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All hands on deck: Training mental health and non-mental health school providers to deliver a CBT anxiety intervention for students on the autism spectrum*

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*We understand there are different preferences for referring to this population. In this paper we use a range of terminology to represent students formally identified with autism as well as students with social communication differences similar to autism.

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This research was approved by the Colorado Multiple Institutional Review Board (COMIRB) Informed consent was obtained from all individual participants and/or legal guardians of participants included in the study.

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Abstract

Background: Autistic youth are at high risk for increased anxiety. Access to mental health care is challenging, particularly for youth from diverse communities. Facing Your Fears in Schools (FYF-S) is a manualized group CBT intervention to manage anxiety in autistic students and can be delivered by interdisciplinary school providers (ISPs). Training mental health (MH) and non-mental health (non-MH) providers to deliver FYF-S may increase the capacity to meet the mental health needs of autistic students. The purpose of this study was to determine whether there were differences in knowledge and perceptions among MH versus non-MH providers.

Methods: Seventy-seven ISPs participated in a FYF-S training. CBT knowledge was measured pre- and post-training; readiness to deliver FYF-S was measured post-training. ISPs delivered FYF-S to 39 students with autism or suspected autism and anxiety. Post-intervention, ISPs rated program acceptability, appropriateness, and feasibility. Results: Although there were significant differences in CBT knowledge pre-training, MH and non-MH providers showed significant improvements in CBT knowledge post-training. Providers did not significantly differ in knowledge nor readiness to deliver FYF-S. Post-intervention, MH and non-MH providers did not demonstrate significant differences in program acceptability, appropriateness, or feasibility. Preliminary qualitative comparison of intervention groups with a MH provider and those led by non-MH providers did not reveal differences in FYF-S fidelity or student anxiety outcomes.

Conclusion: This study provides encouraging evidence that training ISPs to deliver a manualized CBT intervention may be a promising approach to increasing access to much-needed MH services for autistic youth.

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Key words: autism, anxiety, cognitive-behavioral therapy, mental health, school provider

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Youth mental health has worsened in recent years (Bitsko, 2022), with a more pronounced decline since early 2020 (Samji et al., 2022), and the mental health services designed to support youth have not kept up with this rising demand. An estimated 70% of autistic youth experience co-occurring mental health conditions and thus have been disproportionately impacted by mental health service shortages (van Steensel et al., 2011). Autistic youth have also faced disproportionately greater barriers to accessing mental health services than their neurotypical peers (Conrad et al., 2022), due to difficulties finding mental health (MH) providers with autism expertise and/or skilled with modifying evidence-based treatments to meet their unique learning needs (Adams & Young 2021). As the COVID-19 pandemic intensified mental health needs and access difficulties, the need for therapeutic support for this population has grown (Lee et al., 2021; Pelicano et al., 2022).

Anxiety is one of the most commonly co-occurring conditions for autistic youth, with as many as 50% developing significant anxiety symptoms (Ung et al., 2015). In addition to distress and discomfort, anxiety can negatively impact youth across settings including school performance and participation in extra-curricular activities (Adams & Emerson, 2021; Adams et al., 2019; Syriopoulou-Delli et al., 2018). Thus, identifying effective ways to manage anxiety in autistic youth is pivotal to support this population.

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Although there is ample evidence that CBT is effective (Weston et al., 2016; Perihan et al., 2020) for autistic youth with anxiety, most CBT programs are delivered in outpatient specialty clinics, presenting access limitations for many families, including long wait lists, financial costs paired with lack of insurance coverage, proximity to clinics, and parents' struggles to take time off from work to attend appointments (Elkins et al., 2011). Demographic factors such as race, ethnicity, English language proficiency, and socioeconomic status have historically interfered with intervention access for many families, including families of autistic children (Huey & Polo, 2008; Magaña et al., 2013; Pickard et al., 2018). There is a growing need to improve access to evidence-based practice. One promising approach is to offer them in community settings, such as schools, where youth with mental health care needs such as anxiety can be identified and receive equitable care. Given that many youth only receive mental health services within schools (Zablotsky et al., 2015), schools are a critical access point to mental health services for both autistic and non-autistic youth (Ali et al., 2019; Doung et al., 2021).

Parents and school providers have indicated that they view schools as an important resource for identifying and addressing anxiety in autistic students (Reaven et al. 2020; Adams et al., 2019), though there are many challenges. School providers acknowledge feeling under-equipped, citing limited knowledge regarding how anxiety might present in autistic youth (Reyes et al., 2022). School providers who support students with disabilities are often strained, serving in a variety of roles, pivoting to respond to urgent student needs, and performing the emotional labor of effectively managing these stressors so they may continue performing their duties (Kerr & Brown, 2016). Furthermore, teachers often report that although they interface with many students with mental health difficulties, they only have minimal or brief formal education about

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how to identify, manage, or support them (Walter, Gouze, & Lim, 2006). Despite mandates for the implementation of evidence-based practices in schools (e.g., Individuals with Disabilities Education Act and the No Child Left Behind Act), their adoption can be limited (Forman et al., 2009), in part, because very few treatments exist for autistic students with mental health concerns. School providers, including teachers, have expressed a need for more resources to address anxiety in autistic students (Reaven et al., 2019; Kester & Lucyshyn, 2019).

CBT delivery by school MH providers for non-autistic youth has been established (Sulkowski et al. 2012); however, there is limited research on the implementation of CBT in schools by non-MH providers for non-autistic anxious students (Are et al., 2021; Ginsberg et al., 2024), and the literature is even more limited for autistic students (Perihan et al., 2022). There is emerging evidence that CBT for anxiety in autistic youth can be effectively provided in schools; however, most have relied on research teams to deliver the intervention, or pair researchers with school providers to co-facilitate the intervention (Clarke et al., 2017; Ireri et al., 2019; Luxford et al., 2017). Some exceptions to this approach include work by Drmic and colleagues (2017) and Reaven and colleagues (2022, 2023), where interdisciplinary school providers (ISPs) were successfully trained to deliver the Facing Your Fears in Schools program (FYF-S). In each of these studies, the research team did not directly deliver the program. Overall, results were encouraging, suggesting that the inclusion of non-MH providers may broaden the pool of school providers who can deliver CBT within schools (Drmic et al., 2017), increasing access for students.

