas with only approximately 114 LSSPs to serve over 500,000 students. Again, there is some discrepancy between urban (El Paso) and rural (Midland) areas. For example, ESC Region 18 (Midland) only employs 11 LSSPs to assist over 90,000 students. To meet NASP recommended ratios, ESC Region 18 would need to employ 183 LSSPs, an increase of 172 positions.

When looking at statewide data, Texas continues to struggle with shortages of school psychologists. The average Texas ratio for LSSPs to enrolled students was 1: 2,617, which is over 5 times the NASP recommended ratio. According to data collected by the U.S. Department of Education, National Center for Education Statistics (2022), only five other states have a higher ratio of school psychologists to students than Texas. During the 2022-2023 school year, Texas schools educated 5,518,432 students and employed 2,108 LSSPs.

Longitudinal Ratio Data

Barbre (2019) noted that during the 2017-2018 school year, the school psychologist to student ratio in Texas was 1: 2,792. When analyzing the data across the last six school years (see Table 2), the state average ratio has remained steady with few improvements. When looking at the number of LSSPs employed in Texas schools, the number decreased from 2017-2018 to 2018-2019, but then rebounded and stabilized during the 2019-2020 school year. The number of LSSPs employed in Texas schools has continued to improve minimally since that time. Over six years, there has been a 5.8% increase in the number of LSSPs employed in Texas schools (average of 0.97% each year).

When considering the number of LSSPs employed by school districts, numerous variables may impact this number. For example, while there are new graduates and new licensees each year, there is also attrition. Attrition may occur due to retirement, leaving the field, or transitions to other related work (such as contracting positions or academia).

During the same six-year period, there has been an overall increase in Texas student enrollment of 2.2%. Student enrollment increased steadily each year and peaked in 2019-2020. However, enrollment then decreased by 2.2% between the 2019-2020 and 2020-2021 school year, likely due to the COVID-19 pandemic. Student enrollment has continued to increase each year and the 2022-2023 school year had the highest student enrollment numbers over a six-year period.

State and Regional Average Salaries

During the 2022-2023 school year, the average state LSSP salary reported by TEA was $72,244. Other statistics, such as ranges and standard deviations, are not published. This figure has steadily increased each of the last six school years, representing a 13.2% increase from 2017-2018. However, average salaries across the state vary. TASP Area 2 had the highest average salary ($75,789) while TASP Area 6 had the lowest ($63,895). When analyzing data by ESC region, ESC Region 19 (El Paso) had the highest average salary ($78,413), while ESC Region 17 (Lubbock) had the lowest ($61,595). There does not appear to be a clear relationship between salary, geographical area, ratios, or student enrollments. For example, ESC Region 20 (San Antonio) has the best school psychologist to student ratio in the state and represents a highly urban area, yet their average salary is lower than ESC Region 8 (Mt. Pleasant), a more rural area with 1/10 of the student population and seven times the ratio.

Psychology Licenses Issued by the Texas Behavioral Health Executive Council

Table 3 outlines the number of new psychology licenses issued by the Texas Behavioral Health Executive Council (BHEC) during the years 2019-2022. In 2019, BHEC issued 191 new licenses to practice school psychology. This number increased in 2020 and 2021 before decreasing in 2022. A total of 944 new LSSP licenses were issued across a four-year period (average of 236 per year).

During that same period (the 2019-2020 school year through the 2022-2023 school year), Texas school districts only gained an additional 112.47 LSSPs in full-time school-based positions (11.9% of

Table 2
Longitudinal Ratio Data from 2018-2023

	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
LSSPs Employed	1,993.84	1,958.99	1,996.42	2,044.98	2,089.79	2,108.89
Students Enrolled	5,399,682	5,431,910	5,493,940	5,371,586	5,426,740	5,518,432
Ratio	1: 2,792	1: 2,773	1: 2,752	1: 2,627	1: 2,597	1: 2,617
Average Salary	$63,802	$64,569	$67,350	$68,283	$69,830	$72,244

Table 3
Number of new licenses issues by BHEC from 2019-2022

License Type	2019	2020	2021	2022
Licensed Psychologists (LP)	260	260	431	518
Licensed Psychological Associates (LPA)	24	41	52	41
Licensed Specialists in School Psychology (LSSP)	191	227	273	253
Total	475	528	756	812

Table 4
Longitudinal Trends in TSBEP Licensees from 2019-2022

Licensees	2019	2020	2021	2022	% change from 2019
Licensed Psychologists (LP)	5,593	5,744	6,044	6,254	11.8%
Licensed Psychological Associates (LPA)	934	919	933	919	-1.6%
Licensed Specialists in School Psychology (LSSP)	3,819	3,960	4,107	4,257	11.5%
Total	10,346	10,623	11,084	11,430	10.5%

new licensees). This is not to say that these new licensees did not work in schools in some capacity; they just did not gain employment in school psychology positions coded by TEA. Had all new licensees gained full-time employment in public schools during that time frame and all other LSSPs stayed in their full-time positions, the ratio of school psychologists to students could have decreased to 1: 1,807.

Table 4 highlights the total number of active licenses in the state and longitudinal trends. The number of LSSP licenses held from 2019-2022 shows an 11.5% increase, which is only slightly lower than the increase in licensed psychologists (11.8%). As of 2022, there were 4,257 individuals holding the license to practice school psychology, accounting for 37.2% of the total licenses issued.

When examining the amount of LSSP licenses from 2019 to 2022, the number of LSSP license holders increased by 438 licenses. Compared with data in Table 3, had all other license holders retained their license and new licenses been issued to qualified applicants, that number should have been 753. This means there has been attrition of 315 licenses during this period (an average of 105 licenses lost per year). This could possibly be due to retirement, inactive status, or people leaving the state. Stated another way, while the state averages 236 new LSSP licenses per year, there are also 105 licenses per year not retained, yielding a net gain of approximately 131 licenses each year.

It is important to analyze the number of LSSPs in the state compared to those employed by school districts. Based on the data presented in Table 1, 2,108.89 LSSPs are employed by public schools, while there are a total of 4,257 LSSPs licensed in the state. This means only 49.5% of LSSP licensees are employed in full-time positions coded by TEA, compared to 55% in previous data collection (Barbre, 2019). While we are licensing more individuals and growing the field, we are simultaneously losing individuals who choose to be employed in public schools. However, these individuals with a license may still be contributing to the field in other ways (e.g., university training, ESC employment, advocacy, contracting agencies) that are not counted within the ratio.

Some individuals employed outside of public schools may be dually licensed, which allows for the practice of psychology outside of the school setting. BHEC reports that as of 2022, 325 LSSPs were also licensed psychological associates (LPA), and 664 were also licensed psychologists (LP), for a total of 989 people. This represents 23.2% of licensees. It is possible some dually licensed LSSPs leave employment in school districts to pursue other employment opportunities in higher education, independent practice, hospitals, or community mental health agencies. Some of this population may also represent school psychology faculty members and other university faculty. There are approximately 1,160 individuals who only hold the LSSP license, therefore only allowing them to work in schools, yet they do not work in public schools. These individuals may be retired, work part-time, work for contract agencies, work in related settings outside of public schools (such as ESCs) or may continue to hold the license but work in a non-related field. Some of these individuals may still continue to provide school-based psychological services through part-time or contract work yet are not counted in the overall ratio due to data collection procedures.

Continued Factors Contributing to the Shortage

Addressing school psychology shortages is a multifaceted issue. NASP (2016) outlines contributing factors to the shortage, including recruiting candidates into graduate training, access to training programs, graduate training resources, and shortage of field-based training opportunities. Despite ongoing efforts, Texas has seen minimal improvement within the school psychology workforce and many challenges remain. Within the state, challenges and solutions should be centered on visibility, graduate training, supervision, and retention.

Visibility

Texas continues to employ more school counselors and diagnosticians than school psychologists, despite school psychologists receiving advanced training in school-based mental health, behavioral supports, crisis intervention, and school-wide prevention and intervention for children in educational settings than other professions. The NASP Standards for Graduate Preparation of School Psychologists (2020a) outline that school psychology programs should consist of a minimum of 3 years of full-time study, with a minimum of 60 graduate semester credit hours. According to NASP (2020a), a

specialist degree is generally accepted for certification as a school psychologist across the United States and is typically viewed as a degree higher than a master's, given the number of graduate semester hours. In contrast, school counselors and educational diagnosticians in Texas must hold a master's degree and complete coursework toward an appropriate certificate. In many programs, these hours may overlap. School counselors must have a minimum of 48 graduate semester credit hours, while there is no minimum set for educational diagnosticians. Graduate training programs must also prepare students for a comprehensive role as school psychologists to address individual, classroom, school, and district needs to support children academically, behaviorally, socially, and emotionally.

Despite this well-rounded training, Robinson (2023) states, "Unfortunately, most, but not all, Texas school districts severely limit the role of the school psychologist, employing them almost exclusively as testers for special education. School psychologists are well-trained to evaluate students for special education placement, but this is just one of their many roles." Some of this may relate to a lack of awareness of school psychology competencies. District administrators may also confuse various school-based mental health professionals and their roles.

Some role confusion may also be due to previous titling issues. In May 2023, BHEC adopted rules changes that now allow for the occupational use of the title "school psychologist" for appropriate LSSP license holders in Texas. Previously, school psychologists were called LSSPs, one of only two states in the country where the proper occupational title of school psychologist could not be used. Given the extensive history of the title LSSP in schools and the recent rule change, school psychologists need to participate in extensive awareness campaigns of our appropriate title and educate constituents about our comprehensive role to address student academic, social, emotional, and behavioral well-being.

Graduate Training in School Psychology

When shortages exist, the capacity for training must be considered to analyze the pipeline and opportunities for new professionals to enter the workforce. Texas has 21 universities that have School Psychology graduate training programs. Some universities have specialist level programs, the entry level of training; some universities have doctoral programs in School Psychology; some have both levels of training. In total, there are 26 training programs in Texas: 18 specialist level programs and 8 doctoral level programs. Barbre (2019) noted there were 20 training programs in Texas, indicating a 30% increase in the number of programs in a five-year time span.

The TASP Shortage and Workforce Committee sent a survey to all Texas graduate training programs in Spring 2022 to learn more about training capacity. Eighteen of the 25 programs at the time of the survey (an additional 26th program has since been added) responded. While this data only represents one cycle of applications, on average, each program had 26.5 applicants (range of 6-90) for the 2022-2023 academic year, admitted 16.75 applicants (range of 4-80) and had an average cohort size of 12.2 students (range of 4-75). Programs that are NASP approved or accredited must adhere to faculty to student ratios, specifically 1 FTE faculty for every 12 FTE students/candidates, which may limit student cohort size. Historically, doctoral programs may also accept smaller cohorts due to additional training and research requirements. 72% of responding programs said they were operating at an optimal level at that time. Data from Table 3 indicate on average, 236 new LSSP licenses are issued each year. It is assumed that the majority of those are new school psychology graduates, while some may also represent individuals moving into the state.

Many programs appear to be operating at capacity and Texas universities appear to be creating an ample pipeline. However, this must be maintained through appropriate resources. For example, some programs may be turning away qualified applicants due to the NASP imposed ratio and the fact that they either cannot recruit a new faculty member, or their university has not provided more resources for an additional faculty line. Much like the shortage of school psychologists, there is also a shortage of school psychology faculty members across the nation. Of the 21 universities in Texas offering graduate school psychology training, 10 universities (48%) have an open faculty position in school psychology. If left unfilled, that limits the number of accepted students who then enter the workforce.

Resources to recruit and retain school psychology faculty, along with advocacy for faculty

and university working conditions, are needed. For example, while school psychology practitioners have seen salary increases, public searches for state university salaries indicate that some school psychology faculty members in Texas are earning substantially less than the students they train, which may detract some qualified individuals from entering academia. Texas universities have also been challenged by recent legislation regarding diversity, equity, and inclusion initiatives, critical race theory, and faculty tenure requirements. A survey of Texas university faculty members indicates respondents would not recommend positions to out of state colleagues and the political climate is a leading contributor to more than a quarter of respondents' plans to seek employment outside of Texas (Melhado, 2023). Healthy training programs and universities are vital to maintain a healthy pipeline of school psychologists.

Survey data indicate programs that had fewer applicants were often located in rural areas. Barbre (2019) discussed the location of Texas training programs, as many programs seem to be centered in urban areas, with few programs in rural parts of the state. This trend has continued, as most training programs continue to be centered near the urban areas of Dallas, Houston, Austin, and San Antonio. The majority of LSSP licenses are also centered in these urban areas, which indicates that many graduates may continue to stay in areas close to their training programs. Out of the 254 Texas counties, 42% do not have a school psychologist residing in the county, which likely influences local schools and their ability to provide comprehensive mental health services to students. This also represents a challenge in recruiting students to graduate training programs in rural areas where there are fewer school psychologists to provide supervision and possibly fewer employment opportunities.

Field Experiences and Supervision

Part of school psychology training and preparation is adequate field experiences and supervision. NASP (2020) outlines that school psychology graduate students "complete supervised and sequenced practica and internship experiences consistent with program goals and objectives" (p. 21). BHEC and the Texas State Board of Examiners of Psychologists (TSBEP) rules (2023) state that "supervision within the public schools may only be provided by a Licensed Specialist in School Psychology who has a minimum of 3 years of experience providing psychological services within the public school system without supervision" (p. 114). During the culminating internship year, supervision typically consists of a minimum of two hours per week.

Historically, many graduate students, particularly those at the specialist level, complete field-based experiences close to their training programs. If rural areas do not have a properly licensed school psychologist, they cannot offer a practicum or an internship unless they pay a supervisor from a neighboring area or district to supervise the graduate student. This makes it difficult for those areas to attract people for training and subsequent employment, as many graduates may settle and stay in a school district where they complete their internship.

Issues of stipends for internships and supervisors should also be considered. Many districts do not provide monetary payment to supervisors, as they are expected to complete their typical workload, plus provide supervision as a service to the field. However, in a state of extreme shortages like that in Texas, some supervisors may view this as extra work and choose not to supervise graduate students to ease their already high caseload, which can exacerbate shortage issues.

Districts across the state also vary greatly in the availability of internship positions, how they structure internship programs, and pay for school psychology internships. While this has not been widely analyzed, a brief investigation of job postings on district websites revealed that a large suburban school district located near an urban city in Texas (District A) advertised a salary of $60,000 for specialist level interns for the 2023-2024 school year. Another suburban school district in the same urban area (District B) advertised an hourly wage for interns, equating to approximately $39,000 for a 197-day contract. These districts are located approximately 20 miles apart, so hypothetically, they may be attracting the same pool of students who are searching in that geographical area for an internship opportunity. Research shows that salary is a strong incentive for most early career school psychologists as they choose their first positions (Deni et al., 2021), so some

districts may be losing viable candidates due to salary inequity.

Beyond differences in pay, school districts may also structure internship opportunities differently. Given shortages and staffing ratios, some school districts may require interns to be the main service provider at a school, while others may have interns share a school with their supervisors. School districts with more financial resources, consistent staffing, and lower ratios may have stronger incentives to offer appropriate levels of support and training to graduate students and supervisors, which may further contribute to shortages in some areas. Students in graduate school psychology training programs are also not required to stay in Texas to complete internship opportunities, so some students may opt to train in Texas, but go elsewhere to complete internship and ultimately gain employment. This may be particularly enticing if other states have better ratios, allowing school psychologists to engage in more comprehensive roles.

Retention of Practitioners

Licensee data indicate issues with recruitment and retention of school psychology practitioners, specifically in public school positions. For every two people who are newly licensed in the state, we lose approximately one licensed person in the same year. This could be for a variety of reasons (e.g., retirement, attrition, family moves, not maintaining proper professional development requirements). Approximately 12% of new licensees in the past four years have elected to gain a school-based position and only 49.5% of LSSP licensees are employed by school districts, which has decreased slightly over time. As noted previously, there are 1,160 individuals who only hold the LSSP license and do not work for public schools. Ratios would be much improved if those individuals opted to seek school-based employment in regular positions offered by school districts.

Previous studies have attempted to examine school psychology attrition. For example, Wilczenski (1997) noted 5% of school psychologists left the field each year, with differential levels of attrition across the career span, as the highest rate of attrition occurs in those with six to ten years of experience. Approximately two decades later, Boccio et al. (2016) found 16% of school psychologists wanted to leave their job within the next 5 years and 8% wanted to leave the field entirely. The COVID-19 pandemic may have exacerbated attrition among educational professionals, with data suggesting as many as 42% of teachers have considered leaving their position or retiring (Zamarro et al., 2021).

Literature in school psychology has provided insight into why attrition occurs. School psychologists that are dissatisfied with their jobs often report concerns with professional self-efficacy (Young et al., 2020) and feelings of role overload and a lack of administrative support (Schilling et al., 2018). These themes were echoed in a survey sent to TASP members in spring 2022 who identified high caseloads and appropriate levels of administrative support as salient variables that affect their job satisfaction and retention.

There is less research available on where school psychologists go after leaving a position and their perceptions of new positions. This is particularly salient with the rise of contract school psychology positions. NASP (2020b) defines contract services in school psychology as a situation when "school districts that hire an external agency or professional to carry out a specific assignment, such as a psychoeducational assessment or counseling, rather than using a full-time, salaried school psychologist employed by the school district or that district's special education cooperative" (NASP, 2020b, p. 3). Due to the COVID-19 pandemic and the shift to telehealth and tele-assessment options, some contract school psychology services can also be offered virtually or remotely, which may be appealing to some professionals. There is no data collected on the number of Texas school psychologists who may be providing school psychology contract services, rather than working in full-time school positions; thus, this information is not captured in current ratios. To that point, the current ratios may be better than expected if contract school psychologists were included.

NASP (2020b) notes that contract school psychology services have appeared to increase over time, given the shortages that exist and the increased mental health needs of students. While they recognize that many schools may be in situations that necessitate contract services to meet their needs, "school psychological services are most effective when provided by school-employed school psychologists" (NASP 2020b, p.1). They note various advantages and disadvantages that school districts must consider when pursuing contract employees. For example, while

contract employees may provide needed services in a school, their scope of work may be limited, which may further perpetuate issues with the visibility and role of school psychologists in educational settings. These issues should be thoroughly explored as each school district considers their unique needs.

Conclusion and Future Considerations

Data from this report continue to highlight that school psychology shortages continue in Texas with minimal improvement. Unfortunately, many of the issues and needs Barbre (2019) described remain. Solving workforce shortages is complex and requires a multi-faceted approach aimed at numerous variables. In January 2022, TASP created a position on their executive board for an individual to chair a committee of members aimed at addressing shortage and workforce issues. This is a positive step towards continual data monitoring, advocacy, and resource development.

However, advocacy is needed by all constituents to address this problem and will not be solved by a committee, nor a state association. The following recommendations are given, with the hope that readers can assess how they may contribute to solutions and engage their school districts, administrators, and community members to advocate for policies and practices that will improve school psychology shortages. While some recommendations may apply to certain individuals (e.g., faculty in graduate training programs or state associations) and are noted as such, solving shortages should be viewed as a collective issue that everyone can address in some way through targeted advocacy efforts. Finally, while this list of recommendations is lengthy, it is not exhaustive, and readers may find other areas they would like to address as it relates to shortages in their unique areas.

Recommendations

Data collection procedures (State associations, TEA, university training programs, BHEC, ESCs)

1. Continue and strengthen data collection procedures to annually assess Texas school psychology workforce shortages. Attrition data is needed to examine school psychology retirements, those leaving public schools for other positions, and those leaving the field entirely.
2. Work with TEA to update PEIMS data to reflect school psychology positions that may be paid for by school districts beyond full-time employment (e.g., contract school psychologists) to adequately reflect the workforce providing school-based psychological services.
3. Analyze Texas school districts and the number of school psychology vacancies to assess supply and demand issues in the state.
4. Continue and strengthen data collection procedures to assess Texas graduate student applications, enrollment numbers, and internship placements.
5. Collect data on faculty recruitment, retention, and open positions at Texas School Psychology university training programs.
6. Track newly licensed LSSPs and positions acquired after licensure.

Visibility and role (All school psychology professionals)

1. Educate constituents about school psychology competencies through varied content and media (e.g., awareness campaigns, presentations, School Psychology Week, social media).
2. Work with district administration and leaders to expand opportunities for school psychologists to operate in a comprehensive role consistent with the NASP standards (2020a).

Graduate Training Programs (University graduate training programs, State Associations)

1. Advocate for training and program resources at various levels (e.g., Dean, Provost, System, Legislature).
2. Assess variables that impact faculty recruitment and retention in school psychology programs to ensure adequate staffing levels to support student training.
3. Advocate for commensurate pay for school psychology faculty to ensure equity with practitioner pay increases over time.

4. Consider resources to create flexible training options to reach non-traditional students and those located in rural areas.

State level advocacy (State Associations, ESCs, TEA, BHEC, Legislature)

1. Expand funding sources to incentivize graduate training in school psychology, particularly in underserved areas (e.g., grants, scholarships, partnerships with school districts).
2. Investigate funding options to assist rural districts in providing supervision to graduate students, thus increasing practicum, internship, and employment opportunities.
3. Advocate for funding to support the retention of practicing school psychologists (e.g., retention bonuses, funds to support professional development and licensure).
4. Develop streamlined procedures for statewide internships to create equity in the internship process (e.g., commensurate intern salaries, similar timelines, and procedures for applications).
5. Investigate options to encourage and recruit appropriately licensed individuals to work in public school positions.

School Districts (Practicing school psychologists and administrators)

1. Advocate for fair compensation for school-based supervisors (e.g., stipends, reduction in caseload to support graduate students).
2. Reflect on NASP standards for practicum and internship placements and supervision to appropriately support and scaffold graduate student experiences.
3. Examine ways to provide appropriate levels of administrative and professional support to ease role overload due to ongoing shortages.
4. Administer employee surveys to assess job satisfaction and utilize survey results to address the unique needs of practicing school psychologists.
5. Investigate ways to help employees maintain healthy work-life balance amidst increasing workloads.
6. Provide ongoing supervision and mentorship and increased opportunities for professional development for practicing school psychologists.

There are many opportunities and ways to address the shortage of school psychologists in Texas. While these recommendations are organized based on where they may take place, everyone must be vocal and present if we expect to see any improvement. This report is meant to be shared, discussed, and reflected upon with parents, community members, school boards, school staff, and legislators. A lack of school psychologists has a ripple effect for our children and communities, and everyone should be engaged on this issue. It is the writer's hope that this report spurs important conversations and meaningful action to address these important concerns.

References

Barbre, S. (2019). A report on the state of school psychology in Texas schools: 2017-2018 school year. *Research and Practice in the Schools, 6*(1), 1-10.

Boccio, D. E., Weisz, G., & Lefkowitz, R. (2016). Administrative pressure to practice unethically and burnout within the profession of school psychology. *Psychology in the Schools, 53*, 659–672. https://doi.org/10.1002/pits.21931

Deni, J., Power, E. M., Sams, A., Black, H., & Baker, E. R. (2021). An exploratory study of shortages in the field of school psychology. *School Psychology Training and Pedagogy, 38*(4), 67-84.

Eklund, K., DeMarchena, S. L., Rossen, E., Izumi, J. T., Vaillancourt, K., & Rader Kelly, S. (2020). Examining the role of school psychologists as providers of mental and behavioral health services. *Psychology in the Schools, 57,* 489–501. https://doi.org/10.1002/pits.22323

Hendricker, E., Bender, S., & Ouye, J. (2022). The school psychology shortage and its impact on family-based programming. *Contemporary School Psychology, 26*(1), 55-77. https://doi.org/10.1007/s40688-021-00354-9

Melhado, W. (2023, September 7). Texas' political environment driving faculty to leave, survey finds. *The Texas Tribune.*

National Association of School Psychologists. (2016). *Addressing shortages in school psychology: Resource guide*. Author.

National Association of School Psychologists. (2020a). *The professional standards of the National Association of School Psychologists*. Author.

National Association of School Psychologists. (2020b). *Considerations for contract services in school psychology [Brief]*. Author.

Robinson, E. L. (2023, January 20). Where are the school psychologists in Texas? *The Dallas Morning News.*

Schilling, E. J., Randolph, M., & Boan-Lenzo, C. (2018). Job burnout in school psychology: How big is the problem? *Contemporary School Psychology*, 22, 324-331. https://doi.org/10.1007/s40688-017-0138-x

Texas Association of School Boards. (2021). Strategic Staffing: Part 4- Special Education. https://www.tasb.org/services/hr-services/hrx/hr-trends/strategic-staffing-part-4-special-education.aspx

Texas Behavioral Health Executive Council and Texas State Board of Examiners of Psychologists. (2023). Rules and Acts of the Board. https://www.bhec.texas.gov/wp-content/uploads/2023/03/PSY-Rulebook-March-2023.pdf

Texas Education Agency. (2023). Public Education Information Management System (PEIMS) Standards Reports. https://tea.texas.gov/reports-and-data/student-data/standard-reports/peims-standard-reports

U.S. Department of Education, National Center for Education Statistics, Common Core of Data. (CCD),"State Nonfiscal Public Elementary/ Secondary Education Survey," 2021–2022 V.1a.

Wilczenski, F. L. (1997). Marking the school psychology lifespan: Entry into and exit from the profession. *School Psychology Review, 26*(3), 502-514.

Young, E. L., Moulton, S. E., Julian, A., Smith, A., & Butler, R. (2021). Retention and job satisfaction of school psychologists. *Psychology in the Schools, 58*(3), 585-600. https://doi.org/10.1002/pits.22465

Zamarro, G., Camp, A., Fuchsman, D., & McGee, J. B. (2021). *Understanding how COVID-19 has changed teachers' chances of remaining in the classroom [Research Brief]*. Education Reform Faculty and Graduate Students Publications. https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=1128&context=edrepub

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 14-30

ISSN: 2329-5783

Article

Supporting Teachers and Students via the Teacher-Student Mental Health Interaction Model

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Teachers experience burnout, secondary traumatic stress, and compassion fatigue which reduces their mental health and capability of supporting students with mental health concerns (Caringi et al., 2015; Koenig et al., 2018). Research has emerged, however, to demonstrate that improved teacher mental health can be linked to improved student mental health (Harding et al., 2019). As a result of unmet teacher self-care needs and student mental health needs, we introduce the Teacher-Student Mental Health Interaction Model (T-SMHIM) as a way to conceptualize the bi-directional nature of teacher and student mental health. While this is not intended to be a comprehensive systematic literature review, we describe teacher training elements, to be delivered by school psychologists, that promote self-care and equip teachers with knowledge and skills to support student mental health. This paper provides school personnel with information and research to support a new framework for conceptualizing student mental health and academic achievement.

Key words: teacher, student, mental health, compassion fatigue, burnout

Introduction

Teachers and educators have various roles within the education setting (McGhie-Richmond & Haider 2020; Valiente et al., 2020) and numerous demands and expectations are placed on them to meet all the needs of their students. Not only are teachers responsible for student learning and academic success, they support the overall well-being of their students (Valiente et al., 2020) and teach socioemotional skills, while maintaining classroom management, structure, and predictability (Borg et al., 1991; Valiente et al., 2020). They also differentiate instruction, supporting the inclusion of students who qualify for special education services (McGhie-Richmond & Haider, 2020). Being pressured to produce class-wide success, particularly in relation to high-stakes testing, results in an environment of constant accountability and can take a significant toll on teachers (Borg et al., 1991; Herman et al., 2018). The COVID-19 pandemic has intensified the pressure placed on teachers (Hemphill & Marianno, 2020). Often without training or additional resources, teachers had to switch to providing online instruction (Hemphill & Marianno, 2020). Some teachers now provide hybrid instruction in which they must balance the competing demands of students served virtually and students served in-person (Pressley & Ha, 2021), while simultaneously considering their own, and their families', health needs. The multiple roles a teacher takes on in the classroom, combined with the added stress of the increased workload from the pandemic (Kaden, 2020), demonstrates a need to explore teacher mental health concerns.

School-based mental health not only refers to the mental health and well-being of students, but teachers

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as well (Lever et al., 2017). Evidence suggests K-12 teachers experience similar levels of stress compared to nurses and physicians (Gallup, 2014; Lever et al., 2017), even before the pandemic. Almost 80% of teachers experience feelings of physical and emotional exhaustion at the end of the workday (American Federation of Teachers, 2015; Lever et al., 2017). This is nearly a 45% increase from 1991, in which Borg et al. (1991) found about one-third of teachers indicated their occupation was "very stressful" or "extremely stressful." This increase over the past 30 years is cause for immediate concern. With the added stress of the pandemic, teachers continue to report greater mental health concerns than professionals working in healthcare, offices, and other settings (Kush et al., 2021). It is important to note that teachers working remotely reported higher levels of distress than teachers working in-person during the 2020-2021 school year (Kush et al., 2021), suggesting the switch to virtual instruction impacted teacher mental health. In normal circumstances, about 10% of teachers leave the profession after one year (Gray & Taie, 2015), and up to 30% of teachers leave within five years (Sutcher et al., 2015). However, given the added stressors of the pandemic, 32% of respondents from a National Education Agency survey said the pandemic led them to plan to leave the profession earlier than they expected (Walker, 2021). Another survey reached the same conclusion that more teachers reported they were considering leaving their job at the end of the 2020-2021 school year compared to previous years (Walker, 2021). Although it is clear that educators need mental health support, only about 25% of schools offer stress management training to their staff (U.S. Department of Health and Human Services, 2015). Schools are lacking programs and resources to help teachers and other staff members manage work-related stress and improve well-being (Lever et al., 2017).

Just as teacher mental health needs exist, it is equally important to identify and support student mental health needs. Approximately 25% of children experience at least one type of diagnosable mental health condition each year (Kase et al., 2017). Perhaps even more alarming, almost 50% of children with a mental health disorder do not receive adequate treatment or counseling from a mental health professional (Whitney & Peterson, 2019). In schools in which mental health services are provided, researchers have found that up to 80% of youth identified as needing mental health support receive those services within the school setting (Rones & Hoagwood, 2000).

Bi-Directional Impact of Teacher and Student Mental Health

Student behavioral challenges have been found to contribute to teacher burnout, exhaustion, and attrition, thus contributing to a continually negative classroom environment as the teacher struggles to regulate students' behaviors (Milkie & Warner, 2011). Eddy et al. (2020) indicate that the "association between teacher exhaustion and student disruptive behaviors is likely to be bi-directional, such that challenging disruptive behaviors can contribute to teacher stress" (p. 241). When teachers are under stress, they may indirectly and unintentionally negatively impact students' mental health and subsequent academic performance (von der Embse et al., 2015; von der Embse et al., 2016). For instance, a study conducted by Herman and colleagues (2018) examined 121 general education teachers and over 1,800 students to determine how teacher stress and burnout related to students' behavioral and academic achievement outcomes. The researchers categorized teachers and classrooms based on levels of stress, burnout, and coping. They found 93% of teachers in the sample endorsed symptoms categorized by high levels of stress. Teachers categorized as high stress and high burnout with low coping were associated with the highest rates of student behavioral challenges and poorest academic outcomes (Herman et al., 2018). Conversely, Eddy et al. (2020) found that as teacher ratings of emotional exhaustion decrease, the use of exclusionary disciplinary practices also decreased (Eddy et al., 2020).

Purpose

As suggested by Eddy et al. (2020), we propose the relationship between teacher and student mental health is bi-directional such that a teacher's state of mental health directly impacts a student's state of mental health, and vice versa. Thus, as a teacher struggles with aspects of mental health related to burnout, secondary traumatic stress (STS), and compassion fatigue (CF), a student's mental health will be negatively impacted as well. We suggest the opposite direction is also true: as students struggle with mental health and behavior, particularly in relation to trauma experiences, this will negatively impact a teacher's mental health. Taken together, we introduce the Teacher-Student Men-

tal Health Interaction Model (T-SMHIM) as a way to conceptualize the bi-directional nature of teacher and student mental health. We apply the T-SMHIM to propose training school psychologists to develop and provide for pre-service and practicing teachers. We suggest school psychologists educate teachers and school staff on how student and teacher mental health are related and how teachers can use techniques to prevent CF, STS, and burnout to not only improve their mental health, but the mental health of their students, as well.

The T-SMHIM is intended to provide school personnel with evidence-based information and promote context-specific supports to improve teachers' and students' self-care practices and mental health outcomes. The model goes beyond identifying a problem; it also details proposed training elements and expected outcomes. Through introducing teacher self-care practices and knowledge and skills training related to supporting student mental health, we predict both teacher and student mental health outcomes will improve. Given a school psychologist's training in consultation and the National Association of School Psychologists' (NASP) call to promote school-wide practices that promote learning, we purport it is within a school psychologist's role to tailor the training elements described in this paper to their school context and implement teacher training related to self-care and student mental health (NASP, 2020). As student mental health improves, we expect teacher mental health to improve, as well as the reverse. Our model will provide an integrative framework for teachers, administrators, school systems, and education training programs to conceptualize the mental health of students and teachers. We propose understanding the interaction between teacher and student mental health will help educational systems better identify, address, and prevent the multitude of risk factors contributing to mental health problems among students and teachers. While this is not intended to be a comprehensive systematic literature review, we incorporate literature that informs the development of and supports the proposed outcomes of our model. This paper is organized according to the components of the T-SMHIM found in Figure 1.

The Presenting Problem

The first section of the T-SMHIM, as seen in Figure 1, outlines two aspects of the presenting problem: (1) teacher burnout, STS, and CF lead to unmet self-care needs; and (2) teachers have limited training to support student mental health needs, contributing to unmet student mental health needs in the classroom. These aspects, both individually and collectively, can have a negative impact on teachers' mental health as well as negative impacts on student mental health (Brunsting et al., 2014; Koenig et al., 2018). Conversely, research has emerged to demonstrate that improved teacher mental health has been linked to improved student mental health (Harding et al., 2019). Both unmet teacher needs and unmet student needs may be cause for teacher mental health to suffer. We synthesize the research to explicate the presenting problem that is detrimental to teacher mental health.

Unmet Teacher Needs

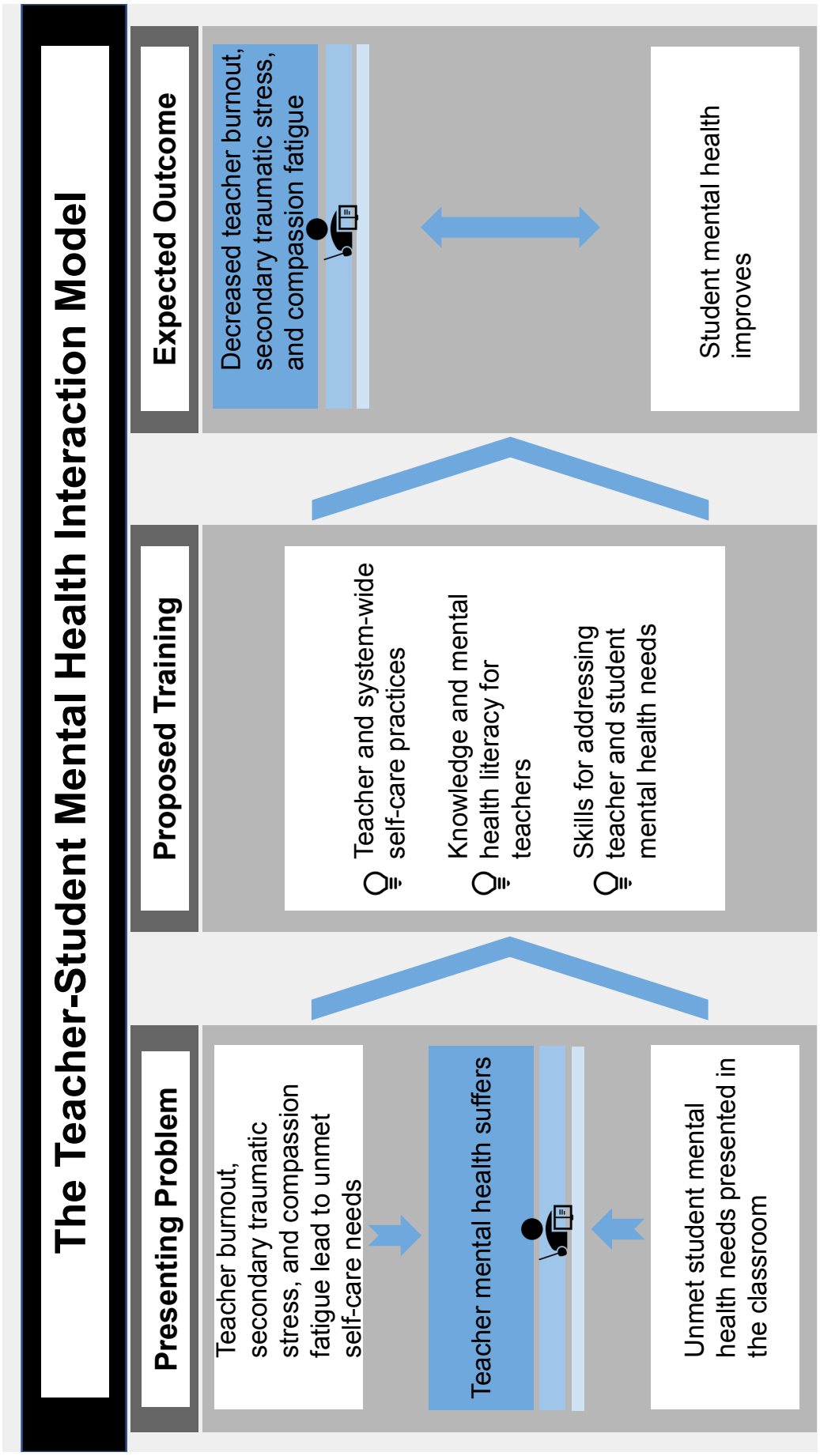
Burnout

Burnout, STS, and CF are often used interchangeably, but are distinct constructs (Cieslak et al., 2014; Essary et al., 2020). Burnout as an occupational construct was introduced in the 1970s (Freudenberger, 1974; Schaufeli & Buunk, 2003) and the field often cites the early work of Maslach and Jackson (1981; 1984; 1986) as the working definition we continue to use. Burnout occurs progressively over time (Koenig et al., 2018), and is defined as "a prolonged response to chronic emotional and interpersonal stressors on the job" (Maslach, 2003, p. 189). Burnout is characterized by three dimensions of exhaustion, depersonalization, and professional inadequacy (Maslach, 2003; Newell & Nelson-Gardell, 2014; Pietarinen et al., 2013). Exhaustion is a feeling of a lack of energy and chronic fatigue as the individual's emotional resources are drained by the intensive and longstanding stress of the profession (Pietarinen et al., 2013; Skaalvik & Skaalvik, 2011). Depersonalization is often referred to as cynicism or the detached, and at times, aloof, attitudes an individual may have toward their job and the individuals they serve (Maslach, 2003; Pietarinen et al., 2013; Schaufeli & Buunk, 2003). Finally, professional inadequacy is a low sense of self-efficacy, leading individuals to perceive they are ineffective at their job and lacking in personal accomplishment (Byrne, 1994; Pietarinen et al., 2013; Schaufeli & Buunk, 2003).

It is important to note "burnout does not require second-hand exposure to trauma via one's work" (Chris

Figure 1

The Teacher-Student Mental Health Interaction Model



tian-Brandt et al., 2020, p.2). Symptoms of burnout often lead to a host of negative outcomes, including increased absenteeism (Schonfeld, 2001) and intent to leave the profession (Christian-Brandt et al., 2020; Shackleton et al., 2019), increased physical and mental health problems, including depressive symptomatology (Bianchi et al., 2013; Pas et al., 2012), and may negatively impact student behavior and achievement (Pas et al., 2012). Working conditions, including perceptions of administrative leadership and collegial relationships (Pas et al., 2012; Skaalvik, & Skaalvik, 2007), rates of student out-of-school suspensions (O'Brennan et al., 2017), large class sizes (Caringi et al., 2015), and time constraints (Shackleton et al., 2019; Skaalvik & Skaalvik, 2009) have all been linked to burnout (Pas et al., 2012).

Secondary Traumatic Stress

STS is "the natural consequent behaviors and emotions resulting from knowing about a traumatizing event experienced by a significant other—the stress resulting from helping or wanting to help a traumatized or suffering person" (Figley, 1995, p. 7). In other words, STS is considered a secondary condition that results from an individual hearing about details of a traumatic event experienced by someone the individual cares about rather than directly experiencing the traumatic event themselves (Essary et al., 2020). Little has been studied in relation to teachers and STS (Caringi et al., 2015; Christian-Brandt et al., 2020), although it is starting to gain more attention in the literature (Essary et al., 2020; Koenig et al., 2018). The first known study to examine STS in educators took place by Borntrager and colleagues in 2012. Their study revealed that 75% of individuals in the sample were reporting levels of STS equal to mental health professionals (Borntrager er al., 2012). Little additional research has been conducted since this seminal study.

Compassion Fatigue

In contrast to burnout, CF can occur after hearing about one traumatic episode (Koenig et al., 2018). CF is defined by Hydon et al. (2015) as:

> [a]n emotional state with negative psychological and physical consequences that emanate from acute or prolonged caregiving of people stricken by intense trauma, suffering, or misfortune. Compassion fatigue occurs when emotional boundaries become blurred and the caregiver unconsciously absorbs the distress, anxiety, fears, and trauma of the patient. (p. 323)

In other words, CF reduces our ability to endure the suffering of others (Figley, 2002). When a teacher becomes overwhelmed by their students' needs and exposure to trauma, the teacher's emotional well-being can be negatively impacted. Originally proposed by Figley (2002), empathy is the foundational tenet under which CF operates, such that empathy is necessary for: (1) working with individuals that are suffering; (2) having a caring relationship with the individual suffering; and (3) delivering effective services to the individual. Figley (2002) argues compassion and empathy come at a cost, however, in the form of CF. When a child, or multiple children, in a classroom experience a traumatic event, the classroom teacher is often hearing about and witnessing the negative impact of the trauma on the child's academic and socioemotional functioning. Further, given that teachers are considered mandatory reporters (Hupe & Stevenson, 2019), they are often the ones to make reports to child welfare agencies on their students' behalf. When this is experienced on a regular basis—caring for children with traumatic histories—CF is likely (Cieslak et al., 2014; Hupe & Stevenson, 2019). Presently, there is a significant lack of research examining CF within the teaching profession (Hupe & Stevenson, 2019; Koenig et al., 2018).

Addressing Burnout, STS, and CF

Burnout and STS are components woven into Figley's (2002) model and it appears CF is, in part, the manifestation of the emotional exhaustion and depersonalization components of burnout (Koenig et al., 2018). Cieslak and colleagues (2014) propose CF is naturally produced by the presence of burnout and STS in service professionals and are likely to co-occur when professionals are indirectly exposed to trauma on the job. At present, it appears that CF is more prevalent in underserved schools (Christian-Brandt et al., 2020) and in schools with higher rates of economically marginalized and racially and ethnically diverse populations (Abraham-Cook, 2012; Denham, 2018). Hupe and Stevenson (2019) also found that as self-report ratings of CF increased, teachers reported increased cynicism toward their jobs and detachment from their students—all components related to burnout (Maslach, 2003). Further, as CF increased, teachers reported significantly more negative attitudes towards reporting child abuse

and indicated they would be less likely to make reports as required by law (Hupe & Stevenson, 2019).

While CF and STS have been studied widely in health care and mental health professionals (Baird & Kracen, 2006; Caringi et al., 2015; Cieslak et al., 2014), this has not been studied as extensively for educators (Caringi et al., 2015; Christian-Brandt et al., 2020; Hupe & Stevenson, 2019; Koenig et al., 2018). However, there is a wide literature base in relation to burnout. Therefore, we are proposing a framework whereby we address each of these constructs as a means to ameliorate burnout, STS, and CF among teachers, thus improving teacher and student mental health. By focusing intervention efforts solely on burnout, as is common practice (Iancu et al., 2018), we suspect current interventions overlook the symptoms associated with STS and CF, leaving teachers without the knowledge to prevent the development of STS or CF and ameliorate their symptoms. As research regarding the prevalence of childhood trauma continues to evolve (Smith et al., 2019), we suggest the research surrounding possible ripple effects on teachers (e.g., STS and CF) continue to evolve with it. See Figure 2 for a visual representation of the effect of burnout, STS, CF, and personal stressors on teachers.

Unmet Student Needs

As students continue to face challenges in the contexts of their home and educational settings, mental health challenges can arise. About 25% of children in the United States are reported to have at least one mental health disorder (Kase et al., 2017) and nearly 50% do not receive adequate treatment or counseling from a mental health professional (Whitney & Peterson, 2019). When student mental health needs go unmet, there can be deleterious impacts on academic success. In general, students with mental health concerns are more likely to be absent from school and less successful academically (Lereya et al., 2019). Specifically, children with externalizing behaviors who have problems with peers may have lower academic performance and greater emotional difficulties compared to those who do not. Further, students with hyperactivity and/or attention difficulties are more at risk for absenteeism compared to other students (Lereya et al., 2019). Chronic absenteeism has also been linked to student mental health such that these students receive less instruction and may feel a heightened sense of alienation from their peers and teachers upon returning to school, thus negatively impacting learning (Gottfried, 2011; Lereya et al., 2019).