The extent to which school-based MH and non-MH providers may differ in their ability to learn and deliver CBT for anxiety in autistic students is unknown and important to explore.

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Training non-MH providers may increase capacity to deliver CBT and thus, access to evidence-based care for autistic youth. Task-sharing the delivery of CBT across provider types may be particularly important given known mental health staffing shortages within public schools (ACLU, 2019); however, differences in training and knowledge among MH and non-MH providers may contribute to differences in perceptions of readiness to deliver a CBT intervention, and could indeed impact how effectively CBT is delivered across disciplines. Understanding whether there are differences in CBT knowledge, acceptability, and whether a provider feels ready and equipped to deliver an evidence-based intervention, can help shed light on approaches to capacity-building for mental health services for autistic youth in schools. Beginning to explore fidelity in program implementation and student anxiety outcomes when an intervention is delivered by MH or non-MH providers may also be an important next step.

Current study

This study represents secondary data analysis from a cluster, randomized trial that examined the effectiveness of the Facing Your Fears in Schools (FYF-S) program (Reaven et al., 2023). The purpose of the current study was to examine CBT knowledge, as well as perceptions of MH and non-MH providers on training and delivery of FYF-S. This study had two main aims: *Aim 1*: To examine whether there were differences between MH and non-MH providers in CBT knowledge and in perceived readiness to deliver FYF-S for participating students following the FYF-S training. It was hypothesized that MH providers would show greater CBT knowledge and report higher perceptions of readiness to deliver FYF-S than non-MH providers. *Aim 2*: To examine whether there were differences between MH and non-MH providers in FYF-S acceptability, feasibility, and appropriateness of FYF-S. We hypothesized that MH providers

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would rate FYF-S as more acceptable, feasible and appropriate than non-MH providers, given their professional backgrounds. *Exploratory Aim:* a) To examine whether there were differences in FYF-S fidelity (intervention adherence and quality of delivery) when groups were led by teams that included a MH provider versus those led exclusively by non-MH providers; and to qualitatively examine preliminary evidence regarding student anxiety outcomes between MH and non-MH groups.

Methods

Study data were part of a cluster, randomized controlled trial. As a result, information in this section will be abbreviated. For a more complete description of the cluster randomized trial methods and procedures, please refer to Reaven et al., 2023.

Participants

Interdisciplinary school providers (ISPs). ISPs from three public school districts were included in this study (N = 77). All ISPs: 1) were already working with autistic students or students with suspected autism, and anxiety; 2) were a degreed MH professional (school psychology, social work, counseling, or behavioral consultation), or degreed non-MH professional (special education, speech/language pathology, occupational or physical therapy); and 3) attended a 12-hour training, delivered at least 80% of FYF-S lessons, and participated in ongoing FYF-S consultation.

Participants. The majority of interdisciplinary school providers were female (91%), non-Hispanic (95%), and White (92%). A range of professional backgrounds were represented, including psychologists (30%), special education teachers (28.6%), speech and language

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pathologists (22%), and other MH providers (e.g., social workers; 11.7%). Providers were characterized as either a MH or non-MH providers (Table 1). A total of 77 trained ISPs were trained; although 8 did not deliver FYF-S. These included administrators who were interested in the training and completed measures, but never intended to deliver the intervention or ISPs who were overrecruited to ensure that there would be enough trained providers for each school team. Sixty-nine ISPs were randomized to one of two conditions: FYF-S or Usual Care (UC). ISPs randomized to FYF-S delivered the program during the fall semester and those ISPs assigned to UC delivered the program during the spring semester. However, only the fall cohort (N=34) were able to deliver the program to completion, because COVID-19 led to school closures during the spring semester. There were no differences in MH or non-MH provider demographic characteristics ($p > .05$).

Students (N=81). To be included in the overall study, students (1) were between the ages of 8 and 14; (2) had no known intellectual disability; (3) had clinical anxiety according to either student, caregiver, or teacher report on screening measures; and (4) had a T-Score of 60 or higher on the Social Responsiveness Scale – Second Edition (SRS-2; Constantino & Gruber, 2012) indicating significant social communication difficulties associated with autism. School providers were asked to refer students who had a medical diagnosis of autism, an educational identification of autism, *or* who had social communication differences similar to autism. This broader net of inclusion was intended to account for disparities in access to autism diagnostic evaluations. Students were excluded if (1) their parents did not consent to participation; or (2) they showed significant behavior or psychiatric symptoms that interfered with group participation. Briefly, 81.5% of the sample was male, with a mean age of 10.71 (SD=1.76). The majority of the sample

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identified as White (61.7%). Additional racial/ethnic identifications were as follows: Multiple race – 13.6%; Black/African American – 11.1%; Asian – 1.2%; Native Hawaiian/Pacific Islander – 1.2; and 11.1 of the sample did not report race/ethnicity. (For additional student demographic information see Reaven et al., 2023).