Children with trauma symptomatology may present behavioral challenges in the classroom (Bell et al., 2013). Childhood trauma, when left untreated, can also significantly impact student well-being and academic performance (Crouch et al., 2019; Peterson, 2018). As of 2014, almost half of children in the United States have experienced at least one adverse childhood experience (ACE; Sacks et al., 2014). Children who have experienced or witnessed a traumatic event are at a high risk for developing posttraumatic stress disorder (PTSD), internalizing, and/or externalizing behaviors, and are at risk for developing maladaptive behaviors such as substance abuse, engaging in high-risk activities, and smoking, among others (Peterson, 2018). Difficulties with attention and learning can impact how students with trauma interact with others and how they perform academically (Peterson, 2018).

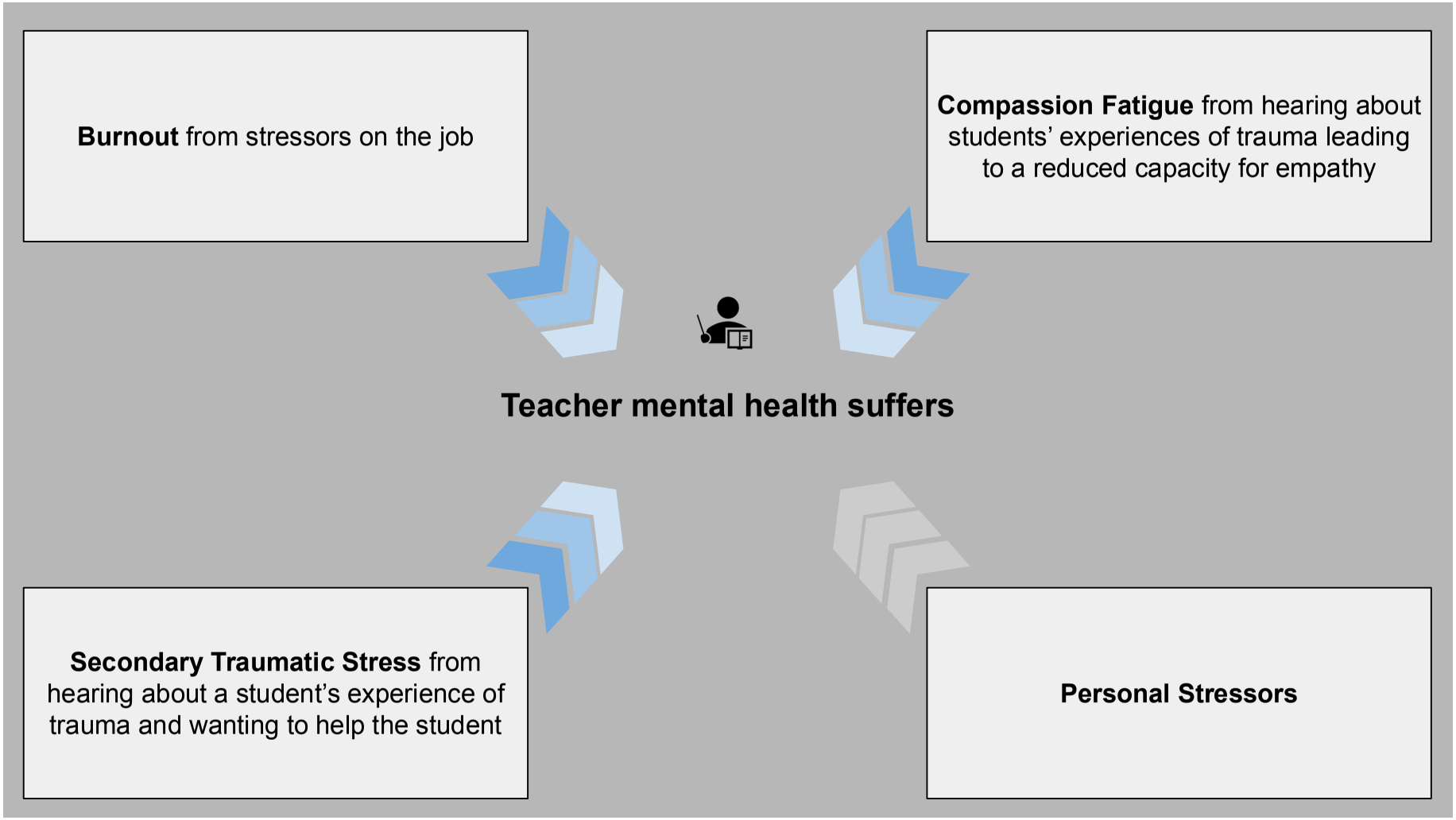
Unmet basic needs, such as food and sleep, can also have harmful effects on student mental health. According to Coleman-Jensen et al. (2019), 7.1% of families with children experienced food insecurity in 2018. Children and adolescents who experience food insecurity are at an increased risk for depression, substance use, and suicidal ideation (Brinkman et al., 2021) as well as poor academic outcomes (Martinez et al., 2020) and emotional distress, which hinders attention and motivation during school (Ashiabi et al., 2005). When children do not receive adequate sleep (e.g., 9 to 12 hours for children ages 6 to 12), they can be at risk for developing more internalizing problems (Fitzgerald et al., 2011; Nunes et al., 2020; Paruthi et al., 2016). Adolescents and teenagers who regularly do not receive the recommended amount of sleep (i.e., too much or too little sleep in a 24-hour period) are at an increased risk for self-harm, suicidal ideation, and suicidal attempts (Fitzgerald et al, 2011; Paruthi et al., 2016). Moreover, sleep deficits have a direct impact on academic performance (Perfect et al., 2014; Stormark et al., 2019) as those with sleep problems are at risk for attention, behavior, and cognitive functioning concerns, in addition to learning challenges (Paruthi et al., 2016).

Teacher Mental Health Suffers

As previously discussed, teachers are faced with an incredible challenge as students come to school carrying a heavy burden related to unmet basic needs,

Figure 2

Burnout, Secondary Traumatic Stress, and Compassion Fatigue in Teachers



trauma, and mental health challenges. In fact, teaching has been identified as one of the most stressful occupations (Herman et al., 2018; Johnson et al., 2005) as teachers are required to remain as flexible and creative as possible, make multiple decisions "on the fly" while at the same time maintaining structure, and are faced with limited time for planning and preparation, all while experiencing increasingly heavy workloads (Klassen & Chiu, 2010; Roeser et al., 2012; Roeser et al., 2013). In 2020, the Education Support Partnership (ESP) presented the Teacher Wellbeing Index, a survey of over 3,000 educators in the United Kingdom. The ESP found 74% of teachers reported behavioral, psychological, and physiological symptoms associated with work-related stress. Almost half had been diagnosed with anxiety or depression (ESP, 2020) yet 57% of those surveyed reported not feeling comfortable disclosing mental health concerns and unmanageable stress levels to their employers. Survey results also indicated high rates of absenteeism, and 52% indicated they had considered leaving the profession during the past two years due to concerns with mental health and well-being (ESP, 2020). Perhaps most shockingly, while the report summarizes two surveys administered in June and July, and October, respectively, the percentage of educators endorsing feeling "stressed" increased from 62% to 84% in just three months. It is no wonder up to 30% of teachers leave the profession within the first five years (Sutcher et al., 2015). We are also seeing a shortage of teachers and individuals entering the profession. Since 2010, there has been a 35% reduction of enrollments in teacher preparation programs (Sutcher et al., 2015). Focusing on teacher mental health is a foundational component of teacher recruitment and retention (Gray et al., 2017; McLean et al., 2017).

As teachers struggle to manage the socioemotional and mental health needs of the students in their classroom, children demonstrate less on-task behavior and lower levels of academic performance (Marzano et al., 2003). Jennings and Greenberg (2009) refer to this as the *burnout cascade* such that "[t]he deteriorating climate is marked by increases in troublesome student behaviors, and teachers become emotionally exhausted as they try to manage them" (p. 492). Excessive feelings of burnout, STS, and CF may lead teachers to engaging in punitive disciplinary practices, thus exacerbating classroom disruption and student mental health concerns (Eddy et al., 2020; Jennings & Greenberg, 2009; Schussler et al., 2016). Although teachers are uniquely positioned to address the mental health needs of students (Franklin et al., 2012; Johnson et al., 2011; Ohrt et al., 2020), teachers often feel they do not have adequate knowledge, training, and confidence to best serve their students (Frauenholtz et al., 2015; Frauenholtz et al., 2017; Reinke et al., 2011; Walter et al., 2006). The lack of preparedness and adequate training may lead to challenges identifying symptoms related to mental health concerns and perpetuate the persistence of stigma surrounding mental health (Frauenholtz et al., 2017). Further, a lack of training in self-care and student mental health may lead to burnout and CF (Eddy et al., 2020; Newell & Nelson-Gardell, 2014). Teachers who lack skills involving student mental health are also less likely to refer students, preventing those students from receiving adequate services (Powers et al., 2014).

Proposed Training

The middle section of the T-SMHIM, as seen in Figure 1, outlines aspects of a proposed training that can support teacher mental health, student mental health, and ultimately student achievement and learning. We propose that by providing a three-pronged teacher training that focuses on promoting teacher and school-wide self-care practices, teacher knowledge and mental health literacy, and skills for addressing teacher and student mental health needs, we can mitigate the unmet teacher self-care needs and unmet student mental health needs described above.

When combining the proposed training elements further described below, we suggest school psychologists utilize the professional development framework proposed by Joyce and Showers (2002) that includes four key elements: acquiring knowledge of the content being delivered by exploring the theory behind the skills or strategies being taught, demonstrating the skill or strategy being taught, the explicit practicing of the skills or strategy being taught, and including an element of peer coaching or support to enhance implementation of the skills or strategies. Specifically, in relation to the last element, providing a peer coaching/support network has been found to build strong working relationships amongst colleagues and has been shown to be an effective practice for the long-term change

of the educator's practice. When these four elements are combined in professional development sessions, knowledge of content, skill implementation, and classroom application are maximized (Darling-Hammond et al., 2009; Joyce & Showers, 2002). Further, evidence supports the importance of sustained and ongoing professional development connected to one's practice that aligns with school priorities and goals, rather than seen as an isolated effort (Darling-Hammond et al., 2009).

This section employs the current literature base to describe why implementing such teacher training is important, in both teacher education programs and by school psychologists as supplementary training for practicing teachers.

Focus #1: Promoting Teacher and System-Wide Self-Care Practices

Self-care is commonly discussed in conjunction with the term well-being (Daly & Gardner, 2020; Posluns & Gall, 2020; Richards et al., 2011); however, self-care refers to the explicit behaviors one takes to "maintain and promote physical and emotional well-being" (Virtue et al. 2012, p. 56). According to Walsh (2011), self-care is developing an awareness of one's needs, with the understanding that the overexposure to stressors can take a toll on one's well-being. Recognizing and revising unrealistic expectations of self is one way that professionals can practice self-care (Wise et al., 2012). It is important to note that a teacher's current experience is not their own fault due to a lack of self-care. We recognize teachers operate in systems that often make finding time for oneself challenging (Kokkinos, 2007) due to the many roles a teacher plays throughout the school day (Valiente et al., 2020) and the multitude of pressures placed on teachers to meet student academic and behavioral needs (Herman et al., 2018). Instead, by defining self-care as any adaptive practice that promotes self-compassion and decreases feelings of stress, we aim to promote school culture shifts that value and prioritize teacher self-care.

For some, self-care can be seen as an extra responsibility on top of an already time- and energy-consuming job. Thus, Benson (2018) promotes a change in the educational structure, rather than focusing efforts solely on promoting self-care. Working to change the "systemic demand of teaching every child" (Benson, 2018, p. 39) should not be overlooked. Benson suggests creating opportunities for educators to work with experienced mentors, providing clinical consultation, offering confidential places for teachers to talk, reminding teachers they are not expected to "cure" students, and providing five-minute substitutes. This emphasis on changing the school structure and culture, rather than adding to a teacher's to-do list, must inform self-care training for teachers and school staff. We propose school psychologists provide pre-service teachers, practicing teachers, paraprofessionals, administrators, and other school staff with information on the benefits of self-care. In providing training regarding self-care practices, school psychologists can employ evidence-based kernels such as reinforcement (e.g., rewarding teachers who engage in specific self-care practices), altering antecedents (e.g., providing reminders to engage in self-care practices), and changing physiological states directly (i.e., mindfulness) to produce reliable behavior changes (Embry & Biglan, 2008), further clarifying how self-care training can produce reliable behavior changes that can facilitate improved teacher mental health outcomes. Of equal importance, we suggest school psychologists work with school administrators to provide opportunities for teachers to connect with other teachers for social support or take breaks in the day to practice self-care, cultivating a school climate where self-care is a priority.

Focus #2: Providing Knowledge and Mental Health Literacy for Teachers

Teachers receive training in academic instruction and the subject(s) in which they seek certification; however, recognizing student mental health concerns is not emphasized in their training (Ohrt et al., 2020). According to Jennings and Greenburg (2009), teachers and students would benefit from teacher training in emotional intelligence, classroom management, and fostering a positive classroom climate. Teacher and student mental health may also be supported as teachers learn about trauma and implement trauma-informed practices. Equipping teachers with knowledge to understand how a student's experiences shape their behaviors and providing teachers with skills to implement a socioemotional intervention or refer a student for more support is vital in getting students the services they need (Ohrt et al., 2020).

Jennings and Greenberg's (2009) Prosocial

Classroom Model explains how deficits in teacher social-emotional competence and well-being can lead to a burnout cascade that negatively impacts classroom relationships, as well as classroom management and climate. Although the Prosocial Classroom Model addresses teacher social-emotional competence and well-being, as well as student social, emotional, and academic outcomes via relationships, classroom management, and social-emotional learning (SEL) implementation, it does not account for the proposed bi-directional relationship between teacher and student mental health, as emphasized in the T-SMHIM. Their model is useful in conceptualizing the relation between teacher and student mental health; however, Jennings and Greenberg (2009) fail to address how students themselves fit within the framework of improved teacher social and emotional competence and improved student outcomes. Through the T-SMHIM we expand upon the Prosocial Classroom Model to include student mental health as part of the problem and an expected indication of whether the proposed teacher trainings were sufficient. By supporting teachers' knowledge related to student mental health and promoting teacher self-care practices, we propose student mental health will improve.

According to Jennings and Greenburg (2009), no pre-service or in-service training programs exist that "focus on improving teachers' knowledge and skills regarding students' social and emotional development that have been carefully evaluated to examine their effects on teacher and classroom functioning" (p. 512). Ohrt et al. (2020) conducted a systematic review, evaluating peer-reviewed articles from the past 100 years, and found that only 15 articles "consisted of intervention studies focused on improving K-12 teachers' abilities to identify and manage student mental health concerns conducted either through a control group comparison or a pre/posttest evaluation" (p. 835). Similarly, Anderson et al. (2019) found only 8 articles that employed randomized control trials or non-controlled pre-/post cohort designs to examine the effectiveness of teacher training in improving knowledge, attitudes, or helping behavior of secondary school teachers for internalizing behaviors and related mental health issues. Their results indicate the need to implement specific training programs to improve teachers' knowledge of student mental health. While a comprehensive review of current trainings on student mental health is beyond the scope of this paper, many provide an overview of mental health disorders, describe the signs and symptoms of mental health disorders, and focus on attention deficit hyperactivity disorder (Ohrt et al., 2020). Readers are encouraged to examine the systematic review by Ohrt et al. (2020) for details on specific mental health trainings available for teachers.

Within the T-SMHIM, we propose teacher training to cover multiple aspects of student and teacher mental health to help close the gap between student need and resources. Training on mental health literacy can substantially improve mental health knowledge. Mental health literacy can be defined as the understanding of "how to obtain and maintain positive mental health" with an emphasis on gaining knowledge about mental disorders and treatments and decreasing stigma associated with mental health challenges (Kutcher et al., 2016, p. 155). Mental health literacy training can also increase teacher help-seeking efficacy, meaning they may be more likely to seek help themselves and suggest friends and family members to seek professional mental health care (Kutcher et al., 2016). Third, teachers who receive mental health training are better suited to identify symptoms of mental health issues (Hussein & Vostanis, 2013; Powers et al., 2014).

Focus #3: Promoting Skills for Addressing Teacher and Student Mental Health Needs

Professional development and training can increase self-efficacy, thus minimizing burnout (Long et al., 2018). Long and colleagues (2018) found that teacher professional development not only improved teacher preparedness and the likelihood to address student mental health concerns, it also increased teacher self-efficacy in regard to student mental health concerns. Teachers who experience low self-efficacy often experience more feelings of burnout, high amounts of perceived danger, and inefficiency in problem-solving (Bandura, 1997; Evers et al., 2002). Therefore, supporting teacher self-efficacy via professional development and learning opportunities may support teacher mental health, while simultaneously supporting student mental health. Research also reveals that although teachers feel it is important to support student socioemotional learning (Bridgeland et al., 2013), they do not feel they have enough training to do so (Reinke et al., 2011). Thus, "teachers must possess knowledge and skills related to regulating their own emotions while simultaneously supporting students in regulating theirs"

(Hoffman et al., 2020, p. 106). We propose training to include a socioemotional aspect to build teacher skills in teaching students socioemotional lessons in order to improve student mental health and class climate.

Research has also shown that teacher training in student mental health increases student academic and behavioral outcomes (Harding et al., 2019; von der Embse et al., 2018). Teachers trained in student mental health have reported higher levels of understanding, feasibility, and acceptability of universal screeners as a way to identify students with behavioral concerns. These teachers have also reported higher self-efficacy in conducting behavioral assessments, leading to increased awareness and identification of behavioral issues, ultimately resulting in better behavioral outcomes (von der Embse et al., 2018). Similarly, it is clear that student mental health has a strong impact on academic outcomes (Masten et al., 2005; Suldo et al., 2014). The Developmental Cascade Model, proposed by Masten et al. (2005), suggests that externalizing symptoms displayed by young children have a "cascade" effect on (i.e., predict) poor academic outcomes by adolescence, and result in internalizing behaviors by young adulthood. Teachers who are trained in mental health literacy, who can identify mental health problems and provide or refer students for services, can help students mitigate their symptomatology, and prevent the "cascade" effects from impacting academic achievement. As a result, we integrate teacher training into the T-SMHIM to emphasize the importance of providing pre-service and practicing teachers with professional development aimed at supporting teacher and student mental health, as well as student achievement.

Expected Outcome

The final component of the T-SMHIM from Figure 1 is the expected outcome. We have previously recognized the presenting problem and proposed training to address the problem. We now use the research base to support our conclusion that as teachers' mental health improves from decreased levels of burnout, STS, and CF, so too will student mental health, and vice versa.

Teacher and Student Mental Health Improves

Although additional research is warranted (Harding et al., 2019), there is some evidence to provide support to this theory that supporting teacher wellness supports student wellness (Gray et al., 2017; Harding et al., 2019; Kidger et al., 2010). For instance, Harding et al. (2019) found that higher ratings of teacher well-being were associated with higher ratings of student well-being and lower ratings of student mental health concerns. Additionally, the researchers found that lower ratings of teacher depressive symptomatology were related to higher ratings of student well-being. Conversely, they also found that higher ratings of teacher depressive symptomatology were associated with lower ratings of student well-being and higher ratings of student psychological distress (Harding et al., 2019).

Kidger et al. (2010) found teachers struggling with their own mental health have a reduced ability to support their students, thus contributing to additional challenges and stress in the classroom for both students and teachers alike. To coincide with this, it has been found that students have indicated teachers may be a source of stress for them (Glazzard & Rose, 2020; Kidger et al., 2010), "suggesting something of a vicious circle, where emotionally distressed individuals behave in increasingly negative ways towards each other" (Kidger et al., 2010, p. 929). Perhaps most important, Sisask et al. (2014) found that as teachers indicated higher personal ratings of psychological well-being and higher confidence in being able to understand students' mental health concerns, the more ready and willing teachers were to help students that presented mental health concerns. This indicates that the more positive teacher mental health is perceived to be, the more likely teachers will be able to help support student mental health. By addressing teacher and student mental health needs, as well as educating teachers on self-care practices and mental health knowledge, we expect teacher mental health concerns will decrease. Moreover, the skills they gain during training will be utilized in the classroom to decrease student mental health concerns. In turn, we expect student academic performance to improve.

Future Directions for Research

Future research that tests the applicability and utility of the T-SMHIM is needed. To further describe the problem as outlined by our model, we recommend a systematic narrative review be conducted that addresses unmet teacher needs, such as burnout,

STS, and CF. Similarly, a systematic review of self-care practices endorsed as effective in reducing teacher burnout, STS, and CF, could justify our proposition that supporting teacher self-care practices will lead to improved teacher mental health. Intervention studies that measure teacher and student mental health and student academic outcomes via pre- and post-measures could contribute to the idea that teacher and student mental health are related and influence student academic achievement. Specifically, outcome research aimed at identifying the impact of teacher self-care training on student mental health is warranted to determine if the use of teacher self-care practices influences student mental health and academic success.

Conclusion

Considering the high rate of teacher burnout, STS, and CF, along with the prevalence of childhood trauma and high student expectations and mental health challenges, the T-SMHIM is influential in conceptualizing approaches to meeting teacher and student needs. The T-SMHIM is applicable to pre-service teachers, practicing teachers, students, administrators, school psychologists, and other school personnel. First, over half of educational professionals surveyed by the ESP reported considering leaving the profession due to mental health and well-being concerns (ESP, 2020). However, self-care practices, such as mindfulness, can promote well-being amongst teachers (Abenavoli et al., 2013; Cook-Cottone & Guyker, 2018). We challenge teachers who set high expectations for themselves (Van der Heijden et al., 2018) to make themselves a priority. Although this may be easier said than done, we propose that when teachers take care of themselves, they will be able to better and more effectively care for their students' needs. Since we suggest teacher mental health influences student mental health and vice versa, teachers who meet their own mental health needs are more likely to meet their students' needs (Hydon et al., 2015). Based on the T-SMHIM, we recommend that teacher education programs integrate self-care practices into the curriculum for pre-service teachers before they enter the workforce. In addition, we suggest teachers receive pre-service training and subsequent professional development related to meeting student mental health needs in the classroom (Kutcher et al., 2016; Long et al., 2018).

Administrators have long been viewed as key personnel in establishing a positive school climate (Allen et al., 2015) and school leadership has been implicated in teacher satisfaction and reductions in burnout (Pas et al., 2012; Skaalvik, & Skaalvik, 2011). Therefore, we hope that by delineating the relation between teacher mental health and student mental health and academic achievement, administrators will take the necessary action steps to cultivate a school community that values teachers and their self-care. By prioritizing teachers' needs, student mental health needs may be more easily supported, thereby increasing academic achievement. We recommend showing appreciation for teachers through action, such as providing instrumental support, rather than just supportive words (Ormiston et al., 2021).

The training of school psychologists (NASP, 2020), including their consultation and collaboration skills, equips them with the necessary skills to support teachers, and ultimately students, as outlined in the T-SMHIM. We recommend school psychologists assist teachers in making self-care plans by providing them with templates, resources, and ideas; offer to support the class or find a school staff member to do so while a teacher takes a regulation break; provide school training in recognizing signs and symptoms of mental health challenges in students; and establish a system to meet mental health referral needs. We recognize a major limitation to implementing these recommendations is the national shortage of school psychologists that leads to a much higher ratio of students to school psychologists than recommended by NASP (NASP, 2017). Although these recommendations seem idyllic, it is within the purview of a school psychologist to provide comprehensive school-based mental and behavioral health services (NASP, 2021). Taken together, we suggest school psychologists focus some of their efforts on supporting teachers as a type of universal support, which may prevent the number of students referred for special education evaluations (Walker, 2020), reduce the quantity of teachers requiring behavioral consultations, and limit the number of students in need of mental health support. By conceptualizing students through the T-SMHIM, we posit school psychologists can share their knowledge and expertise related to mental health with teachers to reach more students.

References

Abenavoli, R. M., Jennings, P. A., Greenberg, M. T., Harris, A. R., & Katz, D. A. (2013). The protective effects of mindfulness against burnout among educators. *Psychology of Education Review*, *37*(2), 57-69.

Abraham-Cook, S. (2012). *The prevalence and correlates of compassion fatigue, compassion satisfaction, and burnout among teachers working in high-poverty urban public schools* [Unpublished doctoral dissertation]. Seton Hall University.

Allen, N., Grigsby, B., & Peters, M. L. (2015). Does leadership matter? Examining the relationship among transformational leadership, school climate, and student achievement. *International Journal of Educational Leadership Preparation*, *10*(2), 1-22.

American Federation of Teachers. (2015). *Quality of worklife survey*. Retrieved from https://www.aft.org/sites/default/files/worklifesurveyresults2015.pdf

Anderson, M., Werner-Seidler, A., King, C., Gayed, A., Harvey, S. B., & O'Dea, B. (2019). Mental health training programs for secondary school teachers: A systematic review. *School Mental Health*, *11*(3), 489-508.

Ashiabi, G. (2005). Household food insecurity and children's school engagement. *Journal of Children and Poverty*, *11*(1), 3-17.

Baird, K., & Kracen, A. C. (2006). Vicarious traumatization and secondary traumatic stress: A research synthesis. *Counselling Psychology Quarterly*, *19*(2), 181-188.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W H Freeman/Times Books/ Henry Holt & Co.

Bell, H., Limberg, D., & Robinson III, E. M. (2013). Recognizing trauma in the classroom: A practical guide for educators. *Childhood Education*, *89*(3), 139-145.

Benson, J. (2018). When teacher self-care is not enough. *Educational Leadership*, *75*(4), 38–42.

Bianchi, R., Boffy, C., Hingray, C., Truchot, D., & Laurent, E. (2013). Comparative symptomatology of burnout and depression. *Journal of Health Psychology*, *18*(6), 782-787.

Borg, M. G., Riding, R. J., & Falzon, J. M. (1991). Stress in teaching: A study of occupational stress and its determinants, job satisfaction and career commitment among primary schoolteachers. *Educational Psychology*, *11*(1), 59-75.

Borntrager, C., Caringi, J., van den Pol, R., Crosby, L., O'Connell, K., Trautman, A., & McDonald, M. (2012). Secondary traumatic stress in school personnel. *Advances in School Mental Health Promotion*, *5*, 1–13.

Bridgeland, J., Bruce, M., & Hariharan, A. (2013). *The missing piece: A national survey on how social and emotional learning can empower children and transform schools*. Civic Enterprises.

Brinkman, J., Garnett, B., Kolodinsky, J., Wang, W., & Pope, L. (2021). Intra-and interpersonal factors buffer the relationship between food insecurity and mental well-being among middle schoolers. *Journal of School Health*, *91*(2), 102-110.

Brunsting, N. C., Sreckovic, M. A., & Lane, K. L. (2014). Special education teacher burnout: A synthesis of research from 1979 to 2013. *Education and Treatment of Children*, *37*(4), 681-712.

Byrne, B. M. (1994). Burnout: Testing for the validity, replication, and invariance of causal structure across elementary, intermediate, and secondary teachers. *American Education Research Journal*, *31*(3), 645-673.

Caringi, J. C., Stanick, C., Trautman, A., Crosby, L., Devlin, M., & Adams, S. (2015). Secondary traumatic stress in public school teachers: Contributing and mitigating factors. *Advances in School Mental Health Promotion*, *8*(4), 244-256.

Christian-Brandt, A. S., Santacrose, D. E., & Barnett, M. L. (2020). In the trauma-informed care trenches: Teacher compassion satisfaction, secondary traumatic stress, burnout, and intent to leave education within underserved elementary schools. *Child Abuse & Neglect*, *110*(3), 1-8.

Cieslak, R., Shoji, K., Douglas, A., Melville, E., Luszczynska, A., & Benight, C. C. (2014). A meta-analysis of the relationship between job burnout and secondary traumatic stress among workers with indirect exposure to trauma. *Psychological Services*, *11*(1), 75-86.

Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A. (2019). *Household food security in the United States in 2018*. U.S. Department of Agriculture, Economic Research Service. Retrieved from https://www.ers.usda.gov/webdocs/publications/94849/err-270.pdf?v=4845.9

Cook-Cottone, C. P., & Guyker, W. M. (2018). The development and validation of the Mindful Self-Care Scale (MSCS): An assessment of practices that support positive embodiment. *Mindfulness*, *9*(1), 161–175. https://doi.org/10.1007/s12671-017-0759-1

Crouch, E., Radcliff, E., Hung, P., & Bennett, K. (2019). Challenges to school success and the role of Adverse Childhood Experiences. *Academic Pediatrics*, *19*(8), 899–907. https://doi-org.proxyiub.uits.iu.edu/10.1016/j.acap.2019.08.006

Daly, B. D., & Gardner, R. A. (2020). A case study exploration into the benefits of teaching self-care to school psychology graduate students. *Contemporary School Psychology*, 1-12. https://doi.org/10.1007/s40688-020-00328-3

Darling-Hammond, L., Wei, R. C., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession*. National Staff Development Council.

Denham, F. S. (2018). School building blight and teacher secondary Traumatic stress: A quantitative study [Doctoral Dissertation, Northcentral University]. Available from ProQuest Dissertations & Theses Global; Publicly Available Content Database. (2128021279).

Eddy, C. L., Huang, F. L., Cohen, D. R., Baker, K. M., Edwards, K. D., Herman, K. C., & Reinke, W. M. (2020). Does teacher emotional exhaustion and efficacy predict student discipline sanctions? *School Psychology Review*, *49*(3), 239-255.

Education Support Partnership. (2020). *Teacher wellbeing index 2020*. London, UK: Author. Retrieved from https://www.educationsupport.org.uk/sites/default/files/teacher_wellbeing_index_2020.pdf

Embry, D. D., & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology Review*, *11*(3), 75–113. https://doi.org/10.1007/s10567-008-0036-x

Essary, J. N., Barza, L., & Thurston, R. J. (2020). Secondary trau-

matic stress among educators. *Kappa Delta Pi Record*, 56(3), 116-121.

Evers, W., Brouwers, A., & Tomic, W. (2002). Burnout and self-efficacy: A study on teachers' beliefs when implementing an innovative educational system in the Netherlands. The British *Journal of Educational Psychology*, *72*, 227–243. https://doi.org/10.1348/000709902158865

Figley, C. R. (1995). *Compassion fatigue: Secondary traumatic stress*. Brunner/Mazel.

Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self care. *Psychotherapy in Practice*, *58*(11), 1433-1441.

Fitzgerald, C. T., Messias, E., & Buysse, D. J. (2011). Teen sleep and suicidality: results from the youth risk behavior surveys of 2007 and 2009. *Journal of Clinical Sleep Medicine*, *7*(4), 351–356. https://doi.org/10.5664/JCSM.1188

Franklin, C. G., Kim, J. S., Ryan, T. N., Kelly, M. S., & Montgomery, K. L. (2012). Teacher involvement in school mental health interventions: A systematic review. *Children and Youth Services Review*, *34*(5), 973-982.

Frauenholtz, S., Williford, A., & Mendenhall, A. N. (2015). Assessing school employees' abilities to respond to children's mental health needs: Implications for school social work. *School Social Work Journal*, *39*(2), 46–62.

Frauenholtz, S., Mendenhall, A. N., & Moon, J. (2017). Role of school employees' mental health knowledge in interdisciplinary collaborations to support the academic success of students experiencing mental health distress. *Children & Schools*, *39*(2), 71-79.

Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues*, *30*(1), 159–165. https://doi.org/10.1111/j.1540-4560.1974.tb00706.x

Gallup. (2014). State of america's schools: The path to winning again in education (Rep.). Gallup.

Glazzard, J., & Rose, A. (2020). The impact of teacher well-being and mental health on pupil progress in primary schools. *Journal of Public Mental Health*, *19*(4), 349-357.

Gottfried, M. A. (2011). The detrimental effects of missing school: Evidence from urban siblings. *American Journal of Education*, *117*(2), 147–182.

Gray, C., Wilcox, G., & Nordstokke, D. (2017). Teacher mental health, school climate, inclusive education, and student learning: A review. *Canadian Psychology*, *58*(3), 203-210.

Gray, L., & Taie, S. (2015). *Public school teacher attrition and mobility in the first five years: Results from the first through fifth waves of the 2007–08 beginning teacher longitudinal study (NCES 2015-337)*. U.S. Department of Education, National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubsearch.

Harding, S., Morris, R., Gunnell, D., Ford, T., Hollingworth, W., Tilling, K., Evans, R., Bell, S., Grey, J., Brockman, R., Campbell, R., Araya, R., Murphy, S., & Kidger, J. (2019). Is teachers' mental health and wellbeing associated with students' mental health and wellbeing? *Journal of Affective Disorders*, *242*, 180-187.

Hemphill, A. A., & Marianno, B. D. (2021). Teachers' unions, collective bargaining, and the response to COVID-19. *Education Finance and Policy*, *16*(1), 170–182. https://doi.org/10.1162/edfp_a_00326

Herman, K. C., Hickmon-Rosa, J., & Reinke, W. M. (2018). Empirically derived profiles of teacher stress, burnout, self-efficacy, and coping and associated student outcomes. *Journal of Positive Behavior Interventions*, *22*(2), 90-100.

Hoffmann, J. D., Brackett, M. A., Bailey, C. S., & Willner, C. J. (2020). Teaching emotion regulation in schools: Translating research into practice with the RULER approach to social and emotional learning. *Emotion*, *20*(1), 105–109. https://doi.org/10.1037/emo0000649

Hupe, T. M., & Stevenson, M. C. (2019). Teachers' intentions to report suspected child abuse: The influence of compassion fatigue. *Journal of Child Custody*, *16*(4), 364-386.

Hussein, S. A., & Vostanis, P. (2013). Teacher training intervention for early identification of common child mental health problems in Pakistan. *Emotional & Behavioural Difficulties*, *18*(3), 284–296.

Hydon, S., Wong, M., Langley, A. K., Stein, B. D., & Kataoka, S. H. (2015). Preventing secondary traumatic stress in educators. *Child and Adolescent Psychiatric Clinics*, *24*(2), 319-333.

Iancu, A. E., Rusu, A., Măroiu, C., Păcurar, R., & Maricuțoiu, L. P. (2018). The effectiveness of interventions aimed at reducing teacher burnout: A meta-analysis. *Educational Psychology Review*, *30*(2), 373–396. https://doi.org/10.1007/s10648-017-9420-8

Jennings, P. A., & Greenberg, M. T. (2009). The Prosocial Classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, *79*(1), 491-525.

Johnson, C., Eva, A. L., Johnson, L., & Walker, B. (2011). Don't turn away: Empowering teachers to support students' mental health. *Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *84*(1), 9–14.

Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work-related stress across occupations. *Journal of Managerial Psychology*, *20*, 178-187. doi:10.1108/02683940510579803

Joyce, B., & Showers, B. (2002). *Student achievement through staff development*. (3rd ed.). Association for Supervision and Curriculum Development.

Kaden, U. (2020). COVID-19 school closure-related changes to the professional life of a K–12 teacher. *Education Sciences*, *10*(6), 165.

Kase, C., Hoover, S., Boyd, G., West, K. D., Dubenitz, J., Trivedi, P. A., Peterson, H. J., & Stein, B. D. (2017). Educational outcomes associated with school behavioral health interventions: A review of the literature. *Journal of School Health*, *87*(7), 554-562.

Kidger, J., Gunnell, D., Biddle, L., Campbell, R., & Donovan, J. (2010). Part and parcel of teaching? Secondary school staff's views on supporting student emotional health and well-being. *British Educational Research Journal*, *36*(6), 919-935.

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, *102*(3), 741–756. https://doi.org/10.1037/a0019237

Koenig, A., Rodger, S., & Specht, J. (2018). Educator burnout and compassion fatigue: A pilot study. *Canadian Journal of School Psychology*, *33*(4), 259-278.

Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology*, *77*(1),229–243. https://doi.org/10.1348/000709905X90344

Kush, J. M., Badillo-Goicoechea, E., Musci, R. J., & Stuart, E. A. (2021). Teacher mental health during the COVID-19 pandemic: Informing policies to support teacher well-being and effective teaching practices. arXiv preprint arXiv: 2109.01547. http://arxiv.org/abs/2109.01547

Kutcher, S., Wei, Y., & Coniglio, C. (2016). Mental health literacy. *Canadian Journal of Psychiatry. Revue Canadienne de Psychiatrie*, *61*(3), 154–158. https://doi.org/10.1177/0706743715616609

Lereya, S. T., Patel, M., dos Santos, J. P. G. A., & Deighton, J. (2019). Mental health difficulties, attainment and attendance: A cross-sectional study. *European Child & Adolescent Psychiatry*, *28*(8), 1147–1152. https://doi-org.proxyiub.uits.iu.edu/10.1007/s00787-018-01273-6

Lever, N., Mathis, E., & Mayworm, A. (2017). School mental health is not just for students: Why teacher and school staff wellness matters. *Report on Emotional & Behavioral Disorders in Youth*, *17*(1), 6-12.

Long, M. W., Albright, G., McMillan, J., Shockley, K. M., & Price, O. A. (2018). Enhancing educator engagement in school mental health care through digital simulation professional development. *Journal of School Health*, *88*(9), 651–659.

Martinez, S. M., Frongillo, E. A., Leung, C., & Ritchie, L. (2020). No food for thought: Food insecurity is related to poor mental health and lower academic performance among students in California's public university system. *Journal of Health Psychology*, *25*(12), 1930-1939.

Marzano, R. J., Marzano, J. S., & Pickering, D. J. (2003). *Classroom management that works*. ASCD.

Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science*, *12*, 189-192.

Maslach, C., & Jackson, S.E. (1981) The measurement of experienced burnout. *Journal of Occupational Behavior*, *2*, 99–113.

Maslach, C. & Jackson, S. E. (1984) Burnout in organizational settings. In S. Oskamp (Ed.), *Applied Social Psychology Annual*, vol. 5 (pp. 133-153). Sage.

Maslach, C., & Jackson, S.E. (1986) *MBI: Maslach Burnout Inventory; Manual Research Edition*. Consulting Psychologists Press.

Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradovic, J., Riley, J. R., Boelcke-Stennes, K., & Tellegen, A. (2005). Developmental cascades: Linking academic achievement and externalizing and internalizing symptoms over 20 years. *Developmental Psychology*, *41*(5), 733–746.

McGhie-Richmond, D., & Haider, F. (2020). Collaborating for inclusion: The intersecting roles of teachers, teacher education, and school leaders in translating research into practice. *Exceptionality Education International*, *30*(2), 32-50.

McLean, L., Abry, T., Taylor, M., Jimenez, M., & Granger, K. (2017). Teachers' mental health and perceptions of school climate across the transition from training to teaching. *Teaching and Teacher Education*, *65*, 230-240.

Milkie, M. A., & Warner, C. H. (2011). Classroom learning environments and the mental health of first grade children. *Journal of Health and Social Behavior*, *52*(1), 4-22.

National Association of School Psychologists. (2021). *Comprehensive school-based mental and behavioral health services and school psychologists* [handout]. Author.

National Association of School Psychologists. (2020). *The professional standards of the National Association of School Psychologists*. Bethesda, MD: Author.

National Association of School Psychologists. (2017). *Shortages in school psychology: Challenges to meeting the growing needs of U.S. students and schools* [Research summary]. Bethesda, MD: Author.

Newell, J. M., & Nelson-Gardell, D. (2014). A competency-based approach to teaching professional self-care: An ethical consideration for social work educators. *Journal of Social Work Education*, *50*, 427-439.

Nunes, S., Campbell, M. K., Klar, N., Reid, G. J., & Stranges, S. (2020). Relationships between sleep and internalizing problems in early adolescence: Results from Canadian national longitudinal survey of children and youth. *Journal of Psychosomatic Research*, *139*, 1-8. https://doi-org.proxyiub.uits.iu.edu/https://www.sciencedirect.com/science/article/abs/pii/S0022399920308412

O'Brennan, L., Pas, E., & Bradshaw, C. (2017). Multilevel examination of burnout among high school staff: Importance of staff and school factors. *School Psychology Review*, *46*(2), 165-176.

Ohrt, J. H., Deaton, J. D., Linich, K., Guest, J. D., Wymer, B., & Sandonato, B. (2020). Teacher training in K–12 student mental health: A systematic review. *Psychology in the Schools*, *57*(5), 833–846. https://doi-org.proxyiub.uits.iu.edu/10.1002/pits.22356

Ormiston, H. E., Heck, O. H., Nygaard, M. A., Ingmire, K. M. (2021). Teacher mental health during lockdown: A priority or an afterthought? Manuscript submitted for publication.

Paruthi, S., Brooks, L. J., D'Ambrosio, C., Hall, W. A., Kotagal, S., Lloyd, R. M., Malow, B. A., Maski, K., Nichols, C., Quan, S. F., Rosen, C. L., Troester, M. M., & Wise, M. S. (2016). Consensus statement of the American academy of sleep medicine on the recommended amount of sleep for healthy children: Methodology and discussion. *Journal of Clinical Sleep Medicine*, *12*(11), 1549–1561. https://doi.org/10.5664/jcsm.6288

Pas, E. T., Bradshaw, C. P., & Hershfeldt, P. A. (2012). Teacher- and school-level predictors of teacher efficacy and burnout: Identifying potential areas for support. *Journal of School Psychology*, *50*, 129-145.

Perfect, M. M., Levine-Donnerstein, D., Archbold, K., Goodwin, J. L., & Quan, S. F. (2014). The contribution of sleep problems to academic and psychosocial functioning. *Psychology in the Schools*, *51*(3), 273-295.

Peterson, S. (2018, November 05). *About child trauma*. Retrieved March 16, 2021, from https://www.nctsn.org/what-is-child-trauma/about-child-trauma

Pietarinen, J., Pyhältö, K., Soini, T., & Salmela-Aro, K. (2013). Reducing teacher burnout: A socio-contextual approach.

Teaching and Teacher Education, *35*, 62-72.

Posluns, K., & Gall, T. L. (2020). Dear mental health practitioners, take care of yourselves: A literature review on self-care. *International Journal for the Advancement of Counselling*, *42*(1), 1–20. https://doi.org/10.1007/s10447-019-09382-w

Powers, J. D., Wegmann, K., Blackman, K., & Swick, D. C. (2014). Increasing awareness of child mental health issues among elementary school staff. *Families in Society: Journal of Contemporary Social Services*, *95*(1), 43–50. https://doi-org.proxyiub.uits.iu.edu/10.1606/1044-3894.2014.95.6

Pressley, T., & Ha, C. (2021). Teaching during a pandemic: United States teachers' self-efficacy during COVID-19. Teaching and Teacher Education, 106, 103465. https://doi.org/10.1016/j.tate.2021.103465

Reinke, W. M., Stormont, M., Herman, K. C., Puri, R., & Goel, N. (2011). Supporting children's mental health in schools: Teacher perceptions of needs, roles, and barriers. *School Psychology Quarterly*, *26*(1), 1-13.

Richards, K., Campenni, C., & Muse-Burke, J. (2011). Self-care and well-being in mental health professions: The mediating effects of self-awareness and mindfulness. *Journal of Mental Health Counseling*, *32*(3), 247–264. https://doi.org/10.17744/mehc.32.3.0n31v88304423806

Roeser, R. W., Skinner, E., Beers, J., & Jennings, P. A. (2012). Mindfulness training and teachers' professional development: An emerging area of research and practice. *Child Development Perspectives*, *6*(2), 167–173. https://doi.org/10.1111/j.1750-8606.2012.00238.x

Roeser, R. W., Schonert-Reichl, K. A., Jha, A., Cullen, M., Wallace, L., Wilensky, R., Oberle, E., Thomson, K., Taylor, C., & Harrison, J. (2013). Mindfulness training and reductions in teacher stress and burnout: Results from two randomized, waitlist-control field trials. *Journal of Educational Psychology*, *105*(3), 787–804. https://doi.org/10.1037/a0032093

Rones, M., & Hoagwood, K. (2000). School-based mental health services: A research review. *Clinical Child and Family Psychology Review*, *3*(4), 223-241.

Sacks, V., Murphey, D., & Moore, K. (2014). Adverse childhood experiences: National and state-level prevalence. Retrieved from http://www.childtrends.org/wpcontent/uploads/2014/07/Brief-adverse-childhood-experiences_FINAL.pdf

Schaufeli, W. B., & Buunk, B. P. (2003). Burnout: An overview of 25 years of research and theorizing. In M. J. Schabracq, J. A. M. Winnubst, & C. L. Cooper (Eds.), *The handbook of work and health psychology* (2nd Ed., pp. 383-425). John Wiley & Sons.

Schonfeld, I. S. (2001). Stress in first-year women teachers: The context of social support and coping. *Genetic, Social, and General Psychology Monographs*, *127*, 133–168.

Schussler, D. L., Jennings, P. A., Sharp, J. E., & Frank, J. L. (2016). Improving teacher awareness and well-being through CARE: A qualitative analysis of the underlying mechanisms. *Mindfulness*, *7*, 130-142.

Shackleton, N., Bonell, C., Jamal, F., Allen, E., Mathiot, A., Elbourne, D., & Viner, R. (2019). Teacher burnout and contextual and compositional elements of school environment. *Journal of School Health*, *89*(12), 977-993.

Sisask, M., Värnik, P., Värnik, A., Apter, A., Balazs, J., Balint, M., Bobes, J., Brunner, R., Corcoran P., Cosman, D., Feldman, D., Haring, C., Kahn, J.-P., Poštuvan, V., Tubiana, A., Sarchiapone, M., Wasserman, C., Carli, V., Hoven, C. W., & Wasserman, D. (2014). Teacher satisfaction with school and psychological well-being affects their readiness to help children with mental health problems. *Health Education Journal*, *73*(4), 382-393.

Skaalvik, E., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology*, *99*, 611–625. https://doi.org/10.1037/0022-0663.99.3.611

Skaalvik, E. M., & Skaalvik, S. (2009). Does school context matter? Relations with teacher burnout and job satisfaction. *Teaching and Teacher Education*, *25*(3), 518-524.

Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, *27*, 1029-1038.

Smith, P., Dalgleish, T., & Meiser-Stedman, R. (2019). Practitioner review: Posttraumatic stress disorder and its treatment in children and adolescents. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *60*(5), 500–515. https://doi.org/10.1111/jcpp.12983

Stormark, K. M., Fosse, H. E., Pallesen, S., & Hysing, M. (2019). The association between sleep problems and academic performance in primary school-aged children: Findings from a Norwegian longitudinal population-based study. *PloS One*, *14*(11), e0224139.

Suldo, S. M., Gormley, M. J., DuPaul, G. J., & Anderson-Butcher, D. (2014). The impact of school mental health on student and school-level academic outcomes: Current status of the research and future directions. *School Mental Health*, *6*(2), 84-98.

Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2015). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* [Research brief]. Learning Policy Institute.

U.S. Department of Health and Human Services, Center for Disease Control and Prevention. (2015). *Results from the School Health Policies and Practices Study 2014*. Retrieved from http://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf.

Valiente, C., Swanson, J., DeLay, D., Fraser, A. M., & Parker, J. H. (2020). Emotion-related socialization in the classroom: Considering the roles of teachers, peers, and the classroom context. *Developmental Psychology*, *56*(3), 578.

Van der Heijden, H. R. M. A., Beijaard, D., Geldens, J. J. M., & Popeijus, H. L. (2018). Understanding teachers as change agents: An investigation of primary school teachers' self-perception. *Journal of Educational Change*, *19*(3), 347-373.

Virtue, S., Sweeney, A., Popick, V., Wesley, K., Bordfeld, A., & Fingerhut, R. (2012). Self-care practices and perceived stress levels among psychology graduate students. *Training and Education in Professional Psychology*, *6*, 55–66. https://doi.org/10.1037/a0026534

von der Embse, N. P., Kilgus, S. P., Eklund, K., Ake, E., & Levi-Neilsen, S. (2018). Training teachers to facilitate early identi-

fication of mental and behavioral health risks. *School Psychology Review*, 47(4), 372–384. doi:10.17105/SPR-2017-0094.V47-4

von der Embse, N. P., Kilgus, S. P., Solomon, H. J., Bowler, M., & Curtiss, C. (2015). Initial development and factor structure of the Educator Test Stress Inventory. *Journal of Psychoeducational Assessment*, *33*(3), 223-237.

von der Embse, N., Sandilos, L., Pendergast, L., & Mankin, A. (2016). Teacher stress, teaching-efficacy, and job satisfaction in response to test-based educational accountability policies. *Learning and Individual Differences*, *50*, 308-317. https://doi.org/10.1016/j.lindif.2016.08.001

Walker, T. (2021, June 17). *Educators ready for fall, but a teacher shortage looms*. National Education Association. https://www.nea.org/advocating-for-change/new-from-nea/educators-ready-fall-teacher-shortage-looms

Walker, T. S. (2020). *The impact of the MTSS framework on special education referral rates and eligibility for specific learning disabilities* (Order No. 28022641). Available from ProQuest Dissertations & Theses Global. (2451112715). https://proxyiub.uits.iu.edu/login?qurl=https%3A%2F%2Fwww.proquest.com%2Fdissertations-theses%2Fimpact-mtss-framework-on-special-education%2Fdocview%2F2451112715%2Fse-2%3Faccountid%3D11620

Walsh, R. (2011). Lifestyle and mental health. *American Psychologist*, *66*(7), 579–592. https://doi.org/10.1037/a0021769

Walter, H. J., Gouze, K., & Lim, K. G. (2006). Teachers' beliefs about mental health needs in inner city elementary schools. *Journal of the American Academy of Child and Adolescent Psychiatry*, *45*(1), 61–68. https://doi.org/10.1097/01.chi.0000187243.17824.6c

Whitney, D. G., & Peterson, M. D. (2019). US national and state-level prevalence of mental health disorders and disparities of mental health care use in children. *JAMA pediatrics*, *173*(4), 389-391.

Wise, E., Hersh, M., & Gibson, C. (2012). Ethics, self-care and well-being for psychologists: Reenvisioning the stress-distress continuum. *Professional Psychology: Research and Practice*, *43*, 487. https://doi.org/10.1037/a0029446

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 31-41

ISSN: 2329-5783

Article

The Effects of Programming for Generalization using Cover-Copy-Compare on Students' Math Fluency, Maintenance, and Generalization

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This study was designed to extend prior studies examining the effects of the cover-copy-compare method (CCC) by programming for stimulus generalization. Specifically, differential effects of CCC only, CCC+repetition, and CCC+programming for generalization were examined on two, fourth grade students' fluency, maintenance, and generalization of basic division math facts. Findings revealed that across all conditions, participants improved their performance on division fact fluency and generalized their skills while solving story problems at levels greater than in baseline. It was difficult to differentiate if one CCC condition was more effective than others, as each student displayed considerable overlap in their performance on fluency measures among all CCC conditions. Effect sizes, limitations, directions for future research, and implications for practice are provided.

Key words: mathematics intervention, fluency, generalization

Across the United States, only 41% of fourth graders and 34% of eighth graders performed at the proficient level on statewide math performance measures (National Assessment of Educational Progress, 2019). Mathematical difficulties can manifest themselves at almost any point in a child's school years, and the seriousness of the difficulties can vary from temporary in one specific domain, to severe learning disabilities affecting multiple domains (Kroesbergen & Van Luit, 2003). Failing to develop fundamental mathematical skills places children at high risk for failing to develop higher order mathematical skills, as well as potentially demonstrating weak performance in other curricular areas that rely on fundamental mathematical skills (Codding et al., 2006; Hodge et al., 2006).

Over several decades, research has shown that cover-copy-compare (CCC) has been very effective for helping students improve academic skills such as reading (e.g., Conley et al., 2004), spelling (e.g., Hansen, 1978), geography (e.g., Skinner et al., 1992), science (e.g., Smith et al., 2002), and mathematics (e.g., Bolich et al., 1995). Additionally, CCC has been implemented as a supplement to classroom math instruction in a variety of settings, such as in the home (e.g., Stading et al., 1996), general education classrooms (e.g., Schermerhorn & McLaughlin, 1997), and in special education classrooms (e.g., Conley et al., 2004). It can also be used with individuals or groups, as well as students with and without learning problems (Cieslar et al., 2008).

CCC has demonstrated especially strong effects for improving mathematics skills (Joseph et al., 2012). As a math intervention, CCC is designed to help students advance in making accurate and fluent responses across a range of math calculation skills (Skinner et al., 1997).

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CCC incorporates several components of effective instruction including modeling, practice opportunities, and corrective feedback (Skinner et al., 1993), through a sequence of specific steps within a short amount of time. Typically, CCC involves the following five steps: (a) looking at a model problem; (b) covering the problem; (c) emitting a response, such as writing a math fact; (d) uncovering the model; and (e) evaluating the emitted response by comparing it to the model (Joseph et al., 2012; Skinner et al., 1989). Students self-manage their performance by evaluating the accuracy of their work immediately upon completion of the task (Mong & Mong, 2010; Skinner et al., 1997). If the student's answer does not match the original problem, the student is asked to repeat the steps. Prior to its implementation, CCC requires a thorough explanation of the intervention process and creation of necessary materials, most likely in the form of a worksheet (Mong & Mong, 2010). Upon learning the procedures, most students are able to implement the intervention independently.

The basic design of CCC can be modified. For example, Grafman and Cates (2010) compared the math fluency and error rates of second-grade students under a Cover-Copy-Compare (CCC) condition and under a modified CCC condition (MCCC). On MCCC worksheets, students copied the target problem and answer prior to covering it and then proceeded with the traditional CCC steps. The researchers hypothesized that the extra repetition of the math fact under the MCCC procedure would be more beneficial to students than the CCC procedure (Grafman & Cates, 2010). However, findings showed that students demonstrated higher fluency scores on the CCC worksheets than on the MCCC worksheets.

While CCC and variations of this method have produced favorable outcomes for students, there have been no studies, to date, that have examined the effects of a CCC condition that was specifically designed to program for stimulus generalization of students' performance on fluency and generalization outcome measures. According to Cooper et al. (2020), this type of stimulus generalization occurs as an individual (in this case the student) engages in similar responses to untrained stimuli (e.g., novel math facts) as they do to trained stimuli (e.g. CCC practiced math facts). Programming for generalization is important as many students who have academic problems do not automatically generalize skills that they learned to other contexts (Cooper et al., 2020). Researchers have demonstrated that students are more likely to generalize skills when instructors program for generalization of those skills (e.g., Esbenshade et al., 2001; Freeland & Noell, 2002).

The purpose of this study was to compare variations of CCC that incorporated different components of effective instruction. In this study, the researchers were interested in examining the differential effects of CCC (model-response), CCC+repetition (model-response-repeated practice), and CCC with programming for generalization (model-response using various stimulus formats) on students' fluency, maintenance, and generalization outcomes. First, it was critical to measure the effects of CCC and variations of this method on students' performance on stimulus generalization outcome measures, as these measures have not been included in prior studies. Second, prior studies involving CCC have not included an experimental condition that was intentionally designed to promote generalization of skills, so it was important to compare a CCC condition that consisted of programming for generalization to other variations of CCC. Lastly, the current study examined the effects of CCC on solving division problems, a mathematical operation for which few researchers have used CCC.

Methods

Participants, Experimenter, and Setting

The participants of this study consisted of two, fourth grade, students who attended an urban school in the Midwest. Students were referred by their classroom teachers based upon prior test scores on state mandated assessments. The participants were considered to be at-risk for mathematical difficulties and were receiving Tier 2 intervention services for mathematics. Furthermore, both participants were performing below their same-aged peers on curriculum-based measurements of basic division (i.e., less than 75% correct on a pre-intervention basic division fact probe). Demographic information including pseudonyms, age, gender, and ethnicity are presented in Table 1. This study was approved by the institution's internal review board and met requirements for conducting research with human subjects.

Pre-assessment. To determine their mathematical functioning levels at the start of the study, par-

Table 1

Participant demographic information with Woodcock-Johnson (3rd Edition) (Woodcock, McGrew, & Mather, 2001) mathematical subtest and pre-intervention basic division fact probe scores.

Name	Age	Gender	Ethnicity	WJ-III Applied Problems	WJ-III Math Fluency	Basic Division Fact Probe
Keith	10-3	Male	African-American	87	82	19
Yvette	9-8	Female	African-American	99	92	10

Note: The basic division fact probe raw score was out of a possible 50 facts.

ticipants were administered math fluency and applied problems portions of the Woodcock-Johnson Tests of Achievement (3rd ed.) (WJ-III ACH) (Woodcock et al., 2001). Additionally, an instructor-made basic division fact probe was administered to participants in order to obtain more information about their division skills prior to the start of the study. This untimed probe contained 50 basic division fact problems (1 through 12). These facts were presented across four division fact formats (i.e., a division bracket [ )‾], division obelus [÷], a fraction [/], and the words, "divided by"). As can be seen in Table 1, the raw scores indicate the students were functioning at an acquisition phase of learning basic division facts (< 60% accuracy) (Haring & Eaton, 1978).

Dependent Variables

Dependent variables were defined as the number of division facts correct per minute (DCPM) and the number of correct problems. Fluency, maintenance, and generalization measures were used to assess students' skills in solving division problems.

Fluency. Fluency measures were administered at the end of each CCC lesson. They consisted of one minute, timed probes that contained 40 randomized division fact problems (1 through 12) presented with division brackets.

Generalization. Generalization measures were untimed and were administered at the end of each CCC lesson. Each generalization measure consisted of 8 story problems containing a variety of phrases signaling participants to divide. Participants earned points for successfully solving the division word problem as follows: 0 points for no written problem and no answer, 1 point for a correctly written division problem or only the correct answer, 2 points for a correctly written problem and answer.

Maintenance. Maintenance measures were administered two weeks after the CCC conditions ended. They were similar to the fluency probes as they also contained 40 randomized division facts.

Experimental Design and Procedures

An alternating treatments design with a baseline phase (aka multielement design) was used to compare the effects of three variations of CCC conditions on the participants' performance on division fact fluency, generalization, and maintenance probes. Prior to the start of baseline conditions, 144 division facts (1-12) were grouped according to the divisor (e.g., facts divided by 1, facts divided by 2, facts divided by 3, and so on) and randomly selected to one of three sets (e.g., "Set A", "Set B", and "Set C"). In this way, each set contained 48 different problems; however, each set contained the same number of problems according to the divisor, and the same number of total facts overall.

After facts were randomly assigned to the sets, the sets were randomly assigned to one of the three variations of CCC intervention conditions. As a result, each intervention condition had a separate set of 48 randomized division facts, with equivalent numbers of divisors. Thus, participants did not experience overlap in division facts from condition to condition. These

sets of facts were included on the fluency and generalization probes for the respective CCC conditions.

Baseline Condition. Baseline data consisted of the administration of the timed fluency probes and the generalization probes. In this condition, students were first administered the fluency probes. Participants were administered six fluency probes (i.e., two probes from set A, two probes from set B, and two probes from set C). Each fluency probe contained a worksheet comprised of 40 division facts. Participants were asked to complete as many problems as they could within one minute. Participants were also administered two generalization probes that contained problems from either set A, B, or C. For the generalization measures, the experimenter read the story problems aloud as the participants followed along on their worksheets. After the story problem was read to them, the participants were asked to write out the division fact problem and solve it. The administration procedures and format of both fluency and generalization probes were the same across sessions in the baseline phase.

Intervention Conditions. The intervention conditions that supplemented students' general classroom math instruction included CCC, CCC+additional repetition (CCC+R), and CCC+generalization (CCC+G). To minimize confounding variables on participants' outcome performance, the CCC conditions were presented in a counterbalanced order. In other words, each participant experienced all three intervention conditions, but in a different order each week. Each CCC condition contained 6 instructional lessons (totaling 18 lessons across conditions) over six weeks (i.e., students receiving each CCC condition one time per week). Each lesson lasted approximately 20 minutes.

The previously mentioned three sets of 48 facts were separated into six groups with each group containing eight facts for each CCC condition. In other words, Sets A, B, and C were divided further into 6 groups (one for each week of the intervention) with each group containing 8 facts that were targeted per week for each CCC condition. In each CCC condition, eight facts divided by 1's and 2's were taught in week 1; eight facts divided by 3's and 4's were taught in week 2; eight facts divided by 5's and 6's were taught in week 3; and so on through facts divided by 12's in week 6. The experimenter did not review facts taught in prior CCC lessons. At the end of each CCC lesson, 40 item fluency probes (i.e., using the same administration procedures as baseline phase probes) followed by eight item generalization measures were administered to the students.

Cover-Copy-Compare (CCC). In this condition, participants were provided with a worksheet divided into four columns. The first column consisted of a basic division fact that was written on the far left-hand column of the sheet. The second and fourth columns consisted of blank spaces in which to write, and the third column contained a box for participants to place a check mark. Participants were asked to (a) look at the problem and provide an answer in the first column, (b) cover the problem in the first column with their hand or index card, (c) write the fact and answer in the second column, (d) uncover the first column with the problem and answer on it, and (e) compare the response in the second column to the one in the first column and place a check in the box in the third column if their written responses matched the one displayed in the first column. If their response did not match the one in the first column, they repeated the procedure and recorded their response in the fourth column. Immediately following each intervention session, students were asked to complete a one-minute timed fluency probe sheet and a generalization probe of the target division facts containing the same problems that were taught in the CCC condition.

CCC + Repetition (CCC+R). In this condition, during each session, the same procedures described in the CCC condition were implemented with the exception of repeating the procedure twice for each division problem regardless of whether or not they emitted a correct response on the first trial. Students were asked to complete a timed fluency probe sheet followed by a generalization probe of the division facts that were taught in each respective session in this condition.

CCC + Generalization (CCC+G). In this condition, the experimenter programmed for generalization by including on the CCC worksheet, various formats for presenting division problems (i.e., stimulus generalization). The same procedures in the CCC condition were implemented with the exception that each division fact problem in this condition was presented in one of the following four stimulus contexts: division bracket, division obelus, fraction, or words. At the end of each session in this condition, participants completed a one-minute timed fluency probe and generalization probe.

Maintenance. To determine if performance was maintained over time, two weeks following the conclusion of all CCC conditions, participants

were administered three, one-minute timed fluency probes. Each probe contained 40 randomly selected division facts that were taught in the respective intervention conditions, one each from set A, B, or C.

Procedural Integrity. Procedural integrity was assessed by a graduate student trained as an independent observer. A checklist containing the steps for administering the probes, the intervention procedures, a list of the materials, and instructions on how to complete the checklist was provided to the independent observer. The observer recorded a checkmark for adherence to the steps for administering the probes, implementing the intervention, and for the presence of any required materials for 28% of the intervention sessions. Only once did the experimenter not fully adhere to the checklist according to the independent observer. When directing the students to complete an intervention CCC sheet, the experimenter did not remind the students to work independently. Therefore, since students were instructed together as a group, adherence was 99% (range: 95-100%).

Interobserver Agreement (IOA). A copy of participants' unscored responses on fluency and generalization probes were independently scored by the trained graduate student observer. The observer was provided with a copy of the participants' permanent products, an answer key, and instructions for scoring participants' responses. After the experimenter and observer independently scored the participants' responses on fluency and generalization probes using an answer key, comparisons were made between the experimenter's scores on each item and the independent observer's scores on each item. Twenty-eight percent of all fluency and generalization probes respectively were scored. Agreement was calculated by dividing the number of agreements per item by the number of agreements per item plus disagreements per item and multiplying by 100 [(Agreements/ Agreements + Disagreements) x100]. IOA was 97% (range: 86-100%) for fluency and was 98% (range: 86-100%) for generalization.

Results

Fluency

Figures 1 and 2 present students' performance across instructional sessions on fluency measures. There was variation across data points across all CCC conditions. Maintenance data indicated higher performance relative to baseline levels.

Keith's fluency performance improved initially from baseline, then decreased across all three conditions. As the intervention continued, Keith's performance across all three conditions improved, with maintenance data remaining higher than baseline.

For Yvette, fluency improved upon the onset of the intervention conditions, in some cases, dramatically; however, her continued performance on fluency measures showed overlap and variability with both increases and decreases in performance through the inter-

Figure 1

Number Correct on Fluency Probes Across CCC Conditions for Keith

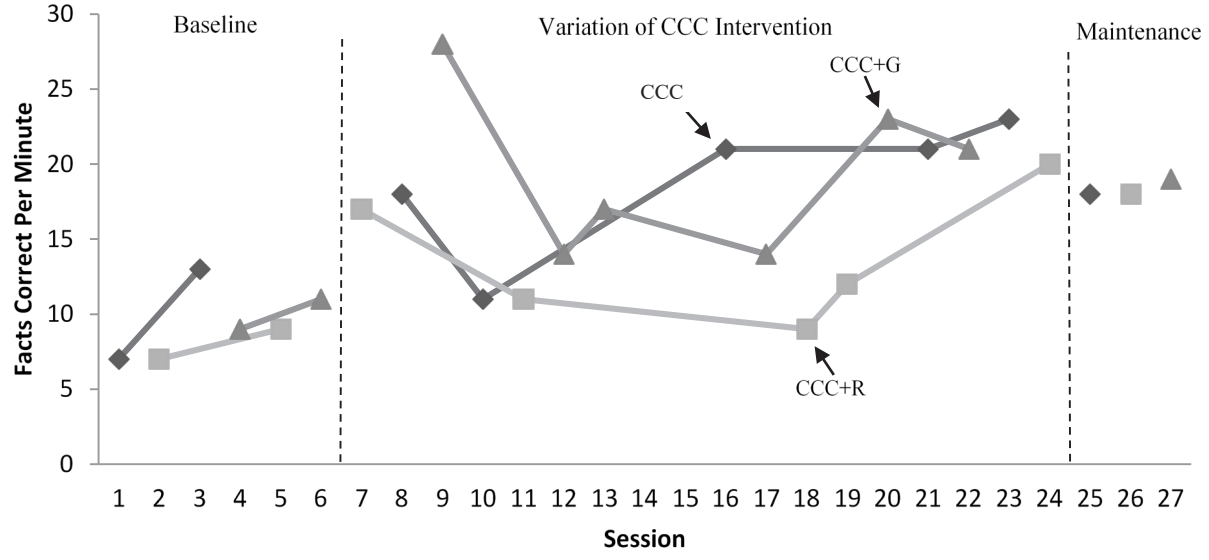


Figure 2

Number Correct on Fluency Probes Across CCC Conditions for Yvette

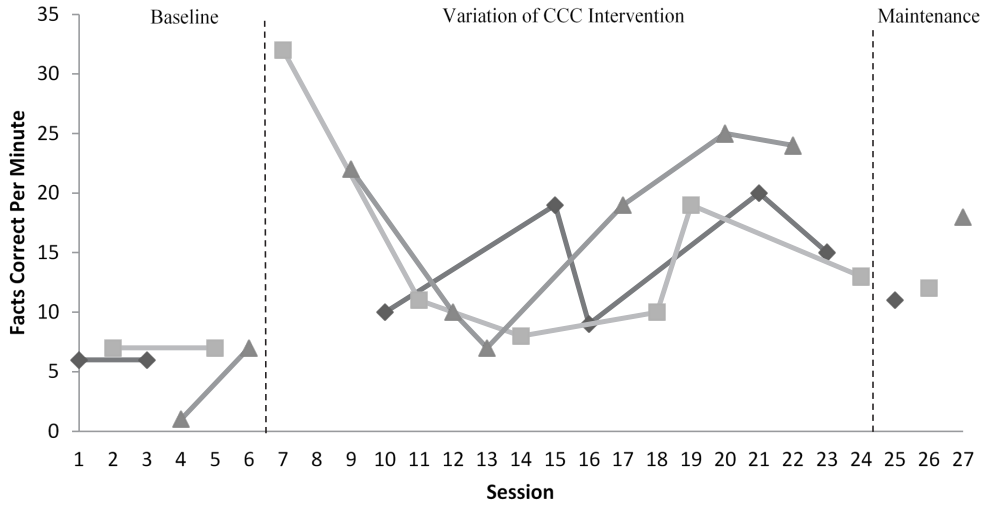


Figure 3

Number Correct on Generalization Probes Across CCC Conditions for Keith

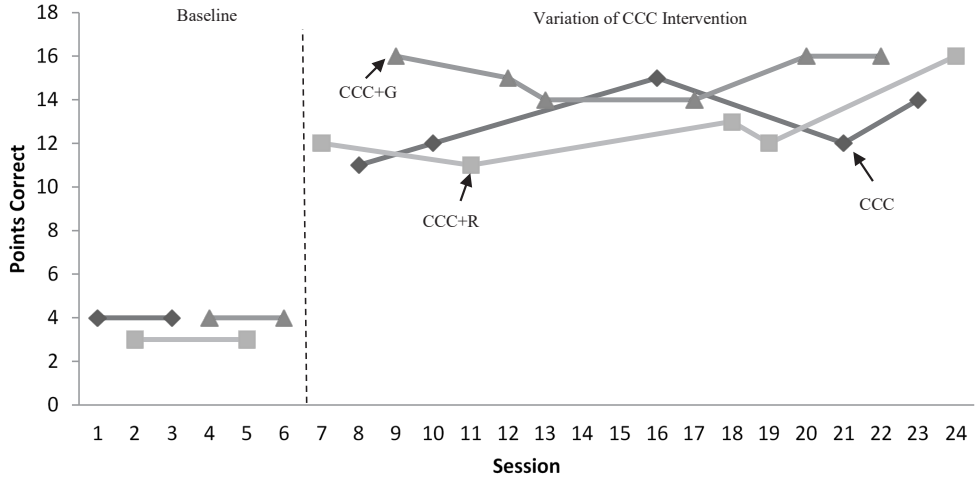
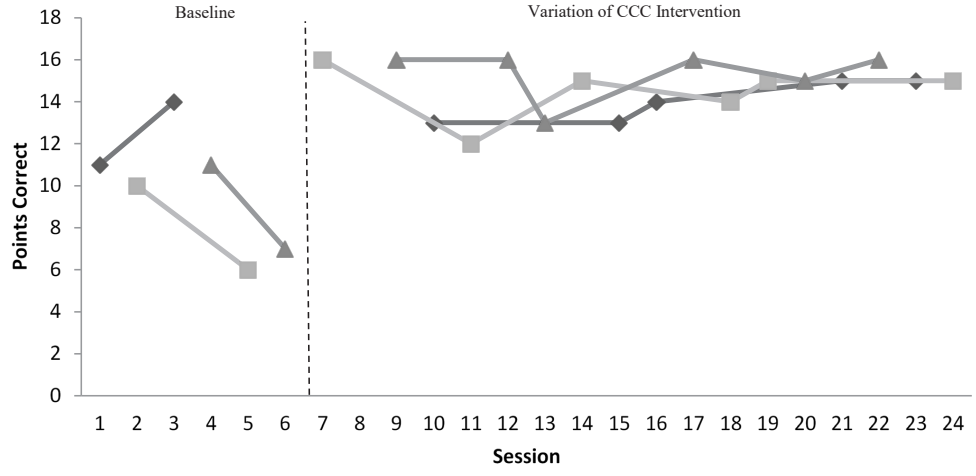


Figure 4

Number Correct on Generalization Probes Across CCC Conditions for Yvette



vention phase across CCC conditions. Similar to Keith, Yvette's maintenance performance was higher than baseline, but lower than her final fluency performance during the intervention phase across all conditions.

In general, students demonstrated overlap in their performance across the CCC conditions. There were instances in which students obtained higher performance in one or two CCC conditions over the other. However, performance was not consistently higher over time under one CCC condition than another.

Generalization

Figures 3 and 4 present students' performance across instructional sessions on generalization measures. As can be seen from these figures, Keith and Yvette demonstrated higher performance on generalization probes during variations of CCC conditions than in baseline conditions. Overall, there was variability in participants' performance within the CCC conditions and overlap in participants' performance across the CCC conditions. However, interestingly, both participants demonstrated higher performance on four out of the six generalization probes (66%) under the CCC+ generalization condition.

Analysis

Tau-U, a non-parametric statistical technique, was used to measure data nonoverlap between baseline and intervention phases. Table 2 presents students' Tau-U percentage comparison between baseline and each CCC condition on fluency and generalization performance. Tau-U was used for analysis because it provides a more conservative estimate of the strength of the intervention, accounts for outliers and baseline trends, and provides more statistical power than other nonoverlap indices (e.g. percent of nonoverlapping data) (Parker et al., 2011). When interpreting Tau-U, scores between 93% and 100% indicate a large effect, between 66% and 92% indicate a medium effect, and 65% or lower indicate a small effect (Rakap, 2015).

Tau-U results are presented for each participant in Table 2. When compared to baseline fluency performance, intervention effects for Keith were strongest in the CCC+G condition, whereas intervention effects for Yvette were strongest in the CCC and CCC+R conditions. As with fluency, intervention effects were strong for both participants across the CCC+R and CCC+G generalization conditions. Small or no effects were evident for Yvette on generalization performance under the CCC condition.

Maintenance

In order to determine if performance gains were maintained over time, maintenance measures were taken two weeks after the conclusion of the intervention. Maintenance measures were similar to the fluency probes. They contained randomized division facts from each set across all previously targeted basic division facts. One maintenance probe was taken per intervention condition. Maintenance results can be seen in Table 3. Both participants maintained the highest fluency in the CCC+G condition.

Discussion

As can be seen from the analysis of data and Tau-U results, findings of this study indicated that both participants improved, over their baseline performance, on basic division fact fluency during all of the CCC conditions. This finding is consistent with prior studies reporting on the effectiveness of the CCC intervention method for students (e.g., Bolich et al., 1995; Cieslar et al., 2008; Skinner et al., 1992). Results also indicated that both participants improved over their baseline performance on basic division generalization probes during all of the CCC intervention conditions. This was an important finding as participants were not explicitly taught how to complete story problems involving basic division during the implementation of any of the CCC conditions.

However, when differential effects of the three variations of CCC on participants' mean fluency performance were examined, results indicated that there was variability across participants and no single intervention condition consistently yielded the greatest mean fluency performance results for both participants. One possible reason is that all CCC conditions incorporate the critical evidence-based instructional components of modeling, opportunities to respond, immediate corrective feedback, and self-monitoring. These components in and of themselves may have been sufficient to produce general improvements.

Overlap between baseline and intervention phases was calculated using Tau-U metrics. Intervention effects on fluency and generalization perfor-

Table 2

Tau-U percentage comparison data across participants within each condition for fluency and generalization

	CCC		CCC+R		CCC+G	
	Fluency	Generalization	Fluency	Generalization	Fluency	Generalization
Participant						
Keith	80	100	88	100	100	100
Yvette	100	50	100	100	92	100

Table 3

Maintenance data across intervention conditions for each participant

	Maintenance		
Student	CCC	CCC+R	CCC+G
Keith	18	18	19
Yvette	11	12	18

mance differed somewhat across CCC conditions for participants. For fluency, intervention effects appeared greater under the CCC+G condition for Keith, but greater in the CCC and CCC+R conditions for Yvette.

For generalization, intervention effects using Tau-U metrics were great across all three conditions for Keith, but only the CCC+R and CCC+G conditions for Yvette. Plausible reasons for these findings are that students are more likely to generalize skills in another context when they are given repeated practice opportunities and when the teacher programs for generalization (Cooper et al., 2020; Skinner & Daly, 2010). In the case of the current brief study, students were given additional opportunities to emit the correct response in the CCC+R condition, and the stimulus was altered in the instructional context while in the CCC+G condition.

Clearly, no single intervention condition demonstrated the most effective generalization results. This lack of differentiation among intervention conditions, as it relates to generalization, may be due to spillover effects. In other words, once a participant learned how to generalize basic division facts in any one intervention condition, s/he was also able to then transfer those skills to the other intervention conditions, resulting in improved generalization performance across all conditions. Despite a lack of prior research evaluating the effects of programming for generalization in a Cover-Copy-Compare method, the improvement in generalization and transfer of skills is consistent with the benefits of programming for generalization during instruction according to Cooper and colleagues (2020).

Performance on maintenance measures that were administered two weeks following the completion of all intervention sessions revealed a slight decrease on division math fact fluency. Nevertheless, maintenance data for both participants were still above baseline levels and tended to be commensurate with the last intervention data point in each respective intervention condition. These results were similar to maintenance findings in previous CCC research indicating that CCC and variations of this intervention produced sustainable results (e.g., Cieslar et al., 2008; Mong & Mong, 2010; Poncy et al., 2007; Skinner et al., 1989). Further, participants obtained higher performance (i.e., Yvette = 6 point difference; Keith = 1 point difference) on math fluency maintenance probes containing items taught in the CCC+G condition than in the CCC+R and CCC conditions. Programming for generalization increases the likelihood that students will become successful in completing the task independently as it helps them become fluent, gain a deeper understanding, and transfer skills to different contexts.

Interestingly, social validity questionnaire results revealed that students favored CCC and CCC+G over the CCC+R condition. They expressed dislike for having to complete the required additional repetition step of the CCC+R, a finding that was similar to a previous study that compared CCC to a CCC+R condition (i.e., Grafman & Cates, 2010). Contrary to students' preferences, the teachers expressed that they would implement either CCC or CCC+R. This was also consistent with Grafman and Cates' (2010) study as teachers in their study indicated that they would rather use the modified CCC method with extra repetition. Interestingly, none of the teachers preferred implementing CCC+G in the classroom. Possibly, they perceived the CCC+G condition as requiring more time to create the materials and implement the lessons.

Limitations

This brief study consisted of a number of limitations that may have influenced the lack of distinctions in performance among the CCC conditions. For instance, the number of possible baseline and intervention sessions and the time allocated for each session was limited to the dates and times that the school permitted the study to take place. Due to the nature of the school schedule and time constraints for intervention sessions, a two-phase: baseline and comparison alternating treatment (aka multielement) design was chosen in order to very rapidly compare CCC variations. In this type of design, a stable baseline with a minimum of 3 data points would typically be established prior to implementation of any intervention (Cooper et al., 2020). However, it quickly became apparent that there was uncertainty surrounding school schedules and in-person attendance. Therefore, the decision was made to move to the intervention phase after two baseline data points were collected per CCC variation. Although some baseline trends were stable (e.g. Figure 3), others were not (e.g. Figure 4). This presents a limitation when interpreting data, as it is then difficult to compare intervention data to baseline. It would have been preferable to have obtained a stable baseline for each participant prior to moving into the intervention phase of the study.

Although all three types of CCC conditions were implemented in a counterbalanced order to minimize the influence of one intervention over the others, there apparently were spillover and practice effects from one condition to another. Although there were some differences among the CCC conditions, there was likely not enough distinguishable elements to produce substantial differences in performance across those conditions in this study.

The total number of math fluency maintenance probes were administered in three sessions for each participant. However, there was only one maintenance math fluency probe per CCC condition, meaning that there was only one probe that contained items associated with those taught in a respective CCC condition. This made it difficult to draw conclusions about which CCC condition had the greatest impact on maintaining math fluency problems. In the case of one participant (Yvette), a ceiling effect on the generalization probes was apparent (mastery on solving math problems was achieved quickly) making it difficult to determine differential effects among the three CCC conditions for this participant.

Considerations and Recommendations for Practitioners

Prior research has reported on the effectiveness of the CCC intervention method for both general and special education students (e.g., Bolich et al., 1995; Cieslar et al., 2008; Skinner et al., 1992) and also the effectiveness of variations of CCC (e.g., Grafman & Cates, 2010; Mong & Mong, 2010). However, there are a few factors that educators must consider prior to implementing a variation of CCC, particularly for basic division facts. First, educators must consider whether it is feasible to implement the CCC intervention, or any of its variations. Remember that any CCC intervention will require a potentially significant amount of work upfront with regards to planning, obtaining or designing worksheets, and teaching the student the procedures. Without this initial work, students will be unable to self-monitor and implement this intervention correctly later.

Educators must also decide whether the CCC intervention, or variations of it, are appropriate for the student. Educators should ask themselves: Will this student benefit from this intervention? How long will it take me to teach the CCC intervention to the student? Can this student self-monitor and implement this intervention? Will the student monitor and evaluate their performance accurately with minimal assistance? Would the student be motivated by the independence afforded by a CCC intervention or variation?

If the CCC intervention or variation is feasible and appropriate for the student, it is important to match the variation of CCC intervention with the student's learning needs. For example, students who may be in the acquisition and fluency phases of a skill may benefit from the required additional repetition of the CCC+R variation, thus affording them extra practice opportunities. However, students at the generalization phase may find this additional repetition to be unnecessary, frustrating, and an inefficient use of their time. On the other hand, students at a fluency or generalization phase of learning, may benefit from the varied formats presented in the CCC+G variation. In this variation, they are able to continue to build their foundational basic division skills, but can also benefit from exposure to a variety of formats, preparing them to solve a range of new and different mathematical problems. This is a significant advantage of this variation and may assist the student in recognizing, understanding, and solving a variety of facts in the future and across contexts. A disadvantage of this variation is that it can be more time consuming for educators to prepare and may not initially improve the student's math fluency as this CCC variation will require more cognitive attention to the math fact format on the student's part when completing the worksheet.

Directions for Future Research

Clearly, more research is needed in examining the effects of programming for generalization using CCC and other evidence-based intervention strategies across various academic content, skills, student demographics, and required levels of support. Larger sample sizes should also be included in order to confirm the strength of the intervention. The effects of other dimensions of programming for generalization, such as teaching students different response requirements on generalization outcomes, may be interesting. For example, future researchers should examine in more detail whether the written words format contributed more towards generalization of skills than other math fact formats. Moreover, similar to the Codding et al. (2007) study, research that consists of programming for generalization should be conducted on students at diverse learning phases such as at the acquisition, fluency, and generalization phases (i.e., Haring & Eaton, 1978). The differential effects of one CCC condition over others may be dependent upon the learning phase at which a student is functioning. In the current study, the generalization measure (i.e., story problems) may be considered a far transfer assessment. Researchers might consider including generalization measures that more closely resemble the tasks that were taught in the intervention conditions. Future researchers may consider adding more than one repetition to the modified CCC condition, or presenting other types of math facts in addition to division facts. Maintenance measures can be administered over a longer time period to examine whether performance is sustained over time. Due to time constraints, an alternating treatment design was used in this study to rapidly compare the effects of the interventions. A repeated acquisition design in which each intervention is implemented for a set number of trials prior to implementing the other intervention could be considered. Moreover, an A-B-C-A-D-A design in which the baseline phase is interspersed over time (i.e., occurring after the implementation of each type of intervention) may have been more useful than the design used in the current study for determining the effects of each intervention. Future researchers may also consider implementing alternating treatment designs embedded within a multiple baseline design, or the addition of implementing a control condition across experimental phases of the study.

References

Bolich, B., Kavon, N., McLaughlin, T. F., Williams, R. L., & Urlacher, S. (1995). Effects of Copy, Cover, Compare procedure and a token economy on the retention of basic multiplication facts by two middle school students with ADD/ADHD. *British Columbia Journal of Special Education*, *19*, 1-10.

Cieslar, W., McLaughlin, T. F., & Derby, K. M. (2008). Effects of Copy, Cover, and Compare procedure on the math and spelling performance of a high school student with behavioral disorder: A case report. *Preventing School Failure*, *52*, 4, 45-51.

Codding, R. S., Eckert, T. L., Fanning, E., Shiyko, M., & Solomon, E. (2006). Comparing mathematics interventions: The effect of Cover-Copy-Compare alone and combined with performance feedback on digits correct and incorrect. *Journal of Behavioral Education*, *16*(2), 125-141.

Codding, R. S., Shiyko, M., Russo, M., Birch, S., Fanning, E., & Jaspen, D. (2007). Comparing mathematics interventions: Does initial level of fluency predict intervention effectiveness? *Journal of School Psychology*, *45*, 603-617.

Conley, C. M., Derby, K. M., Roberts-Gwinn, M., Weber, K. P., & McLaughlin, T. F. (2004). An analysis of initial acquisition and maintenance of sight words following Picture Making and Copy, Cover, and Compare teaching methods. *Journal of Ap-*

plied Behavior Analysis, *37*, 339-350.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2020). *Applied behavior analysis: Third edition*. Pearson.

Esbenshade, P. H., Rosales-Ruiz, J., & Koegel, R. L. (2001). Programming common stimuli to promote generalized question-asking. *Journal of Positive Behavior Interventions*, *3*(4), 199. https://doi-org.proxy.lib.ohio-state.edu/10.1177/109830070100300402

Freeland, J. T., & Noell, G. H. (2002). Programming for maintenance: An investigation of delayed intermittent reinforcement and common stimuli to create indiscriminable contingencies. *Journal of Behavioral Education*, *11*(1), 5–18. https://doi.org.proxy.lib.ohio-state.edu/10.1023/A:1014329104102

Grafman, J. M., & Cates, G. L. (2010). The differential effects of two self-managed instruction procedures: Cover, Copy, and Compare versus Copy, Cover, and Compare. *Psychology in the Schools*, *47*, 153-165.

Hansen, C. L. (1978). Writing skills. In N. G. Haring, T. C. Lovitt, M. D. Eaton, & C. L. Hansen (Eds.), *The fourth R: Research in the classroom* (pp. 93-126). Merrill.

Haring, N. G., & Eaton, M. D. (1978). Systematic instructional procedures: An instructional hierarchy. In N. G. Haring, T. C. Lovitt, M. D. Eaton, & C. L. Hansen (Eds.), *The fourth R: Research in the classroom* (pp. 23–40). Merrill.

Hodge, J., Riccomini, P. J., Buford, R., & Herbst, M. H. (2006). A review of instructional interventions in mathematics for students with emotional and behavioral disorders. *Behavioral Disorders*, *31*, 297-311.

Joseph, L. M., Konrad, M., Cates, G., Vajcner, T., Eveleigh, E., & Fishley, K. M. (2012). A meta-analytic review of Cover-Copy-Compare and variations of this self-management procedure. *Psychology in the Schools*, *49*, 122-136.

Kroesbergen, E. H., & Van Luit, J. E. H. (2003). Mathematics interventions for children with special needs. *Remedial and Special Education*, *24*(2), 97-114.

Mong, M. D., & Mong, K. W. (2010). Efficacy of two mathematics interventions for enhancing fluency with elementary students. *Journal of Behavioral Education*, *19*, 273-288.

National Assessment of Educational Progress. (2019). *The nation's report card*. http://nces.ed.gov/nationsreportcard/

Parker, R. I., Vannest, K. J., Davis, J. L., & Sauber, S. B. (2011). Combining nonoverlap and trend for single-case research: Tau-U. *Behavior Therapy*, *42*, 284-299.

Poncy, B. C., Skinner, C. H., & Jaspers, K. E. (2007). Evaluating and comparing interventions designed to enhance math fact accuracy and fluency: Cover, Copy, and Compare versus Taped Problems. *Journal of Behavioral Education*, *16*, 27-37.

Rakap, S. (2015). Effect sizes as result interpretation aids in single-subject experimental research: Description and application of four nonoverlap methods. *British Journal of Special Education*, *42*, 11–33.

Schermerhorn, P. K., & McLaughlin, T. F. (1997). Effects of the Add-A-Word Spelling Program on test accuracy, grades, and retention of spelling words with fifth and sixth grade regular education students. *Child & Family Behavior Therapy*, *19*(1), 23-25.

Skinner, C. H., Bamberg, H. W., Smith, E. S., & Powell, S. S. (1993). Cognitive Cover, Copy, and Compare: Subvocal responding to increase rates of accurate division responding. *Remedial and Special Education*, *14*, 49-56.

Skinner, C. H., Belfiore, P. J., & Pierce, N. (1992). Cover, Copy, and Compare: Increasing geography accuracy in students with behavior disorders. *School Psychology Review*, *21*, 73-81.

Skinner, C. H. & Daly, E. J., III (2010). Improving generalization skills. Commentary on a special issue. *Journal of Behavioral Education*, *19*, 106-115.

Skinner, C. H., McLaughlin, T. F., & Logan, P. (1997). Cover-Copy-Compare: A self-managed academic intervention effective across skills, students, and settings. *Journal of Behavioral Education*, *7*, 295-306.

Skinner, C. H., Turco, T. L., Beatty, K. L., & Rasavage, C. (1989). Cover, Copy, and Compare: A method for increasing multiplication performance. *School Psychology Review*, *18*, 412-420.

Smith, T. J., Dittmer, K. I., & Skinner, C. H. (2002). Enhancing science performance in students with learning disabilities using Cover, Copy, and Compare: A student shows the way. *Psychology in the Schools*, *39*, 417-426.

Stading, M., Williams, R. L., & McLaughlin, T. F. (1996). Effects of Copy, Cover, and Compare procedure on multiplication facts mastery with a third grade girl with learning disabilities in a home setting. *Education and Treatment of Children*, *18*, 425-434.

Woodcock, R. W., McGrew, K. S., & Mather, N. (2001). *Woodcock-Johnson III Tests of Achievement*. Riverside.

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 42-50

ISSN: 2329-5783

Article

Creating a Safe School Environment for LGBTQ+ Youth using the PREPaRE Model

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Lesbian, gay, bisexual, transgender, and queer-plus (LGBTQ+) youth experience various forms of violence in schools, such as bullying. This article highlights the most recent data on the school experiences of this population of students. The association between bullying and academic and socioemotional functioning is covered, and the research on school responses to bullying is reviewed. Finally, the PREPaRE Model, a framework for creating safer school environments for not only LGBTQ+ youth but for all students, is outlined.