Procedures

This study was approved by the Colorado Multiple Institutional Review Board (COMIRB) as well as the IRBs from the three participating public school districts. School districts were selected because of their racially and economically diverse student populations and a previous research collaboration with the study authors. School administrators were informed of the study goals and target student population and assisted with identifying and inviting schools to participate. Twenty-seven school teams from 25 different schools participated. Once the schools were identified, ISPs were selected and informed consent obtained. School teams were randomly assigned to either FYF-S or UC. Before participating in the FYF-S training, participants completed a pre-assessment of CBT knowledge. Following the training, participants completed a post-assessment of CBT knowledge, as well as a measure of their perceived readiness to deliver the FYF-S program effectively. As noted above, schools were randomized to either FYF-S or UC and ISPs then delivered FYF-S to small groups of students with autism or suspected autism and anxiety. Pre-treatment delivery data (e.g., CBT knowledge, acceptability, readiness to deliver) from both the fall and spring cohorts ($N = 77$) are included in this study. Following group completion, school providers from the fall cohort only ($N = 34$) completed an implementation survey that measured their perceptions of the appropriateness, acceptability, and feasibility of FYF-S.

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It is noteworthy that we did not prospectively intend to compare MH vs non-MH provider differences on various measures or examine student anxiety outcomes based on facilitator background. The research team recommended that each school team have a MH provider available to offer support, consultation, and to address any mental health crises; however, the MH provider was not required to be present during intervention delivery. Although most schools were able to include a MH provider as a facilitator, two teams completed all of their sessions without a MH provider in attendance, citing difficulties with the MH provider's availability. For purposes of the current study, these will be referred to as “non-MH teams.” In contrast, “MH teams” are those in which the MH provider was one of the group facilitators.

Training. Each of the three school districts received identical 12-hour, in-person training by members of our research team (i.e., clinical psychologists) and “School Trainers,” who were school providers with previous training and experience in FYF-S. Including School Trainers was a part of a Train-the-Trainer strategy designed to increase eventual sustainability of the FYF-S. Trainings took place during professional development days, and certificates of completion were offered to support ISPs' continuing education requirements. A variety of learning formats were used, including large-group didactic instruction, videos demonstrating program content, and small group activities. Content included how to identify the presence of anxiety symptoms in autistic students, an overview of CBT for anxiety, and an overview of the FYF-S program in particular. The training thoroughly covered core content and fidelity checklists indicated that over 90% of elements were completed across the three in-person trainings. Following the initial training, ISPs attended twice-monthly FYF-S consultation meetings (20-30 minutes) throughout

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the duration of the program, led by a member of the research team (i.e., a clinical psychologist) paired with a school provider who had been previously trained in FYF-S.

FYF-S Program. FYF-S is delivered with groups of 2 to 5 students during the school day, typically over the course of 12 40-minute sessions. Two caregiver contacts and brief weekly written communications to parents and teachers are also included to share information about what students are learning in the program. FYF-S is a group manualized intervention based on CBT approaches (Reaven et al. 2011). Consistent with other CBT programs for anxiety management, core content included learning strategies for somatic management (i.e., taking steps to calm the physiological response to anxiety, such as deep breathing), cognitive strategies (i.e., changing one's anxious thoughts to be more realistic and adaptive), and graded exposure practice (i.e., facing fears a little at a time). We recommended that a minimum of two school providers run each group, as it was a new program for all participants.

Measures

Assessment of CBT Knowledge. CBT Knowledge was measured via a 20-item multiple choice test pre/post training (Reaven et al., 2022; 2023). This measure was developed based on content provided in the training program and was similar to other measures assessing CBT knowledge (Rees & Gillam, 2001). A similar measure has been used in previous FYF research (Reaven et al., 2015; Reaven et al., 2018; Reaven et al., 2022). In this study, two nearly identical versions of the test were included (i.e., version A and B), with half of the school providers completing version A at pre-training, and the other completing version B. Alternate versions that had only minor changes in wording and item order were administered to ISPs at post-training.

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Assessment of Provider Readiness to Deliver FYF-S. The degree to which providers felt ready to deliver the FYF-S program was assessed via a 5-item questionnaire, developed by the research team and completed by the ISPs following the FYF-S training workshop. Providers were asked to rate their readiness to deliver (i.e., their perceived knowledge of and confidence with the FYF-S program) on a 1-6 Likert scale (*1=strongly disagree, 6=strongly agree*). Total scores were generated and higher scores indicated a greater level of readiness in treatment delivery. Items included the following statements: *1) I understand the principles of CBT for treatment of anxiety; 2) I understand the FYF-S program; 3) I feel confident in facilitating FYF-S; 4) I feel confident conducting graded exposure practice with students in group; 5) The core components of FYF-S are consistent with my conceptual framework on how to work with youth with ASD and anxiety.*

Implementation Survey. Providers completed an implementation survey after delivering the FYF-S intervention that assessed their perceptions of the feasibility, acceptability, and appropriateness of FYF-S. This measure was adapted for the study based on other, similar measures used in prior research (e.g., Ingersoll, & Dvortcsak, 2010; Lehman, Greener, & Simpson, 2002; Pickard et al., 2022). ISPs were asked to rate each question on a 5-point Likert scale from *Strongly Disagree to Strongly Agree*. They also had the option to rate “*Don’t Know*” for all items. The 34-item questionnaire was completed online, and questions were asked in random order rather than grouped by construct. Providers could not see construct labels (i.e., intervention acceptability, appropriateness, feasibility) when completing questions. *Intervention Acceptability* was measured with 15 questions that included statements like, “*I enjoy using the FYF-S model,*” “*Parents like the FYF-S model,*” and “*The FYF-S materials are clear,*

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understandable, and helpful.” Intervention Appropriateness was measured using 10 questions that included statements like, “*The format of the FYF-S program is appropriate,*” “*FYF-S enhances my students’ ability to manage anxiety,*” and “*Some parents have too many problems to participate in FYF-S.*” *Intervention Feasibility* was measured using 9 questions including statements like, “*I have the skills needed to implement FYF effectively,*” “*My school has enough staff to implement the FYF-S intervention,*” and “*I intend to use FYF-S with my students.*” Total scores for each subscale were generated by reverse coding negative items and summing.