Key words: LGBTQ+, schools, students, violence, safety and crisis response

Lesbian, gay, bisexual, transgender, and queer (LGBTQ+) youth comprise a growing demographic in schools. The increased visibility and acceptance of the LGBTQ+ community and the proliferation of protective and supportive policies in society and schools make it safer for youth to come out at earlier ages. Despite these advances, LGBTQ+ youth continue to experience various forms of violence at school, at home, and in the community-at-large [Gay, Lesbian and Straight Education Network (GLSEN), 2020. Schools serve as milieus not only to improve the experiences of LGBTQ+ youth but as places to combat the problem of discrimination. When schools are more secure for LGBTQ+ youth, they become safer for all youth.

With the information mentioned above in mind, the purpose of the present article is three-fold. First, we provide a summary of selected literature related to the school experiences of LGBTQ+ students. Second, information about the effects of violence on LGBTQ+ youth is presented. Finally, we offer a framework for creatin a safe school environment working with LGTBQ+ students. Ultimately, this article is intended to serve as a resource for school personnel to be better able to optimize LGBTQ+ students' potential for success throughout life and in school.

Background

Throughout the first two decades of the 21st century, rights, protections, and policy guidance targeting LGBTQ+ individuals proliferated significantly. For instance, the Matthew Shepard and James Byrd, Jr. Hate Crimes Prevention Act was signed into law in October 2009 to extend the coverage of federal hate crimes statutes to include those based on a victim's actual or perceived sexual orientation or gender identity; furthermore, the U.S. Supreme Court in June 2015 ruled LGBTQ+ persons were entitled to participate fully in the institution of marriage already afforded their heterosexual and cisgender counterparts (Boram, 2016). The impact of these and related laws continue to ei-

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ther improve or restrict the rights and protections of LGBTQ+ youth, shaping how LGBTQ+ adults engage in society today and in the decades to come.

During this same period, additional LGBTQ+ policy development and procedural guidance of schools evolved. For example, the U.S. Department of Health and Human Services (HHS) (2016) created a website with resources and technical assistance for LGBTQ+ youth who experience bullying. Additionally, the U.S. Department of Education hosted five summits on strategies for protecting students, including LGBTQ+ students, from bullying and harassment (Office of the Press Secretary, 2016). Moreover, in July 2014, the U.S. Department of Education published guidance for creating policies and practices to support transgender and gender diverse students, and the U.S. Department of Justice included gender diversity as a protected class under the Title VII of the Civil Rights Act of 1964 (Office of the Press Secretary, 2016). A joint resolution by the American Psychological Association (APA) and the National Association of School Psychologists (NASP) (2015) called for K-12 schools to be places of safety and support for all youth, particularly LGBTQ+ students.

As the U.S. entered the 2020s, the country witnessed numerous federal efforts to weaken some of the gains. Under the previous presidential administration, the U.S. Department of Education (DOE) refused to investigate civil rights complaints made by LGBTQ+ students; the same DOE did not prohibit federal dollars from being funneled to private schools that actively discriminate against LGBTQ+ students (Mirza & Bewkes, 2019). One blatant example of this refusal took effect on February 12, 2018, when DOE Secretary Betsy Devos indicated the department would not investigate any complaints filed by gender diverse students banned from restrooms and other gender-specific spaces at schools.

In the same vein, the Conscience and Religious Freedom Division within the Office of Civil Rights in the Department of Health and Human Services (HHS) defended healthcare providers who refuse to treat individuals toward whom they have a religious objection (e.g., LGBTQ+ persons) that can lead to health disparities for LGBTQ+ youth and adults (Hein et al., 2018). There were even elected officials at the local and state levels who have been unwilling to recognize the rights of LGTBQ+ youth. For instance, in 2013, Leslie Ellison, a board member of the Orleans Parish (LA) School Board, opposed an antibullying policy due to the inclusion of sexual orientation as a protected identity class (Ploof, 2020). As of 2015, nine states (i.e., Alabama, Arizona, Louisiana, Minnesota, Mississippi, Oklahoma, South Carolina, Texas, and Utah) had statutes requiring school personnel to remain neutral about sexual orientation and gender identity matters, obstructing academic and supportive services essential to supporting LGBTQ+ youth (Abreu et al., 2016).

Recently, a number of states have passed anti-gay and anti-transgender legislation restricting the school rights of students. Jarrell (2022) reported there are over 300 anti-LGBTQ+ bills that were passed or proposed this year alone. For example, in April 2022, Florida Governor Ron DeSantis signed into the state's Parental Rights in Education bill, which prevents teachers from having classroom instruction about sexual orientation or gender identity for students in kindergarten through third grades (Jones & Franklin, 2022). Such states as Indiana, Iowa, Louisiana, Missouri, Kentucky, Alabama, Tennessee, Arizona, and Alaska have either passed or introduced legislation that would prohibit trans women and girls from participating in any school sports team designated for biological girls or young women (Riedel, 2022). Seventeen states have passed restrictions to health care for transgender youth (Perry, 2022). In February of 2022, Governor Abbott of Texas directed the Texas Department of Family and Protective Services (DFPS) to investigate reports of gender-affirming care on children and teenagers as a form of child abuse (Jarrell, 2022). The following states passed legislation that prohibit transgender students from using bathrooms that align with their gender identity and not biological sex: Alabama, Minnesota, Mississippi, Oklahoma, and South Dakota (Perry, 2022).

Also, eighteen states have passed legislation that bans books and instructional materials addressing gender or sexual diverse topics in libraries and school curricula, especially for sex-ed classes (Jones & Franklin, 2022). Another point of contention in schools is use of students' declared pronouns and names. For instance, Kluge v. Brownsburg Cmty. Sch. Corp., 2020, involved an Indiana high school teacher who claimed he was discriminated against and forced to resign because his religious beliefs prevented him from adhering to the school's policy, which was to use student's declared names and pronouns (Eckes, 2021). It should be noted the teacher did not win his lawsuit; however, this case highlights the potential hostility and resistance

to full acceptance many LGBTQ+ youth may encounter in schools across the United States. The resulting consequences of such laws and policies are dangerous on many levels, which is echoed in the following:

> First, LGBT students are given a damaging message that their sexual behavior is not to be spoken of or acknowledged and certainly not celebrated. Second, LGBT students are robbed of an imperative aspect of their health education and are more exposed to the implications of unsafe sex. Third, heterosexual students are once again reminded that non-heterosexual behavior is unworthy of such acknowledgment. This furthers the separation of LGBT students as "other" and encourages discrimination, bullying, and even more isolation of non-heterosexual students. (pp. 49-50)

School Experiences of LGBTQ+ Youth

All 50 states and the District of Colombia have implemented some variation of policy, rules, or guidelines that address bullying in schools; however, only 22 states and Washington D.C. address explicit harassment and bullying based on sexual orientation and gender identity (Human Rights Campaign [HRC], 2020). As a result, education settings continue to be hostile environments for many LGBTQ+ youths. LGBTQ+ youth, compared to their heterosexual and cisgender peers, are at elevated risk for adverse school outcomes (Robinson & Espelage, 2011). GLSEN (2020), through a survey that included 23,001 LGBTQ+ students between the ages of 13 and 21, reported approximately 60% of said youth viewed schools as unsafe places for them. Furthermore, the Centers for Disease Control and Prevention (CDC; 2015) conducted a survey that found 61% of LGBTQ+ youth reported being bullied or cyberbullied, compared to 15.5% to 20.2% of their heterosexual/cisgender peers. Abreu and Kenny (2018) conducted a systematic review of cyberbullying [defined as harassing emails, instant messages, and texts (Beckerman & Aurebach, 2014)] among LGBTQ+ youth students, the results of which found between 10.5% and 71.3% reported having been victims of such bullying.

In another study, Beckerman and Auerbach (2014) indicated LGBTQ+ students experience physical bullying (e.g., hitting, punching, kicking) and verbal bullying (e.g., teasing, name-calling, taunting) in schools. For instance, a survey completed by 16,713 LGBTQ students suggested approximately 86% of them experienced harassment or assault based on personal characteristics, gender expression, and gender (GLSEN, 2020). Also, a significant percentage of those surveyed experienced verbal harassment at school based on their sexual orientation, gender expression, or gender (GLSEN, 2020). These percentages of bullying and harassment incidents are higher among this particular population compared to their counterparts. For instance, according to the Youth Risk Behavior Survey, 20% of high school students reported being bullied at school (CDC, 2019). These negative comments can come in the form of microaggressions, which can range from hate speech, terms of disparagement, or the telling of homophobic jokes, amongst other forms (Sue, 2010). Similarly, microaggressions based on LGBTQ+ status can be just as detrimental as physical bullying, which can negatively impact the mental health of sexual and gender minoritized students (Swann et al., 2016). As a result of such violent experiences, according to GLSEN (2020), 32.7% of LGBTQ students reported missing at least one day of school because they felt unsafe or uncomfortable, and over 71% of them avoided school functions due to concerns of safety. Comparatively, based on the results of the Youth Risk Behavior Survey, nine percent of high school students missed school due to safety concerns (CDC, 2019).

Bullying as a Form of Child Traumatic Stress

Trauma, such as bullying, can negatively influence school performance through poor grades, absenteeism, and higher dropout rates (National Child Traumatic Stress Network-Child Trauma Toolkit for Educators, 2008). Bullying can negatively impact LGBTQ+ youth in the following areas: disrupted neurodevelopment; social, emotional, and cognitive impairment; adoption of health-risk behaviors; disease; disability; and social-emotional problems (Ports et al., 2016). Many LGBTQ+ youths experience a significant number of Adverse Childhood Experiences (ACEs) that impact their ability to navigate the developmental, academic, social, emotional, behavioral, and other demands in their lives (GLSEN, 2020). LGBTQ+ students experienced higher levels of victimization, had lower grade point averages, and were twice as likely to indicate they did not have post-secondary educational plans (GLSEN, 2020).

Given some of the ACEs LGBTQ+ youth experience at home and at school, they may skip school to protect themselves and reduce their risk of suicidal ideation and behaviors (Bouris et al., 2016). LGBTQ+ youth are more likely than their heterosexual and cisgender peers to display higher levels of depressive symptoms because of perceived discrimination in school (Almeida et al., 2009), and some youth may present with post-traumatic stress disorder (PTSD) symptomatology (Beckerman & Auerbach, 2014). Similarly, sexual harassment among LGBTQ+ adolescents has been associated with depressive symptoms (Hatchel et al., 2018). Many LGBTQ+ youths are homeless due to family rejection, which can negatively affect their academic success and the overall trajectory of their lives. These circumstances can lead to their exposure to physical dating violence and forced sexual intercourse (CDC, 2015). Researchers have also reported a correlation between familial abuse and sexual and gender minoritized youth entering into violent intimate relationships (Langenderfer-Magruder et al., 2016).

The PREPaRE Model: A Framework for Creating a Safe School Environment

The PREPaRE model (Brock et al., 2016) is a research-based, evidence-informed school safety and crisis response curriculum developed by school-based mental health professionals for school personnel. The model is not necessarily an intervention but a framework that allows schools to examine their climates and to employ initiatives to meet the specific needs of students such as youth who identify as part of the LGBTQ+ community. This approach can allow schools to develop an MTSS response by creating a menu of interventions that can be used to meet the specific safety needs of all students and LGBTQ+ students specifically. It is a comprehensive approach that assumes school personnel should do everything possible to prevent crises from happening in the first place: preparing for those crises that are probable first based on local circumstances (e.g., tornadoes in the country's mid-section; earthquakes in the West) and getting to those crises that are possible (e.g., school intruders; armed assailants) accordingly; being prepared to respond following crisis exposure; engaging in postvention and recovery processes; monitoring self-care throughout; and evaluating effectiveness at all phases of the process. The framework is steeped in guidance from the U.S. Department of Education, which in 2013 issued an unfunded mandate directing all schools to address what it calls five missions when it comes to school safety and crisis response work: prevention, protection, mitigation, response, and recovery. Every school's emergency operations plans must address the five missions (Brock et al., 2011). Thus, as a comprehensive approach to school safety and crisis response work, the PREPaRE framework is designed to assist schools in meeting these expectations/requirements (Brock et al., 2016).

The term 'PREPaRE' itself is an acronym representing the various aspects of the school safety and crisis response process: Prevent and prepare; Reaffirm physical health and psychological security; Provide and Respond to need following crisis exposure; and Evaluate effectiveness. The model can be applied in many ways to school safety and crisis response activities, including creating and maintaining safe climates for all students, specifically LGBTQ+ students, as follows. Schools will need to flesh out specific details under each mission, for which we offer suggestions throughout the duration of this paper. Under each mission are functional annexes, which detail the goals, objectives, and action steps of each function such as under the security annex (Brock et al., 2016).

Prevent and Prepare

Two aspects of the Prevent and Prepare element are to ensure physical and psychological safety (Brock et al., 2016) by addressing school climate, student behavior, academic functioning, and resilience (Brock et al., 2011). This element falls under the Security Annex. Not only should the physical structure and set up of schools, school grounds, and off-site spaces in which elements of education are being conducted (e.g., field trips) promote a sense of protection and security, but they should also feel warm, inclusive, and inviting to all students, particularly LGBTQ+ youth. Between 2008 and 2014, the number of LGBTQ+ safe places in schools [e.g., gender and sexuality alliances (GSAs)] increased (Demissie et al., 2018). Such spaces can serve as the second family for LGBTQ+ youth who are rejected or feel misunderstood by their family (Gamarel et al., 2014). LGBTQ+ youth who perceive school as a safe and supportive place have better outcomes; however, many schools do not have appropriate resources or offer valuable support (GLSEN, 2020).

Fetner and Elaforos (2015) reported schools with gender and sexuality alliances (GSA) created safer environments where LGBTQ+ youth experience greater school connectedness. In contrast, in schools without such a group, youths felt more isolated and withdrawn.

Creating such welcoming school environments for LGBTQ+ youths will require schools to identify existing barriers to this process. As a first step of the Prepare and Prevent process, schools should consider conducting a culture and climate assessment to examine the perceptions of LGBTQ+ students and staff related to school safety and school connectedness (Brock et al., 2016). Arredondo et al. (2016) reported schools do not consistently collect data on their sexual minoritized youth's school experiences, which makes accessing the needs and strengths of this student population inadequate. Therefore, school districts should consider adding questions about students' sexual orientation and gender identity as a part of their district-wide surveys to assess school climate (Kosciw et al., 2009). Such surveys provide schools directly with the next steps for creating a positive school climate for LGTBQ+ youth where they feel physically and psychologically safe. If schools are unable to collect such data, many states collect this data through the Youth Risk Behavior Survey or similar measures. If states or schools are not collecting this data, school psychologists and their state associations should be advocating for this data to be collected. It should be noted the National Association of School Psychologists (NASP) has resources school psychologists can use to advocate for such data to be collected.

Further, school safety teams should consider examining their antibullying policies; however, researchers have indicated generic antibullying policies do not positively change the school environment for sexual and gender minoritized youth (Kull et al., 2016). This process will require schools to define operationally homophobic, transphobic, and gender-based bullying, which can help assess the depth of the problem and develop appropriate interventions (Pugh & Chitiyo, 2012). Shared values and norms must specifically include antibullying policies that include protections for LGTBQ+ youth and an established school-wide antibullying task force to assess school LGBTQ+ bullying climate (Abreu et al., 2016).

For instance, most bullying occurs in unsupervised areas, including restrooms and cafeterias (Swearer et al., 2007). This task force should utilize a problem-solving process, including problem identification, problem analysis, plan implementation, and plan evaluation; this allows the team to operationalize target conditions and identify risk and protective factors (Hess et al., 2012). A problem-solving approach ensures data-based decision-making and accountability and consultation and collaboration (NASP, 2010). As a companion to any antibullying policy is a policy that addresses inclusive, gender-neutral language, allows students to use their preferred name and pronouns, and maintains confidentiality so that school staff members do not disclose information regarding a student's identity or sharing unnecessary information (Savage & Lagerstrom, 2018).

Lastly, students and staff members should receive direct instruction in antibullying and bystander education (Hobbs & Savage, 2018). Further, all students should be taught about gender because it can help prevent homophobic bullying, which is often rooted in gender stereotypes (Savage & Lagerstrom, 2018). School officials can benefit from training on working with LGBTQ+ students (Cowan & Klotz, 2012). Researchers have indicated that educators want training that would better prepare them to be inclusive and create safe spaces for sexual and gender-minoritized individuals (Fredman et al., 2015). Also, training at this level should focus on teaching staff to recognize risk factors, warning signs, and help-seeking behaviors of LGBTQ+ students who are potentially being harassed (Singer et al., 2018). Ultimately, we believe schools should rebrand their Social and Emotional Learning (SEL) programs and interventions as school safety initiatives.

Reaffirm

Unfortunately, there will be times where youth who identify as members of the LGBTQ+ community may experience a homophobic-related crisis at school or in the community. Brock et al. (2016) have suggested school officials need to reaffirm their physical and psychological health, ensuring that basic needs are met, such as shelter. As part of this element, adults' actions and behaviors are highly relevant to reassuring a sense of connection and safety after a crisis (Brock et al., 2016). Ullman (2014) investigated sexual-minoritized students' perceptions of school climate and environmental stressors and supports using Margaret Spencer's Phenomenological Variant of Ecological Systems Theory (PVEST) model and found that same-sex students' self-esteem and connection to their teachers and school

are impacted by their perceptions of school climate and school relationships. Further, such a developmental theory provides an opportunity to understand how LGBTQ+ youths' self-concepts are influenced by perceived direct and indirect interactions (Wolowic et al., 2018).

Students need to know how they can promote their safety and the various supports available (Brock et al., 2016). For instance, selective intervention may need to support students who engage in bullying and students at-risk for being the target of bullying, such as LGBTQ+ students. Students who are aggressive toward sexual and gender minoritized youth could benefit from having consequences reinforced for bullying. Also, a staff member could serve as a mediator to address interpersonal conflict. Findings from a study suggested youth with low scores in trait aggressiveness respond well to anti-violence messaging, having a less favorable attitude toward violence (Cárdaba et al., 2016). According to research, students who engage in bullying may benefit from the following topics: (1) bullying awareness; (2) various forms of bullying; (3) effects of victimization; (4) strategies to create a bully-free school environment; and (5) importance of prevention (Swearer et al., 2007).

Evaluate

In applying the PREPaRE model's evaluation element, schools should consider assessing for psychological trauma and conducting psychological triage (Brock et al., 2016). Sexual and gender minoritized youth victims of homophobic and transphobic bullying may benefit from toxic stress screening to stabilize or improve their overall mental health well-being (Beckerman & Auerbach, 2014). Franke (2014) reported toxic stress screenings allow health providers to identify youth who need therapeutic intervention support. While several such screeners are available, the ACE questionnaire and the Center for Youth Wellness' Adverse Child Experiences Questionnaire (CYW ACE-Q) are commonly used measures (Schulman & Maul, 2019). Based on these screeners' results, an intervention focus should be on helping sexual and gender minoritized youth foster resilience, which is an active process that is culture and context-specific (Asakura, 2016). There should be an assessment of individual and collective risk and protective factors for these students because every student will respond differently to traumatic stress such as homophobic bullying (Blaustein, 2013). This is important because coping products consist of behavioral and health-relevant outcomes that can be either productive or adverse (Spencer & Swanson, 2013) in the face of a crisis or a challenge. In other words, there needs to be a determination of how certain factors influence a student's vulnerability to a threat and their perception of a threat. Internal vulnerability factors consist of preexisting mental and physical illness, social withdrawal, trauma history, and external vulnerability factors, including lack of family support and lack of social resources (Brock et al., 2016).

Further, an examination of physical proximity to the crisis should occur. Was the student a victim of homophobic bullying? Did an LGBTQ+ student witness another student who identifies as part of the community being bullied? In addition to physical proximity, emotional proximity needs to be assessed. Was the student a friend to someone who was bullied? Schools should know how students can manifest traumatic experiences of homophobic bullying. They need to learn the impact it has on cognitive, behavioral, and socioemotional functioning. Some youth might experience psychopathological reactions. Screening or evaluation may be warranted to assess for PTSD or other related trauma disorders. Also, screening for and monitoring suicide risk may be needed for some students (Singer et al., 2018).

Provide Interventions and Respond

According to Brock et al. (2016), during the Provide Interventions and Respond element, school staff ensures interventions are provided, and the psychological needs of students are met. Researchers have recommended using cognitive behavioral strategies to teach conflict resolution, nurture positive self-esteem, and improve self-efficacy (Abreu & Kenny, 2018). Because bullying is a form of trauma, cognitive behavior therapy is the preferred treatment that consists of psychoeducation on trauma, emotion regulation training, exposure, cognitive processing, and problem-solving (Deblinger et al., 2012). Some outlets for teaching these skills include small group counseling, mentoring programs, small group psychoeducational programs, and modeling resilient behavior (Noltemeyer, 2014). Individual resilience factors that should be considered include positive self-esteem, self-efficacy, cognitive ability to mediate stress, self-acceptance, proactive

coping, self-care, and shamelessness (Colpitts & Gahagan, 2016). Budding research has suggested that affirming mindfulness may help improve the overall mental health of LGBTQ+ youth (Iacono, 2018). Mindfulness can be a protective factor against victimization associated with sexual orientation for Latinx sexual minoritized youth (Toomey & Anhalt, 2016). Students will require affirmative counseling at the intensive level where the school-based mental health clinician has positive regard for sexual orientation (NASP, 2017).

Many of these strategies can occur within a GSA club. Potentially, it is an ideal setting for establishing peer support and practicing assertiveness skills. LGBTQ+ youth of color reported that safe places empowered them to cultivate a sense of confidence to persist and flourish outside of the safe space (Gamarel et al., 2014). In other words, these safe spaces build community empowerment by involving "individuals working together in an organized manner to deter community threats, improve quality of life, and generally facilitate citizen participation" (Hess et al., 2012, p. 51).

Examine

Before implementing any programming or crisis planning, schools must conduct a vulnerability assessment to determine any areas of need to address for their LGBTQ+ students. For instance, the District and School Transgender and Gender Diverse Readiness Assessment Form (DSTGDRA; Savage et al., 2017) allows schools to assess needs in some of the following areas: (1) policies, communication, and messaging; (2) behavior interventions; (3) curriculum and instruction; (4) particular services and equity matters; (5) extracurricular activities; and (6) gender-safe spaces. Further, schools must be willing to examine the effectiveness of any programming they implement to support LGBTQ+ youth. Brock et al. (2016) stressed the importance of process analysis, which understands what programming or plan was implemented, who was responsible for implementation, and was it done with fidelity. Lastly, it is necessary to determine if the programming or plan was effective, that the intended outcomes were achieved. Process analysis and outcome data can be measured via questionnaires, surveys, focus groups, or systematic observations of implementation strategies (Brock et al., 2016). Such data would allow schools to determine if they should continue developing a new program or plan to support LGBTQ+ youth.

Conclusion

As microcosms of the larger society, schools serve as venues through which people can create the world for which everyone is striving. Establishing safe and supportive environments inclusive of every student, particularly LGBTQ+ students, should be a priority of all school personnel. Doing so is not only a matter of social justice consistent with the ethical and legal expectations of our education system; it is essentially life-affirming and lifesaving. When LGBTQ+ students feel included, valued, accepted, and secure, they are better able to engage in the entire schooling process; they can also build the confidence and resilience they will need to navigate the various successes and challenges they will face as adults living in a homophobic and transphobic society. Today's students lead the way in creating this world; let us not fail them by our limitations.

References

Abreu, R. L., Black, W. W., Mosley, D. V., & Fedewa, A. L. (2016). LGBTQ youth bullying experiences in schools: The role of school counselors within a system of oppression. *Journal of Creativity in Mental Health*, *11*(3), 325-342. https://doi.org/10.1080/15401383.2016.1214092

Abreu, R. L., & Kenny, M. C. (2018). Cyberbullying and LGBTQ youth: A systematic literature review and recommendations for prevention and intervention. *Journal of Child & Adolescent Trauma*, *11*, 81-97.https://doi.org/10.1007/s40653-017-0175-7

Almeida, J., Johnson, R. M., Corliss, H. L., Molnar, B. E., & Azrael, D. (2009). Emotional distress among LGBT youth: The influence of perceived discrimination based on sexual orientation. *Journal of Youth and Adolescence*, *38*(7), 1001–1014. https://doi.org/10.1007/s10964-009-9397-9

American Psychological Association & National Association of School Psychologists. (2015). *Resolution on gender and sexual orientation diversity in children and adolescents in schools*. Retrieved from http://www.apa.org/about/policy/orientation-diversity.aspx

Arredondo, M., Cray, C., Russell, S., Skiba, R., & Snapp, S. (2016). *Documenting disparities for LGBT students: Expanding the collection and reporting of data on sexual orientation and gender identity*. Retrieved from http://www.indiana.edu/~atlantic/

wp-content/uploads/2016/03/SOGI-Brief-Final.pdf

Asakura, K. (2016). Paving pathways through the pain: A grounded theory of resilience among lesbian, gay, bisexual, trans, and queer youth. *Journal of Research on Adolescence*, *27*(3), 521-536. https://doi.org/10.1111/jora.12291

Beckerman, N. L., & Auerbach, C. (2014). PTSD as aftermath for bullied LGBT adolescents: The case for comprehensive assessment. *Social Work in Mental Health*, *12*(3), 195-211. https://doi.org/ 10.1080/15332985.2014.888026

Blaustein, M. (2013). *Introduction to childhood trauma for intervention*. In E. Rossen & R. Hull (Eds.), *Supporting and Educating Traumatized Children: A Guide for Educators and Professionals*. Oxford University Press.

Boram, M. (2016). The Matthew Shepard and James Byrd, Jr. Hate Crimes Prevention Act: A criminal law perspective. *University of Baltimore Law Review*, *45*(2), 343. Retrieved from https://scholarworks.law.ubalt.edu/ublr/vol45/iss2/6

Bouris, A., Everett, B. G., Heath, R. D., Elsaesser, C. E., Torsten B., & Neilands, T. B. (2016). Effects of victimization and violence on suicidal ideation and behaviors among sexual minority and heterosexual adolescents. *LGBT Health*, *3*(2), 153-161. https://doi.org/10.1089/lgbt.2015.0037

Brock, S. E., Nickerson, A. B., Louvar Reeves, M. A., Conolly, C. N., Jimerson, S. R., Pesce, R. C., & Lazzaro, B. R. (2016). *School crisis prevention and intervention: The PREPaRE Model* (Second Edition). NASP Publications.

Brock, S. E., Nickerson, A. B., Reeves, M. A., Savage, T. A., & Woitaszewski, S. A. (2011). Development, evaluation, and future directions of the PREPaRE School Crisis Prevention and Interpretation Training Curriculum. *Journal of School Violence*, *10*(1), 34–52. https://doi.org/10.1080/15388220.2010.519268

Cárdaba, M. A. M., Briñol, P., Brändle, G., & Ruiz-SanRomán, J. A. (2016). The moderating role of aggressiveness in response to campaigns and interventions promoting anti-violence attitudes: Aggressiveness and anti-violence attitudes. *Aggressive Behavior*, *42*(5), 471-482. https://doi.org/10.1002/ab.21643

Centers for Disease Control and Prevention. (2015). *LGBT youth*. Retrieved from https://www.cdc.gov/lgbthealth/youth.htm

Centers for Disease Control and Prevention (2019). *Youth risk behavior survey: Data summary and trends reports 2009-2019*. Retrieved from https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBSDataSummaryTrendsReport2019-508.pdf

Colpitts, E., & Gahagan, J. (2016). The utility of resilience as a conceptual framework for understanding and measuring LGBTQ health. *International Journal for Equity in Health*, *15*(60), 1-8. https://doi.org/10.1186/s12939-016-0349-1

Cowan, K. C., & Klotz, M. B. (2012). Tips for building commitment to create safe, supportive schools for LGBTQ students. *Communique*, *40*(8), 10.

Deblinger, E., Behl, L. E., & Glickman, A. R. (2012). Trauma-focused cognitive-behavioral therapy for children who have experienced sexual abuse. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive-behavioral procedures* (p. 345–375). Guilford Press.

Demissie, Z., Rasberry, C. N., Steiner, R. J., Brener, N., & McManus, T. (2018). Trends in secondary schools' practices to support lesbian, gay, bisexual, transgender, and questioning students, 2008-2014. *American Journal of Public Health*, *108*(4), 557-564. https://doi.org/10.2105/AJPH.2017.304296

Eckes, S. E. (2021). Pronouns and preferred names: When public school teachers' religious beliefs conflict with school directives. *Educational Researcher*, *50*(1), 65–68. https://doi.org/10.3102/0013189X209943198

Fetner, T., & Elafros, A. (2015). The GSA difference: LGBTQ and ally experiences in high schools with and without gay-straight alliances. *Social Sciences*, *4*(3), 563-581. https://doi.org/10.3390/socsci4030563

Franke, H. A. (2014). Toxic stress: Effects, prevention and treatment. *Children*, *1*(3), 390–402. https://doi.org/10.3390/children1030390

Fredman, A. J., Schultz, N. J., & Hoffman, M. F. (2015). "You're moving a frickin' big ship": The challenges of addressing LGBTQ topics in public schools. *Education and Urban Society*, *47*(1), 56–85. https://doi.org/10.1177/0013124513496457

Gamarel, K. E., Walker, J., Rivera, L., & Golub, S. A. (2014). Identity safety and relational health in youth spaces: A needs assessment with LGBTQ youth of color. *Journal of LGBT Youth*, *11*(3), 289-315. https://doi.org/10.1080/19361653.2013.879464

Gay, Lesbian and Straight Education Network (GLSEN) (2020). *The 2019 National School Climate Survey*. Author. Retrieved from https://www.glsen.org/research/2019-national-school-climate-survey

Hatchel, T., Espelage, D.L., & Huang, Y. (2018). Sexual harassment victimization, school belonging, and depressive symptoms among LGBTQ adolescents: Temporal insights. *American Journal of Orthopsychiatry*, *88*(4), 422-430. https://doi.org/10.1037/ort0000279

Hein, L. C., Stokes, F., Greenberg, C. S., & Saewyc, E. M. (2018). Policy brief: Protecting vulnerable LGBTQ youth and advocating for ethical health care. *Nursing Outlook*, *66*(5), 505-507. https://doi.org/10.1016/j.outlook.2018.08.006

Hess, R. S., Short, R. J., & Hazel, C. E. (2012). *Comprehensive children's mental health services in schools and communities: A public health problem-solving model*. Taylor & Francis Group.

Hobbs, T. K., & Savage, T. A. (2018). *Lesbian, gay, bisexual, and questioning youth: Helping handout for school and home*. National Association of School Psychologists.

Human Rights Campaign (2020). *State equality index 2019*. Retrieved from https://www.hrc.org/resources/state-equality-index

Iacono, G. (2018). An affirmative mindfulness approach for lesbian, gay, bisexual, transgender, and queer youth mental health. *Clinical Social Work Journal*, *47*, 156-166. https://doi.org/10.1007/s10615-018-0656-7

Jarrell, Z. (2022). *Overview of over 300 anti-LGBTQ+ bills in 2022*. Retrieved from https://www.washingtonblade.com/2022/04/22/overview-of-over-300-anti-lgbtq-bills-in-2022/

Jones, D., & Franklin, J. (2022). *Not just Florida. More than a dozen states propose so-called 'Don't Say Gay' bills*. Retrieved from https://www.npr.org/2022/04/10/1091543359/15-states-

dont-say-gay-anti-transgender-bills

Kosciw, J. G., Greytak, E. A., & Diaz, E. M. (2009). Who, what, where, when, and why: Demographic and ecological factors contributing to hostile school climate for lesbian, gay, bisexual, and transgender youth. *Journal of Youth & Adolescence*, *38*, 976-988. https://doi.org/ 10.1007/s10964-009-9412-1

Kull, R. M., Greytak, E. A., Kosciw, J. G., & Villenas, C. (2016). Effectiveness of school district antibullying policies in improving LGBT youths' school climate. *Psychology of Sexual Orientation and Gender Diversity*, *3*(4), 407-415. https://doi.org/10.1037/sgd0000196

Langenderfer-Magruder, L., Walls, N. E., Whitfield, D. L., Brown, S. M., & Barrett, C. M. (2016). Partner violence victimization among lesbian, gay, bisexual, transgender, and queer youth: Associations among risk factors. *Child Adolescent Social Work Journal*, *33*, 55-68. https://doi.org/10.1007/s10560-015-0402-8

Mirza, S. A., & Bewkes, F. J. (2019). *Secretary DeVos is failing to protect the civil rights of LGBTQ students*. Retrieved from https://www.americanprogress.org/issues/lgbtq-rights/reports/2019/07/29/472636/secretary-devos-failing-protect-civil-rights-lgbtq-students/

National Association of School Psychologists. (2010). *Model for comprehensive and integrated school psychological services*. Author.

National Association of School Psychologists. (2017). *Safe and supportive schools for LGBTQ+ youth* (Position statement). Author.

National Child Traumatic Stress Network Schools Committee. (2008). *Child trauma toolkit for educators*. National Center for Child Traumatic Stress.

Noltemeyer, A. L. (2014). Best practices in fostering student resilience. In P. L. Harrison & A. Thomas (Eds.), *Best practices in school psychology: Student-level services* (6th ed., pp. 225-238). National Association of School Psychologists.

Office of the Press Secretary. (2016). *Fact sheet: Obama administration's record and the LGBT community*. Retrieved from https://obamawhitehouse.archives.gov/the-press-office/2016/06/09/fact-sheet-obama-administrations-record-and-lgbt-community.

Perry, A. (2022). Unleashing hate in our schools. *Progressive*, *86*(3), 32–35.

Ploof, S. (2020). *OPSB candidate believes LGBTQ kids don't deserve equality*. Retrieved from https://www.bigeasymagazine.com/2020/10/06/opsb-candidate-believes-lgbtq-kids-dont deserve-equality/

Ports, K. A., Ford, D. C., & Merrick, M. T. (2016). Adverse childhood experiences and sexual victimization in adulthood. *Child Abuse & Neglect*, *51*, 313-322. https://doi.org/10.1016/j.chiabu.2015.08.017

Pugh, R., & Chitiyo, M. (2012). The problem of bullying in schools and the promise of positive behaviour supports. *Journal of Research in Special Educational Needs*, *12*(2), 47-53. https://doi.org/10.1111/j.1471-3802.2011.01204.x

Riedel, S. (2022). *Here's all the anti-trans legislation that moved forward this week*. Retrieved from https://www.them.us/story/dont-say-gay-bill-anti-lgbtq-legislation-florida-idaho

Robinson, J. P., & Espelage, D. L. (2011). Inequities in educational and psychological outcomes between LGBTQ and straight students in middle and high school. *Educational Researcher*, *40*(7), 315-330. doi:10.3102/0013189X11422112

Savage, T. A., & Lagerstrom, L. (2018). *Transgender and gender diverse youth: Helping handout for school and home*. National Association of School Psychologists.

Savage, T. A., Springborg, H., & Lagerstrom, L. (2017). An environmental scan tool to assess district and school readiness to support transgender and gender diverse youth. *Communique*, *46*(1), 14.

Schulman, M., & Maul, A. (2019). *Screening for adverse childhood experiences and trauma*. Retrieved from https://www.chcs.org/media/TA-Tool-Screening-for-ACEs-and-Trauma_020619.pdf.

Singer, J. B., Erbacher, T. A., & Rosen, P. (2018). School-based suicide prevention: A framework for evidence-based practice. *School Mental Health*, *11*(1), 54-71. https://doi.org/10.1907/s12310-018-924-8

Spencer, M. B., & Swanson, D. P. (2013). Opportunities and challenges to the development of healthy children and youth living in diverse communities. *Development and Psychopathology*, *25*(4), 1551-1566. https://doi.org/10.1017/S095457941300076X

Sue, D. W. (2010). *Microaggressions in everyday life: Race, gender, and sexual orientation*. John Wiley & Sons.

Swann, G., Minshew, R., Newcomb, M. E., & Mustanski, B. (2016). Validation of the sexual orientation microaggression inventory in two diverse samples of LGBTQ youth. *Archives of Sexual Behavior*, *45*, 1289-1298. https://doi.org/10.1007/s10508-016-0718-2

Swearer, S. M., Espelage, D. L., Love, K. B., & Kingsbury, W. (2007). School-wide approaches to intervention with school violence and bullying. In B. Doll and J.A. Cummings (Eds.), *Transforming school mental health services: Population-based approaches to promoting the competency and wellness of children* (pp. 187-212). Corwin Press in cooperation with the National Association of School Psychologists.

Toomey, R. B., & Anhalt, K. (2016). Mindfulness as a coping strategy for bias-based victimization among Latina/o sexual minority youth. P*sychology of Sexual Orientation and Gender Diversity*, *3*(4), 432-441. https://doi.org/10.1037/sgd0000192

Ullman, J. (2014). 'At-risk' or school-based risk? Testing a model of school-based stressors, coping responses, and academic self-concept for same-sex attracted youth. *Journal of Youth Studies*, *7*(11), 1-16. https://doi.org/10.1080/13676261.2014.963539.

U.S. Department of Health and Human Services. (2016). *Advancing LGBT health and well-being; 2016 report*. Retrieved from https://www.hhs.gov/sites/default/files/2016-report-with-cover.pdf.

Wolowic, J. M., Sullivan, R., Porta, C. M., Valdez, C. A. B., & Eisenberg, M. E. (2018). Come along with me: Linking LGBTQ youth to supportive resources. International Journal of Child, *Youth and Family Studies*, *9*(3), 1-20. https://doi.org/10.18357/ijcyfs93201818274

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 51-66

ISSN:2329-5783

Article

Perceived Challenges, Efficacy, Educational Impact, and Implementation of COVID-19 Mitigation Measures in Public Schools

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The novel coronavirus pandemic of 2019 had a substantial impact on the education of students and required district leaders throughout the US to adapt their operating procedures as research and recommendations for responding to the outbreak emerged. The present study examined teacher and parent perceptions of school responses to this public health crisis. Participants (N = 69) rated the effectiveness, challenge to implement, educational impact, and district enforcement of mitigation measures including mask use, social distancing, enhanced cleaning, and restricting communal activities. These perceptions were compared to emerging research on the efficacy of these techniques at reducing viral transmission. Results show inconsistent alignment between perceived vs. evidence-based efficacy of mitigation strategies on measures including mask use and social distancing. These findings highlight the important role School Psychologists can play in re-educating stakeholders about viral transmission and mitigation strategies, adapting procedures to remain up to date with emerging research, and monitoring implementation of procedures to protect the health of school personnel and students most effectively.

Keywords*:* COVID-19, schools, mitigation measures, masks, enhanced cleaning, administration, public health

Public health threats such as infection from the novel coronavirus and other diseases make it essential that school leaders implement the most effective strategies available to ensure student and staff safety. The ongoing novel coronavirus pandemic generated a lack of consistent guidance as new information emerged, prompting confusion regarding the efficacy of mitigation strategies. This confusion coupled with obstacles in implementing particular strategies in schools may be reducing the efficacy of school efforts to protect students and staff from infection. School leaders need stakeholder feedback to craft culturally sensitive responses. School Psychologists can play a critical role in helping schools gather information from students, families, and staff to generate meaningful mitigation strategies and help validate those responses. To facilitate this work, research is needed to examine the strategies parents and teachers believe are effective in reducing transmission of COVID-19, compare these beliefs to current research, and make recommendations to support schools in taking effective actions given limited resources and an evolving understanding of viral transmission.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the associated coronavirus disease 2019 (COVID-19) are caused by a single-stranded RNA virus found in birds and mammals (Nisha et al., 2020). The number of known active COVID-19 infections in the United States was under 50 in February of 2020 and over 7 million by December of 2020 (Centers for Disease Control and Prevention [CDC], 2022). During 2020, the US recorded the highest number of cases and deaths from COVID-19 in the world with approximately 11% of the population

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infected in March and approximately 25% of the population infected in December (Pei et al., 2021). According to Leidman et al. (2021), infection risk increased with age, and though children showed lower rates of infection than adults, their positivity rates paralleled those of adults, trending downward in early fall of 2020 and upward through December. Mehta et al. (2020) revealed that infection rates were similar in children and adults, but children had less severe symptoms and may have been less likely to be reported.

To reduce viral spread in children, a variety of educational strategies were adopted across the US in 2020, which can be grouped into broad categories including offering no education services for an extended time, packet-based instruction at a distance, online instruction, and in person (i.e., face-to-face) instruction (Schlegelmilch & Douglas, 2020). In March of 2020, many schools in all 50 US states had closed (Auger et al., 2020). Staguhn et al. (2021) examined the relationship between confirmed COVID-19 case rates, school closures, and stay-at-home orders in states in which the school closure date preceded stay-at-home orders by more than three days. The researchers concluded that in addition to stay-at-home orders playing a role in reducing the spread of infection, closing schools was also associated with reduced infection rates. However, in Japan, Iwata et al. (2020) found that in March of 2020 there were no differences in infection rates due to school closure. Fukumoto et al. (2021) also found no link between school closures and COVID-19 spread. In December of 2020, 62% of US K-12 schools offered full or partial in person learning, with little difference noted in infection rates between counties that offered fully online or face-to-face learning (Leidman et al., 2021). Krishnamachari et al. (2021) concluded that the impact of closing schools on reducing the spread of COVID-19 is unclear.

School closures can have negative impacts on learning for many students (Engzell et al., 2021). For example, many school districts were able to provide services to general education students but were unable to accommodate the needs of students in special education, so those services became optional or were not offered for periods of time (Hirsch et al. 2022). Several lawsuits against schools for issues related to Free and Appropriate Education and changes in Individual Education Plans due to school responses to the pandemic were initiated (Jameson et al., 2020).

Though shifting to online instruction was a viable alternative for many schools during the pandemic, it posed problems for students with limited access to technology. In a sample of 4,917 US adults, 94% of parents with school-aged children reported their children's school was closed, and 36% of parents in the lower income category were concerned that their child would not be able to complete schoolwork because they lacked access to a computer at home, whereas this concern was reported by only 4% of parents in the upper income category (Vogels et al., 2020). Domina et al. (2021) found students with high-speed Internet access, diverse learning opportunities, and high connectivity with other families were more engaged in their education during this time than students without these resources. Given these issues, some schools remained open or reopened as quickly as possible during the pandemic, so a better understanding of disease mitigation strategies to deploy within schools is needed.

Mitigation Measures

By April 2020 the Center for Disease Control (CDC) in the US issued public health guidance including the use of cloth face coverings, hand washing, social distancing, and environmental surface cleaning (Schuchat & CDC COVID-19 Response Team, 2020). While these recommendations were readily adopted by school districts, challenges to their implementation were present. For example, by June of 2020 shortages of hand sanitizer were reported (Berardi et al., 2020). Air purification and treatment techniques were costly for schools at over $300 per student (Cai et al., 2022), and Xu et al. (2021) found in models that while air purification could keep infection risk below 1% in limited cases, additional steps such as use of face masks and social distancing were required to stay below 1% in all cases. Overall cost for mitigation measures were estimated to be between $55 (materials and consumables only) to $442 (materials, staff, and transportation) per student per year (Rice et al., 2020).

As the virus became better understood during 2020, guidance to mitigate its impact changed. National government guidance on wearing face masks was inconsistent between regions and was frequently modified (Laestadius et al., 2020) despite emerging research that measures such as social distancing and mask use were effective in limiting the spread of infection (Chu et al., 2020). In the early days of the pandemic, there was also confusion regarding whether the virus was airborne and could spread via droplets and aerosol particles (Lewis, 2020). In September of 2020, the CDC posted, then removed information regarding

aerosol transmission of the virus at distances greater than 6 feet (Tanne, 2020). Gregory et al. (2022) noted that some people lost trust in public health information as they expected the end of mask use after vaccination though continued mask use was ultimately recommended. This shifting guidance for virus mitigation created confusion, and school leaders were responsible for implementing and revising strategies as new information emerged.

Current Research

Given these revisions to understanding the virus and its transmission, the purpose of the present study was to examine perceived efficacy and implementation of mitigation strategies utilized in schools in 2020 aimed at reducing spread of infection and contextualize these findings with emerging research on COVID-19 to support school personnel in protecting children and their families. Confusion related to early guidance may have left school staff and parents unsure how to best mitigate viral transmission, and some strategies may have been difficult to implement, so their impact on education services remains unclear. Better understanding these variables can inform data-based decision making to aid school psychologists as they promote interventions to increase school safety without having a negative impact on instructional supports to promote learning.

The present study examined teachers' and parents' perceptions of the efficacy of methods to reduce virus spread and compared those perceptions to emerging research with the goal of making evidence-based recommendations aimed at reducing transmission of the virus as it continues to rise and ebb in the population. It was predicted that perceptions of effective mitigation measures would be misaligned with subsequent research evidence on reducing viral spread as it takes time to change beliefs after shifting health guidance. It was also predicted that those measures considered effective at reducing transmission, having a positive impact on the quality of education, and being easy to implement would be enforced by districts at higher rates than measures perceived as less effective, harder to implement, and having a negative impact on educational services provided.

METHOD

Participants

Participation in the study was anonymous, and the research was approved as an exempt project by the Institutional Review Board of Texas A&M University - Central Texas. Data were collected using an online assessment tool (i.e., Qualtrics) regarding the 2020-2021 school year between mid-December 2020 and mid-August 2021. The link to the online survey was shared with parents and teachers of school-aged children via email and social media. A total of 113 participants began the survey, but 41 participants indicated that their children had participated in school in only an online capacity since September 2020. These participants were thanked for their time and exited from the survey. Three participants did not provide ratings on any variables and were removed from analyses, leaving a final sample of 69 participants.

Participants ranged in age from 20 to 58 years (M = 34.36, SD = 10.30). Regarding marital status, 50.7% (n = 35) were married, 26.1% (n = 18) were single, and 8.7% (n = 6) were divorced; ten participants did not provide data. For ethnic identification, 49.3% (n = 34) selected White, 14.5% (n = 10) Black or African American, 4.3% (n = 3) American Indian or Alaska Native, 4.3% (n = 3) Asian, 4.3% (n = 3) Native Hawaiian or Pacific Islander, 4.3% (n = 3) Other, and 18.8% (n = 13) did not provide a response. For education level, 7.2% (n = 5) reported some college, 44.9% (n = 31) reported a 2-year degree, 21.7% (n = 15) reported a 4-year degree, 7.2% (n = 5) reported a professional degree, 2.9% (n = 2) reported a doctorate, and 15.9% (n = 11) did not respond. Participants indicated approximate annual household income of less than $50,000 (28.9%, n = 20), $50,000 to $99,999 (33.3%, n = 23), $100,000 to $149,999 (10.1%, n = 7), and over $150,000 (13.0%, n = 9); ten participants did not provide data.

Materials

A list of mitigation measures adopted by school districts was compiled through an online search of public school COVID-19 response plans. Frequently occurring mitigation strategies included reducing surface transmission through cleaning such as hand washing, hand sanitizing, enhanced school cleaning, and closing water fountains, reducing transmission from close contacts including removing individu-

als exposed to the virus from school, requiring a doctor's note for return to school, social distancing, restricting visitors to school, limiting extracurricular activities, restricting use of the cafeteria, and restricting use of lockers, and reducing aerosol transmission by wearing face masks or wearing face shields.

Participants rated each of these mitigation measures regarding effectiveness of the measure in reducing the spread of COVID-19 in schools on a 1 (*extremely effective*) to 7 (*not effective at all*) Likert-type scale, the impact of the measure on the quality of education in the school district on a 1 (*extremely positive*) to 7 (*extremely negative*) Likert-type scale, the frequency the school district enforced the measure due to COVID-19 on a 1 (*always*) to 7 (*never*) Likert-type scale with the option to indicate that the school did use this measure, and how challenging each measure was to implement by the school on 1 (*extremely easy*) to 7 (*extremely difficult*) Likert-type scale with the option to indicate their school did not implement the measure.

Participants rated their approval of their school district's response to COVID-19 on a 7-point Likert-type scale ranging from 1 (*extremely happy*) to 7 (*extremely unhappy*). They also rated their level of concern regarding getting sick from COVID-19 on a 5-point Likert-type scale ranging from 1 (*extremely concerned*) to 5 (*not concerned*). Participants were grouped based on their level of concern for getting sick: high concern (i.e., extremely and moderately concerned; $n = 26$) and low concern (i.e., somewhat, slightly, or not concerned, $n = 34$).

Finally, participants provided demographic data regarding their school district name, their age, ethnicity, education level, marital status, and annual income. Prior to being exited from the survey, participants responded to two open-ended items, "What was the most significant challenge in having school during the pandemic?" and "What action could the schools have taken to make learning during the pandemic more effective?" Fifty participants provided responses to these items, and the majority stated only one challenge though four participants described more than one. These responses were coded for each challenge they described.

Procedure

Participants provided consent prior to accessing the survey. Next, they indicated whether their children had attended school in person or online since September 2020; those who indicated their children had attended school only online were exited from the survey. Participants then provided ratings of their perceptions of the efficacy of each mitigation measure in reducing the spread of COVID-19, their perception of the impact each measure had on the quality of education in the school district, how frequently the school district was enforcing each measure due to COVID-19, and how challenging it was to implement each measure at the school. Next, they rated their approval of the school district's response to COVID-19 and their concern regarding getting sick from the virus. Finally, they responded to the demographic and open-ended items before being thanked for their time and exited from the survey.

RESULTS

Concerns about Getting Sick and Approval of District's Response

Overall, participants were somewhat concerned about getting sick from COVID-19 ($n = 60$, $M = 2.93$, $SD = 1.34$), and they approved of their school district's response to the virus, indicating they were somewhat happy with it ($n = 60$, $M = 2.47$, $SD = 1.65$). The correlation between participants' concern about getting sick from COVID-19 and their approval of their school district's response to the virus was not statistically significant, $r = .07$, *ns*. An independent samples t test revealed that participants who were more concerned about getting sick from the virus did not differ in their approval ratings regarding the district's response to the virus from participants who were less concerned about getting sick from COVID-19, $t(58) = -.65$, *ns*.

Perceptions of Mitigation Measures

For each mitigation measure, participants rated 1) the perceived efficacy of the measure to reduce the spread of COVID-19 in schools, 2) the impact of measure on the quality of education in the school district, 3) how challenging it was to implement the measure, and 4) how frequently the school district enforced the mitigation measure due to the COVID-19 virus. Repeated-measures analyses of variance (ANOVA) with a Greenhouse-Geisser correction were performed on the ratings of each variable. Post hoc comparisons with a Bonferroni correction for the alpha level of .0038 (.05/13) assessed significant differences among the ratings.

Table 1

Mean and Standard Deviation of Each Mitigation Measure on Ratings of Perceived Efficacy for Reducing Spread of COVID-19 (n = 65)

Mitigation Measure	*M*	*SD*
(a) Removing those exposed	$2.20_{abcdefg}$	1.65
(b) Hand washing	$2.23_{abcdefg}$	1.31
(c) Hand sanitizing	$2.29_{abcdefgh}$	1.39
(d) Enhanced cleaning	$2.35_{abcdefghi}$	1.41
(e) Wearing face masks	$2.71_{abcdefghi}$	1.91
(f) Closing water fountains	$2.74_{abcdefghi}$	1.94
(g) Requiring doctor's note	$2.85_{abcdefghi}$	2.24
(h) Social distancing	$2.97_{cdefghi}$	2.04
(i) Restricting visitors	3.12_{defghi}	2.03
(j) Limiting extracurriculars	4.18_{jklm}	2.07
(k) Restricting cafeteria	4.35_{jklm}	2.33
(l) Restricting lockers	4.52_{jklm}	2.35
(m) Wearing face shields	4.79_{jklm}	1.77

Note. Means with differing subscripts are significantly different at the $p < .0038$ level.

Table 2

Mean and Standard Deviation of Each Mitigation Measure on Ratings of Perceived Impact on the Quality of Education Delivered by the District (n = 59)

Mitigation Measure	*M*	*SD*
(a) Enhanced cleaning	2.00_{abc}	1.23
(b) Hand washing	2.22_{abcde}	1.31
(c) Hand sanitizing	2.22_{abcde}	1.30
(d) Removing those exposed	2.24_{abcdef}	1.75
(e) Requiring doctor's note	$2.76_{bcdefghi}$	1.96
(f) Closing water fountains	2.88_{defghi}	1.78
(g) Social distancing	2.95_{efghi}	1.90
(h) Wearing face masks	3.05_{efghij}	2.11
(i) Restricting visitors	$3.31_{efghijk}$	1.91
(j) Restricting lockers	3.85_{hijklm}	1.81
(k) Restricting cafeteria	3.98_{ijklm}	1.82
(l) Limiting extracurriculars	4.19_{jklm}	2.22
(m) Wearing face shields	4.20_{jklm}	1.57

Note. Means with differing subscripts are significantly different at the $p < .0038$ level

Reducing the Spread of COVID-19

Ratings of the perceived efficacy of each mitigation measure for reducing the spread of COVID-19 are presented in Table 1. The repeated-measures ANOVA revealed significant differences in ratings across measures, $F(7.81, 499.98) = 26.64$, $p < .001$, $\eta p^2 = .29$. Pairwise comparisons revealed that participants rated limiting close interpersonal contacts at the school including limiting participation in extracurricular activities, reducing cafeteria use, and restricting use of lockers as less effective than other measures. Wearing face shields instead of masks was also rated as less effective than other mitigation measures including wearing face masks, which did not differ from the other measures assessed.

Impact on Quality of Education

Ratings of the perceived impact on the quality of education provided by the participant's school district are presented in Table 2. No mitigation measures were rated as having a negative impact on the quality of education provided as all means were at or above the midpoint of the scale. The repeated-measures ANOVA revealed significant differences in ratings across measures, $F(7.24, 420.12) = 22.71$, $p < .001$, $\eta p^2 = .28$. Pairwise comparisons indicated that participants rated cleaning measures including hand washing and sanitizing and removing those exposed to the virus from school and requiring a doctor's note for return as having a more positive impact on quality of education than measures that limited students interpersonal contacts at school (e.g., restricting lockers, cafeteria use and participation in extracurricular activities).

Challenge to Implement

Ratings of how challenging it was to implement each mitigation measure are presented in Table 3. Participants who indicated that a strategy was not implemented in their district were dropped from the analysis. Of the remaining participants ($n = 18$), no measures were rated as difficult to implement as all means were above the scale midpoint. The repeated-measures ANOVA revealed significant differences in ratings across measures, $F(6.42, 109.13) = 3.07$, $p = .007$, $\eta p^2 = .15$. Pairwise comparisons revealed that participants rated enhanced cleaning, closing water fountains, and requiring a doctor's note for returning to school after symptoms as significantly less challenging to implement than wearing face shields instead of face masks. No other measures differed significantly from each other.

District Enforcement

Participants rated how frequently their school district enforced each mitigation measure (see Table 4). Participants who indicated that a strategy was not implemented in their district were dropped from the analysis. Of the remaining participants ($n = 25$), all measures were enforced at least half the time. The repeated-measures ANOVA revealed significant differences in ratings across measures, $F(5.54, 132.91) = 7.25$, $p < .001$, $\eta p^2 = .23$. Pairwise comparisons revealed that cleaning measures including hand washing and sanitizing, wearing face masks, closing water fountains, and removing those exposed to the virus from school were enforced significantly more often than restricting use of the cafeteria and wearing face shields instead of face masks.

Bivariate Correlations

Concerns about Getting Sick and Perceptions of Efficacy in Reducing Virus Spread

Participants' ratings of concern regarding getting sick from COVID-19 were not significantly related to their perceptions of the efficacy of the following measures for reducing the spread of COVID-19 in schools: enhanced cleaning ($r = .00$, *ns*), hand washing ($r = .03$, *ns*) or hand sanitizing ($r = .07$, *ns*), wearing face shields ($r = -.05$, *ns*), closing water fountains ($r = .11$, *ns*), restricting use of lockers ($r = .23$, *ns*), or limiting the use of the cafeteria ($r = .18$, *ns*). However, these concerns were positively related to perceptions of efficacy in reducing the spread of COVID-19 in schools for wearing masks ($r = .38$, $p < .01$), limiting extracurricular activities ($r = .31$, $p < .05$), closing school to visitors ($r = .46$, $p < .01$), practicing social distancing ($r = .34$, $p < .01$), requiring doctor's notes for returning to school after symptoms ($r = .33$, $p < .01$), and removing those exposed to COVID-19 from school ($r = .26$, $p < .05$)

Study Variables by Each Mitigation Measure

Over 15% of the sample rated four of the mitigation measures as not implemented in their school

Table 3

Mean and Standard Deviation of Each Mitigation Measure on Ratings of Perceived Challenge to Implement (n = 18)

Mitigation Measure	*M*	*SD*
Enhanced cleaning	1.89_{abc}	.96
Closing fountains	1.94_{abc}	1.39
Requiring doctor's note	2.28_{abc}	1.32
Hand washing	2.33_{abcd}	1.68
Hand sanitizing	2.33_{abcd}	1.78
Removing those exposed	2.50_{abcd}	2.18
Wearing face masks	2.67_{abcd}	2.00
Limiting extracurriculars	2.89_{abcd}	1.71
Social distancing	2.89_{abcd}	1.97
Restricting lockers	3.00_{abcd}	1.88
Restricting visitors	3.28_{abcd}	1.78
Restricting cafeteria	3.33_{abcd}	1.97
Wearing face shields	3.67_{d}	1.68

Note. Means with differing subscripts are significantly different at the $p < .0038$ level

Table 4

Mean and Standard Deviation of Each Mitigation Measure on Ratings of Perceived District Enforcement due to COVID-19 (n = 25)

Mitigation Measure	*M*	*SD*
(a) Hand washing	$1.52_{abcdefghij}$	.71
(b) Enhanced cleaning	$1.72_{abcdefghijk}$	1.14
(c) Hand sanitizing	$1.72_{abcdefghijk}$	1.02
(d) Closing fountains	$1.72_{abcdefghijk}$	1.28
(e) Wearing face masks	$1.72_{abcdefghijk}$	1.34
(f) Removing those exposed	$1.76_{abcdefghijk}$	1.62
(g) Restricting lockers	$1.96_{abcdefghijk}$	1.74
(h) Requiring doctor's note	$2.04_{abcdefghijkl}$	1.77
(i) Social distancing	$2.24_{abcdefghijklm}$	1.39
(j) Restricting visitors	$2.60_{abcdefghijklm}$	1.98
(k) Limiting extracurriculars	$2.96_{bcdefghijklm}$	1.95
(l) Restricting cafeteria	3.80_{hijklm}	2.55
(m) Wearing face shields	3.84_{ijklm}	2.38

Note. Means with differing subscripts are significantly different at the $p < .0038$ level

districts: limiting extracurricular activities ($n = 11$), restricting use of the cafeteria ($n = 28$), restricting use of lockers ($n = 19$), and wearing face shields instead of masks ($n = 31$). These measures were removed from further analysis.

Correlations among the remaining measures' ratings of perceived efficacy, impact on quality of education, challenge to implement, and district's enforcement of the mitigation measure are provided in Table 5. It was expected that the more effective the measure was at preventing the virus, the more positive impact the measure had on education, and the easier it was to implement, the more likely the district would be to enforce the measure. Most correlation coefficients support these expectations as they are positive and statistically significant.

However, contrary to expectations, ratings of perceived efficacy, impact on quality of education, and

Table 5

Bivariate Correlations among Ratings of Perceived Efficacy for Reducing Spread of COVID-19, Perceived Impact on the Quality of Education Delivered by the District, Perceived Challenge to Implement, and District's Enforcement due to COVID-19 for Each Mitigation Measure

Variable	1	2	3
Enhanced cleaning			
1. Efficacy	-		
2. Quality	.47**	-	
3. Challenge	.31*	.58**	-
4. Enforcement	.38**	.40**	.64**
Hand washing			
1. Efficacy	-		
2. Quality	.48**	-	
3. Challenge	.21	.21	-
4. Enforcement	.27*	.29*	.17
Hand sanitizing			
1. Efficacy	-		
2. Quality	.65**	-	
3. Challenge	.21	.28*	-
4. Enforcement	.30*	.35**	.31*
Closing fountains			
1. Efficacy	-		
2. Quality	.69**	-	
3. Challenge	.51**	.57**	-
4. Enforcement	.07	.22	.19
Removing those exposed			
1. Efficacy	-		
2. Quality	.60**	-	
3. Challenge	.40**	.53**	-
4. Enforcement	.20	.09	.29
Requiring doctor's note			
1. Efficacy	-		
2. Quality	.73**	-	
3. Challenge	.44**	.44**	-
4. Enforcement	.60**	.47**	.40**
Social Distancing			
1. Efficacy	-		
2. Quality	.59**	-	
3. Challenge	.30*	.49**	-
4. Enforcement	.52*	.42**	.25

Restricting visitors			
1. Efficacy	-		
2. Quality	.66**	-	
3. Challenge	.22	.33*	-
4. Enforcement	.15	.18	.26
Wearing face masks			
1. Efficacy	-		
2. Quality	.70**	-	
3. Challenge	.45**	.39**	-
4. Enforcement	.17	-.03	.15
Wearing face shields			
1. Efficacy	-		
2. Quality	.51**	-	
3. Challenge	.34	.41*	-
4. Enforcement	.44	.49**	.17
Limiting extracurriculars			
1. Efficacy	-		
2. Quality	.70**	-	
3. Challenge	.45**	.50**	-
4. Enforcement	.24	.34	.45**
Restricting cafeteria			
1. Efficacy	-		
2. Quality	.55**	-	
3. Challenge	.40*	.26	-
4. Enforcement	.39*	.38*	.41*
Restricting lockers			
1. Efficacy	-		
2. Quality	.65**	-	
3. Challenge	.25	.21	-
4. Enforcement	.29	.08	.50**

challenge to implement the measure were not related to district enforcement of closing water fountains, removing those exposed to the virus from school, restricting visitors to the school, and using face shields instead of face masks. As such, these mitigation measures were not included in the regression analyses.

Regression Analyses Predicting District Enforcement of Mitigation Measures

For the five remaining mitigation measures, participants' perceptions of effectiveness in reducing the spread of COVID-19 in schools, impact on quality of education in the school district, and how challenging it was to implement the measure were simultaneously entered into regression equations to predict participants' ratings of the frequency the school district enforced the measure due to COVID-19 (see Table 6). The regression models for hand washing [$F(3, 54) = 2.74$, $p = .05$] and hand sanitizing [$F(3, 52) = 3.89$, $p = .02$] approached statistical significance, but none of the individual variables was statistically significant in predicting district enforcement of the mitigation measure.

Table 6

Regression Coefficients for Ratings of Perceived Efficacy for Reducing Spread of COVID-19, Impact on the Quality of Education Delivered by the District, and Challenge to Implement on District Enforcement due to COVID-19 by Mitigation Measure

Mitigation Measure	Predictor Variable	*B*	*SE*	*t*	*p*	95% CI
Hand washing						
	Reducing spread	.17	.17	1.00	.32	[-.17, .50]
	Impact on Quality	.30	.17	1.74	.09	[-.05, .64]
	Challenge to Implement	.06	.12	.48	.63	[-.18, .30]
Hand sanitizing						
	Reducing spread	.13	.16	.81	.42	[-.19, .45]
	Impact on Quality	.22	.17	1.26	.21	[-.13, .56]
	Challenge to Implement	.20	.11	1.75	.09	[-.03, .43]
Enhanced cleaning						
	Reducing spread	.21	.11	1.86	.07	[-.02, .43]
	Impact on Quality	-.07	.16	-.45	.66	[-.38, .24]
	Challenge to Implement	.51	.11	4.78	<.001	[.30, .73]
Requiring doctor's note						
	Reducing spread	.46	.11	4.31	<.001	[.25, .68]
	Impact on Quality	-.13	.13	-1.00	.32	[-.40, .14]
	Challenge to Implement	.19	.11	1.80	.08	[-.02, .41]
Social distancing						
	Reducing spread	.28	.11	2.48	.02	[.05, .51]
	Impact on Quality	.18	.13	1.36	.18	[-.08, .44]
	Challenge to Implement	.05	.10	.51	.61	[-.15, .25]

Note. CI = confidence interval

The regression equation predicting district enforcement of enhanced school cleaning accounted for 43.90% of the variance, $F(3, 55) = 14.36$, $p < .001$. Perception of how challenging it was to implement the measure was the only statistically significant variable predicting enforcement. The regression equation predicting district enforcement of requiring a doctor's note to return to school after symptoms accounted for 44.80% of the variance, $F(3, 46) = 12.44$, $p < .001$. Perception of efficacy in reducing the spread of COVID-19 was the only variable that predicted enforcement of the mitigation measure. Similarly, the regression equation predicting district enforcement of social distancing was also statistically significant and predicted 26.00% of the variance, $F(3, 53) = 6.19$, $p = .001$. Perception of efficacy in reducing the spread of COVID-19 was the only variable that predicted enforcement.

Challenges with Having School During the Pandemic

Open-ended responses regarding the most significant challenge associated with having school during the pandemic were grouped based on the difficulties they described. The two most common themes to emerge were challenges with learning online ($n = 14$) and concerns regarding safety and prevention measures implemented in the schools ($n = 14$). Regarding safety and prevention measures for in person learning, participants were likely to report difficulties related to mask wearing, social distancing, having sufficient supplies, and keeping their children healthy when others were not taking appropriate precautions. Regarding learning online, though many participants merely stated "online learning" in their responses, some explained their concerns with not having appropriate support for online learning including a platform to meet students' needs, access to computers, and information resources for families to help their students at home. Related to these concerns, some participants

(n = 5) noted challenges adapting to blended teaching and learning in which some students were on campus while others were at home or students were switching between attendance options due to quarantine. These issues may be underlying concerns expressed regarding having access to and communicating with teachers (n = 5).

Disruptions to school and family schedules (n = 8) were also noted by participants as they described challenges associated with delaying the start of school, opening and closing schools, changing students' schedules, and coping with unexpected school cancellations that interrupted work and family routines. Some participants were concerned about becoming ill with the virus (n = 6), stating they were "scared of covid," were worried about catching the virus, or feared that their child would get sick. One participant expressed frustration with the panic they perceived from "a virus with a +99% survivability rate." Staying motivated and maintaining morale was noted by two participants

DISCUSSION

District Enforcement

Results of the study indicated that participants held generally positive views of their district's response to COVID-19 as 80% of the approval ratings were above the midpoint of the scale, and ratings of approval did not differ between those who were most vs. least concerned about getting sick from the virus. Overall, districts were rated as more likely to enforce cleaning measures including handwashing and sanitizing, closing water fountains, wearing face masks, and removing those exposed to the virus from school than restricting extracurricular activities and cafeteria use. Perceptions of efficacy in reducing the spread of COVID-19 predicted district enforcement of social distancing and requiring a doctor's note to return to school after symptoms, and perceptions of challenge to implement (i.e., moderately easy) predicted enforcement of enhanced cleaning. Contrary to expectations, perceptions of efficacy, impact on educational quality, and challenge to implement did not predict enforcement of other mitigation measures.

Regarding difficulty of implementation, results of the current study provide initial empirical evidence on this topic. No previous research was found examining perceptions of challenge in implementing different mitigation methods in schools. None of the mitigation measures assessed in the current research were perceived as difficult to implement, and this variable predicted only district enforcement of enhanced cleaning, which was viewed as the easiest to implement of all measures. Participants in the current sample rated enhanced cleaning, closing fountains, and requiring a doctor's note as less of a challenge to implement than all other measures, which did not significantly differ from each other.

Similarly, no mitigation measures were perceived as having a negative impact on the quality of education though measures that limited students' interpersonal contacts at school (e.g., restricting lockers, cafeteria use, and participation in extracurricular activities) were rated less positively than cleaning measures including hand washing and sanitizing and removing those exposed to the virus from school and requiring a doctor's note for return. Contrary to expectations, impact on quality did not predict district enforcement of any measures.

While the educational impact of closing schools has been well documented (Reuge et al., 2021), little research has examined the impact of mitigation measures on quality of education provided in schools. Given limited research, some concerns have been raised about masks impacting social interactions. However, Ruba and Pollak (2020) found that school-aged children were able to identify emotional states in people with covered facial features. As such, it is not clear that mask use and social distancing have any negative impact on education quality. Additional research is needed on these variables to distinguish impact on education from impact on convenience.

Perceptions of Efficacy

It was predicted that perceptions of efficacy in reducing the spread of COVID-19 would be misaligned with research evidence given changes to health guidance in the early days of the pandemic. Emerging research indicates that short-range aerosol contact is the primary source of COVID-19 infection (Zhang et al., 2020). However, research reveals variability in compliance with mask and social distancing rules in public schools with 67% of children and 99% of adults wearing masks, and 55% of children and 48% of adults socially distancing with spacing greater than or equal to six feet (Kaiser et al., 2021). Krishnamachari et al. (2021) indicated that mask mandates are effective at

limiting the spread of COVID-19, and Donovan et al. (2022) reported that public school districts with mask requirements had lower rates of the virus than districts with no mask requirements. However, some states including Texas have instituted mask mandates (Exec. Order No. GA-29, 2020) then banned these mandates in public schools (Exec. Order No. GA-36, 2021).

As predicted, given lack of information early in the pandemic and shifting guidance on ways to reduce transmission, results from the current study revealed that participants held beliefs that were not consistent with current research. Participants rated masks as more than moderately effective in reducing spread of the virus, but these ratings were not significantly different from other mitigation measures that have proven not to substantially reduce transmission rates. For example, while the importance of hand sanitization in controlling the spread of disease has been long documented (Nightingale, 1860) and is included in the Center for Disease Control's recommendations, there is little evidence that it has a significant impact on the spread of airborne illnesses (Xiao et al., 2020). Additionally, implementation has been difficult with only 42% of primary school children showing excellent hand-washing cognition and behavior, with girls outperforming boys (Chen et al., 2020). Though proper hand hygiene reduces the spread of gastrointestinal illness and is an important influenza response to help reduce pressure on health systems (Xiao et al., 2020), participants' beliefs that it is as efficacious as mask wearing at reducing the transmission of COVID-19 are not supported by evidence. Given that face masks were perceived as neither challenging to implement nor as having a negative impact on education, an easy, nonharmful, effective mitigation strategy may not be utilized as effectively as it could be to protect the health of students.

In addition, some social distancing measures were viewed as less than moderately effective at reducing transmission when research supports the efficacy of social distancing. In a modeling study, Wang et al. (2020) demonstrated that social distancing decreases the spread of COVID-19. To promote this goal, several strategies are available to keep the recommended six feet of space between people and to reduce the number of interactions people have with others. However, in the current study, reducing close interpersonal contacts at school including limiting participation in extracurricular activities, reducing cafeteria use where students remove masks to eat, and restricting use of lockers were rated as less effective at reducing the spread of COVID-19 than other measures though these activities may put students in close proximity with each other. Lessler et al. (2021) found that using more than seven school-based mitigation approaches, including social distancing, eliminated the association between in-person schooling and risk of COVID-19 infection. As such, school leaders may consider adopting additional actions to expand their ability to maintain social distance between students. School psychologists play an important role in this work by promoting safe schools that protect the physical and psychological safety of students and staff. As such, they can be instrumental in educating staff, teachers, and parents that enhanced cleaning measures including hand washing are not as effective in reducing spread of infection for airborne illnesses as social distancing, and they can model effective practices in their work.

Differences in perceptions regarding the efficacy of mitigation measures may be related to individuals' personal concerns about getting sick from COVID-19 given the positive correlation between these variables. Exploratory analyses indicated that ratings of efficacy for some mitigation measures differed significantly based on how concerned participants were regarding getting sick from COVID-19. Specifically, participants who were more concerned about falling ill (M = 1.96, SD = 1.31) rated wearing face masks as significantly more effective at reducing transmission than those less concerned (M = 3.00, SD = 2.13) with getting sick from COVID-19, $t(55.72) = -2.32$, $p = .02$, $d = .57$. Those more concerned (M = 3.27, SD = 1.73) also rated limiting extracurricular activities as more effective than those less concerned (M = 4.29, SD = 2.11) with getting sick, $t(58) = -2.01$, $p = .05$, $d = .52$. Individuals who were more concerned (M = 1.92, SD = .95) with getting sick rated restricting visitors to the school as more effective at reducing transmission than those who were less concerned (M = 3.59, SD = 2.24), $t(47.28) = -3.88$, $p < .001$, $d = .92$. And, those more concerned with getting sick (M = 2.08, SD = 1.70) rated social distancing as more effective in preventing illness than those less concerned (M = 3.26, SD = 2.02), $t(58) = -2.42$, $p = .02$, $d = .63$. Ratings for the other mitigation measures by level of concern for getting sick were not statistically significant.

These results suggest that personal health concerns may be more influential in shaping perceptions

of mitigation measures than research evidence documenting actual efficacy of the techniques. In the present sample, those with more concerns about getting sick from COVID-19 held perceptions of efficacy that were more consistent with research evidence than those who were less concerned about falling ill. It may be that those who were concerned about the negative health implications of the virus engaged in more systematic search strategies for information about reducing the likelihood of illness (e.g., Pennycook et al., 2020); future research should examine individual differences that may underlie these differences in perceptions and the accuracy of beliefs held by individuals as these factors may reveal new avenues for shaping behavior to promote wellness. Such social and cultural variables are recognized by school psychologists in their work to design, implement, and evaluate services that promote mental and behavioral health and the impact these variables have on learning (NASP, 2020).

Recommendations and Conclusions

As illness from COVID-19 continues and other viruses pose threats to human health, future research should explore the efficacy and feasibility of additional mitigation measures for use in schools. Emerging evidence reveals that in the context of the Omicron variant of COVID-19 anti-N antibodies (i.e., those produced due to COVID-19 infection but not vaccination) increased substantially from December 2021 to February 2022 in children. Specifically, seroprevalence rates rose from 44.2% to 75.2% in children aged 0-11 years and from 45.6% to 74.2% in children aged 12-17 years. These rates were higher than all other age groups which had higher vaccination rates (Clarke et al., 2022). Given this evidence of rapid spread of infection in children, enhanced efforts to mitigate transmission of future illnesses are needed.

The National Association of School Psychologists (NASP) Practice Model Domain 6: Services to Promote Safe and Supportive Schools explains the role of School Psychologists working in collaboration with others to promote physical safety and implement effective crisis prevention (NASP, 2020). School psychologists can be instrumental in bringing data to bear to inform the mitigation measures implemented in schools and support systems approaches to address these threats. For example, temperature and symptom screening upon arrival at school may help slow transmission rates, and parents may need support with home self-screening protocols before bringing children to campus. Most critically, school psychologists should be prepared to re-educate staff, teachers, and families using the most up-to-date research evidence available on the efficacy of behavior-based virus mitigation strategies. Public health recommendations have changed considerably since the start of the pandemic, but modifications to existing belief systems lag behind these advances in science. As such, school psychologists must take an active role in educating stakeholders and altering misperceptions of viral transmission and efficacy of mitigation measures to most effectively reduce COVID-19 case rates on their campuses.

Moreover, the effectiveness of disease mitigation responses is affected by the fidelity of implementation. Research reveals that mitigation strategies are not uniformly implemented (Chen et al., 2020; Kaiser et al., 2021), yet mitigation responses in schools are effective in reducing the spread of COVID-19 as Bershteyn et al. (2020) noted that an absence of infection control measures in schools was associated with a 625-fold increase in cases over schools with infection control measures, and Lessler et al. (2021) found that as the number of mitigation measures increased, the rates of infection decreased. School psychologists are well placed to monitor and report mitigation behaviors and mitigation plan adherence in students and staff on an ongoing basis to ensure appropriate implementation of the techniques. In addition, surveying awareness of teachers' and parents' perceptions of the effectiveness of mitigation measures and their impact on education can assist school psychologists in developing educational materials for stakeholders and inform school policies to ensure the most effective strategies are being implemented and maintained. Remaining up to date as new research emerges on the virus and mitigation strategies will enable deployment of the most effective means available to protect students, their families, and school personnel given limited resources.

References

Auger, K., Shah, S, Richardson, T., Hartley, D., Hall, M., Warniment, A., Timmons, K., Bosse, D., Ferris, S., Brady, P., Schondelmeyer, A., & Thomson, J. (2020). Association between statewide school closure and COVID-19 incidence and mortality in the US. *JAMA*, *324*(9), 859–870. doi:10.1001/jama.2020.14348

Berardi, A., Perinelli, D., Merchant, H., Bisharat, L., Bashei, I., Bonacucina, G., Cespi, M., & Palmieri, G.

(2020). Hand sanitisers amid CoViD-19: A critical review of alcohol-based products on the market and formulation approaches to respond to increasing demand. *International Journal of Pharmaceutics, 584*, https://doi.org/10.1016/j.ijpharm.2020.119431

Bershteyn, A., Kim, H., McGillen, J., & Braithwaite, R. S. (2020). Which policies most effectively reduce SARS-CoV-2 transmission in schools? medRxiv. https://doi.org/10.1101/2020.11.24.20237305

Cai, J., Li, S., Hu, D., Xu, Y., & He, Q. (2022). Nationwide assessment of energy costs and policies to limit airborne infection risks in U.S. schools. *Journal of Building Engineering, 45*. https://doi.org/10.1016/j.jobe.2021.103533

CDC. (2022, March 7). *COVID Data Tracker*. Centers for Disease Control and Prevention. https://covid.cdc.gov/covid-data-tracker/#demographic-sovertime

Chen, X., Ran, L., Liu, Q., Hu, Q., Du, X., & Tan, X. (2020). Hand hygiene, mask-wearing behaviors and its associated factors during the COVID-19 epidemic: A cross-sectional study among primary school students in Wuhan, China. *International Journal of Environmental Research and Public Health*, *17*(8), 2893. https://doi.org/10.3390/ijerph17082893

Chu, D., Akl, E., Duda, S., Solo, K., Yaacoub, S., & Schunemann, H. (2020). Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: A systematic review and meta-analysis. *The Lancet 395*(10242), 1973-1987. https://doi.org/10.1016/S0140-6736(20)31142-9

Clarke, K., Jones, J., Deng, Y., Nycz, E., Lee, A., Iachan, R., Gundlapalli, A., Hall, A., & MacNeil, A. (2022). Seroprevalence of infection-induced SARS-CoV-2 antibodies - United States, September 2021-February 2022. *MMWR. Morbidity and Mortality Weekly Report*, *71*(17), 606–608. https://doi.org/10.15585/mmwr.mm7117e3

Domina, T., Renzulli, L., Murray, B., Garza, A., & Perez, L. (2021). Remote or removed: Predicting successful engagement with online learning during COVID-19. *Socius*, 7. https://doi.org/10.1177/2378023120988200

Donovan, C. V., Rose, C., Lewis, K. N., Vang, K., Stanley, N., Motley, M., Brown, C. C., Gray, F. J., Jr, Thompson, J. W., Amick, B. C., 3rd, Williams, M. L., Thomas, E., Neatherlin, J., Zohoori, N., Porter, A., & Cima, M. (2022). SARS-CoV-2 incidence in K-12 school districts with mask-required versus mask-optional policies - Arkansas, August-October 2021. *MMWR. Morbidity and Mortality Weekly Report*, *71*(10), 384–389. https://doi.org/10.15585/mmwr.mm7110e1

Engzell, P., Frey, A., & Verhagen, M. (2021). Learning loss due to school closures during the COVID-19 pandemic. *Proceedings of the National Academy of Sciences, 118* (17), e2022376118. https://doi.org/10.1073/pnas.2022376118

Exec. Order No. GA-29 (July 2, 2020). https://gov.texas.gov/uploads/files/press/EO-GA-29-use-of-face-coverings-during-COVID-19-IMAGE-07-02-2020.pdf

Exec. Order No. GA-36 (May 18, 2021). https://gov.texas.gov/uploads/files/press/EO-GA-36_prohibition_on_mandating_face_coverings_response_to_COVID-19_disaster_IMAGE_05-18-2021.pdf

Fukumoto, K., McClean, C.T., & Nakagawa, K. (2021). No causal effect of school closures in Japan on the spread of COVID-19 in spring 2020. *Nature Medicine, 27*, 2111–2119. https://doi.org/10.1038/s41591-021-01571-8

Gregory, M., MacEwan, S., Gaughan, A., Rush, L., Powell, J., Kurth, J., Kenah, E., Panchal, A., & McAlerney, A. (2022). Closing the gap on COVID-19 vaccinations in first responders and beyond: Increasing trust. *International Journal of Environmental Research and Public Health, 19*, 644. https://doi.org/10.3390/ijerph19020644

Hirsch, S., Bruhn, A., McDaniels S., & Mathews, H. (2022). A survey of educators serving students with emotional and behavioral disorders during the Covid-19 pandemic. *Behavioral Disorders, 47*(2), 95-107. https://doi.org/10.1177/01987429211016780

Iwata, K., Asako, D., & Miyakoshi, C. (2020). Was school closure effective in mitigating coronavirus disease 2019 (COVID-19)? Time series analysis using Bayesian inference. *International Journal of Infectious Diseases, 99*, 57-61. https://doi.org/10.1016/j.ijid.2020.07.052

Jameson, J. M., Stegenga, S. M., Ryan, J., & Green, A. (2020). Free appropriate public education in the time of COVID-19. *Rural Special Education Quarterly, 39*(4), 181–192. https://doi.org/10.1177/8756870520959659

Kaiser, S., Watson, A., Dogan, B. Karmur, A., Warren, K., Wang, P., Sosa, M., Olarte, A., Dorsey, S., Su, M., Brown, L., Sachdev, D., & Bardach, N. (2021). Preventing COVID-19 transmission in education settings. *Pediatrics, 148* (3), https://doi.org/10.1542/peds.2021-051438

Krishnamachari, B., Morris, A., Zastrow, D., Dsida, A., Harper, B., & Santella, A. (2021). The role of mask mandates, stay at home orders and school closure in curbing the COVID-19 pandemic prior to vaccination. *American Journal of Infection Control 49*(8). 1036-1042. https://doi.org/10.1016/j.ajic.2021.02.002

Laestadius, L., Wang, Y., Ben Taleb, Z., Kalan, M.E., Cho, Y., & Manganello, J. (2020). Online National Health Agency mask guidance for the public in light of COVID-19: Content analysis. *JMIR Public Health Surveillance, 6*(2). doi: 10.2196/19501

Leidman, E., Duca, L., Omura, J., Proia, K., Stephens, J., & Sauber-Schatz, E. (2021). COVID-19 trends among persons aged 0–24 Years — United States, March 1–December 12, 2020. *Morbidity and Mortality Weekly Report,70*, 88–94. http://dx.doi.org/10.15585/mmwr.mm7003e1

Lessler, J., Grabowski, M., Grantz, K., Badillo-Goicoechea, E., Metcalf, C., Lupton-Smith, C., Azman, A., & Stuart, E. (2021). Household COVID-19 risk and in-person schooling. *Science, 372*,1092-1097. https://doi.org/10.1126/science.abh2939

Lewis, D. (2020). Is the coronavirus airborne? Experts can't agree. *Nature*, *580*(7802), 175. https://doi.org/10.1038/d41586-020-00974-w

Mehta, N., Mytton, O., Mullins, E., Fowler, T., Falconer, C., Murphy, O., Langenberg, C., Jayatunga, W., Eddy, D., & Nguyen-Van-Tam, J. (2020). SARS-CoV-2 (COVID-19): What do we know about children? A systematic review. *Clinical Infectious Diseases, 71*(9), 2469–2479. https://doi.org/10.1093/cid/ciaa556

National Association of School Psychologists. (2020). Domains of Practice. https://www.nasponline.org/standards-and-certification/nasp-2020-professional-standards-adopted/nasp-2020-domains-of-practice

Nightingale, F. (1860). *Notes on nursing: What it is and what it is not.* Harrison.

Pei, S., Yamana, T.K., Kandula, S., Galanti, M., & Shaman, S. (2021). Burden and characteristics of COVID-19 in the United States during 2020. *Nature 598*, 338–341. https://doi.org/10.1038/s41586-021-03914-4

Pennycook, G., McPhetres, J., Zhang, Y., Lu, J. G., & Rand, D. G. (2020). Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy-nudge intervention. *Psychological Science*, *31*(7), 770-780. https://doi.org/10.1177/0956797620939054

Reuge, N., Jenkins, R., Brossard, M., Soobrayan, B., Mizunoya, S., Ackers, J., Jones, L., & Taulo, W. (2021). Education response to COVID 19 pandemic, a special issue proposed by UNICEF: Editorial review. *International Journal of Educational Development, 87*, 102485. https://doi.org/10.1016/j.ijedudev.2021.102485

Rice, K. L., Miller, G. F., Coronado, F., & Meltzer, M. I. (2020). Estimated resource costs for implementation of CDC's recommended COVID-19 mitigation strategies in pre-kindergarten through grade 12 public schools - United States, 2020-21 school year. *MMWR. Morbidity and Mortality Weekly Report*, *69*(50), 1917–1921. https://doi.org/10.15585/mmwr.mm6950e1

Ruba, A., & Pollak, S. (2020). Children's emotion inferences from masked faces: Implications for social interactions during COVID-19. *PLoS ONE 15*(12): e0243708. https://doi.org/10.1371/journal.pone.0243708

Schlegelmilch, J., & Douglas, C. (2020). Initial Coronavirus Disease–2019 closure strategies adopted by a convenience sample of US school districts: Directions for future research. *Disaster Medicine and Public Health Preparedness*, *14*(3), E17-E18. doi:10.1017/dmp.2020.147

Schuchat, A., & CDC COVID-19 Response Team. (2020). Public health response to the initiation and spread of pandemic COVID-19 in the United States, February 24-April 21, 2020. *Morbidity and Mortality Weekly Report, 69*(18), 551–556. https://doi.org/10.15585/mmwr.mm6918e2

Staguhn, E., Weston-Farber, E., & Castillo, R. (2021). The impact of statewide school closures on COVID-19 infection rates. *American Journal of Infection Control 49*(4), 503-505. https://doi.org/10.1016/j.ajic.2021.01.002

Tanne, J. H. (2020). Covid-19: CDC publishes then withdraws information on aerosol transmission. *BMJ 370* doi:10.1136/bmj.m3739

Vogels, E., Perrin, A., Rainie, L., & Anderson, M. (2020, April 30). *53% of Americans say the internet has been essential during the COVID-19 outbreak*. Pew Research Center. https://www.pewresearch.org/internet/2020/04/30/53-of-americans-say-the-internet-has-been-essential-during-the-covid-19-outbreak/

Wang, X., Pasco, R. F., Du, Z., Petty, M., Fox, S. J., Galvani, A. P., Pignone, M., Johnston, S. C., & Meyers, L. A. (2020). Impact of social distancing measures on Coronavirus Disease healthcare demand, Central Texas,

USA. *Emerging Infectious Diseases*, *26*(10), 2361–2369. https://doi.org/10.3201/eid2610.201702

Xu, Y., Cai, J., Li, S., He, Q., & Zhu, S. (2021). Airborne infection risks of SARS-CoV-2 in U.S. schools and impacts of different intervention strategies. *Sustainable Cities and Society*,*74*. https://doi.org/10.1016/j.scs.2021.103188

Xiao, J., Shiu, E., Gao, H., Wong, J. Y., Fong, M. W., Ryu, S., & Cowling, B. J. (2020). Nonpharmaceutical measures for pandemic Influenza in nonhealthcare settings: Personal protective and environmental measures. *Emerging Infectious Diseases*, *26*(5), 967–975. https://doi.org/10.3201/eid2605.190994

Zhang, R., Li, Y., Zhang, A. L., Wang, Y., & Molina, M. J. (2020). Identifying airborne transmission as the dominant route for the spread of COVID-19. *Proceedings of the National Academy of Sciences*, *117*(26), 14857-14863. https://doi.org/10.1073/pnas.2009637117

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 67-78

ISSN:2329-5783

Article

Pre-Service Teachers and Multi-tiered Systems of Support: Examining Foundational Perceptions and Skills

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Multi-tiered systems of support (MTSS) are an evidence-based framework for schools to better support student development and increase evidence-based practice use in schools. Despite national policy, major knowledge gaps exist, particularly regarding education's largest stakeholders: teachers. This study explored pre-service teachers' MTSS knowledge, beliefs, and perception of skills regarding the use of this framework to address academic skill needs; specifically, whether knowledge aligns with best practices and whether knowledge and beliefs predict perceptions of their MTSS skills. A sample (N=72) of teacher trainees were surveyed about their MTSS knowledge, MTSS beliefs, and perception of MTSS skills for addressing academic needs. A multiple linear regression was used to examine the effect of MTSS knowledge and beliefs on perception of MTSS skills. The overall regression model was non-significant; however, self-reported MTSS knowledge was a significant predictor of MTSS skills. Investigating pre-service teacher MTSS knowledge and skills may inform the development of targeted teacher education programming.

Keywords: **multitiered systems of support, pre-service teachers, academic skills**

The Every Student Succeeds Act [ESSA] (2015) and the 2004 reauthorization of the Individuals with Disabilities Education Improvement Act [IDEIA] (2004) are federal laws that require the use of evidence-based practices to bolster student success. Multi-tiered systems of support (MTSS) are evidence-based frameworks that help schools better comply with these national policies and meet the needs of diverse learners. MTSS is a multi-level prevention framework comprised of data-based, tiered systems designed to give differentiated academic and behavioral support based on student need. MTSS includes an unspecified number of tiers and emerged from the 3-tier response to intervention (RTI) framework and terminology used to describe frameworks for academic skills and represents a broader conceptualization of tiered systems of service delivery. Many school districts utilize the structures and processes of MTSS for early academic and behavioral intervention, disability identification, or a combination of the two (Fuchs & Deshler, 2007; Gersten, Jayanthi, & Dimino, 2017; State Systematic Improvement Plan, National Center for Systematic Improvement, 2018).

Throughout this paper, we will use the term MTSS and academic MTSS to refer to tiered systems of service delivery that support students broadly, and for academic skills, respectively. We will also use the term RTI when referring to the measures used in the study that specifically include that language in the title. This use of terminology reflects the changes over time in the literature and in practice when referring to tiered models of service delivery to meet student needs.