Treatment Fidelity and Competence. Treatment fidelity (i.e., adherence to the treatment protocol and quality of treatment delivery) was obtained by recording the presence or absence of program activities on a checklist organized for each of the 12 sessions. Fidelity raters used FYF-S session recordings to indicate the occurrence of session activities and to indicate a global session rating using a 5-point Likert scale. Behavioral ratings ranged from: (1) *poor (ISP handled activity poorly and demonstrated lack of understanding or expertise)* to (5) *excellent (ISP delivered the activity with exemplary skill)*. Overall competence was calculated as an average of quality ratings across all coded sessions. Four of the study authors (JR, ABS, CM and LH) coded treatment adherence and competence.

Sixty percent of sessions were coded for fidelity (see Reaven et al., 2023). Fidelity was considered acceptable if it was 80% or higher. Twenty percent of a random sub-set of FYF-S sessions were coded by a second rater for inter-rater reliability. Coder agreement for overall competence in program delivery was considered met if ratings were within 1 point between coders on a 5-point Likert scale.

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Student outcome. *Screen for Child Anxiety and Related Emotional Disorders – Parent/Child* (SCARED-P/C: Birmaher et al., 1999). The SCARED-P/C is a 41-item questionnaire that measures anxiety symptoms, and it has teacher, caregiver, and child versions. Item scores are added and there is a clinically meaningful cut off score. The SCARED demonstrates excellent psychometric properties for the general population (Birmaher et al., 1999; Hale et al., 2011), and results from previous work with autistic youth yielded good sensitivity (.71) and specificity (.67), strong internal consistency (e.g., Cronbach’s alpha scores for the child total score: .92 and parent total score: .90), and strong convergent validity with a gold-standard clinical interview among parents of autistic youth (Stern et al., 2014).

Data Analysis Plan. Study variables were examined for assumptions and one adjustment of an outlier ($z > \pm 3.29$) was made using a standardized approach (i.e., reduction to next most extreme score) to meet necessary requirements for parametric testing (Tabachnick, Fidell, & Ullman, 2013). We utilized independent or dependent t-tests and chi-squared analyses for continuous and categorical data, respectively. Effects of the intervention were depicted graphically for child participants in the non-MH provider (n=8 children) and MH provider teams (n=31 children). No statistical comparisons were applied to exploratory aims, as these were not sufficiently powered due to small sample sizes.

Results

CBT Knowledge. Pre-training (baseline) assessment of CBT knowledge showed MH providers scored significantly higher ($M = 80.95$; $SD = 8.67$) compared to non-MH providers ($M = 76.21$; $SD = 10.99$), $t(72) = 1.94$, $p = .03$, Cohen’s $d = .46$. Paired sample t-tests for each group showed significant improvement from pre-test to post-test, in which MH providers improved by

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an average of 6.20 points, $t(24) = -2.94$, $p = .007$, Cohen's $d = -.59$. A greater magnitude of pre-post change was shown for non-MH providers, in which they significantly improved their knowledge of CBT by an average of 12.49 points following participating in FYF-S training, $t(35) = -6.55$, $p < .001$, Cohen's $d = -1.09$. Comparison of groups at post workshop showed CBT knowledge scores for MH providers ($M = 86.11$; $SD = 6.53$) were not significantly different from non-MH providers ($M = 88.85$; $SD = 8.40$), $p > .05$. See Figure 1.

Readiness to Deliver FYF-S. Post-FYF-S training survey of self-efficacy showed no differences in the degree to which providers felt ready to deliver FYF between MH providers ($M = 26.52$; $SD = 2.80$) and non-MH providers ($M = 26.07$; $SD = 2.38$), $p > .05$.

Implementation Factors Post-Delivery. Comparison on FYF-S acceptability showed no differences between MH providers ($M = 4.07$; $SD = 0.30$) and non-MH providers ($M = 4.01$; $SD = 0.33$; $p > .05$). Appropriateness subscale scores were also similar when comparing MH providers ($M = 3.49$; $SD = 0.32$) and non-MH providers ($M = 3.58$; $SD = 0.34$; $p > .05$). Finally, there were no differences when comparing how MH providers ($M = 4.00$; $SD = 0.42$) and non-MH providers ($M = 3.76$; $SD = 0.44$; $p > .05$) viewed the feasibility of FYF-S.

Fidelity. Eleven school teams from the fall cohort included a MH provider (i.e., “MH team”) and two teams were comprised of exclusively of non-MH providers (i.e., “non-MH team”). The number of sessions completed ranged from 6-12, with a mean of 10.54. Of the completed sessions, comparison of adherence to session activities completed during each session and averaged over the 12 weeks, showed both groups were above 80%. Non-MH teams demonstrated 82% adherence and MH teams demonstrated 86% adherence. The average rated scores for *quality of intervention delivery* (1-5 Likert scale) was also very similar between

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groups, with MH ($M = 4.05$; $SD = 0.53$) and non-MH teams ($M = 3.81$; $SD = 0.27$) both showing fairly good quality. Inter-rater reliability for competence of program delivery from 17 randomly selected sessions showed *substantial* agreement for overall session quality ($\kappa = 0.77$) and treatment activity completion ($\kappa = 0.76$) (Landis & Koch, 1977).

Child Anxiety Outcomes (N=39). Qualitative examination of parent SCARED scores did not reveal a notably different pattern related to type of provider (MH team compared ($n=31$) to non-MH team ($n=8$))¹. Overall, most parent-reported SCARED scores declined between pre- and post-intervention, and this pattern was qualitatively apparent among four of the eight children served by the non-MH team.

Child reported SCARED total scores demonstrated a similar pattern for the MH group but less consistent among those in the non-MH group. Overall, there was considerable variability to the change pattern of scores, but the majority of students showed a decrease in scores from pre- to post-intervention for the MH group. Two out of seven children served by the non-MH team showed this pattern, consistent with the MH group (See Figures 2 and 3).