Overall, MTSS has empirical support for improving student outcomes (Burns et al., 2005; Smith et al., 2016); however, even with policy supports and growing research on MTSS (Burns et al., 2005; Fuchs & Deschler, 2007), effective implementation remains a challenge for many teachers and school districts (Gersten et al., 2017; O'Connor & Freeman, 2012; Reynolds & Shaywitz, 2009). Successful MTSS implementation requires not only district and policy-level systems change, it also requires professional

Author Note: This research was completed as part of the first author's requirements for doctoral candidacy.
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preparation of individuals, often teachers, who will collect data, deliver instruction, as well as decide which students receive supplemental instruction and when (Fuchs & Deschler, 2007; Reschly & Bergstrom, 2009).

While there has been burgeoning empirical investigation into administrators' readiness for implementation of MTSS (Swanson, Solis, Ciullo, & McKenna, 2012), education's core stakeholders, teachers, remain understudied (Donnell & Gettinger, 2015; Greenfield et al., 2010). Targeting MTSS implementation readiness among teachers in training is an essential component for successfully scaling up MTSS practices that may affect model implementation and, ultimately, student academic and behavioral outcomes. However, more research in this area is needed.

Teacher Knowledge, Beliefs, and Perception of Skills

Teacher traits that impact the implementation of systems such as MTSS to support academic skills development are difficult to study (Castro-Villarreal et al., 2014; Verloop et al., 2001) because the multidimensional nature of teacher knowledge research typically requires the measurement of numerous constructs (Calderhead, 1996; Verloop et al., 2001). One way to frame and understand the role of teachers in MTSS is through the theory of planned behavior (e.g., Ajzen, 1991) because of its utility in elucidating necessary constructs for behavior change. In the theory of planned behavior, knowledge, beliefs, and positive perception of skills are linked to the desired behavior, such as effectively implementing MTSS practices. Teachers' knowledge, beliefs, and perceptions of skills have also been identified within the systems and educational innovation implementation literature as traits that impact use and fidelity (Carroll et al., 2007; Fixsen et al., 2005; Verloop et al., 2001). Therefore, investigating these teacher traits in the context of MTSS for academic skills may help identify barriers and facilitators to successful implementation.

Teacher Knowledge of MTSS for Academic Skills

Teachers' training affects the use of and adherence to a program (Carroll et al., 2007) and increasing teacher knowledge on a subject through active learning can motivate changes in teaching practices (Birman, Desimone, Porter, & Garet, 2000). Pre-service and in-service training is, therefore, essential for successfully scaling up service delivery programs such as academic MTSS (Fixsen et al., 2005). Successful school-wide implementation of MTSS for academic skills relies on teacher knowledge that aligns with evidence-based core instruction and MTSS practices (Center for Response to Intervention, 2019). Teachers are often responsible for many components of MTSS including delivery of core curriculum, differentiated instruction, interventions, and data collection (Castro-Villarreal et al., 2014; Reynolds & Shaywitz, 2009; Shanahan, 2008). However, current research suggests that teachers' overall knowledge of the structure, practices, and processes integral to the *framework* of MTSS, and how the aforementioned components are linked to successful implementation of academic MTSS is limited (Castro-Villarreal et al., 2014; Tillery et al., 2009). Teachers have been found to score low on scales measuring their knowledge of assessment and MTSS practices in reading, in particular (Spear-Swerling & Cheesman, 2012). Similarly, studies suggest very few teachers are able to give a comprehensive definition of MTSS (Castro-Villarreal et al., 2014) and consistently report feeling underprepared to use data-based decision making to inform their instruction (Al Otaiba et al., 2019; Spear-Swerling & Cheesman, 2012). Furthermore, when asked about training needs relevant to MTSS, teachers reported their own lack of knowledge regarding assessment and evidence-based practices as a major barrier to MTSS implementation (Castro-Villarreal et al., 2014).

Teacher Beliefs about MTSS for Academic Skills

Teacher knowledge and beliefs are inextricably related. Stakeholder involvement and buy-in is an essential component of program implementation (Fixsen et al., 2005) and teachers' beliefs (i.e., whether they think a program will work, or not), in conjunction with training and knowledge, affects the level of adherence to program delivery (Carroll et al., 2007). Teachers whose beliefs align with MTSS for academic skills report more positive attitudes towards implementation (Donnell & Gettinger, 2015) and when teacher training emphasizes the rationale for MTSS, teacher beliefs in and support of MTSS tend to increase. That said, some teachers' beliefs differ greatly from the core tenets of academic MTSS. Specifically, in one study of over 600 educators, 59% of teachers did not believe that all students, if provided with appropriate supports, could achieve grade level benchmarks or targets (O'Connor & Freeman, 2012).

While teachers may be obligated by school policy or procedure to operate within a school's MTSS system, their knowledge-base and exposure to MTSS may vary and that may affect their buy-in, and subsequently, fidelity to data-collection and instructional practices (Carroll et al., 2007; Verloop, 2001). Teachers' responsibility for delivering services to support academic skills within an MTSS framework relies not only on their formal knowledge of the system, but also their perceptions of specific MTSS-related practices (Calderhead, 1996; Carroll et al., 2007; Fuchs & Deschler, 2007).

Teachers' Perception of Their Skills to Implement MTSS for Academic Skills

Though important, teachers' knowledge and positive beliefs about MTSS are not enough; teachers must also feel equipped with skills to implement the components of MTSS for academic skills with high fidelity in order to change student outcomes (Carroll et al., 2007; Fives & Buehl, 2012). Teachers cite lack of training and confidence in essential skills as a barrier to effective MTSS implementation (Greenfield et al., 2010; Martinez & Young, 2011). Specifically, teachers note that they lack adequate knowledge and skills required to implement the evidence-based interventions and data collection required for this model of service delivery (Castro-Villarreal et al., 2014; Greenfield et al., 2010). This lack of skill can threaten successful MTSS implementation, and schools that deliberately recruit teachers with MTSS skills report more successful MTSS programming (Ikeda et al., 2007). Unfortunately, lack of MTSS specific skills is common. For instance, many pre-service teacher preparation programs do not directly address MTSS skill development (O'Connor & Freeman, 2012), therefore, many teachers may learn MTSS related skills during district sponsored professional development once they are employed.

Teacher Training

While some research suggests teacher education programs cover MTSS frameworks and interventions (e.g., Ross & Lignugaris-Kraft, 2015), it is important to also investigate whether current pre-service teachers' MTSS knowledge might represent a barrier to successful MTSS implementation for academic skills (Castro-Villarreal et al., 2014; Hazelkorn et al., 2010). Teacher education programs are tasked with the challenge of preparing a workforce to meet the many and varied needs of children, while also balancing university and state core curriculum requirements. Implementing extra training at the pre-service level must be carefully considered in light of limited credit hours and time available for teacher trainers to integrate new material.

Investigation of current teachers' MTSS knowledge, perceptions, and skills is limited. There are a few qualitative and descriptive studies (Castro-Villarreal et al., 2014; Hazelkorn et al., 2010; Swanson et al., 2012; Tillery et al., 2009) with some focusing specifically on special education teachers (Swanson et al., 2012) or school administrators (Martinez & Young, 2009). There are also limited quantitative investigations of practicing teachers' acceptance of MTSS implementation for academic skills (Donnell & Gettinger, 2015), as well as limited exploration of MTSS and pre-service teachers generally (Barrio, Lindo, Combes, & Hovey, 2015). As use of MTSS for academic skills in school systems continues to expand, it is vital to understand pre-service teachers' knowledge, beliefs, and perception of skills as a foundation for implementation (Fixsen et al., 2005). This can better inform gaps in teacher training that may enhance MTSS implementation. To date, however, there has not been a quantitative study focused on pre-service teachers' overall knowledge, perceptions, and skills to implement academic MTSS.

Current Study

The purpose of the current study was to examine the knowledge, beliefs, and perception of skills related to MTSS for academic skills among pre-service teachers. The study was designed to address the following research questions:

1. Do pre-service teachers have a knowledge base that aligns with best practices for academic MTSS?
2. Do pre-service teachers' MTSS knowledge base and beliefs about MTSS for academic skills predict their perception of their own MTSS implementation skills?

METHOD

Participants

Participants were drawn from a pool of 559 undergraduate students attending an educator preparation program in the southern United States. About

85% of undergraduates in this program are female and 15% are male. Approximately half (49.4%) of undergraduates in teacher education identify as Hispanic; 27.9% identify as white, 9.3% identify as Asian, and 6.4% identify as Black. Out of 119 students who expressed interest (i.e., started the survey), 72 participants completed the survey and were included in the final sample. Demographic information for participants who completed the survey is displayed in Table 1. Over 95% of participants included in the sample were female, and 37.5% of participants were beginning students (i.e., 1- 2 semesters completed toward teaching credential). Over 62% of participants were advanced teacher education students (i.e., 4-5 semesters toward teaching credential).

Table 1
Demographics of Pre-Service Teacher Participants Completing Full Survey

Factor	Sample (%)
Gender	
Male	4.1
Female	95.9
Semesters toward teaching degree	
1	23.61
2	13.89
3	0
4	4.16
5	58.33
Participants who took an MTSS class	12.5

Note. Number of semesters towards teaching degree completed at time of study; total may not add up to 100 due to rounding

Measures

Pre-Service Teacher Knowledge of Academic RTI/MTSS

Teacher knowledge is an essential component of implementing educational practices, such as MTSS (Verloop et al., 2001). Pre-service teachers' knowledge of MTSS for academic skills was measured using the *Teacher Knowledge Survey* (TKS) assessment/RTI subscale (Spear-Swerling & Cheesman, 2012). The TKS assessment/RTI subscale measures teachers' knowledge base for implementing RTI (i.e., MTSS for academic skills) models. The 66-items of the TKS were designed to measure teachers' basic knowledge and RTI skills related to reading. Areas assessed include knowledge of phonemic awareness, phonics, fluency, vocabulary, assessment, practices, and comprehension. Thirty-three percent of the questions measure content knowledge, while 67% of the items measure knowledge-application through scenario-based questions. All questions on the TKS have a stem and five answer choices. Four of the answers relate to the stem-question, with a fifth option of "I do not know" and each item has one correct answer choice. Cronbach's alpha for the full TKS survey indicated good reliability (α=.88; Spear-Swerling & Cheesman, 2012).

For this study, only the 25-item assessment/RTI subscale was used to assess teacher knowledge of assessment and MTSS practices. Like the full 66-item TKS, the TKS assessment/RTI subscale measures theoretical content and application knowledge. For example, the TKS assessment/RTI subscale measures content knowledge by asking participants "Which of the following is a central characteristic of all response-to-intervention (RTI) models?" Cronbach's alpha for the TKS assessment/RTI subscale is satisfactory (α=.77).

Pre-Service Teacher Beliefs about RTI/MTSS for Academic Skills

Pre-service teacher beliefs about MTSS for academic skills were measured using the Beliefs survey from the University of South Florida's *Problem Solving/RTI Evaluation Tool Technical Assistance Manual* (2010). Teacher buy-in is an essential component of systems implementation, and the Beliefs Survey was designed to measure the degree to which teachers and school staff agree with beliefs integral to implementation. The full survey consists of 27 items on a 5-point Likert scale. Four items related only to behavioral MTSS beliefs were removed from the full survey given the academic focus of the current study, resulting in 23 items. Scale response items range from (1) strongly disagree to (5) strongly agree. Three factors of beliefs consistent with MTSS are measured including beliefs about the academic ability and performance of students with disabilities, beliefs about data-based decision making, and beliefs about functions of core and supplemental instruction. These three factor scores are combined to obtain one score that indicates general MTSS beliefs. Removing four items from the original scale did not affect the components of the three factor scores, as the items removed were not

components of the factors. The scale developers utilized empirical literature, instruments, and program evaluations during scale development and verified content validity through review by an Educator Expert Validation Panel (EEVP) consisting of several teachers with experience working with MTSS for academic skills. Internal consistency and reliability for the beliefs survey is adequate with Cronbach's alpha ranging from α =.79 to α =.87 for all three factors (Castillo et al., 2010).

Pre-Service Teachers' RTI/MTSS Skills

Teachers' self-efficacy, or perception of skills, is strongly associated with implementation of new tasks and teaching performance (Klassen & Tze, 2014). The "Perceptions of RTI Skills" survey from the University of South Florida's *Problem Solving/RTI Evaluation Tool Technical Assistance Manual* (2010) was used to measure pre-service teachers' MTSS skills. The survey consists of 20 items that assess skills in applying MTSS practices to academics, behavior, data manipulation, and technology use. The survey answer choices are presented on a 5-point Likert scale ranging from 1 ("I do not have this skill at all") to 5 ("I am highly skilled in this area and could teach others this skill"). Three factors related to perceptions of applied MTSS skills are measured in the full scale: academic content, behavior content, and data manipulation/technology content. The two factors related to academic MTSS (academic content and data manipulation/technology content) were collected in this study. These two factor scores were combined to obtain one score that indicates an overall, general perception of MTSS for academic skills. The developers utilized empirical literature, instruments, and program evaluations during scale development and verified content validity through review by an EEVP. Internal consistency and reliability for the Perceptions of RTI Skills survey is excellent with Cronbach's alpha ranging from .94 to .97 for all three factors (Castillo et al., 2010).

Procedures

Survey Design

Responses to the TKS RTI/assessment subscale, RTI beliefs survey, and perceptions of RTI skills survey were examined visually at the individual item level by the researcher and an MTSS expert to help eliminate cross-loading of constructs; these decisions were guided by MTSS content knowledge and theory. No items were deemed repetitive; however, items not focused on academic skills were removed from the RTI beliefs and RTI perceptions of RTI skills survey to maintain consistency with the TKS RTI/assessment subscale, which focuses on academic MTSS. The full survey used in this study contained 68 items.

Data Collection

Participants were recruited over a 3-month period during the fall of 2019. After approval by the first author's institutional review board, a Qualtrics survey was distributed via e-mail using an internal teacher education listserv at a university in the southern United States. Participants were also recruited in person during teacher education courses and given access to the Qualtrics survey via e-mail. Participation was optional, not timed, and required about 25 minutes per participant. Upon completion, participants were given the option to enter a raffle for a $25 gift card.

Data Analysis

Descriptive statistics were used to examine participant age, gender, semesters of coursework completed, teaching experience, and knowledge, beliefs, and skills related to MTSS for academics. Data were assessed for normality and outliers using visual inspection of histograms and no extreme statistical outliers were identified. Participants with incomplete survey responses completed less than half of the survey items (46% completion or less) and were therefore not included in the analysis. Frequency statistics are reported for the RTI beliefs and RTI perceptions surveys and for the TKS assessment/RTI subscale. Items with the highest and lowest error rates were examined through percentages. A multiple linear regression was conducted to discern the impact and relative contribution of knowledge and beliefs to perception of skills. All testable assumptions of a standard multiple regression were evaluated prior to conducting the statistical analysis. An analysis of standard residuals indicated that the data included no outliers (Std. Residual Min = -2.15, Std. Residual Max=2.04) and met the assumption of collinearity (Beliefs, Tolerance = .99, VIF=1.007; Knowledge, Tolerance = .99, VIF=1.007). Study data also met the assumption of independent errors (Durbin-Watson value = 2.149) and the histogram

and P-P plot of standardized residuals indicated approximately normally distributed errors. A scatterplot of standardized residuals showed the data met linearity and homogeneity of variance assumptions.

RESULTS

Table 2 describes means, standard deviations, and ranges on the TKS assessment/RTI subscale, Beliefs Survey, and Perception of RTI Skills Survey for the analyzed sample.

Table 2

Descriptive Statistics for Teacher Knowledge Survey assessment/RTI subscale, Beliefs Survey, Perception of RTI Skills Survey

	Mean	SD	Range
Knowledge	4.67	3.54	0-14
Beliefs	85.81	9.77	69-114
Skills	90.31	29.04	40-155

Note. Means, SD, and range are presented for the collapsed, total scores for Beliefs and Skills Survey.

Table 3

Teacher Knowledge Survey assessment/RTI Subscale Items with Highest and Lowest Error Rates

Nature of item (Applied or Content Knowledge)	Percentage of sample correct
Identifying student in need of intervention (AK)	34.72
Modifying intervention for a student who is nonresponsive to tier II interventions (AK)	31.94
Conceptualization of learning disabilities within an RTI/MTSS model (CK)	6.94
Usefulness of a R-CBM measure (CK)	8.33

Note. AK – Applied Knowledge, CK – Content Knowledge

Pre-Service Teacher RTI/MTSS for Academic Skills Knowledge

For the TKS assessment/RTI subscale, items with the highest and lowest error rates were examined using percentages (see Table 3). The mean number correct for the TKS assessment/RTI subscale was 4.67 out of 25 items (see Table 2). The items with the highest number of participants responding correctly were applied knowledge items. This meant that the items asked the participant to apply learned knowledge to a hypothetical student's situation. In general, over 30% of participants were able to apply learned knowledge to identify a student in need of an intervention and modify an intervention. The items with the lowest number of participants responding correctly were content knowledge items. Over 90% of the sample was unable to correctly answer questions about learning disabilities based on an MTSS model or to identify the usefulness of a typical measure for screening and progress monitoring.

Pre-Service Teacher MTSS for Academic Skills Beliefs

Average endorsement of MTSS beliefs is displayed in Table 2 and Table 4. Table 2 displays the mean, standard deviation, and range of the collapsed, total scores. Table 4 displays participants' averaged Likert scale response scores. Participants' average endorsement of MTSS beliefs ranged from "Neutral" to "Strongly Agree." A majority (65.3%) of participants reported that they "Agree" or "Strongly Agree" with beliefs consistent with MTSS practices. No participants endorsed that they disagreed or strongly disagreed with overall beliefs consistent with MTSS for academic skills practices.

Pre-Service Teacher RTI/MTSS for Academics Perceived Skills

The mean, standard deviation, and range of the collapsed total scores are displayed in Table 2 and the average Likert scale responses are in Table 5. Participants endorsed a range of perceptions about their skills, with over 45% reporting minimal MTSS skills or none at all. Approximately 43% endorsed their overall skill level as being in the "I have this skill but need some support to use it" range. Over 11% of participants reported a high level of MTSS skills overall that required little or no support.

Table 4

Frequency Distribution of Participants' Average Endorsement of RTI Beliefs

Endorsement of RTI beliefs	*n*	*%*
Strongly disagree	0	0
Disagree	0	0
Neutral	25	34.7
Agree	45	62.5
Strongly Agree	2	2.8

Note. Endorsement of RTI beliefs taken from average of all responses on RTI Beliefs Survey

Table 5

Frequency Distribution of Participants' Average Endorsement of RTI Skills

Endorsement of RTI skills	*n*	*%*
No Skill	12	16.67
Minimal Skill	21	29.17
Some Skill	31	43.05
High Skill	8	11.11
Very High Skill	0	0

Note. Endorsement of RTI skills taken from average of all responses on RTI Skills Survey

MTSS Knowledge and Belief Effect on Perception of MTSS Skills

A multiple linear regression was used to examine whether pre-service teacher MTSS knowledge and MTSS beliefs together predicted pre-service teacher perception of their MTSS skills. The overall regression model was non-significant ($F(2,69)=2.774$, $p=.07$), with an R^2 of .074. MTSS beliefs was not a significant predictor of MTSS skills ($p=.81$), however, self-reported MTSS knowledge was found to be a significant predictor of perceived MTSS skills ($p=.02$).

DISCUSSION

MTSS is a framework for schools that may facilitate compliance with ESSA (2015) and IDEIA (2004) and when implemented successfully, leads to improvement in student academic and behavior outcomes (Burns et al., 2005; Smith et al., 2016). Currently, 32 states are working towards or have instituted MTSS for academic skills, with plans to expand MTSS to all 50 states (State Systematic Improvement Plan, National Center for Systematic Improvement, 2018). Even with supportive public policy and growing scientific investigation (Burns et al., 2005), however, effective implementation remains a challenge (Balu et al., 2015; Reynolds & Shaywitz, 2009). Investigating potential implementation facilitators and barriers, such as teacher characteristics, remains essential to successful implementation. A focus on pre-service training in particular may be key to successful MTSS implementation as skill building through professional development once teachers are in the field is costly (Castro-Villarreal, et al., 2014; Hazelkorn et al., 2010; Tillery et al., 2009; TNTP, 2015). In addition, pre-service teachers have voiced concerns about their MTSS knowledge and implementation skills (Barrio & Combes, 2015) further suggesting the need to focus on promoting these skills during training.

Findings of the present study indicate that MTSS knowledge may affect pre-service teachers' perception of their MTSS skills; however, pre-service teachers' overall knowledge about various aspects of MTSS was relatively low. Participants, on average, answered 4.67 items correct out of 25 possible items. This is consistent with prior research that found practicing teachers scored lowest on the TKS assessment/RTI subscale when compared to scales measuring different domains of teacher knowledge (Spear-Swerling & Cheesman, 2012). Further, only 33.33% of pre-service teachers in the present study were able to answer items about the advantages of a tiered service-delivery model, much lower than Spear-Swerling and Cheesman's (2012) finding of roughly 80% of practicing teachers. This may indicate practicing teachers are gaining these skills in the field or through professional development post-graduation. Further, this difference in knowledge may suggest an opportunity to increase foundational MTSS knowledge in pre-service training programs.

Overall, pre-service teacher MTSS for academic skills beliefs in this study were relatively high, with over 65% of participants reporting beliefs consistent with practices. However, when examined at the factor level, 81.9% of pre-service teachers in the present study did not endorse the belief that all students with necessary supports could achieve grade level benchmarks. This mirrors O'Connor and Freeman's (2012) findings indicating that, using the same survey, 59% of practicing teachers did not endorse the belief that all students, with necessary supports, could achieve grade-level benchmarks. In the present study,

however, only 15.2% of pre-service teachers indicated that they disagreed with this belief, with 67% of pre-service teachers neutral about all students achieving grade-level benchmarks. This finding may reflect the fact that this sample is currently in teacher training and actively developing beliefs concerning student achievement and potential. It may also be indicative of consideration of the small percentage of students with the most profound impairments, who may indeed not ever achieve grade or age-level benchmarks for reading performance. Further, the large number of pre-service teachers who reported supporting overall MTSS beliefs but also indicated neutrality on student achievement highlights another MTSS knowledge area that may benefit from greater focus during teacher training.

Unlike pre-service teacher beliefs in this study, pre-service teacher ratings of their perception of their own MTSS skills varied. Over 40% of participants rated their overall MTSS skills in the "I have this skill but need support to use it" range, while only 11.11% reported needing very little or no support. Further, around 45% of participants reported needing substantial support for implementation or not having MTSS skills at all. These findings are consistent with the demographics of the sampled population and may reflect the differing range of teaching education experience and opportunities for field-based practice of the participants at the time of data collection.

Investigating whether pre-service teachers have a knowledge base that aligns with practices associated with MTSS for academic skills may help bridge the science to practice gap in university teacher training programs and ultimately, schools. While pre-service teacher MTSS beliefs were found to be generally high in this study, close examination of belief and knowledge responses revealed areas that teacher training programs may wish to target to increase their trainees' MTSS knowledge. Because pre-service learning may affect perception of skills (i.e., self-efficacy), targeting teacher MTSS knowledge while in training, may be a way to provide a strong foundation for pre-service teachers' MTSS for academic skills proficiency and confidence before they enter the work force. It is essential to further study this connection in order to develop and successfully implement training.

Limitations

The findings of this study must be interpreted in light of several limitations. First, the study design included a convenience sample of pre-service teachers at a single teacher preparation training program in the southern United States. The population sampled may not be representative of all pre-service teachers and teacher training programs, ultimately limiting generalizability. Also, although the scales utilized in this study are empirically supported, they have limitations. For example, using a subscale from the TKS to measure teacher knowledge may be a limitation as the full scale was designed to analyze both teacher Tier 1 reading instruction and MTSS related factors. Further, although they were examined separately in the descriptive analyses, combining the factor scores on the Beliefs and Perception of Skills surveys to obtain scores that represent overall MTSS beliefs and perception of MTSS skills diverges from prior use of the measures. Future studies using these surveys should examine the relationships between knowledge, beliefs, and skills at the individual factor levels. Findings of this study should be interpreted cautiously due to the small sample of 72 participants. Utilizing the full sample of 119 would have likely increased power; however, this study included only fully completed survey responses. Future studies should increase the sample size utilized. Lastly, teachers are only one important component of implementing MTSS for academic skills so further study of all stakeholders involved in implementation would inform efforts to scale up this prevention framework.

Future Directions and Practical Implications

Exploring whether a gap exists between teacher knowledge, skills, and beliefs about MTSS frameworks for academic skills and the awareness needed for implementation is necessary for addressing barriers. Teacher training can focus on identified knowledge gaps, as many practicing and pre-service teachers may not fully understand their role within MTSS (Barrio & Combes, 2015; Castro-Villarreal et al., 2014; Hazelkorn et al., 2010; Tillery et al., 2009). Stakeholder involvement, buy in, and program knowledge remain essential components for changing professional behavior (Carroll et al. 2007). These findings indicate that pre-service knowledge of MTSS for academic skills was low overall and may affect perception of MTSS skills. Since positive perceptions of skills are linked to increased implementation fidelity and teaching performance (Abrami et al. 2004; Klassen & Tze, 2014), this is an opportunity to provide sup-

port to pre-service teachers with instruction or intervention designed to explicitly bolster MTSS knowledge. Some programs have successfully enhanced MTSS knowledge and skills at the university training level and resulted in high ratings of teaching-candidates by school districts (Prasse et al., 2012; Ross & Lignugaris-Kraft, 2015). However, evidence of their efficacy remains limited and training continues to vary widely (Vollmer, Gettinger, & Begeny, 2019).

Teacher preparation programs, like many professional training programs accredited by state agencies or guided by national standards, are required to provide a specific sequence of training to students enrolled in their programs. This can make it particularly challenging to incorporate new or additional content for instruction. Nevertheless, if a program were to desire to increase the knowledge of their trainees regarding MTSS, the results of this study suggest that may be beneficial. Training programs should focus on bolstering both theoretical and practical pre-service teacher knowledge of all the essential domains of MTSS (i.e., tiered interventions, pre-determined goals/objectives, universal screening, evidence-based interventions, progress monitoring, and data-based decision making) as well as continued monitoring of skill and knowledge development.

University teacher training programs may also benefit from collaboration with school psychology and special education training programs to deliver content knowledge regarding MTSS for academic skills. Additionally, school psychologists and special educators are trained in measurement and differentiated instruction in ways that complement and support classroom teachers. This collaborative approach to training would be reflective of practice where educators of various backgrounds work collaboratively to implement MTSS service delivery models.

In addition to learning in the classroom setting, partnerships between pre-service teacher education programs and local school districts implementing the full service-delivery model could provide the opportunity for field-based learning about MTSS and real examples of interdisciplinary collaboration. Further, teacher educators may find the current results helpful in identifying didactic and field-based learning experiences in MTSS domains where teachers and pre-service teachers continuously report low levels of understanding such as assessment and data-based decision making (Al Otaiba et al., 2019; Spear-Swerling & Cheesman, 2012). This may guide instruction and training opportunities that result in graduates prepared to meet the many individual instructional needs of students in schools, collaborate on interdisciplinary teams that include special educators and school psychologists, and successfully participate in prevention models of service delivery.

Empirical investigations of pre-service teachers and MTSS teacher preparation overall remain scarce (Barrio et al., 2015; Vollmer et al., 2019). This study investigated pre-service teacher characteristics to better understand how these important stakeholders view their level of MTSS knowledge, beliefs, and perceptions of skills; however, further exploration of pre-service teachers' MTSS knowledge, beliefs, and skills is warranted. Investigating specific knowledge and skill deficits regarding MTSS may help to inform the development of effective teacher education programming. Arming pre-service teachers with increased MTSS knowledge, beliefs, and skills may better prepare them to implement MTSS with fidelity and collaborate on interdisciplinary teams, ultimately leading to positive outcomes for students.

References

Abrami, P. C., Poulsen, C., & Chambers, B. (2004). Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. *Educational Psychology*, *24*, 201-216. https://doi.org/10.1080/01443410320001601 4

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*,179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Al Otaiba, S., Baker, K., Lan, P., Allor, J., Rivas, B., Yovanoff, P., & Kamata, A. (2019). Elementary teacher's knowledge of response to intervention implementation: A preliminary factor analysis. *Annals of Dyslexia*, *69*, 34-53. https://doi.org/10.1007/s11881-018-00171-5

Balu, R., Zhu, P, Doolittle, F., Schiller, E., Jenkins, J., & Gersten, R. (2015). Evaluation of Response to Intervention Practices for Elementary School Reading (NCEE 2016-4000). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. https://files.eric.ed.gov/fulltext/ED560820.pdf

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of Human Behavior* (Vol. 4, pp. 71-81). Academic Press. (Reprinted in H. Friedman [Ed.], *Encyclopedia of Mental Health*. Academic Press, 1998).

Barrio, B. L., Lindo, E. J., Combes, B. H., & Hovey, K. A. (2015). Ten years of response to intervention: Implications for general education teacher preparation programs. *Action in Teacher Education*, *37*,190-204. https://doi.org/10.1080/01626620.2015.100460

Barrio, B. L., & Combes, B. H. (2015). General education pre-service teachers' levels of concern on response to intervention (RTI) implementation. *Teacher Education and Special Education*, *38*,121-137. https://doi.org/10.1177/0888406414546874

Burns, M. K., Appleton, J. J., & Stehouwer, J. D. (2005). Meta-analytic review of responsiveness-to-intervention research: Examining field-based and research-implemented models. *Journal of Psychoeducational Assessment*, *23*, 381-394. https://doi.org/10.1177/073428290502300406

Calderhead, J. (1996). Teachers: Beliefs and knowledge. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of Educational Psychology* (pp. 709-725). New York, NY, US: Macmillan Library Reference Usa; London, England: Prentice Hall International.

Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J., & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science, 2*(1), 40. https://doi.org/10.1186/1748-5908-2-40

Castillo, J.M., Batsche, G.M., Curtis, M.J., Stockslager, K., March, A., and Minch, D. (2010). *Problem Solving/Response to Intervention Evaluation Tool Technical Assistance Manual.* Florida Problem Solving/Response to Intervention (PS/RtI) Project. https://digitalcommons.usf.edu/cgi/viewcontent.cgi?article=1037&context=esf_facpub

Castro-Villarreal, F., Rodriguez, B. J., & Moore, S. (2014). Teachers' perceptions and attitudes about Response to Intervention (RTI) in their schools: A qualitative analysis. *Teaching and Teacher Education*, *40*, 104-112. https://doi.org/10.1016/j.tate.2014.02.004

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155. https://psycnet.apa.org/doi/10.1037/0033-2909.112.1.155

Donnell, L. A., & Gettinger, M. (2015). Elementary school teachers' acceptability of school reform: Contribution of belief congruence, self-efficacy, and professional development. *Teaching and Teacher Education, 51*, 47-57. https://doi.org/10.1016/j.tate.2015.06.003

ESSA (2015). Every Student Succeeds Act of 2015, Pub. L. No. 114-95 § 114 Stat. 1177 (2015-2016).https://www.cogress.gov/114/plaws/publ95/PLAW-114publ95.pdf

Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational Research*, *38*(1), 47-65. https://doi.org/10.1080/0013188960380104

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191. https://doi.org/10.3758/BF03193146

Fives, H., & Buehl, M. M. (2012). Spring cleaning for the "messy" construct of teachers' beliefs: What are they? Which have been examined? What can they tell us. *APA Educational Psychology Handbook, 2*, 471-499. https://psycnet.apa.org/doi/10.1037/13274-019

Fuchs, D., & Deshler, D. D. (2007). What we need to know about responsiveness to intervention (and shouldn't be afraid to ask). *Learning Disabilities Research & Practice, 22*, 129–136. https://doi.org/10.1111/j.1540-5826.2007.00237.x

Fuchs, D., & Fuchs, L. S. (2007). Responsiveness-to-intervention: A blueprint for practitioners, policymakers, and parents. *TEACHING Exceptional Children, 38*(1), 57-61. https://journals.sagepub.com/doi/pdf/10.1177/004005990503800112

Gersten, R., Jayanthi, M., & Dimino, J. (2017). Too much, too soon? Unanswered questions from national response to intervention evaluation. *Exceptional Children*, *83*(3), 244-254. https://doi.org/10.1177/0014402917692847

Gersten, R., Woodward, J., & Darch, C. (1986). Direct instruction: A research-based approach to curriculum design and teaching. *Exceptional Children, 53*(1), 17-31. https://doi.org/10.1177/001440298605300102

Greenfield, R., Rinaldi, C., Proctor, C. P., & Cardarelli, A. (2010). Teachers' perceptions of a response to intervention (RTI) reform effort in an urban elementary school: A consensual qualitative analysis. *Journal of Disability Policy Studies, 21*(1), 47- 63. https://doi.org/10.1177/1044207310365499

Greenwood, C. R., Carta, J. J., Goldstein, H., Kaminski, R. A., McConnell, S. R., & Atwater, J. (2015) The center for response to intervention in early childhood: Developing evidence-based tools for a multi-tier approach to preschool language and early literacy instruction. *Journal of Early Intervention, 36*(4), 246-262. https://doi.org/10.1177/1053815115581209

Goldrick, L., Sindelar, P., Zabala, D., & Hirsch, E. (2014). *The role of state policy in preparing educators to meet the learning needs of students with disabilities* (Document No. PA-1). Retrieved from University of Florida, Collaboration for Effective Educator, Development, Accountability, and Reform Center website: http://ceedar.education.ufl.edu/tools/literature-syntheses/

Hazelkorn, M., Bucholz, J., Goodman, J., Duffy, M., & Brady, M. (2010). Response to intervention: General or special education? Who is responsible? *The Educational Forum, 75*, 17-25. https://doi.org/10.1080/00131725.2010.528552

Ikeda, M. J., Rahn-Blakeslee, A., Niebling, B. C., Gustafson, J. K., Allison, R., & Stumme, J. (2007). The Heartland Area Education Agency 11 problem-solving approach: An overview and lessons learned. In S. R. Jimerson, M. K. Burns, &A. M. VanDerHeyden (Eds.), *Handbook of Response to Intervention* (pp. 255 – 268). Springer.

Individuals with Disabilities Education Improvement Act. 2004 (Pub. L. No. 108- 446), 20 U.S.C.1400 et seq. (reauthorization of the Individuals with Disabilities Education Act of 1990). https://ies.ed.gov/ncser/pdf/pl108-446.pdf

Klassen, R. M., & Tze, V. M. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review, 12*, 59-76. https://doi.org/10.1016/j.edurev.2014.06.001

Kretlow, A. G., & Helf, S. S. (2013). Teacher implementation of evidence-based practices in tier 1. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children, 36*, 167-185. https://doi.org/10.1177/0888406413489838

Kealey, K. A., Peterson, A. V., Jr., Gaul, M. A., & Dinh, K. T. (2000). Teacher training as a behavior change process: Principles and results from a longitudinal study. *Health Education & Behavior, 27*, 64-81. doi: 10.1177/10901981000270010

Lyon, G. R., & Weiser, B. (2009). Teacher knowledge, instructional expertise, and the development of reading proficiency. *Journal of Learning Disabilities*, *42*, 475-480. http://dx.doi.org/10.1177/0022219409338741

Martinez, R., & Young, A. (2011). Response to intervention: How is it practiced and perceived? *International Journal of Special Education, 26*, 44-52.

Miltenberger, R. (1990). Assessment of Treatment Acceptability – A Review of the Literature.*Topics In Early Childhood Special Education, 10*, 24-38. https://doi.org/10.1177/027112149001000304

Moats, L. (2009). Still wanted: Teachers with knowledge of language. *Journal of LearningDisabilities*, *42*, 387-391. https://doi.org/10.1177/0022219409338735

O'Connor, E. P., & Freeman, E. W. (2012). District level considerations in supporting and sustaining RtI implementation. *Psychology in the Schools*, *49*, 297–310. https://doi.org/10.1002/pits.21598

Podhajski, B., Mather, N., Nathan, J., & Sammons, J. (2009). Professional development in scientifically-based reading instruction: Teacher knowledge and reading outcomes. *Journal of Learning Disabilities*, *42*, 403-417. https://doi.org/10.1177/002221940933873

Prasse, D. P., Breunlin, R. J., Giroux, D., Hunt, J., Morrison, D., & Thier, K. (2012). Embedding multi-tiered system of supports/Response to Intervention into teacher preparation. *Learning Disabilities: A Contemporary Journal*, *10*, 75-93.

Reschly, D. J. & Bergstrom, M. K. (2009) Response to Intervention. In T.B. Gutkin & C. R. Reynolds (Eds.), *The Handbook of School Psychology* (4th ed., pp. 434-460). Wiley.

Reynolds, C. R., & Shaywitz, S. E. (2009). Response to Intervention: Ready or not? Or, from wait-to-fail to watch-them-fail. *School Psychology Quarterly*, *24*, 130-145. https://psycnet.apa.org/doi/10.1037/a0016158

Ross, S. W., & Lignugaris-Kraft, B. (2015). Multi-tiered systems of support preservice residency: A pilot undergraduate teacher preparation

model. *Journal of the National Association for Alternative Certification, 10,* 3-20.

Shanahan, T. (2008). Implications of RTI for the reading teacher. In Douglas Fuchs, Lynn S. Fuchs, & Sharon Vaughn (Eds.). *Response to Intervention: A Framework for Reading Educators* (pp.105-122). International Reading Association.

Smith, J. L. M., Nelson, N. J., Fien, H., Smolkowski, K., Kosty, D., & Baker, S. K. (2016). Examining the efficacy of a multitiered intervention for at-risk readers in grade 1. *The Elementary School Journal, 116,* 549-573. https://www.jstor.org/stable/26546616

Spear-Swerling, L., & Cheesman, E. (2012). Teachers' knowledge base for implementing response-to-intervention models in reading. *Reading and Writing, 25,* 1691-1723. https://doi.org/10.1007/s11145-011-9338-3

Swanson, E., Solis, M., Ciullo, S., & McKenna, J. W. (2012). Special education teachers' perceptions and instructional practices in response to intervention implementation. *Learning Disability Quarterly, 35,* 115-126. https://doi.org/10.1177/0731948711432510

The New Teacher Project [TNTP]. (2015, August). Confronting the hard truth about our quest for teacher development. Retrieved from https://tntp.org/publications/view/the mirage-confronting-the-truth-about-our-quest-for-teacher-development

Tillery, A. D., Varjas, K., Meyers, J., & Collins, A. S. (2009). General education teachers' perceptions of behavior management and intervention strategies. *Journal of Positive Behavior Interventions, 12,* 86-102. https://doi.org/10.1177/1098300708330879

Verloop, N., Van Driel, J., & Meijer, P. (2001). Teacher knowledge and the knowledge base of teaching. *International Journal of Educational Research, 35,* 441-461. https://doi.org/10.1016/S0883-0355(02)00003-4

Vollmer, L. E., Gettinger, M., & Begeny, J. C. (2019). Training preservice general education teachers in response to intervention: A survey of teacher educators throughout the United States. *Journal of Applied School Psychology*, *35*, 122-145. https://doi.org/10.1080/15377903.2018.1528488

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 79-91

ISSN:2329-5783

Article

An Analysis of State Social/Emotional Learning Standards and Student Outcomes

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Meta-analytic studies show students who participate in social/emotional learning (SEL) programs have improved social/emotional skills and higher academic achievement (Durlak et al., 2011). While many states outline SEL standards within prekindergarten, counseling, and/or health education curricula, there is variability in curricular standards. Investigating this variability in SEL curricula and its relation to educational outcomes can contribute to increased knowledge, systems change, and advocacy efforts for a variety of school-based mental health professionals, including school psychologists. This study investigated the association between SEL state standards and outcomes, such as special education eligibility, suspensions, and bullying rates. Results indicate few associations between SEL learning and curricular standards and outcomes; however, a significant association between rates of special education eligibility and the location of the K-12 SEL standards being embedded was found. States that embed SEL standards within their Counseling curriculum had significantly lower rates of students eligible for special education. Implications and considerations for districts and states who use SEL curricula, such as implementation variables and appropriate outcome measures, are discussed, along with the role of school psychologists and other school-based mental health professionals in implementation, program evaluation, and policy/advocacy efforts.

***Keywords*: social/emotional learning, special education, discipline, bullying, outcome measurement**

While the Centers for Disease Control and Prevention (2023) note that 17.4% of young children ages 2-8 have a diagnosed mental, behavioral, or developmental disorder and approximately 9% of children ages 3-17 were diagnosed with behavior problems, anxiety or ADHD, treatment rates vary and there are continued issues with treatment accessibility in many parts of the country. Given these concerns, public school systems often play a vital role in mental health promotion, prevention, and intervention. This is critically important, as social, emotional, and behavioral problems are often associated with a variety of poor outcomes such as overall academic challenges, high rates of absenteeism, low graduation rates, unemployment, and higher incidence of contact with the justice system compared to peers with other disabilities or no disabilities (Beyer et al., 2012; Butterworth & Leach, 2018; Finning et al, 2020; Kincaid & Sullivan, 2019; Mitchell et al., 2018).

Current Research on Social/Emotional Learning Programs

One way that schools have addressed prevention and early intervention of behavioral, social, and emotional concerns in children is through the implementation of

Author Note:

Compliance with Ethical Standards: No funding was received for the preparation of this manuscript. The authors declare that they have no conflicts of interest. Correspondence concerning this article should be addressed to Elise Hendricker, College of Liberal Arts and Social Sciences, University of Houston-Victoria, 22400 Grand Circle Boulevard, Suite 206, Katy TX 77449; Contact: hendrickere@uhv.edu

social/emotional learning programs. Social and emotional learning (SEL) is defined as:

> The process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel, and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions (Collaborative for Academic, Social and Emotional Learning [CASEL], 2023).

CASEL (2020) identifies an integrated framework to address SEL through five core competencies emphasized in a variety of settings, such as classroom instruction, school-wide programming, and family and community partnerships. Competencies emphasize intrapersonal skills, such as self-awareness and self-management of thoughts, feelings, and behaviors. Interpersonal skills are also included to help children learn social awareness through perspective taking, empathy, and building positive relationships with others. Children learn responsible decision-making skills by analyzing problems, evaluating consequences, and making decisions that are considerate of self and others (CASEL, 2020).

SEL has a plethora of evidence supporting its integration into schools. Meta-analytic studies indicate students who participate in SEL programs have improved social/emotional skills, as well as significantly higher academic achievement than their peers (Durlak et al., 2011). The effects of these programs have lasting impact, as participants show long-term improvements in social/emotional skills and well-being years after the intervention when compared to a control population (Greenburg et al., 2017; Taylor et al., 2017). SEL curricula have shown evidence in improving a variety of academic, behavioral, emotional, and social variables across age groups, including prekindergarten (Morris et al., 2013; Upshur et al., 2019), elementary school (Zhai et al., 2015), and high school students (Caldarella et al., 2019; Dowling et al., 2019). Additionally, SEL has positive effects on student outcomes, independent of race/ethnicity, gender, and socioeconomic status (Schonfeld et al., 2015).

Studies have also found SEL programs to benefit students receiving special education services due to an educational disability (Elias et al., 2018; Espelage et al., 2015), as well as potentially prevent at-risk students from needing intensive special education supports in the future (McCormick et al., 2019). For example, recipients of an early and preventative SEL program were less likely to receive special education services four years after program participation when compared to non-participants (McCormick et al., 2019). SEL may prove helpful in providing early intervention for all students, thus reducing the need for special education services and lowering incidences of disproportionality in various special education eligibility categories (Snyder et al., 2016).

SEL also offers promise in addressing bullying and harassment in schools. Bullying prevention programs based on the SEL framework found significant reductions in bullying among students with and without disabilities (Brown et al., 2011; Domino, 2013; Espelage et al., 2015). Follow-up studies have found declines in homophobic name-calling and sexual harassment perpetration (Espelage et al., 2014). In addition to studies examining the effectiveness of SEL programs, relevant research also suggests that students' self-reported overall SEL skills were inversely related to their perceptions of bullying at school and their personal experiences of victimization (Nickerson et al., 2019). Theoretical assumptions suggest that SEL may be effective in reducing bullying and harassment by increasing social-emotional skills, which then may reduce students' victimization from bullying (Smith & Low, 2013).

Suspension is another area that may be impacted by SEL. The American Academy of Pediatrics (2013) recommends that programs identifying students at risk of suspensions and expulsions should also teach age-appropriate behaviors; SEL programs appear to align with this need. Instead of suspension, SEL curricula may help students manage their behavior and avoid incidents leading to suspension (Kendziora & Yoder, 2016). Prior research in this area suggests an overall small, not statistically significant, reduction in out-of-school suspensions and arrests (Mielke & Farrington, 2021). Subgroup analyses suggest that well-implemented programs yielded significant reductions in suspensions, while programs with implementation problems did not yield similar results (Valdebenito et al., 2018).

Social/Emotional Learning Curricular Standards

Coupled with growing evidence that SEL programs can have positive impacts on various student outcomes, schools have also begun to give increased focus to SEL programs due to legal requirements. At the federal level, the Every Student Succeeds Act

(ESSA, 2015) requires states to be accountable for academic achievement. However, schools must also measure data related to school quality and student success and thereby implement programming to address aspects beyond academics. While academic curricular standards are often commonplace in schools, scholars highlight the importance of high-quality SEL curriculum standards (Dusenbery et al., 2014). They argue these standards should span prekindergarten through high school and provide benchmarks for student knowledge and skills in each of the five core competencies outlined by CASEL (2020). Similarly, McCormac & Snyder (2019) highlight the importance of SEL programs being integrated into school counseling core curriculum.

Given the importance of SEL curricula and federal guidance related to outcome measurement and ongoing monitoring in schools, many states have elected to codify SEL curricular objectives into their state standards. However, because states have some degree of authority to define and regulate their educational standards, variability exists regarding how standards are defined and how they are embedded into the curriculum. For example, Eklund and colleagues (2018) found all 50 states have freestanding SEL curriculum standards at the prekindergarten (PreK) level, meaning these standards stand alone and are not integrated into other areas of the curriculum. However, substantially fewer states have freestanding SEL standards for grades K-12 and most SEL curriculum standards are integrated into other areas of the curriculum, such as health education or counseling (Eklund et al., 2018). This variability of curricular location has not been fully researched and it may have a meaningful impact on student outcomes. For example, while SEL has strong research to support its effectiveness, many studies use randomized controlled trials, assigning students to receive or not receive SEL curricula, or study the impact of one specific SEL program on a particular population (see Espelage et al., 2015 and McCormick et al., 2019 for examples). While this information is meaningful and contributes to the literature on SEL programming, it may not offer a complete and full representation of actual practices in schools when SEL is embedded into other parts of the school day, may not be delivered with fidelity by those trained in mental health, or may be less valued than traditional academic standards. In the case of SEL, states have defined what SEL standards are for each age group and how these should be aligned within the curriculum. However, it is up to local districts and school teams to consider how to address those standards using various programs, how to implement those standards with fidelity, and how to monitor and measure student outcomes. Nearly a quarter of educational administrators and teachers say their districts are not teaching SEL in their schools (Ed Week Research Center, 2020) and when they are implemented, SEL curriculum and standards are often left to teachers to deliver with little ongoing training, monitoring, consultation, or coaching (Will, 2020).

Within educational research and practice, we may need to transition from a mindset of "it worked" to "it will work here" (Joyce & Cartwright, 2020). Knowing what should be done versus what to do is not a new issue in schools. However, districts must consider how they translate state level curricular standards and objectives in conjunction with their district priorities, initiatives, and funding related to the implementation of SEL. School-based administrators and school mental health providers would benefit from greater understanding in interpreting state standards, understanding how to implement curriculum to meet those standards in their schools, and measuring outcomes in a meaningful way for their unique population.

Purpose of the Study

The purpose of this study is to investigate the relationship between SEL state standards, curricular location, and outcome variables related to special education population numbers, discipline, and bullying. While previous studies have examined states and their SEL curricular standards (e.g., Eklund et al., 2018), this work has not been extended to student-based outcomes. Schools using SEL curricular standards aligned at the state level can use this knowledge to understand how this type of programming may impact social-emotional skill development and prevention to help advocate for meaningful practices and systems change.

Specifically, the research questions within this study include: (1) Is there a relationship between a state's inclusion of PreK and Kindergarten through 12th grade SEL standards and the percent of students (ages 3-21) eligible for special education? (2) Is there a relationship between a state's inclusion of PreK and Kindergarten through 12th grade standards and the percent of students in each state reported as harassed or bullied? (3) Is there a relationship between a state's inclusion of PreK and Kindergarten through 12th grade

standards and the percent of students in each state with one or more suspensions?

METHOD

Procedures

Eklund et al. (2018) completed a systematic review across all fifty states, identifying which states have SEL curriculum standards in prekindergarten-12th grade. State standards were coded accordingly if they described the knowledge and skills children should display within their social and emotional development. Standards occurred as freestanding (not embedded within a curricular domain) or as part of a curricular domain (such as physical education/health or school counseling standards). Standards were also analyzed to determine how well they aligned with the five CASEL core competencies of self-awareness, self-management, social awareness, relationship skills and responsible decision-making (CASEL, 2020). Each state's standards were investigated thoroughly through state department of education websites and broad internet searches. Reliability of search and coding procedures was established.

Given the depth of this previous work, for the purpose of the current study, these coded state standards established by Eklund et al. (2018) were utilized to analyze their association to special education populations. No additional coding of SEL standards was utilized in the current study. Instead, the current study extended the work of Eklund et al. (2018) by analyzing associated outcomes. In 2020, the authors reviewed the U.S. Department of Education website and recorded the most recent special education population data from each state for the year 2017. The reported number of K-12 students with one or more suspensions and the number of students reported as harassed or bullied in each state for the year 2017 were also collected from the U.S. Department of Education website. The number of students ages 3-5 and 6-21 within each federally defined special education disability category for the year 2017 was also coded from the U.S. Department of Education website.

Measures

SEL Standards

Dummy variables were created based on whether SEL standards were addressed in each state (0 = not addressed; 1 = addressed). For K-12, standards occurred as freestanding (i.e., not embedded within a curricular domain) or as part of a curricular domain (i.e., physical education/health, or counseling). The PreK standards do not have specific locations where standards are addressed; they are simply addressed or not addressed. The following variables depict the various ways in which SEL standards were addressed: (1) PreK standards, (2) K-12 standards in health/physical education, (3) K-12 standards in counseling, and (4) freestanding standards.

Standards Curriculum Location

Many states incorporate SEL standards in their physical education, health, and/or school counseling standards (Eklund et al., 2018). Therefore, each state was coded as one of the following based on the way in which the standards were addressed: (1) not addressed anywhere, (2) physical education/health only, (3) freestanding only, (4) counseling only, (5) PreK only, (6) all locations (i.e., PreK, physical education/health, counseling, and freestanding), (7) PreK and physical education/health, (8) PreK and counseling, (9) PreK and freestanding, (10) PreK, physical education/health, and counseling, (11) PreK, freestanding, and counseling, (12) PreK, freestanding, and physical education/health, (13) freestanding and physical education/health, (14) freestanding and counseling, (15) counseling and physical education/health, (16) freestanding, physical education/health, and counseling.

Standards Integration

Standards were analyzed to determine how well they aligned with the five CASEL core competencies (i.e., self-awareness, self-management, social awareness, relationship skills, and responsible decision-making; CASEL, 2020). Each state was coded zero to four based on how many places in the curriculum implemented all five CASEL standards. Higher scores indicate CASEL standards being implemented in various facets of the curriculum. For example, Alabama was coded a three because they address all five CASEL standards within three areas of the curriculum (PreK, physical education/health, and counseling).

Suspensions

The Department of Education Office for Civil Rights database provided the total number of K-12 students with one or more suspensions in 2017-2018. Information on suspensions for PK was not represented in this database and therefore were excluded from

analyses. The number of suspensions in each state were collected and the percent of students in each state with one or more suspensions were calculated based on the total state enrollment.

Harassment/Bullying

The Department of Education Office for Civil Rights database provided the total number of K-12 students reported as harassed or bullied in 2017-2018. Information on harassment/bullying for PK were not represented in this database and therefore were excluded from analyses. The number of students reported as harassed or bullied in each state were collected and the percent of students in each state reported as harassed or bullied were calculated based on the total state enrollment.

Special Education Enrollment

Data from each state included the overall number of school age children enrolled in public school, the number of students served in special education ages 3-5, and the number of students served in special education ages 6-21. Based on these data, the percent of students served in special education ages 3-21 in each state were calculated.

Data Analysis

Prior to conducting the primary data analyses, data were screened for missing data and outliers, and to ensure that all assumptions associated with the analyses were met using IBM SPSS Statistics 26.0 (IBM Corp., 2019). Missing values analysis indicated that there were no variables or cases with 3% or more missing values. Although there are no established cutoff rules for acceptable percentages of missing data in a dataset, Schafer (1999) asserts that a missing rate of 5% or less is inconsequential. Additional analyses revealed no evidence of violations regarding the assumptions associated with multiple regression analysis, including independence of residuals, homoscedasticity, no evidence of univariate or multivariate outliers, and no evidence of muticollinearity. Once data were screened and it was determined that data were adequate for the proposed analyses, multiple regression analyses using random effects were performed to analyze the relations between SEL standards in each state, special education enrollment, students reported as harassed or bullied, and students with one or more suspensions.

RESULTS

Descriptive Statistics

Table 1 outlines the SEL curricular standards in each state. All 50 states have state curricular SEL standards in prekindergarten. Of these states, 35 states include all five CASEL standards within the prekindergarten state curriculum standards. Within the Kindergarten through 12th grade curriculum, 10 states use freestanding SEL standards that are not embedded within a particular curriculum. Two of these states only include these standards in particular grades. The majority of states (47 out of 50) have state curriculum SEL standards aligned with the five CASEL standards within the K-12 Health/Physical Education curriculum. Two states also include standards in the K-12 Health/Physical Education curriculum but these are not representative of all five CASEL standards. Only one state does not include standards in the Health/Physical Education curriculum. Seventeen states include all five CASEL standards in the Counseling curriculum, with two additional states including three of the five standards.

In analyzing all possible curricular areas where SEL standards are included and compliance with the CASEL framework, only one state does not reference all five CASEL competencies at some point in their curriculum. While states may vary where they include these standards and the degree to which they address all CASEL competencies, the majority of states have at least one place they are addressing all SEL competencies to students at some point during their prekindergarten-12th grade educational experience.

Preliminary Pearson correlation analyses were conducted to determine the bivariate relations among all study variables (Table 2). There was a significant positive correlation between K-12 Freestanding Standards and Special Education Enrollment (r = .313, p < 0.05). All other correlations were non-significant.

Research Question 1

The first research question asked: Is there a relationship between a state's inclusion of PreK and Kindergarten-12th grade SEL standards and the

Table 1
Social Emotional Learning Standards by State

State	# of PreK Standards	K-12 Free-standing	# of K-12 Health/PE Standards	# of K-12 Coun-seling Standards	Places all standards imple-mented
Alabama	5	No	5	5	PreK, Health, Counseling
Alaska	5	No	5	5	PreK, Health, Counseling
Arizona	5	No	5	0	PreK, Health
Arkansas	5	No	5	0	PreK, Health
California	4 (no RD)	No	5	0	Health
Colorado	5	No	5	0	PreK, Health
Connecticut	5	Yes	5	5	PreK, Freestanding, Health, Counseling
Delaware	5	No	5	0	PreK, Health
Florida	4 (no RD)	No	5	0	Health
Georgia	4 (no RD)	No	5	0	Health
Hawaii	4 (no RD)	No	5	0	Health
Idaho	5	Yes	5	5	PreK, Freestanding, Health, Counseling
Illinois	5	Yes	5	5	PreK, Freestanding, Health, Counseling
Indiana	4 (no RD)	Yes	5	5	Freestanding, Health, Counseling
Iowa	4 (no RD)	No	5	0	Health
Kansas	5	No	5	0	PreK, Health
Kentucky	4 (no RD)	No	5	0	Health
Louisiana	4 (no RD)	No	4 (no SO)	0	None
Maine	4 (no RD)	Yes	4 (no SA)	0	Freestanding
Maryland	4 (no RD)	No	5	0	Health
Massachusetts	4 (no RS)	Yes (KG only)	5	0	Health
Michigan	3 (no SM, RD)	No	5	0	Health
Minnesota	5	No	5	0	PreK, Health
Mississippi	4 (no RD)	No	5	0	Health
Missouri	3 (no SM, RD)	No	5	3 (no SO, RD)	Health
Montana	5	No	5	0	PreK, Health
Nebraska	5	No	5	0	PreK, Health
Nevada	5	No	5	0	PreK, Health
New Hamp-shire	5	No	5	0	PreK, Health
New Jersey	5	No	5	0	PreK, Health
New Mexico	5	No	5	0	PreK, Health
New York	5	No	5	0	PreK, Health
North Caro-lina	5	No	5	0	PreK, Health
North Dakota	5	No	5	0	PreK, Health
Ohio	5	Yes (K-3 only)	0	5	PreK, Counseling
Oklahoma	4 (no RD)	No	5	0	Health

Oregon	5	No	5	5	PreK, Health, Counseling
Pennsylvania	5	Yes	5	5	PreK, Freestanding, Health, Counseling
Rhode Island	5	No	5	5	PreK, Health, Counseling
South Carolina	5	No	5	5	PreK, Health, Counseling
South Dakota	5	No	5	0	PreK, Health
Tennessee	5	No	5	5	PreK, Health, Counseling
Texas	5	No	5	5	PreK, Health, Counseling
Utah	5	No	5	5	PreK, Health, Counseling
Vermont	5	No	5	0	PreK, Health
Virginia	5	No	5	5	PreK, Health, Counseling
Washington	5	Yes	5	5	PreK, Health, Counseling
West Virginia	5	Yes	5	5	PreK, Health, Counseling
Wisconsin	5	No	5	3 (no SM, SO)	PreK, Health
Wyoming	5	No	5	0	PreK, Health

Note: CASEL standards: SA (Self-Awareness), SM (Self-Management), SO (Social Awareness), RS (Relationship Skills), and RD (Responsible Decision Making)

Table 2

Pearson Correlations Between Variables

	Special Education Enrollment	Suspensions	Harassment/Bullying
PreK Standards	.091	-.177	.153
K-12 Health/PE Standards	-.100	-.175	.105
K-12 Counseling Standards	-.074	.031	-.085
K-12 Freestanding Standards	.313*	-.041	-.068
Standards Curricular Location	.138	-.140	.104
Standards Integration	.183	-.035	.120

*Correlation is significant at the .05 level.

percent of students (ages 3-21) eligible for special education? A multiple regression model was tested with the predictor variables PreK standards, K-12 standards in health/physical education, K-12 standards in counseling, K-12 freestanding standards, standards curricular location, and standards integration, and one dependent variable, percent of students ages 3-21 in special education, $R^2 = .217$, $F(6, 43) = 2.442$, $p < .05$. The K-12 standards in counseling had a significant negative regression weight, suggesting states with a greater number of K-12 standards in counseling had lower percentages of students in special education, after controlling for the other variables in the model. The number of PreK standards, K-12 standards in health/physical education, freestanding standards, ways in which the standards were addressed, and number of places where all standards are implemented did not contribute to the regression model, suggesting these variables were not related to percentages of students in special education.

Research Question 2

The second research question asked: Is there a relationship between a state's inclusion of PreK and Kindergarten-12th grade standards and the percent of students in each state reported as harassed or bullied? A multiple regression model was tested with the predictor variables PreK standards, K-12 standards in health/physical education, K-12 standards in counseling, K-12 freestanding standards, standards curricular location, and standards integration, and one dependent variable, percent of K-12 students reported as harassed or bullied, $R^2 = .169$, $F(6, 43) = 1.453$, $p = .217$. Results suggest the model is a poor fit to the data. A

state's inclusion of SEL standards did not predict the percent of students in each state reported as harassed or bullied.

Research Question 3

The third research question asked: Is there a relationship between a state's inclusion of PreK and Kindergarten-12th grade standards and the percent of students with one or more suspensions in each state? A multiple regression model was tested with the predictor variables PreK standards, K-12 standards in health/physical education, K-12 standards in counseling, K-12 freestanding standards, standards curricular location, and standards integration, and one dependent variable, percent of K-12 students with one or more suspensions, $R^2 = .131$, $F(6, 43) = 1.085$, $p = .387$. Results suggest the model is a poor fit to the data. A state's inclusion of SEL standards did not predict the percent of students in each state with one or more suspensions.

DISCUSSION

Studies have shown that students who are involved in social/emotional learning programs and curricula have improved social, emotional, and academic outcomes across various age levels (Caldarella et al., 2019; Morris et al., 2013; Zhai et al., 2015). This study examined the relationship between state curricular standards and outcome variables related to the rates of students receiving special education, bullying, and suspensions. Findings can help guide school teams including school psychologists, school counselors, and educational administrators about SEL standards in their state to advocate for systems change, curricular policies, and prevention and early intervention efforts. This knowledge may also help guide school psychologists' roles related to the dissemination and implementation of SEL standards in the classroom.

Currently, all 50 states have SEL standards embedded in the curriculum; however, where the standards are covered, the number of core competencies addressed, as well as the age ranges in which they are applied varies by state (Eklund et al, 2018). For example, all 50 states have prekindergarten standards that relate to self-awareness and social awareness, but not all states address all five CASEL standards in the prekindergarten curriculum. Thirty-four states have all five CASEL core competencies integrated into their curriculum from prekindergarten to 12th grade, yet these vary by where they are located within the curriculum. Some states implement all standards in multiple types of curricula, so that students gain repeated levels of exposure across numerous contexts, while others may only implement a comprehensive SEL curriculum in the health/physical education setting. Taken together, the results indicate variability in how SEL standards are addressed in each state.

Results from this study found a significant association between rates of special education eligibility and the location of the SEL standards being embedded. States that embed SEL standards within their Counseling curriculum had significantly lower rates of students eligible for special education. Significant associations were not found with states that embed SEL standards in their Health/Physical Education curriculum, nor those that have freestanding SEL standards. It is hypothesized that having a comprehensive SEL curriculum integrated into the Counseling curriculum ensures that counselors are responsible for the implementation of the SEL standards. Counselors, being mental health providers, may be more familiar and comfortable with social-emotional topics and curriculum compared to teachers. They also have extensive mental health training that teachers and physical education instructors typically do not receive, making them especially skilled at delivering SEL (McCormac & Snyder, 2019). Without proper training and ongoing support for general education teachers who are required to teach, assess, and measure SEL objectives, the implementation of SEL curricular standards may not be consistent (Will, 2020). These factors, taken together, may be contributing to the lower rates of special education eligibility among states that embed SEL standards in their counseling curricula.

Results from this study found that states' implementation of PreK and Kindergarten through 12th grade SEL standards were not significantly associated with the percent of students reported as harassed or bullied, nor was it significantly associated with the percent of suspensions. Although results are contrary to previous findings, which suggest SEL programs significantly reduce bullying, victimization, and harassment, and have small effects on reducing out-of-school suspensions (Espelage et al., 2014; Espelage et al., 2015; Mielke & Farrington, 2021), there are several plausible explanations for the results of this study. First, it is possible that state-reported incidents of bullying, harassment, and suspension are too distal as outcome variables to find significant associations.

Relevant research commonly studies student- or teacher-reported bullying and harassment or student-reported SEL competencies as the outcome variables, which are more proximal to the school context in which SEL curricula are being implemented (e.g., Espelage et al., 2014; Nickerson et al., 2019). Another consideration is the presence of other relevant variables that were not within the scope of this current study, such as restorative practices or alternative disciplinary procedures that impact state's reported incidents of bullying, harassment, and suspensions. Results may indicate that implementation of SEL curricula in isolation do not reduce incidents of bullying, harassment, or suspensions, and that other factors may mediate or moderate the effects of SEL programs.

Implications for Practice

Educational leaders, such as school boards, administration, and school-based mental health providers (e.g., counselors, school psychologists, and social workers), can ensure students receive and benefit from SEL instruction in several ways. First, school psychologists may advocate for SEL curricula to be covered within the Counseling curriculum. This ensures that individuals trained as school-based mental health providers are responsible for implementing, evaluating, and progress monitoring the SEL standards. While advocating for SEL objectives to be covered within the Counseling curriculum may put more pressure on the role of school counselors, school psychologists can utilize their knowledge and experience with social and emotional development to ensure students receive and benefit from SEL instruction in several ways. For example, school psychologists can assist with the implementation, evaluation, and progress monitoring of the SEL standards. School psychologists have unique training and knowledge to assist their districts in establishing clear standards and curriculum to address students' social/emotional functioning, as well as skills in consulting and collaborating with other allied mental health professionals. Schools should consider how to best use the knowledge and skills of all school-based mental health support professionals, such as school psychologists, school counselors, and school social workers, to make SEL curriculum efforts comprehensive and cohesive for all students.

While teachers are often experts in academic curriculum, many receive limited training, professional development, and mentoring related to behavior management and social emotional learning (Schonert-Reichl, 2017). Yet, in many states teachers may be required to implement SEL curriculum and measure student outcomes with little professional preparation and lack of support from administrators and staff (Cancio et al., 2014). The rich training and competencies that school psychologists offer to students and school staff, both directly and indirectly, can not only influence the implementation of SEL standards, but may also impact long-term outcomes, such as positive student success and teacher retention (Gonzalez et al., 2008). Educational administrators, counselors, and school psychologists can also provide professional development training about SEL curriculum and instruction to teachers within their district (Maras et al., 2015; Meyers et al., 2015; Palacios & Lemberger-TrueLove, 2019).

Schools seeking to reduce bullying, harassment, and suspensions may need to implement curricula that are more targeted, such as bullying prevention programs with an SEL framework. Inclusion and implementation of SEL standards alone may not be enough to impact changes. Selecting a targeted curriculum may be more appropriate for addressing these areas, especially when implemented as part of a school-wide system of learning support. Given the possibility that state-reported data may be too distal as outcome variables, schools may consider gathering data at a more proximal or local level. Doing so will help determine if SEL curricula are contributing a positive effect on the classrooms, schools, or districts that are implementing such programs (Joyce & Cartwright, 2020). Such data will be valuable as educational leaders plan policy and resource allocations for their local contexts.

Part of the school psychology role is advocacy for the well-being of students and their educational experience (NASP, 2020). School psychologists can take an active role to understand how SEL standards are implemented and designed at the state and local levels. This information can inform systems change and advocacy efforts for the benefit of students and expansion of their own job roles. Meyers et al. (2015) provide further guidance for school psychologists to engage in systems level consultation geared at addressing SEL learning by outlining steps taken to implement an SEL curriculum and objectives across several districts. Additionally, Maras et al. (2015) describe a process of creating a tiered response model for SEL. School psychologists can also visit the CASEL (2020) website to obtain resources highlighting evidence-

based SEL programs at preschool, elementary, and secondary levels.

Limitations and Future Directions

This manuscript reports on an exploratory study examining the relationship between SEL standards, rates of special education eligibility, bullying/harassment, and suspensions. Further analysis is needed to determine factors that contribute to the significant differences in special education populations between states who have SEL standards within their Counseling curriculum and those that do not. This study did not examine variables related to implementation modes such as universal curricula, multi-tiered system of supports, or targeted instruction. Future studies may examine these implementation variables. Related variables such as training, accountability, and fidelity of SEL standard implementation are also important for further study. Meyers et al. (2019) referenced a starting point for integrating SEL leadership teams and addressing SEL implementation quality. CASEL's School Guide can also be utilized as a guide for planning, implementing, and monitoring SEL curriculum (CASEL, 2020).

Another study limitation involves the exclusion of relevant factors that may influence constructs of interest, due to the nature of the datasets used for this study. For example, state-level variability in special education eligibility exists, and future research could examine the associations between SEL and special education eligibility, while controlling for various factors. Regarding bullying, harassment, and suspensions, future studies may take into consideration a more complex interaction between SEL competencies and school climate. Yang et al. (2021) found that bullying behaviors were not only impacted by SEL competencies, but also perceived school climate. Finally, this data is a reflection of 2017 state populations and 2017-2018 special education numbers. Additional studies should include updated data to determine the temporal influence of SEL standards and relevant outcomes across time.

Conclusion

SEL has an established record of numerous positive impacts for students (Caldarella et al., 2019; Durlak et al., 2011; Morris et al., 2013; Zhai et al., 2015). CASEL (2020) has identified an integrated framework to address SEL through five core competencies emphasized in a variety of settings (i.e., self-awareness, self-management, social awareness, relationship skills, and responsible decision-making). States vary regarding standard implementation and integration (Eklund et al., 2018). The findings from this study are important for educational administrators, counselors, and school psychologists. Administrators are influential in interpretating state standards, understanding how to implement curriculum to meet those standards in their schools, and measure outcomes. School-based mental health providers, such as counselors and school psychologists, receive mental health training that makes them especially skilled at providing SEL curriculum (McCormac & Snyder, 2019). Findings indicate a significant association between rates of special education eligibility and the location of the K-12 SEL standards being embedded. States that embed SEL standards within their Counseling curriculum had significantly lower rates of students eligible for special education. This finding is consistent with McCormick et al. (2019), which suggest that SEL could prevent students from needing intensive special education supports in the future. Currently, only seventeen states implement all five CASEL standards in the Counseling curriculum. Educational administrators, counselors, and school psychologists in the remaining thirty-three states are posed to advocate for system change regarding the SEL implementation and integration location within their schools.

Findings from this study indicate that states' implementation of PreK and Kindergarten through 12^{th} grade SEL standards are not associated with the percent of students reported as harassed or bullied, nor the percent of suspensions. This finding is contradictory to previous study findings regarding harassment or bullying (Brown et al., 2011; Domino, 2013; Espelage et al., 2015) and suspensions (Mielke & Farrington, 2021; Valdebenito, et al., 2018). Further investigation in this area is needed to clearly establish the relationship between SEL, bullying/harassment, and suspensions.

References

Beyer, T., Postert, C., Muller, J. M., & Furniss, T. (2012). Prognosis and continuity of child mental health problems from preschool to primary school: Results of a four-year longitudinal study. *Child Psychiatry & Human Development, 43*, 533-543. https://doi.org/10.1007/s10578-012-0282-5

Brown, E. C., Low, S., Smith, B. H., & Haggerty, K. P. (2011). Outcomes from a school-randomized trial of Steps to Respect: A bullying prevention program. *School Psychology Review, 40*(3), 423-443. https://doi.org/10.1080/02796015.2011.12087707

Butterworth, P., & Leach, L. S. (2018). Early onset of distress disorders and high-school dropout: Prospective evidence from a national cohort of Australian adolescents. *American Journal of Epidemiology, 187*(6), 1192-1198. https://doi.org/10.1093/aje/kwx353

Caldarella, P., Millet, A. J., Heath, M. A., Warren, J. S., & Williams, L. (2019). School counselors use of social emotional learning in high school: A study of the Strong Teens curriculum. *Journal of School Counseling, 17*(19), 1-35. https://doi.org/10.1080/19404476.2019.1701868

Cancio, E. J., Albrecht, S. F., & Johns, B. H. (2014). Combating the attrition of teachers of students with EBD: What can administrators do? *Intervention in School and Clinic, 49,* 306-312. https://doi.org/10.1177/1053451213513953

Collaborative for Academic, Social and Emotional Learning. (2023). *Fundamentals of SEL*. Retrieved on January 23, 2023 at https://casel.org/fundamentals-of-sel/

Collaborative for Academic, Social and Emotional Learning. (2020). *Core SEL competencies*. Retrieved on January 10, 2020 at https://casel.org/core-competencies/

Domino, M. (2013). Measuring the impact of an alternative approach to school bullying. *Journal of School Health, 83*(6), 430-437. https://doi.org/10.1111/josh.12047

Dowling, K., Simpkin, A. J., & Barry, M. M. (2019). A cluster randomized-controlled trial of the MindOut social and emotional learning program for disadvantaged post-primary school students. *Journal of Youth and Adolescents, 48*, 1245-1263. https://doi.org/10.1007/s10964-019-00987-3

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405-432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Dusenbery, L., Weissberg, R. P., Goren, P., & Domitrovich, C. (2014, January). State standards to advance social and emotional learning: Findings from CASEL's state scan of social and emotional learning standards, prekindergarten through high school, 2014. https://casel.org/wp-content/uploads/2016/06/casel-brief-on-state-standards-january-2014.pdf

Eklund, K., Kilpatrick, K. D., Kilgus, S. P., & Haider, A. (2018). A systematic review of state-level social-emotional learning standards: Implications for practice and research. *School Psychology Review, 47*(3), 316-326. https://doi.org/10.17105/SPR-2017.0116.V47-3

Elias, M. J., DeMarchena, S., & Luce, F. (2018). Leading a multi-tiered approach to bringing social-emotional and character development to regular and special education students. *Journal of Educational Leadership and Policy Studies, Special Issue II*, 11-18. https://go.southernct.edu/jelps/files/JELPS-Spring-2018-Special-Issue-Leadership-for-Individuals-with-Special-Needs_Final.pdf

Espelage, D. L., Low S. K., & Jimerson, S. R. (2014). Understanding school climate, aggression, peer victimization, and bullying perpetration: Contemporary science, practice, and policy. *School Psychology Quarterly, 29*(3), 233-237. https://doi.org/10.1037/spq0000090

Espelage, D. L., Rose, C. A., & Polanin, J. R. (2015). Social-emotional learning program to reduce bullying, fighting and victimization among middle school students with disabilities. *Remedial and Special Education, 36*(5), 299-311. https://doi.org/10.1177/0741932514564564

Every Student Succeeds Act (ESSA) of 2015, Pub. L. No. 114-95 (2015).

Finning, K., Ford, T., Moore, D. A., & Ukoumunne, O. C. (2020). Emotional disorder and absence from school: Findings from the 2003 British Child and Adolescent Mental Health Survey. *European Child & Adolescent Psychiatry, 29,* 187-198. https://doi.org/10.1007/s00787-019-01342-4

Gonzalez, L., Brown, M. S., & Slate, J. R. (2008). Teachers who left the teaching profession: A qualitative understanding. *The Qualitative Report, 13*(1), 1-11. https://nsuworks.nova.edu/tqr/vol13/iss1/1

Greenburg, M. T., Domitrovich, C. E., Weissberg, R. P., & Durlak, J. A., (2017). Social and emotional learning as a public health approach to education. *Future of Children, 27,* 13-32. https://doi:10.1353/foc.2017.0001

IBM Corp. (2019). IBM SPSS statistics for Mac, Version 26.0. IBM Corp.

Joyce, K. E., & Cartwright, N. (2020). Bridging the gap between research and practice: Predicting what will work locally. *American Educational Research Journal, 57*(3), 1045-1082. https://doi.org/10.3102/0002831219866687

Kendziora, K., & Yoder, N. (2016, October). *When Districts Support and Integrate Social and Emotional Learning (SEL): Findings From an Ongoing Evaluation of Districtwide Implementation of SEL*. American Institutes of Research. https://files.eric.ed.gov/fulltext/ED571840.pdf

Kincaid, A. P., & Sullivan, A. L. (2019). Double jeopardy? Disproportionality in first juvenile court involvement by disability status. *Exceptional Children, 85*(4), 453-370. https://doi.org/10.1177/0014402918819101

McCormac, M., & Snyder, S. (2019). District initiative to improve tier 1 with evidenced-based classroom lessons. *Professional School Counseling, 22*(1b), 1-11. https://doi.org/10.1177%2F2156759X19834438

McCormick, M. P., Neuhaus, R., Parham Horn, E., O'Conner, E. E., White, H. S., Harding, S., Cappella, E., & McClowry, S. (2019). Long-term effects of social-emotional learning on receipt of special education and grade retention: Evidence from a randomized trial of Insights. *AERA Open, 5* (3), 1-21. https://doi.org/10.1177/2332858419867290

Maras, M. A., Thompson, A. M., Lewis, C., Thornburg, K., & Hawks, J. (2015). Developing a tiered response model for social-emotional learning through interdisciplinary collaboration. *Journal of Educational and Psychological Consultation, 25*, 198-223. https://doi.org/10.1080/10474412.2014.929954

Meyers, D., Domitrovich, C., Dissi, R., Trejo, J., & Greenburg, M. (2019). Supporting systemic social and emotional learning with a schoolwide implementation model. *Evaluation and Program Planning, 73*, 53-61. https://doi.org/10.1016/j.evalprogplan.2018.11.005

Meyers, A., Tobin, R., Huber, B., Conway, D., & Shelvin, K. (2015). Interdisciplinary collaboration supporting social-emotional learning in rural school systems. *Journal of Educational and Psychological Consultation*, 25, 109-128. https://doi.org/10.1080/10474412.2014.929956

Mielke, M., & Farrington, D. P. (2021). School-based interventions to reduce suspensions and arrest: A meta-analysis. *Aggression and Violent Behavior, 56.* https://doi.org/10.1016/j.avb.2020.101518

Morris, P., Millenky, M., Raver, C. C., & Jones, S. M. (2013). Does a prekindergarten social and emotional learning intervention pay off for classroom instruction and children's behavior and academic skills? Evidence from the foundations of learning project. *Early Education and Development, 24*, 1020-1042. https://doi.org/10.1080/10409289.2013.825187

National Association of School Psychologists. (2020). *The Professional Standards of the National Association of School Psychologists.* Author. https://www.nasponline.org/standards-and-certification/nasp-2020-professional-standards-adopted

Nickerson, A. B., Fredrick, S. S., Allen, K. P., & Jenkins, L. N. (2019). Social emotional learning (SEL) practices in schools: Effects on perceptions of bullying victimization. *Journal of School Psychology, 73*, 74-88. https://doi.org/10.1016/j.jsp.2019.03.002

Palacios, A., & Lemberger-Truelove, M. (2019). A counselor-delivered mindfulness and social-emotional learning intervention for early childhood educators. *Journal of Humanistic Counseling, 58*, 184-202. https://doi.org/10.1002/johc.12119

Schafer, J. L. (1999). Multiple imputation: A primer. *Statistical Methods in Medical Research, 8*, 3-15. https://doi.org/10.1177/096228029900800102

Schonert-Reichl, K. A. (2017). Social emotional learning and teachers. *The Future of Children, 27*(1), 137-155. https://doi.org/10.1353/foc.2017.0007

Schonfeld, D. J., Adams, R. E., Fredstrom, B. K., Weissberg, R. P., Gilman, R., Voyce, C., Tomlin, R., & Speese-Linehan, D. (2015). Cluster randomized trial demonstrating impact on academic achievement of elementary social-emotional learning. *School Psychology Quarterly, 30*, 406-420. https://doi.org/10.1037/spq0000099

Smith, B. H., & Low, S. (2013). The role of social-emotional learning in bullying prevention efforts. *Theory into Practice, 52*(4), 280-287. https://doi.org/10.1080/00405841.2013.829731

Snyder, T. D., de Brey, C., & Dillow, S. A. (2016, December). *Digest of Education Statistics 2015 (NCES 2016-014).* National Center for Education

Statistics, Institute of Education Sciences, U.S. Department of Education. https://nces.ed.gov/pubs2016/2016014.pdf

Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development, 88*(4), 1156-1171. https://doi.org/10.1111/cdev.12864

Upshur, C., C., Wenz-Gross, M., Rhoads, C., Heyman, M., Yoo, Y., & Sawosik, G. (2019). A randomized efficacy trial of the second step early learning (SSEL) curriculum. *Journal of Applied Developmental Psychology, 62,* 145-159. https://doi.org/10.1016/j.appdev.2019.02.008

Will, M. (2020). The success of social-emotional learning hinges on teachers. *Education Week.* https://www.edweek.org/leadership/the-success-of-social-emotional-learning-hinges-on-teachers/2020/04

Yang, C., Chen, C., Lin, X., & Chan, M. (2021). School-wide social emotional learning and cyberbullying victimization among middle and high school students: Moderating role of school climate. *School Psychology, 36*(2), 75-85. http://doi.org/10.1037/spq0000423

Zhai, F., Raver, C. C., & Jones, S. M. (2015). Social and emotional learning services and child outcomes in third grade: Evidence from a cohort of Head Start participants. *Children and Youth Services Review, 56,* 42-51. https://doi.org/10.1016/j.childyouth.2015.06.016

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 92-99

ISSN:2329-5783

Article

Application of a Democratic Approach to Team-Based Problem Solving and Individualized Education Program Teams

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School-based teams, whether mandated or formed by choice, have the potential to support students through collaborative practices that integrate ideas and strategies of diverse team members, including families, school administrators, teachers, and other professionals. The success of teams may be hampered by a hierarchical organization, leaving instructors, parents, and other personnel out of the decision-making process. Here the authors propose an alternate approach that infuses a democratic stance promoting inclusivity, valued difference of opinion, and equitable school-based teams. This article will highlight both the inherent benefits as well as challenges to this approach.

***Keywords*: School-based teams, individualized education program (IEP), educational leadership, democratic process, distributed leadership**

Educators tasked with the monumental roles of preventing, identifying, and addressing students' academic and behavioral challenges often do so in the context of collaborative teams (Burns, Kanive, & Karich, 2014). While in some cases a team-based approach may be mandated by law or policy (e.g., the Individuals with Disabilities Education Improvement Act [IDEA] 2004), teams may also form because they are perceived to be the most effective way of helping children and adolescents achieve success (Splett et al., 2017; Truscott et al., 2005). Team-based approaches that include family members may also align with initiatives aimed at improving family-school partnering and collaborative approaches to decision-making to support students through both general and special education, particularly when family members are given the opportunity to engage in meaningful ways (Miller, Arthur-Stanley, & Banerjee, 2022; Miller, Love, Kurth, & Zagona, 2019).

Teams may serve multiple purposes in the service of supporting academic and behavioral success for all students. In the context of a multi-tier system of supports (MTSS), teams may develop and support the implementation of screeners to determine which students may be at risk for academic or behavioral difficulties; identify and deploy interventions to address concerns; review and interpret outcome data as interventions are tried; and make data-informed decisions to best meet the needs of learners (Brown-Chidsey, 2016; Plotts & Lasser, 2020).

They may also support inclusion efforts, facilitate communication across key constituents, and enhance collaboration, though barriers to achieving

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these goals are prevalent (Zagona, Miller, Kurth, & Love, 2019). Teams bring together individuals so that they may share their specialized knowledge and skill sets for collaborative problem-solving, thereby closing information gaps and facilitating greater coordination of resources and services.

Though a number of benefits to team-based problem solving and decision making have been identified, "the conditions for effective and efficient practice in schools remain elusive" (Rosenfield et al., 2018, p. 408). In principle, teams offer several advantages over unilateral, top-down decision-making. Multi-disciplinary teams include individuals with unique sets of information to share, varied experiences with the student under consideration, and distinct skill sets. For example, a teacher, school psychologist, parent/caregiver, principal, and speech therapist exchange data, ideas, and recommendations that inform problem identification, analysis, intervention, and evaluation.

Though parents and caregivers are often invited to participate in school-based teams, some report that they have not been given the opportunity to engage in a meaningful way. For example, some fathers have described the process as "educator-driven, meaning that educators might provide parents with testing data, recommend goals, and leave little room for the parents to respond, contribute, or discuss" (Mueller & Buckley, 2014). It is important to note that legislation and court rulings mandate parent involvement in the Individualized Education Program (IEP) process, and that there may be many good reasons to involve family members beyond compliance and mandates. Even so, a body of research on small groups indicates that the characteristics and processes of groups determine whether they are effective at accomplishing their goals, and that consideration should be given to how groups are organized and structured to promote success (Batalha, Niemeyer, Dryzek, & Gastil, 2019; Gastil, 1992).

The importance of democratic values and processes in public education has a long history that falls beyond the scope of this article, but here we highlight some current thinking on this topic to set the stage for a case example. Scholars in educational philosophy note that schools are important public/civic democratic sites, and that our society at large is in a state of crisis, given the widespread proliferation of misinformation, declining trust in institutions, and divisive rhetoric (DeCesare, 2020). Given the pressing need to integrate democratic values in public education, the absence of intentionality is striking. For example, Bullough (2022) reviewed mission statements and supporting documents from all 41 school districts in Utah and found that only 4 of the 41 included *democratic* or *democracy*. Democratic values in school have the potential to manifest in staff meetings, classrooms, family-school partnering activities, and IEP teams. Stitzlein (2020) sees parental dissent as an important expression of citizens' democratic responsibilities, noting that it, "may lend greater political legitimacy to, and lead to greater publicness in, our public schools" (p. 368).

Gastil (1992) notes that democratic teams must be inclusive groups that are egalitarian, committed to a democratic process, engaged in democratic deliberation (e.g., everyone has equal opportunity to speak, set the agenda, vote, dissent, etc.), demonstrative of democratic relationships (e.g., acknowledgement of individuality and recognition of mutuality), and characterized by consideration (e.g., listening and consideration). Moreover, democratic groups must have sovereign power to make decisions. In the following case example, we explore the degree to which a school-based team manifests these democratic group traits.

Case Example

Simon, a 3rd grade student at Miller Elementary School, had been identified last year as a student with a disability under the classification of Emotional Disturbance (inappropriate types of behavior or feeling under normal circumstances). His teacher, Mrs. Beltran, described Simon at the beginning part of the school year as upbeat, focused, and attentive in class. Over the course of the academic year, Mrs. Beltran noted that Simon was accruing more absences, and when he was present in class, often wore the same set of clothes from the previous class day. The clothes began developing an odor that became apparent to his classmates, causing his peers to pick fun at Simon. The words used by his peers were insulting and demeaning.

In response to the teasing, Simon began acting out, which adversely impacted the overall learning environment in the classroom. Simon began using explicit profanity, challenging his teacher's authority, and raising his voice. These behaviors were disruptive and difficult for Mrs. Beltran to manage. As a new teacher to the school, Mrs. Beltran shared with her

principal that she felt ill equipped to manage Simon's behavioral challenges in the classroom. After consulting with the principal and school social worker, Mrs. Beltran called a team meeting to discuss the concerns and identify solutions.

At the meeting, Mrs. Beltran shared her frustration and feelings of becoming disoriented and overwhelmed by Simon's behavior in the classroom. Mr. Wood, LCSW *(Licensed Clinical Social Worker)* chimed in to share his view based on his infrequent but noteworthy interactions with Simon. He vaguely referred to Simon's "issues at home" but did not elaborate.

Mr. Wood and Mrs. Beltran agreed that involving Simon's parents would be helpful to offer further insight into what may be occurring within the home and potentially deepen the understanding of Simon's behavior in the classroom. Principal Lopez interceded by using her position of power to emphasize Simon's behaviors through a punitive, disciplinary lens. She recommended that Simon's behavioral concerns be addressed not through collaborative problem-solving, but rather through strict application of punishments for misbehavior. Even though a behavior intervention plan had been developed for Simon, Principal Lopez made it clear that she would not consider anything but a strict and punitive response to Simon's behaviors.

Mr. Wood reached Simon's mother by phone to engage her in supporting Simon's success at school, but she reported that she trusted the school "to do what's best for Simon." When asked for more information, her response suggested that she did not see herself as someone whose voice mattered with respect to school-based decisions.

This case study highlights how administrators and teachers must be aware of, and effectively incorporate a democratic approach which aims at improving the outcome of success for all students. As Simon's case illustrates, student concerns are not simplistic nor should be addressed without giving a voice to all who have an interest in supporting him. Absent from the decision-making case is Simon's mother, who could potentially be instrumental in helping the team support Simon's success.

Students' behavior is best understood in an ecological context, and to conceptualize learning and behavioral concerns, educators will find that active listening and collaborative problem-solving in a democratic framework allow for a greater capacity to see a child in an ecosystemic context. Consider how addressing Simon's concerns would have been different had the principal collaboratively engaged with the teacher, social worker, school psychologist, and parents.

We recognize that even when schools make concerted efforts to engage in collaborative problem solving, teams may still be vulnerable to intentional or inadvertent social influences that may diminish the degree to which members may freely share their ideas and opinions (Klose & Lasser, 2007; Klose & Lasser, 2014). For example, team members may fail to make the best decisions for students under perceived pressure from authority figures (e.g., school administrators or outside experts). As was documented in Stanley Milgram's (1965) famous experiments, individuals who are instructed by an authority figure to engage in a behavior (e.g., punishing volunteers with what is believed to be an electric shock) may do so even if it makes them uncomfortable. Similarly, a school principal with supervisory authority over teachers and staff may apply pressure to make decisions that individuals would not otherwise make (e.g., placing a student in a more restrictive learning environment).

The adverse impact of social pressures may be mitigated by teams who are knowledgeable about social psychology, make explicit their awareness of how groups behave, and actively work to foster collaboration and shared decision-making. The intentional focus on the potential pitfalls of group dynamics (e.g., tendency toward conformity rather than the deliberate focus on individual thought) may promote better decision-making. When team members approach collaboration with the intention of actively listening to all participants and an openness to varied perspectives, teams may be more likely to overcome those obstacles that have been discussed.

Anecdotal data suggest that professional development workshops for educators have not adequately addressed the need for preparation in effective teaming, the social psychology of groups, and how teams may collaborate more effectively. In fact, some school professionals have expressed disdain for collaborative teaming (Rosenfield & Gravois, 1999). Given the strong empirical support for collaborative consultation and team-based processes (e.g., Miller, Arthur-Stanley, & Banerjee, 2022; Smith et al., 2020), the development of the necessary skills and practices makes good sense. Pre-service and in-

service professional development workshops about effective school-based teams may support better engagement in collaborative problem solving to address concerns about students' academic, social, emotional, and behavioral success. In fact, a lack of training has been identified as a limiting factor when studying effective teaming (Rosenfield et al., 2018). Though effective training programs, such as Team Initiated Problem-Solving (TIPS) (see Horner et al., 2018) exist, our purpose here is to foster greater democracy in school-based decision-making. We focus our attention here on how special education directors, principals, and other educators may play a critical role in school-based teams and effectively promote the application of democratic processes, particularly in special education IEP teams.