Discussion

The mental health needs of autistic students have far exceeded availability of and access to appropriate evidence-based care in the community; therefore, schools may represent an ideal setting to provide much-needed services. Further, school personnel have reported the desire to serve the mental health needs of autistic students yet have expressed concern about their training and background to do so. The results of this study indicate that interdisciplinary school providers can be trained to effectively deliver a CBT program (FYF-S) to address the anxious behaviors of

¹ Figures 2 and 3 show only complete pre-post data for visual changes, excluding participants with only pre or post.

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students with autism or suspected autism. These findings are encouraging because they suggest that the workforce of school providers using evidence-based care to address anxiety in autistic students may be increased by training non-MH providers alongside those with MH backgrounds.

The first aim in this study examined whether there were differences between non-MH providers and MH providers in CBT knowledge and readiness to deliver FYF-S. Both MH and non-MH providers demonstrated high levels of CBT knowledge at baseline, perhaps suggesting either that CBT knowledge has become rather commonplace among a range of interdisciplinary school providers, or that those non-MH providers who opted to participate in this study may have had greater interest in addressing mental health in students and thus familiarity with CBT. Consistent with our hypothesis, MH providers' CBT knowledge was significantly higher than non-MH providers at baseline; however, CBT knowledge improved significantly following the training, and, contrary to our hypothesis, non-MH providers effectively “caught up” to MH providers, showing no significant between-group differences in knowledge post-training.

Consistent with other studies examining provider responses to CBT-based trainings (Beidas & Kendall, 2010), participants in this study generally felt ready to deliver the FYF-S program after participating in the training; however, contrary to our hypothesis, MH and non-MH providers showed no significant difference in their perceived readiness to deliver FYF-S. Although there is some evidence that CBT training can indeed improve the confidence of non-MH providers to deliver mental health care (Everly et al., 2014), to date there have been no known studies comparing non-MH professionals' perceived readiness to that of their MH colleagues.

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We also hypothesized that, after treatment delivery, both MH providers and non-MH providers would view FYF-S as feasible and acceptable, which they did. Although we also hypothesized that MH providers would have provided more favorable ratings of feasibility and acceptability compared to non-MH providers; results revealed no significant differences in MH vs. non-MH providers' perceptions of feasibility or acceptability.

Finally, we conducted a preliminary exploration of whether teams that included a MH provider demonstrated differences in fidelity (i.e., program adherence and quality) of delivery compared to teams with exclusively non-MH providers facilitating the groups. The very preliminary data indicated that there were not apparent differences in FYF-S fidelity between teams of providers. Similarly, we explored whether there would be differences in student anxiety outcomes between groups led by MH versus non-MH teams. Again, there were no differences between teams evident upon qualitative inspection, although the similarities between MH and non-MH teams appeared more consistent among parent report compared to the greater variability among child report. Future studies should explore the possibility that implementation differences exist between groups; however, these results should also be interpreted with much caution given the very small sample of non-MH providers compared with MH and lack of statistical tests (see limitations).

Implications

Previous research indicates that non-MH providers can be trained to deliver mental health treatment in adults and youth without autism (Weaver & Himle, 2017; Are et al., 2022; Eakman, et al., 2022), and that school-based MH and non-MH providers can also be trained to deliver a mental health intervention for autistic youth with anxiety (Drmic et al., 2017; Reaven et al.,

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2022, Reaven et al., 2023). This study is the first to compare implementation and explore effectiveness outcomes among MH and non-MH providers, and provides encouraging, but very preliminary initial evidence that, with training and support, school providers with and without mental health backgrounds can improve their CBT knowledge, and effectively deliver a manualized CBT program for autistic youth and yield similar fidelity and student outcomes. Our findings add to the body of research indicating non-MH providers can assume an important role in the provision of mental healthcare (Patel et al., 2007; Fazel et al., 2014). Further, it provides initial support that training non-MH providers to deliver CBT to autistic students may serve to address student anxiety, as well as address providers’ desire to have the knowledge to effectively deliver evidence-based care to their students.

Currently, comparisons of the perceived feasibility and acceptability of CBT programs between MH and non-MH providers is lacking, even in the general CBT literature; however, there is emerging evidence that trained non-MH providers in underserved communities (e.g., rural, medically complex, palliative care) find CBT interventions feasible and acceptable (Weaver, et al., 2017; Andersen et al., 2018; Anderson, et al., 2008). Findings from the current study are promising and suggest that the delivery of CBT may be shared across interdisciplinary providers within settings where there are significant mental health staffing shortages. In order to build capacity and increase equity in student access to mental health treatments, providing training to school providers to deliver mental health interventions may be a viable and important option.

The current study cast a wide net of inclusion for students, allowing students with “suspected autism” to be included alongside students with known medical diagnoses or

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educational identifications of autism. This important addition to participant inclusion, may make FYF-S more feasible for ISPs to deliver as it provides a wider pool of students for small group delivery. Further, this approach is in keeping with school-based systems that offer support based on student need, rather than a specific diagnosis or educational identification.

The use of a train-the-trainer approach provides the opportunity for school-based experts in FYF-S, to potentially create a sustainable system where schools can train additional ISPs to deliver FYF-S. More research is needed to explore this implementation strategy.

There are several limitations of this study. First, measures of CBT knowledge, readiness to deliver, feasibility and acceptability were developed by the research team and their psychometric properties are unknown. Additionally, interdisciplinary school providers primarily identified as female and White, and there should be caution when extending the findings to more diverse communities. Further research should prioritize including more diverse samples of school providers. Although non-MH providers showed initial gains in CBT knowledge, it is unclear to what extent these gains will be maintained over time and whether they would generalize to other CBT programs.