Educational Leadership and School-based Teams

School leadership is a critical component to the overall functioning of a school. Effective school leaders create environments where teachers do not want to leave, students are engaged in learning, and parents see a burgeoning school-community partnership (Miller, Arthur-Stanley, & Banerjee, 2022). Recent scholarship has promoted the need for school leaders to be culturally responsive, while also positively impacting the overall school climate (Khalifa et al., 2016). This also includes fostering individualized education and adequate learning opportunities for special education students. IEPs, mandated by Federal law, ensure that students with disabilities have a free and appropriate public education (FAPE) in the least restrictive environment. As such, they have fostered inclusive education (Bray et al., 2018). While schools exert considerable influence on the implementation of IEPs, school leaders can prohibit or impede the delivery of individualized instruction, support, and resources for students with special needs (Ainscow & Sandill, 2010; Lambrecht et al., 2020). Some of this can be due to school leaders feeling unprepared for the administrative duties required for special programs (Goor & Schwenn, 1995), or how administrator preparation programs have shifted from providing coursework specifically on special education policies or practices. Prior research has alluded to principals feeling overwhelmed by the number, diversity, and severity of children classified as students with disabilities in their schools (Garrison-Wade, 2007).With over 7 million K-12 students enrolled in special education programs (National Center for Education Statistics, 2020), and more students being identified as needing special education services, the preparation of school leaders should include developing knowledge and skills for managing the diverse needs in their schools, including how to properly instruct and provide resources for special needs populations. Professional development opportunities for school administrators and pre-service individuals may address these competencies by integrating leadership models that embrace democratic, collaborative processes. Here we introduce distributive leadership as one such model and propose an explicit commitment to democratic school-based teams.

Distributed Leadership Model

Distributed leadership began as a framework to understand the formal and informal activities that leaders have undertaken within an organization (Spillane, 2004). A component of that framework was for endeavors within an organization to be 'distributed' among all leadership types and levels (Harris & DeFlaminis, 2016). Over the years, as educational improvement initiatives have shifted to solving building level problems and implementing state policy, leaders have been tasked to implement programs and policies that required a more collaborative approach. As public education demands and responsibilities increase for school leaders, emerging challenges require different responses and viewpoints. The use of teams has been one way to collaborate and implement distributed leadership strategies when it comes to providing educational programming and policies that influence a school's culture and climate.

Teams provide the opportunity to collaborate and shift leadership from the actions of one individual to a collective effort that involves all relevant stakeholders. Distributed leadership is influenced by the organizational structures that have been created through an organization's culture and values, thus impacting the operational roles of teams when it comes to executing IEP policies and practices. Critiques of distributed leadership have questioned its democratic nature in practice, and its approaches to power (Woods, 2016). Researchers have found that distributed leadership can reproduce inequality through prevailing assumptions and established power differences that could exist within schools (Lumby,

2013). The unequal distribution of social and professional capital can influence how well distributed leadership is infused within organizations.

We recognize that, even with the best intentions, encouraging others to voice their opinions and share responsibility may not always yield the desired results, particularly when team members feel that sharing is unsafe (Kwon & Farndale, 2020). For example, a teacher may be unwilling to express a minority viewpoint for fear of a negative appraisal, even though divergent perspectives may lead to better student outcomes. We can expect great participation from all team members when we go beyond creating policies and practices that promote active engagement and meaningful participation from all team members, taking time to bring about the conditions in which individuals feel safe when sharing their voices (for a more thorough discussion of these conditions see Kwon & Farndale).

A Proactive Approach

We believe that, with the support of school leaders, teams may make an explicit commitment to a democratic process to ensure that all voices are heard and valued. Merely paying lip service to shared governance and meaningful participation from all team members will fall short of a truly egalitarian team. Moreover, bureaucratic accountability systems that focus on compliance are likely to miss the mark, with an emphasis on paperwork rather than substantive, democratic engagement.

The adoption of an explicit commitment to a democratic process may assist school-based teams in embracing and applying these principles when meeting to address student concerns. To this end, we have crafted a sample statement that could be read at the beginning of meetings, posted on the walls of conference rooms, and shared with parents, teachers, and staff through multiple modes of communication (email, newsletters, memos, etc.). Given the ways in which individuals may be discouraged from engaging in the process discussed earlier (e.g., social psychological pressures like authority), the production and distribution of a statement like the one below may be seen as a social invitation or permission to engage.

Sample statement of commitment to democratic process

In this meeting,

All voices will be heard
We will value diversity and difference of perspectives
We aspire make decisions that are agreed upon by all members
We will not let rank or title dictate the process
We will accomplish tasks by utilizing the knowledge and skill set of every individual on this team
We will build trust within our team, school, and students by acting with integrity
We will seek resolution that is mutually agreed upon
We will not be afraid to ask questions
We will respect each person's individual values
Together we will strive to tackle all obstacles that impact the students we serve.

Recommendations

We recognize that the enormity of building a culture of effective teaming cannot be easily addressed with a quick fix or simple intervention. Our proposal of making explicit a commitment to democratic processes represents a concrete step that must also be embedded in a robust shift away from top-down approaches that have historically discouraged the meaningful participation of all team members. We acknowledge that in systems that have long embraced a top-down approach, there will likely be great resistance to change. Here we offer other recommendations that may enhance school-based teams' capacity to build more democratic and equitable processes.

To cultivate a culture of democracy in a school, begin by asking questions that may assist in assessing the current climate (Van Benthuysen, 2018). Questions that may be considered include: When teams meet, whose voices are most often heard? Whose voices are rarely heard? What are the school's explicit values (e.g., as enshrined in a mission statement)? Do the explicit values incorporate democratic principles? To what extent do policies and practices align with the stated values? What factors may make participation feel unsafe? These questions should be considered by school leaders and other professional educators as a reflective practice, and it is vital to note that the success of this activity may be limited by biases and limited perspective taking. An anonymous survey of parents/caregivers, teachers, and staff about the school culture may shed light on how diverse individuals perceive the climate.

In addition to the engagement around the explicit values, the examination of the school's

implicit values should also be considered. Granted, identifying that which is implicit will be more difficult than assessing that which is explicit, but this information may be critical for determining what course of action should be taken to make decision-making processes more democratic. For example, whereas the explicit value states that all voices are valued, the school may operate on an implicit value of expertise that manifests itself in privileging the voices of professional educators over families and community members. Therefore, any climate assessment should study not only what stakeholders say the value, but also how values are expressed.

Once the climate and culture has been assessed, schools may use this information to address areas in which democratic processes are missing, voices have not been heard, and teams have not permitted all members to engage equally. Conducting an anonymous survey may not only reveal inequities in current processes, and communication networks; but may also give voice to those diverse communities, otherwise fearful of speaking up.

One must identify problems before solving them, so schools are advised to avoid putting the cart before the horse when trying to build a culture of democracy. Once targets for intervention are identified, schools may set observable, measurable goals that can later be assessed. Schools that are committed to continuous improvement may also collect data when democratic principles are applied to policies and practices, which could be integrated with action research models (Hines, 2016). Research questions may address relationships between democracy and student outcomes, family engagement, employee satisfaction, and other variables of interest. Given the nature of democratic experiences, action researchers may consider qualitative approaches such as phenomenological research (Guba & Lincoln, 1994), which models the democratic values that are being studied, as participants' experiences are recognized as valid.

School leaders may also underscore the importance of democratic values by downplaying their positions of power and privilege in the interest of amplifying the voices of others. This can be done by active listening before talking, placing parents/caregivers at the head of the table, removing physical signals of status (e.g., name tags, diplomas), and approaching others from an egalitarian, non-hierarchical stance. The deemphasizing of status communicates to others that school leaders have shared values, shared power, and shared goals with family members. This approach is consistent with the fundamentals of deliberative democratic processes, in which empathic understanding is enhanced (Hannon, 2019).

Teachers and professionals who work primarily with special education may be in an excellent position to foster and promote democratic processes in team meetings, particularly IEP teams. For example, a school psychologist who takes a leadership role in an IEP meeting may make explicit the multidisciplinary composition of the assessment team. They may also ensure that all members of the IEP team, including parents and caregivers, can engage in meaningful participation.

When teams meet, it may be helpful to have each team member complete a brief post-team questionnaire that can include questions with a response range from Strongly Agree to Strongly Disagree such as:

In this meeting, I felt I could safely share my point of view.

In this meeting, I believe others felt they could safely share their points of view.

In this meeting, decisions were made democratically.

In this meeting, I felt a hierarchy approach was evident.

Teams are encouraged to collect data for at least a year, by doing so, said teams' data may shed light on trends both positive and negative in terms of implementing that desired culture shift. Ideally such trends might provide teams with ideas for creating new processes that honor democracy and equitability, with the end goal being to dismantle the ancient hierarchical approach and give birth to true democracy.

Several limitations regarding the arguments advanced here should be noted. First, though we believe that the application of democratic values and processes should benefit students, we currently do not have empirical support that this is effective specifically in school-based teams (though a body of research has clearly demonstrated the benefits of democratic deliberation in small groups; see Batalha et al., 2019; Gastil, 2018). Second, we recognize that advancing democratic principles may be hard to achieve in school systems that have traditionally operated on top-down, authoritarian models, though

we think that the potential gains are worth the effort and have offered alternative models (e.g., distributed leadership). Lastly, we recognize that cultural factors may also present challenges to increasing the degree to which schools function in a democratic milieu, given that some families and staff may have different ideas about authority, shared governance, and decision-making. Despite these limitations, we believe that advancing democracy in public education would advance the wellbeing of all parties.

References

Ainscow, M., & Sandill, A. (2010). Developing inclusive education systems: The role of organisational cultures and leadership. *International Journal of Inclusive Education*, *14*(4), 401-416.

Batalha, L., Niemeyer, S., Dryzek, J., & Gastil, J. (2019). Psychological mechanisms of deliberative transformation: The role of group identity. *Journal of Public Deliberation, 15*, (n.p.). Retrieved from: https://www.publicdeliberation.net/jpd/vol15/iss1/art2

Bray, L. E., & Russell, J. L. (2018). The dynamic interaction between institutional pressures and activity: An examination of the implementation of IEPs in secondary inclusive settings. *Educational Evaluation and Policy Analysis*, *40*(2), 243-266.

Brown-Chidsey, R. (2016). *Practical handbook of multi-tiered systems of support: Building academic and behavioral success in schools*. Guilford.

Bullough, R.V. (2022). Refocusing the agenda of public education: District mission statements and the manners of democracy as a way of life. *Democracy and Education, 30*, 1-11.

Burns, M. K., Kanive, R., & Karich, A. C. (2014). Best practices in implementing school-based teams within a multitiered system of support. In P. L. Harrison & A. Thomas (Eds.), *Best practices in school psychology: Data-based and collaborative decision making* (pp. 569–582). National Association of School Psychologists.

DeCesare, T. (2020). Centered democratic education: Public schools as civic centers. *Philosophical Studies in Education, 51*, 33-43.

Garrison-Wade, D., Sobel, D., & Fulmer, C. L. (2007). Inclusive leadership: Preparing principals for the role that awaits them. *Educational leadership and administration: Teaching and program development*, *19*, 117-132.

Gastil, J. (1992). A definition of small group democracy. *Small Group Research, 23*, 278-301.

Gastil, J. (2018). The lessons and limitations of experiments in small group deliberation. *Annual Review of Law and Social Science, 14*, 271-291.

Goor, M. B., Schwenn, J. O., & Boyer, L. (1997). Preparing principals for leadership in special education. *Intervention in School and Clinic*, *32*(3), 133–141.

Grooms, A. A., & Childs, J. (2021). "We need to do better by kids": Changing routines in US schools in response to COVID-19 school closures. *Journal of Education for Students Placed at Risk (JESPAR)*, *26*(2), 135-156.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). Sage.

Hannon, M. (2019). Empathic understanding and deliberative democracy. *Philosophy and Phenomenological Research, 101*, 591-611.

Harris, A., & DeFlaminis, J. (2016). Distributed leadership in practice: Evidence, misconceptions and possibilities. *Management in Education*, *30*(4), 141-146.

Hines, M. E. (2016). *Action research in education*. Oxford.

Horner, R. H., Newton, J. S., Todd, A. W., Algozzine, B., Algozzine, K., Cusumano, D., & Preston, A. (2018). A randomized waitlist controlled analysis of team-initiated problem solving professional development and use. *Behavioral Disorders*, *43*(4), 444–456.

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004).

Khalifa, M. A., Gooden, M. A., & Davis, J. E. (2016). Culturally responsive school leadership: A synthesis of the literature. *Review of Educational Research*, *86*(4), 1272-1311.

Klose, L. M., & Lasser, J. S. (2014). Best practices in the application of professional ethics. In P. L. Harrison & A. Thomas (Eds.), *Best Practices in School Psychology IV* (pp. 449–458). National Association of School Psychologists.

Kohn, A. (2013). Change by decree. Retrieved from https://www.alfiekohn.org/article/change-decree/

Kwon, B., & Farndale, E. (2020). Employee voice viewed through a cross-cultural lens. *Human Resource Management Review*, *30*(1). https://doi-org.libproxy.txstate.edu/10.1016/j.hrmr.2018.06.002

Lambrecht, J., Lenkeit, J., Hartmann, A., Ehlert, A., Knigge, M., & Spörer, N. (2020). The effect of school leadership on implementing inclusive education: How transformational and instructional leadership practices affect individualised education planning. *International Journal of Inclusive Education*, 1-15.

Lasser, J., & Klose, L. M. (2007). The impact of social psychological phenomena on ethical decision-making. *School Psychology Review*, *36*, 484–500.

Lumby, J. (2013). Distributed leadership: The uses and abuses of power. *Educational Management Administration & Leadership*, *41*(5), 581-597.

Milgram, S. (1965). Some conditions of obedience and disobedience to authority. *Human Relations*, *18*(1), 57–76.

Miller, G., Arthur-Stanley, A., & Banerjee, R. (2022). *Advances in Family-School-Community Partnering: A practical guide for school mental health professionals and educators*. Routledge.

Miller, A. L., Love, H. R., Kurth, J. A., & Zagona, A. L. (2019). Parent identity and family-school partnerships: Animating diverse enactments for (special) education decision making. *Inclusion*, *7*(2), 92–110. https://doi-org.libproxy.txstate.edu/10.1352/2326-6988-7.2.92

Mueller, T. G., & Buckley, P. C. (2014). Fathers' experiences with the special education system: The overlooked voice. *Research and Practice for Persons with Severe Disabilities*, *39*(2), 119-135.

National Center for Education Statistics (2020). Students with disabilities. Retrieved from https://nces.ed.gov/programs/coe/indicator_cgg.asp

Plotts, C., & Lasser, J. (2020). *School psychologist as counselor: A practitioner's handbook.* National Association of School Psychologists.

Rosenfield, S., & Gravois, T. (1999). Working with teams in the schools. In C. R. Reynolds & T. B. Gutkin (Eds.), *The Handbook of School Psychology* (pp. 1025-1040). Wiley.

Rosenfield, S., Newell, M., Zwolski, S., Jr., & Benishek, L. E. (2018). Evaluating problem-solving teams in K–12 schools: Do they work? *American Psychologist*, *73*(4), 407–419. https://doi.org/10.1037/amp0000254

Smith, T. E., Holmes, S. R., Sheridan, S. M., Cooper, J. M., Bloomfield, B. S., & Preast, J. L. (2020). The effects of consultation-based family-school engagement on student and parent outcomes: A meta-analysis. *Journal of Educational and Psychological Consultation*, *31*(3). https://doi-rg.libproxy.txstate.edu/10.1080/10474412.2020.1749062

Spillane, J. P. (2004). Educational leadership. *Educational Evaluation and Policy Analysis*, *26*(2), 169-172.

Splett, J. W., Perales, K., Halliday-Boykins, C. A., Gilchrest, C. E., Gibson, N., & Weist, M. D. (2017). Best practices for teaming and collaboration in the interconnected systems framework. *Journal of Applied School Psychology*, *33*(4), 347–368. https://doi-org.libproxy.txstate.edu/10.1080/15377903.2017.1328625

Stitzlein, S.M. (2020). The democratic potential of parental dissenting: Keeping public schools public, legitimate, and educational. *Educational Theory*, *70*, 355-372.

Truscott, S., Cohen, C., Sams, D., Sanborn, K., & Frank, A. (2005). The current state(s) of prereferral intervention teams - A report from two national surveys. *Remedial and Special Education*, *26*(3), 130–140.

Van Benthuysen, H. (2018). Building democratic classrooms: Cultivating civic competencies. Retrieved from https://www.teachingchannel.com/blog/building-democratic-classrooms

Woods, P. A. (2016). Authority, power and distributed leadership. *Management in Education*, *30*(4), 155-160.

Zagona, A. L., Miller, A. L., Kurth, J. A., & Love, H. R. (2019). Parent perspectives on special education services: How do schools implement team decisions? *School Community Journal*, *29*(2), 105–128.

Research and Practice in the Schools
2023, Vol. 10, No. 1, pp. 100-107

ISSN: 2329-5783

Graduate Student Section

School-Based Cognitive Behavioral Therapy for Children with Anxiety Post-COVID

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As students return to in-person school, it is anticipated that many will need support for anxiety and trauma related to the ongoing pandemic. One well-researched intervention that may be conducted within school systems is Cognitive Behavioral Therapy (CBT). This paper shares important considerations and tips for school psychologists seeking to implement CBT in the schools with students with anxiety, post COVID-19.

Key words: anxiety, intervention, social-emotional, mental health

The umbrella term, "mental health", includes a wide variety of concepts that are known for affecting a person's thinking, mood, and/or behavior (Centers for Disease Control and Prevention, 2018). Mental health is an important topic and has gained recognition over the past few years. It has also become more widely discussed in the media in light of the current global pandemic (Gallagher, 2020). Mental health impacts how a person thinks, feels, or behaves in both beneficial and detrimental ways. Moreover, mental health difficulties can increase the risk for many physical health issues as well (Centers for Disease Control and Prevention, 2018). This, combined with the fact that more than 50% of people will experience significant mental health problems at some point in their life (Centers for Disease Control and Prevention, 2018), justifies the growing focus on mental health in our society. More specifically, the COVID-19 pandemic, its impact, and related stressors have put mental health in the spotlight.

For individuals with significant mental health needs, classification of their characteristics and symptoms may aid in treatment. The Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition (DSM-5) contains descriptions, symptoms, and other criteria used by mental health providers across the world as a guide to identifying and diagnosing mental disorders (American Psychiatric Association, 2013). Although many disorders are presented in the DSM-5, anxiety disorders are some of the most prevalent (Anxiety and Depression Association of America, 2020).

Anxiety

Anxiety disorder can be described in general terms as overpowering feelings such as worry, fear, or nervousness that interfere with one's ability to function in their daily life. Secondary characteristics can include feeling restless, wound-up, easily fatigued, difficulty concentrating, irritability, muscle tension, sleep problems, and experiencing gastrointestinal (GI) problems such as an upset stomach (National Institute of Mental Health, 2018). When experiencing symptoms of the disorder, individuals often refer to these symptoms very generally as "anxiety".

Although all anxiety disorders have the commonality of excessive fear or worry in specific situations (National Alliance on Mental Illness, 2017), each type of anxiety disorder can have its own unique set of symptoms. Anxiety can present itself in a variety of ways, leading professionals to classify specific types of anxiety disorders based upon presentation symptoms. These include diagnoses such as generalized anxiety d-

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isorder, separation anxiety disorder, social anxiety disorders, and/or specific phobias (National Alliance on Mental Illness, 2017).

Pre-COVID Statistics

According to the Anxiety and Depression Association of American (ADAA; 2020), anxiety disorders are considered the most common category of disorder in the U.S., affecting nearly 40 million adults every year. Although slightly smaller in quantity, the number of children and adolescents affected by this disorder is just as significant. According to the Centers for Disease Control and Prevention (CDC; 2020), around 7% or approximately 4.4 million children aged 3 to 17 have been diagnosed with an anxiety disorder. Although anxiety disorders are treatable, only 37% of individuals with symptoms seek out and receive treatment (ADAA, 2020).

Impact of the Pandemic on Students

Prior to the COVID-19 pandemic, it was expected that approximately 15 to 20% of students would be identified through a screening as needing some type of mental health support (Dowdy et al., 2015). However, a 2020 study on the impact of COVID-19 on students reported that around 25% of students have experienced some form of anxiety related to the pandemic (Pragholapati, 2020). It is likely that the percentage of students experiencing COVID-19-related anxiety has increased as the year has progressed. Although it cannot be fully determined yet if there has actually been an increase from the time of publication, the anticipated 5-10% increase related to the pandemic is significant.

In order to keep students physically safe and healthy, a number of changes and restrictions have been issued in schools across the country. Some of the many restrictions imposed on students as a result of the COVID-19 pandemic include social distancing, wearing masks, and virtual learning (Centers for Disease Control and Prevention, 2021a). Unfortunately, these added restrictions may make it more difficult to identify the typical indicators students exhibit when experiencing mental health difficulties (American Psychological Association, 2020b). For example, teachers are unable to see a student's body language, nervous habits, or reactions to curriculum in a virtual classroom setting, because only their heads are visible (assuming the student's camera is on) through a computer screen. Not only is the ability to spot indicators for students who need additional support more difficult during this period, but so is providing additional services. School closures may be playing a role in the increase in students' pandemic-related anxiety, as many students receive mental health services exclusively from their school setting. This is especially true for those who lack the resources or finances to seek services outside of the school (Golberstein et al., 2020).

It is also important to consider how the pandemic will affect students long-term. Because many schools are engaged in a hybrid model of education (Lieberman, 2020), students may struggle to adjust back to a "normal" full day, five days a week, schedule. Students who are beginning school for the first time (i.e., kindergarteners or preschoolers) have no prior knowledge of school procedures and expectations prior to the pandemic. Thus, the current circumstances are, in fact, "normal" to them (Fink, 2020). Many students will have to go through a second adjustment period when (or if) full days, mask requirements, and social distancing rules are lifted.

Signs and Symptoms

It is especially important that any educator working with a student knows the signs of anxiety and understands that symptoms of anxiety in children and adolescents are frequently different than those displayed in adults (Pyramid Healthcare, 2018). This is critical because these symptoms can often be misconstrued as behavioral problems or other mental health problems. When considering generalized anxiety disorder, according to the DSM-5, individuals must meet criteria such as the following: worrying excessively and having difficulty controlling worrying, associated symptoms such as restlessness, feeling on-edge, being easily fatigued, difficulty concentrating or mind going blank, irritability, muscle tension, and/or sleep disturbances. In general, these symptoms are present a majority of days across an extended amount of time. Excessive worrying impacts daily functioning and is not attributed to the effects of medications or another medical diagnosis, and the excessive worry is not caused/better explained by another disorder (American Psychiatric Association, 2013). However, it should be noted that the criteria are slightly altered for children. Less symptomatology is required for a child versus that for an adult.

It is important that educators and practitioners

understand the difference between typical anxieties that are present in most students, and a clinically significant presentation of anxiety requiring more formalized intervention and treatment. Many educators, parents, practitioners, and students have experienced some form of hardship and/or trauma related to the ongoing pandemic. However, these experiences do not automatically mean that one's needs rise to a clinical level. Having school-wide social-emotional screeners will help identify some of those students with higher levels of needs. Identifying and grouping students based upon level of need will also be beneficial so that support staff, such as school psychologists or school social workers, can efficiently plan consultative sessions, direct sessions, group sessions, and so on based on the exact level of need.

Treatment

As can be seen above, a significant portion of the U.S. population has an anxiety disorder, diagnosed or undiagnosed. Therefore, the need for effective and available treatment for generalized anxiety is great. Because generalized anxiety is frequently comorbid with other disorders, the importance of interventions cannot be overstated, especially for children (Higa-McMillan et al., 2014). Intervention is typically considered the most effective when implemented during a child's early years, because the connections made in the brain are most adaptable within the first three years of life and over time those connections become more difficult to alter (Centers for Disease Control and Prevention, 2021b). There are multiple treatment modalities available for children impacted by anxiety. For example, treatment options include mindfulness-based psychotherapies (focuses an individual's thoughts onto the present moment), psychodynamic psychotherapy (focuses on an individual's emotions rather than behaviors), and/or psychopharmacological interventions, such as antidepressants (Wehry et al., 2015). One well-researched treatment shown to be effective for the treatment of anxiety disorder is Cognitive Behavioral Therapy, also known as CBT (Wehry et al., 2015).

Cognitive Behavioral Therapy

Overview

Cognitive Behavioral Therapy (CBT) is a form of psychotherapy that was developed in the early 1960s by Aaron Beck (Beck, 2011). CBT is a treatment that focuses on understanding the beliefs or patterns of behavior presented by an individual. The therapist works to assist the client in producing changes or modifications in their thinking or beliefs to bring about emotional and behavioral changes. CBT sessions typically include working to improve behaviors such as identifying the problem and setting a goal, identifying automatic thoughts and emotions, evaluating those thoughts and emotions, and responding to those thoughts and emotions (Beck, 2011).

CBT can be presented in a number of forms and programs, but the main underlying procedures and goals for CBT remain the same. CBT typically includes an initial session, which focuses on learning about someone's mental health condition and any other information necessary to gain a better understanding of the person as a whole. Other steps that are typically included in CBT include identifying stressors or other troubles within the person's life, having the individual become aware of their thoughts, emotions, and beliefs about those stressors, identifying negative or inaccurate thoughts, and then reshaping those negative or faulty thoughts (Fenn & Byrne, 2013). During CBT, individuals may be asked to engage in "homework" tasks or activities outside of the therapy session so that the skills learned during the session can be strengthened and practiced. The number of sessions required for CBT can vary from 5 to 20 or more depending on the person and severity of the problem (Mayo Clinic, 2019). One benefit of CBT is that it can be conducted with a variety of individuals, regardless of age (Beck, 2011).

CBT is a well-researched intervention commonly used to treat mental health problems such as anxiety. It has also been shown to be effective with a wide variety of individuals and problems, such as adults who suffer from eating disorders (Grilo et al., 2011) and Post Traumatic Stress Disorder (PTSD; Schnurr et al., 2007) as well as children and adolescents (Scheeringa et al., 2010). With regard to implementation settings, CBT has been shown to be effective when implemented in the school setting with elementary students (e.g., Chiu et al., 2013), and with students as part of an after-school activity group (e.g., Manassis et al., 2010). In addition to being overall effective as an intervention, CBT has also been shown to be an effective component of prevention programs. For instance, the CBT-based prevention program, Coping Cat© (Kendall, 2018),

has also been shown to reduce children's anxiety levels (Starrenburg et al., 2016).

Modalities

The term "CBT" typically refers to psychotherapy combining behavioral and cognitive approaches (Little & Akin-Little, 2019). Cognitive models typically subscribe to the notion that an individual's perception of a situation predicts their behavioral reaction (Beck, 2011), whereas behavioral models typically emphasize the significant role that reinforcing or punishing consequences of behavior play in learning and behavior (Staddon, 2014). Each of these approaches encompasses a wide variety of intervention forms and techniques. For instance, forms of CBT therapy can include applied behavior analysis, behavior therapy, problem-solving therapy, rumination-focused CBT, and trauma-focused CBT, among many others. Specific techniques can include, but are not limited to, gradual exposure, modeling, role-playing, operant strategies, functional analysis, response chaining, shaping, social skills training, and more (Little & Akin-Little, 2019). Clearly, CBT is not a "one-size-fits-all" approach. Therefore, the logistics of a CBT intervention (e.g. format, content, session duration, frequency, etc.) are based upon a specific case conceptualization and tailored to meet the client's or student's needs.

School-based CBT can be implemented at three different levels: universal, selective, and indicated (Little & Akin-Little, 2019), which correspond to school psychologists' use of Multi-Tiered Systems of Support (MTSS) Tier 1, Tier 2, and Tier 3 respectively. School-based CBT programming at Tier 1 or Tier 2 may focus more on larger groups of students, basic problem-solving skills, and general social-emotional regulation skills, whereas Tier 3 CBT may focus more on smaller groups or individuals, with much more targeted skill areas (Greenburg et al., 1995; Kendall, 2018). In fact, specific programs have been created to target each of the tiers so that all students can receive an appropriate level of service. More specifically, support has been shown for school-based, CBT-specific programming at the universal/Tier 1 levels with the Promoting Alternative Thinking Strategies (PATHS) curriculum (Greenburg et al., 1995), and at more individual/Tier 2 or Tier 3 levels with the Coping Cat curriculum (Kendall, 2018). Practitioners who are seeking a more prescribed curriculum for implementing CBT may wish to explore programs such as these. It is also important to note that there is less research on school-based CBT programs than those implemented outside of the school. Continued research in this area would be beneficial.

CBT Implementation Tips Post-COVID

The primary role of a school psychologist is to assist in improving academic achievement, promote positive behavior and mental health, and support diverse learners. Yet, school psychologists have multiple roles and a unique and comprehensive skill-set. School psychologists also create safe and positive school climates, strengthen family-school partnerships, improve school-wide assessment and accountability, and monitor individual student progress in academics and behavior (National Association of School Psychologists, 2014). School psychologists are also well equipped to use and advocate for evidence-based practices within the school, and to match those practices to students' needs. Thus, with their combined educational knowledge and practical experiences, school psychologists are excellent candidates to assist in the implementation of CBT in schools with both special education and general education populations. With parent/guardian consent, working with the general education population may actually be beneficial to the school psychologist, allowing them to build rapport with students who may have significant enough needs that they may be referred for further evaluation at a later time.

Before implementing a CBT intervention in the schools post-COVID, there are a few factors of which school psychologists should be aware. To start, data should be reviewed to identify students who were considered at-risk prior to the school closures. This may include students with pre-existing conditions, such as anxiety, behavioral concerns, or those who previously received support (National Association of School Psychologists, 2020b). As mentioned above, practitioners should be mindful of the differences between typical nervousness and clinical anxiety.

The National Association of School Psychologists (2020b) also suggests that when considering the three tiers of Multi-Tiered System of Supports (MTSS), Tier 2 interventions and supports should not automatically become the new Tier 1 for all students because of the pandemic. The selection of students for Tier 2 intervention should be made after Tier 1, classroom-wide,

supports have been implemented for all students. At that point, it is then appropriate to screen students and determine who would benefit most from Tier 2, or small group supports. Some available resources for screening for anxiety within the schools include: Screen for Child Anxiety Related Disorders (SCARED; Birmaher et al., 1997; Birmaher et al., 1999), Generalized Anxiety Disorder 7-item (GAD-7; Spitzer et al., 2006), and the Behavior Assessment System for Children (BASC-3; Reynolds & Kamphaus, 2015).

Moreover, the ability to structure sessions based on the student's level of need, makes CBT an attractive intervention choice for those students with high levels of anxiety. As mentioned previously, this type of intervention allows for students to complete some of the tasks or activities outside of the session, which is beneficial during the return to school because it allows for continued social distancing when needed. Another aspect to take into consideration is that CBT can be done in brief sessions (CBT that is conducted in 4-8 sessions rather than up to 20), which is typically appropriate for issues such as anxiety. Brief sessions may be a beneficial adjustment to the intervention with the current, pandemic-related fluctuation in school day schedules (Cully & Teten, 2008). It is important to prepare for and consider that there will be a variety of anxiety triggers among students and some students may divulge more than others. Placing students into small groups for the CBT sessions may help them to realize that others are also experiencing similar feelings and that anxiety can produce a variety of different symptoms for any given individual (Pritchard, 2016).

Ideally, the overall goal is for educators and students to return to in-person school full-time. However, the effects and consequences of the pandemic will still likely have a lingering impact. Many students, particularly those who were already behind their typical same-aged peers, are going to feel the effects of the pandemic both academically and emotionally for years to come (Einhorn, 2020). According to the National Association of School Psychologists (2020b), school psychologists need to work under the assumption that all students and staff have likely experienced some form of trauma as a consequence of the pandemic. Emotional reactions are normal and likely to be expected during this time. It is important to remember that students and staff have experienced a number of changes to their daily lives, structure, routines, and schedules, and may have reduced overall stamina as a result. The following are tips/advice for the implementation of CBT Post COVID-19:

- Because parental/guardian support at all MTSS levels is fundamental (National Association of School Psychologists, 2020b), encourage parental support and engagement in the CBT process, especially when the student is spending a majority of their time within the home. Not only can parents/guardians assist with generalization and reinforcement of skills learned in the school setting to the home environment, but they can be invaluable resources at the outset of intervention during the case conceptualization phase (e.g. hypotheses for student's behavior, onset of behavior, potential reinforcers for student, etc.) (Little & Akin-Little, 2019).
- Acknowledge and focus on the safety and exposure concerns that may be felt by those with anxiety as in-person restrictions continue to be lifted.
- Organize CBT groups based on grade-level, or even classroom-level, when possible, so that students are not exposed to multiple groups of students during the day. When possible, group students per grade-level based on identified needs.
- School psychologists can assist schools in evaluating their current universal practices. They can also provide guidance on how best to utilize existing resources within the school for students with increased social-emotional needs. For example, schools may consider hiring additional interventionists or aides to assist in working with students in need (National Association of School Psychologists, 2020a).
- Consult and collaborate with other mental health professionals within the schools (e.g., school social workers) to implement the CBT.
- Instead of screening for social-emotional concerns at the outset of the school year, wait a month or two. This allows students to have time to adjust to changes and demands of the school, thus reducing the likelihood of overidentification of students needing Tier 2 interventions (National Association of School Psychologists, 2020c).
- When determining an appropriate time to conduct CBT sessions, consider holding sessions prior to activities that may trigger additional anxiety. For

example, going to recess during COVID-19 could cause an increase in anxiety related to the number of students or germs on the playground. Engaging in CBT sessions prior to recess could allow for the student to practice and/or utilize their "homework" while at recess.

- When feasible, implement CBT in-person rather than virtually. Although virtual sessions have proven effective, face-to-face intervention has demonstrated greater outcomes and long-term benefits post treatment (Mohr et al., 2012).
- To prevent exhaustion and burn-out due to the increased numbers of students needing support, provide CBT to small groups of students rather than individuals (National Association of School Psychologists, 2020a).

Future Research

As previously mentioned, less research exists regarding CBT implemented in the schools than for CBT programs implemented outside of the school. Continued research is necessary in this area to determine the most effective and efficient intervention methods within the unique context of school settings. Future research should examine school-based CBT programs and implementation across students of diverse ages, backgrounds, ethnicity, and levels of need. Researchers may also want to consider comparing CBT programs with specific curricula, duration, and implementation time.

Conclusion

These are unprecedented times for our current society due to the COVID-19 pandemic. Society in general has an increased need for mental health treatment, but it is especially crucial to have plans in place that address the needs of children and adolescents who are still cognitively and physically developing, as they plan to return to school. This is especially true for students who are currently feeling anxiety related to the planning of their future and uncertainties related to upcoming school years (American Psychological Association, 2020a). Although this paper focuses on post-pandemic phases, it is important to note that the pandemic is still currently ongoing. Many of these tips and considerations can, and should, be utilized now. Benefits associated with CBT include the ability to present it in different formats, implement it with individuals or groups, and tailor the sessions to specific needs. Additionally, practical and useful coping skills are taught during CBT that can be generalized to alternative scenarios outside of therapy (National Health Service, 2019). School psychologists can play a large role in assisting those in need of mental health treatment. Knowledge of the signs and symptoms of anxiety, effective interventions, and suggestions for other education professionals or families is key in making the difference for these students.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing.

American Psychological Association. (2020a). *Stress in America 2020: A national mental health crisis*. American Psychological Association. https://www.apa.org/news/press/releases/stress/2020/report-october

American Psychological Association. (2020b). *Student mental health during and after COVID-19: How can schools identify youth who need support?* http://www.apa.org/topics/covid-19/student-mental-health

Anxiety and Depression Association of America. (n.d.) *Facts and statistics*. https://adaa.org/about-adaa/press-room/facts-statistics

Beck, J. S. (2011). Introduction to cognitive behavior therapy. *Cognitive Behavior Therapy* (2nd ed., pp. 1-14). Guilford Press.

Birmaher, B., Brent, D. A., Chiapetta, L., Bridge, J., Monga. S., & Baugher, M. (1999). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): A replication study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *38*(10), 1230-1236.

Birmaher, B., Khetarpal, S., Brent, D., Cully, M., Balach, L., Kaufman, J., & McKenzie, S. (1997). The Screen for Child Anxiety Related Emotional Disorders (SCARED): Scale construction and psychometric characteristics. *Psychiatry*, *36*(4), 545-553.

Centers for Disease Control and Prevention. (2020, November 5). *Anxiety and depression in children: Get the facts*. https://www.cdc.gov/childrensmentalhealth/features/anxiety-depression-children.html

Centers for Disease Control and Prevention. (2018, January 26). *Learn about mental health*. Mental Health. https://www.cdc.gov/mentalhealth/index.html

Centers for Disease Control and Prevention. (2021a, March 19). *Operating schools during COVID-19: CDC's Considerations*. https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/schools.html

Centers for Disease Control and Prevention. (2021b, January 28).

Why act early if you're concerned about development? https://www.cdc.gov/ncbddd/actearly/whyActEarly.html

Chiu, A. W., Langer, D. A., McLeod, B. D., Har, K., Drahota, A., Galla, B. M., Jacobs, J., Ifekwunigwe, M., & Wood, J. J. (2013). Effectiveness of modular CBT for child anxiety in elementary schools. *School Psychology Quarterly*, *28*(2), 141-153.

Cully, J. A., & Teten, A. L. (2008). *A therapist's guide to brief cognitive behavioral therapy*. Department of Veterans Affairs South Central MIRECC, Houston. https://depts.washington.edu/dbpeds/therapists_guide_to_brief_cbtmanual.pdf

Dowdy, E., Furlong, M., Raines, T. C., Bovery, B., Kauffman, B., Kamphaus, R. W., ...Murdock, J. (2015). Enhancing school-based mental health services with a preventive and promotive approach to universal screening for complete mental health. *Journal of Educational and Psychological Consultation*, *25* (2-3), 178-197.

Einhorn, E. (2020, December 15). *Covid is having a devastating impact on children - and the vaccine won't fix everything*. NBC News. https://www.nbcnews.com/news/education/covid-having-devastating-impact-children-vaccine-won-t-fix-everything-n1251172

Fenn, K., & Byrne, M. (2013). The key principles of cognitive behavioural therapy. *InnovAiT: Education and Inspiration for General Practice*, *6*(9), 579-585. https://doi.org/10.1177/1755738012471029

Fink, K. (2020, August 12). *Kindergarten during COVID isn't kindergarten at all*. We Are Teachers. https://www.weareteachers.com/kindergarten-covid-isnt-kindergarten/

Gallagher, G. M. (2020, September 18). *Media & Mental Health: How COVID-19 news consumption worsens wellness*. Contagion Live. https://www.contagionlive.com/view/media--mental-health-covid19-news-consumption-worsens-wellness

Golberstein, E., Wen, H., Miller, B. F. (2020, April 14). Coronavirus disease 2019 (COVID-19) and mental health for children and adolescents. *JAMA Pediatrics*, *174*(9):819-820. doi:10.1001/jamapediatrics.2020.1456

Greenberg, M., Kusche, C., Cook, E., & Quamma, J. (1995). Promoting emotional competence in school-aged children: The effects of the PATHS curriculum. *Development and Psychopathology*, *7*, 117-136.

Grilo, C. M., Masheb, R. M., Wilson, G. T., Gueorguieva, R., & White, M. A. (2011). Cognitive–behavioral therapy, behavioral weight loss, and sequential treatment for obese patients with binge-eating disorder: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *79*(5), 675-685.

Higa-McMillan, C. K., Francis, S. E., & Chorpita, B. F. (2014). Anxiety disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child Psychopathology* (3rd ed., pp. 345-428). Guilford Press.

Kendall, P. C. (2018, September). *Coping Cat©*. The California evidence-based clearinghouse for child welfare. https://www.cebc4cw.org/program/coping-cat/detailed

Lieberman, M. (2020, November 11). *How hybrid learning is (and is not) working during COVID-19: 6 case studies*. Education Week. https://www.edweek.org/leadership/how-hybrid-learning-is-and-is-not-working-during-covid-19-6-case-studies/2020/11

Little, S. G., & Akin-Little, A. (2019). *Behavioral interventions in schools: Evidence-based positive strategies* (2nd ed). American Psychological Association.

Manassis, K., Wilansky-Traynor, P., Farzan, N., Kleiman, V., Parker, K., & Sanford, M. (2010). The feelings club: Randomized controlled evaluation of school-based CBT for anxious or depressive symptoms. *Depression and Anxiety*, *27*(10), 945-952. https://doi.org/10.1002/da.20724

Mayo Clinic. (2019, March 16). *Cognitive behavioral therapy*. https://www.mayoclinic.org/tests-procedures/cognitive-behavioral-therapy/about/pac-20384610

Mohr, D. C., Ho, J., Duffecy, J., Reifler, D., Sokol, L., Burns, M. N., Jin, L., & Siddique, J. (2012). Effect of telephone-administered vs face-to-face cognitive behavioral therapy on adherence to therapy and depression outcomes among primary care patients: A randomized trial. *JAMA*, *307*(21), 2278-2285.

National Alliance on Mental Illness. (2017, December). *Anxiety disorders*. https://www.nami.org/About-Mental-Illness/Mental-Health-Conditions/Anxiety-Disorders

National Association of School Psychologists. (2020a). *Providing effective social–emotional and behavioral supports after COVID-19 closures: Universal screening and Tier 1 intervention*. https://www.nasponline.org/resources-and-publications/resources-and-podcasts/covid-19-resource-center/return-to-school/providing-effective-social–emotional-and-behavioral-supports-after-covid-19-closures-universal-screening-and-tier-1-interventions

National Association of School Psychologists. (2020b). *Tier 2 social–emotional learning/mental and behavioral health interventions: Post COVID-19*. https://www.nasponline.org/resources-and-publications/resources-and-podcasts/covid-19-resource-center/return-to-school/tier-2-social–emotional-learning/mental-and-behavioral-health-interventions-post-covid-19

National Association of School Psychologists. (2020c). *Tier 3 mental and behavioral health interventions and special education*. https://www.nasponline.org/resources-and-publications/resources-and-podcasts/covid-19-resource-center/return-to-school/tier-3-mental-and-behavioral-health-interventions-and-special-education

National Association of School Psychologists. (2014). *Who are school psychologists?* https://www.nasponline.org/about-school-psychology/who-are-school-psychologists

National Institute of Mental Health. (2018, July). *Anxiety disorders*. https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml

National Health Service. (2019, July). *Overview - Cognitive behavioural therapy (CBT)*. NHS Choices. https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/talking-therapies-and-counselling/cognitive-behavioural-therapy-cbt/overview/

Pragholapati, A. (2020, May 11). *COVID-19 impact on students*. https://doi.org/10.17605/OSF.IO/NUYJ9

Pritchard, E. L. (2016, January 20). *13 things you must know before doing CBT*. https://www.goodhousekeeping.com/uk/health/health-advice/a558947/what-you-need-to-know-cognitive-behavioural-therapy/

Pyramid Healthcare. (2018, September 25). *Anxiety disorders in*

children vs. adults. https://www.pyramidhealthcarepa.com/anxiety-kids-adults/

Reynolds, C. R., & Kamphaus, R. W. (2015). *Behavior assessment system for children* (3rd ed.) (BASC-3). Pearson Inc.

Scheeringa, M. S., Weems, C. F., Cohen, J. A., Amaya-Jackson, L., & Guthrie, D. (2010). Trauma-focused cognitive-behavioral therapy for posttraumatic stress disorder in three-through six year-old children: A randomized clinical trial. *Journal of Child Psychology and Psychiatry*, *52*(8), 853-860. https://doi.org/10.1111/j.1469-7610.2010.02354.x

Schnurr, P. P., Friedman, M. J., Engel, C. C., Foa, E. B., Shea, M. T., Chow, B. K., Resick, P. A., Thurston, V., Orsillo, S. M., Haug, R., Turner, C., & Bernardy, N. (2007). Cognitive behavioral therapy for posttraumatic stress disorder in women: A randomized controlled trial. *JAMA*, *297*(8), 820-830. https://doi.org/10.1001/jama.297.8.820

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097.

Staddon, J. (2014). *The new behaviorism*. Psychology Press.

Wehry, A. M., Beesdo-Baum, K., Hennelly, M. M., Connolly, S. D., & Strawn, J. R. (2015). Assessment and treatment of anxiety disorders in children and adolescents. Current Psychiatry Reports, 17(7), 52. https://doi.org/10.1007/s11920-015-0591-z