Finally, this study was part of a larger cluster, randomized controlled trial in which there had not been an intentional effort to have treatment groups run solely by non-MH providers for comparison purposes. Thus, this study included small and uneven comparison groups (2 non-MH groups compared to 11 groups that included a MH provider), precluding direct statistical comparison.

Further research is needed to confirm and expand these findings. There is a need for a larger sample of school providers with MH and non-MH backgrounds to best compare providers

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on various implementation factors. With a larger sample, it would be important to consider other provider characteristics that may influence the delivery of a CBT intervention (e.g., years in profession, experience with autistic students). The school providers in the current study received ongoing consultation from the research team, and it would be interesting to better understand the level of support that is needed and whether having a MH background mediates this relationship. In CBT approaches, exposure is a core component of anxiety treatment and may be the aspect that is least familiar to non-MH providers. It would be important to understand whether there are differences in provider level variables (e.g., self-efficacy) as well as implementation variables (e.g., fidelity) between MH and non-MH providers when specifically delivering the exposure-based sessions of FYF-S.

Conclusion

This is the first known study to examine differences in perceptions between MH and non-MH providers within school settings on implementation outcomes relevant to the delivery of a school-based manualized CBT program for anxiety in autistic students. These encouraging results suggest that both MH and non-MH providers can be trained to deliver a CBT program for autistic youth, as they indicate that they are ready to deliver the program post-training, potentially with high fidelity and positive student outcomes. Future studies should continue to explore training non-MH providers to deliver CBT interventions for anxiety that is interfering in school performance for autistic students, particularly as a way to expand access to mental health treatments for this population. Schools are an excellent setting to deliver mental health interventions. If we are to effectively address student mental health needs of our students and

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potentiate autistic students' ability to manage the academic, social, and sensory demands of their school settings, increasing capacity through school-based interventions is the way of the future.

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References

- Adams, D., & Emerson, L. M. (2021). The impact of anxiety in children on the autism spectrum. *Journal of Autism and Developmental Disorders*, *51*, 1909-1920. Doi: <https://doi.org/10.1007/s10803-020-04673-3>
- Adams, D., & Young, K. (2021). A systematic review of the perceived barriers and facilitators to accessing psychological treatment for mental health problems in individuals on the autism spectrum. *Review Journal of Autism and Developmental Disorders*, *8*(4), 436-453. DOI: <https://doi.org/10.1007/s40489-020-00226-7>
- Adams, D., Young, K., & Keen, D. (2019). Anxiety in children with autism at school: A systematic review. *Review Journal of Autism and Developmental Disorders*, *6*, 274-288. Doi: <https://doi.org/10.1007/s40489-019-00172-z>
- Ali, M. M., West, K., Teich, J. L., Lynch, S., Mutter, R., & Dubenitz, J. (2019). Utilization of mental health services in educational setting by adolescents in the United States. *Journal of School Health*, *89*(5), 393-401. <https://doi.org/10.1111/josh.12753>
- American Civil Liberties Union, Mann, A., Whitaker, A., Torres-Guillén, S., Morton, M., Jordan, H., Coyle, S., & Sun, W. L. (2019). *Cops and no counselors: How the lack of school mental health staff is harming students*. ACLU.
- Andersen, L. S., Magidson, J. F., O’Cleirigh, C., Remmert, J. E., Kagee, A., Leaver, M., Stein, D., Safren, S., & Joska, J. (2018). A pilot study of a nurse-delivered cognitive behavioral therapy intervention (Ziphamandla) for adherence and depression in HIV in South Africa. *Journal of health psychology*, *23*(6), 776-787. Doi: <https://doi.org/10.1177/1359105316643375>

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Anderson, T., Watson, M., & Davidson, R. (2008). The use of cognitive behavioural therapy techniques for anxiety and depression in hospice patients: a feasibility study. *Palliative Medicine*, 22(7), 814–821. Doi: <https://doi.org/10.1177/0269216308095157>

Are, A., Olisah, V., Bella-Awusah, T., & Ani, C. (2022). Controlled clinical trial of teacher-delivered cognitive behavioural therapy (CBT) for adolescents with clinically diagnosed depressive disorder in Nigeria. *International Journal of Mental Health*, 51(1), 4–23. Doi: <https://doi.org/10.1080/00207411.2021.1891361>

Beidas, R. S., & Kendall, P. C. (2010). Training therapists in evidence-based practice: A critical review of studies from a systems-contextual perspective. *Clinical Psychology: Science and Practice*, 17(1), 1–30. Doi: <https://doi.org/10.1111/j.1468-2850.2009.01187.x>

Birmaher B., Brent D. A., Chiappetta 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.

Bitsko, R. H. Claussen AH, Lichstein J, et al. (2022). Mental health surveillance among children —United States, 2013–2019. *MMWR supplements*, 71. DOI: <http://dx.doi.org/10.15585/mmwr.su7102a1>

Clarke, C., Hill, V., & Charman, T. (2017). School based cognitive behavioural therapy targeting anxiety in children with autistic spectrum disorder: a quasi-experimental randomised controlled trial incorporating a mixed methods approach. *Journal of autism and developmental disorders*, 47, 3883–3895. Doi: [https://doi.org/10.1007/s10803-016-2801-](https://doi.org/10.1007/s10803-016-2801-x)

[x](#)

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Conrad, C., Cerda, N., & Harstad, E. (2022). Parent-reported problems accessing mental health services among a national sample of youth with autism spectrum disorder and anxiety. *Journal of Developmental & Behavioral Pediatrics*, *43*(6), 320-326.

DOI: 10.1097/DBP.0000000000001062

Constantino J. N., Gruber C. P. (2012). *Social responsiveness scale: SRS-2* (p. 106). Western psychological services.

Drmic, I. E., Aljunied, M., & Reaven, J. (2017). Feasibility, acceptability and preliminary treatment outcomes in a school-based CBT intervention program for adolescents with ASD and anxiety in Singapore. *Journal of Autism and Developmental Disorders*, *47*, 3909-3929. Doi: <https://doi.org/10.1007/s10803-016-3007-y>

Duong, M. T., Bruns, E. J., Lee, K., Cox, S., Coifman, J., Mayworm, A., & Lyon, A. R. (2021). Rates of mental health service utilization by children and adolescents in schools and other common service settings: A systematic review and meta-analysis. *Administration and Policy in Mental Health and Mental Health Services Research*, *48*, 420-439. Doi: <https://doi.org/10.1007/s10488-020-01080-9>

Eakman, A. M., Schmid, A. A., Rolle, N. R., Kinney, A. R., & Henry, K. L. (2022). Follow-up analyses from a wait-list controlled trial of occupational therapist–delivered cognitive–behavioral therapy for insomnia among veterans with chronic insomnia. *The American Journal of Occupational Therapy*, *76*(2), 7602205110. Doi: <https://doi.org/10.5014/ajot.2022.045682>

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Elkins, M. R., McHugh, K. R., Santucci, L. C., & Barlow, D. H. (2011). Improving the

transportability of CBT for internalizing disorders in children. *Clinical Child and Family*

Psychology Review, *14*, 161-173. Doi: <https://doi.org/10.1007/s10567-011-0085-4>

Everly, G. S., McCabe, O. L., Semon, N. L., Thompson, C. B., & Links, J. M. (2014). The

development of a model of psychological first aid for non-mental health trained public

health personnel. *Journal of public health management and practice*, *20*, S24-S29. Doi:

10.1097/PHH.0000000000000065

Fazel, M., Patel, V., Thomas, S., & Tol, W. (2014). Mental health interventions in schools in

low-income and middle-income countries. *The Lancet Psychiatry*, *1*(5), 388-398. Doi:

[https://doi.org/10.1016/S2215-0366\(14\)70357-8](https://doi.org/10.1016/S2215-0366(14)70357-8)

Forman, S. G., Olin, S. S., Hoagwood, K. E., Crowe, M., & Saka, N. (2009). Evidence-based

interventions in schools: Developers' views of implementation barriers and

facilitators. *School Mental Health*, *1*, 26-36. Doi: [https://doi.org/10.1007/s12310-008-](https://doi.org/10.1007/s12310-008-9002-5)

[9002-5](https://doi.org/10.1007/s12310-008-9002-5)

Ginsburg, G. S., Pella, J. E., & Chan, G. (2024). A Pilot RCT of a Teacher Delivered School–

Home Intervention to Reduce Student Anxiety. *School Mental Health*, 1-17. Doi:

<https://doi.org/10.1007/s12310-024-09638-w>

Hale, W. W., Crocetti, E., Raaijmakers, Q. A., & Meeus, W. H. (2011). A meta-analysis of the

cross-cultural psychometric properties of the Screen for Child Anxiety Related Emotional

Disorders (SCARED). *Journal of Child Psychology and Psychiatry*, *52*(1), 80-90. Doi:

<https://doi.org/10.1111/j.1469-7610.2010.02285.x>

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Huey SJ Jr, Polo AJ (2008) Evidence-based psychosocial treatments for ethnic minority

youth. *Journal of Clinical Child & Adolescent Psychology* **37**: 262–301. Doi:

[10.1080/15374410701820174](https://doi.org/10.1080/15374410701820174)

Ingersoll, B., & Dvortcsak, A. (2010). *Teaching social communication to children with autism:*

A manual for parents(Vol. 2). Guilford Press.

Irer, N. W., White, S. W., & Mbwayo, A. W. (2019). Treating anxiety and social deficits in

children with autism spectrum disorder in two schools in Nairobi, Kenya. *Journal of*

autism and developmental disorders, **49**, 3309-3315. Doi:

<https://doi.org/10.1007/s10803-019-04045-6>

Kerr, M. M., & Brown, E. L. (2016). Preventing school failure for teachers, revisited: Special

educators explore their emotional labor. *Preventing School Failure: Alternative*

Education for Children and Youth, **60**(2), 143-151. Doi:

<https://doi.org/10.1080/1045988X.2015.1043715>

Kester, K. R., & Lucyshyn, J. M. (2019). Co-creating a school-based Facing Your Fears anxiety

treatment for children with autism spectrum disorder: A model for school

psychology. *Psychology in the Schools*, **56**(5), 824-839. Doi:

<https://doi.org/10.1002/pits.22234>

Lee, V., Albaum, C., Tablon Modica, P., Ahmad, F., Gorter, J. W., Khanlou, N., McMorris, C.,

Lai, J., Harrison, C., Hedley, T., Johnston, P., Putterman, C., Spoelstra, M., & Weiss, J.

A. (2021). The impact of COVID-19 on the mental health and wellbeing of caregivers of

autistic children and youth: A scoping review. *Autism Research*, **14**(12), 2477-2494. doi:

10.1002/aur.2616

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Lehman, W. E., Greener, J. M., & Simpson, D. D. (2002). Assessing organizational readiness for change. *Journal of substance abuse treatment*, 22(4), 197-209. Doi: [https://doi.org/10.1016/S0740-5472\(02\)00233-7](https://doi.org/10.1016/S0740-5472(02)00233-7)

Luxford, S., Hadwin, J. A., & Kovshoff, H. (2017). Evaluating the effectiveness of a school-based cognitive behavioural therapy intervention for anxiety in adolescents diagnosed with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 47, 3896-3908. Doi: <https://doi.org/10.1007/s10803-016-2857-7>

Magaña, S., Lopez, K., Aguinaga, A., & Morton, H. (2013). Access to diagnosis and treatment services among Latino children with autism spectrum disorders. *Intellectual and developmental disabilities*, 51(3), 141-153. Doi: <https://doi.org/10.1352/1934-9556-51.3.141>

Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: a global public-health challenge. *The Lancet*, 369(9569), 1302-1313. Doi: [https://doi.org/10.1016/S0140-6736\(07\)60368-7](https://doi.org/10.1016/S0140-6736(07)60368-7)

Pellicano, E., Brett, S., den Houting, J., Heyworth, M., Magiati, I., Steward, R., Urbanowicz, A., & Stears, M. (2022). COVID-19, social isolation and the mental health of autistic people and their families: A qualitative study. *Autism*, 26(4), 914-927. Doi: <https://doi.org/10.1177/13623613211035936>

Perihan, C., Bicer, A., & Bocanegra, J. (2022). Assessment and treatment of anxiety in children with autism spectrum disorder in school settings: A systematic review and meta-analysis. *School mental health*, 14(1), 153-164. Doi: <https://doi.org/10.1007/s12310-021-09461-7>

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Perihan, C., Burke, M., Bowman-Perrott, L., Bicer, A., Gallup, J., Thompson, J., & Sallese, M.

(2020). Effects of cognitive behavioral therapy for reducing anxiety in children with high functioning ASD: A systematic review and meta-analysis. *Journal of autism and developmental disorders*, 50, 1958-1972. Doi: <https://doi.org/10.1007/s10803-019-03949-7>

Pickard, K., Meyer, A., Reyes, N., Tanda, T., & Reaven, J. (2022) Using evaluative frameworks to examine the implementation outcomes of a CBT program for autistic students with anxiety within public school settings. *Autism*, 26(3), 640-653, DOI: [10.1177/13623613211065797](https://doi.org/10.1177/13623613211065797)

Reaven, J., Blakeley-Smith, A., Beattie, T. L., Sullivan, A., Moody, E. J., Stern, J. A., ... & Smith, I. M. (2015). Improving transportability of a cognitive-behavioral treatment intervention for anxiety in youth with autism spectrum disorders: Results from a US–Canada collaboration. *Autism*, 19(2), 211-222. Doi: <https://doi.org/10.1177/1362361313518124>

Reaven J., Blakeley-Smith A., Nichols S., Hepburn S. (2011). *Facing your fears: Group therapy for managing anxiety in children with high-functioning autism spectrum disorders*. Paul Brookes Publishing.

Reaven, J., Meyer, A. T., Pickard, K., Boles, R. E., Hayutin, L., Middleton, C., Reyes, N., Hepburn, S., Tanda, T., Stahmer, A., & Blakeley-Smith, A. (2022). Increasing access and reach: Implementing school-based CBT for anxiety in students with ASD or suspected ASD. *Evidence-Based Practice in Child and Adolescent Mental Health*, 7(1), 56-75. Doi: <https://doi.org/10.1080/23794925.2021.1941430>

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Reaven, J., Moody, E. J., Grofer Klinger, L., Keefer, A., Duncan, A., O'Kelley, S., Meyer, A.,

Hepburn, S., & Blakeley-Smith, A. (2018). Training clinicians to deliver group CBT to manage anxiety in youth with ASD: Results of a multisite trial. *Journal of Consulting and Clinical Psychology*, 86(3), 205. Doi: <https://doi.org/10.1037/ccp0000285>

Reaven, J., Pickard, K., Meyer, A. T., Hayutin, L., Middleton, C., Reyes, N. M., Tanda, T.,

Stahmer, A., Blakeley-Smith, A., & Boles, R. E. (2024). Implementing school-based cognitive behavior therapy for anxiety in students with autism or suspected autism via a train-the-trainer approach: Results from a clustered randomized trial. *Autism*, 28(2), 484-497. Doi: <https://doi.org/10.1177/13623613231175951>

Reaven, J., Reyes, N., Pickard, K., Tanda, T., & Morris, M. A. (2020). Addressing the needs of diverse youth with ASD and anxiety in public schools: Stakeholder input on adaptations of clinic-based Facing Your Fears. *School Mental Health*, 12(2), 308-322. Doi: <https://doi.org/10.1007/s12310-019-09351-z>

Reyes, N. M., Pickard, K., Tanda, T., Morris, M. A., & Reaven, J. (2022). Identifying and understanding anxiety in youth with ASD: Parent and school provider perspectives on anxiety within public school settings. *Evidence-based practice in child and adolescent mental health*, 7(1), 12-23. Doi: <https://doi.org/10.1080/23794925.2021.1917017>

Samji, H., Wu, J., Ladak, A., Vossen, C., Stewart, E., Dove, N., Long, D., & Snell, G. (2022). Mental health impacts of the COVID-19 pandemic on children and youth—a systematic review. *Child and adolescent mental health*, 27(2), 173-189. Doi: <https://doi.org/10.1111/camh.12501>

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Stern, J. A., Gadgil, M. S., Blakeley-Smith, A., Reaven, J. A., & Hepburn, S. L. (2014).

Psychometric properties of the SCARED in youth with autism spectrum

disorder. *Research in autism spectrum disorders*, 8(9), 1225-1234. Doi:

<https://doi.org/10.1016/j.rasd.2014.06.008>

Sulkowski, M. L., Joyce, D. K., & Storch, E. A. (2012). Treating childhood anxiety in schools:

Service delivery in a response to intervention paradigm. *Journal of Child and Family*

Studies, 21, 938-947. <https://doi.org/10.1007/s10826-011-9553-1>

Syriopoulou-Delli, C. K., Polychronopoulou, S. A., Kolaitis, G. A., & Antoniou, A. S. G. (2019).

Views of teachers on anxiety symptoms in students with autism spectrum

disorder. *Journal of Autism and Developmental Disorders*, 49, 704-720. Doi:

<https://doi.org/10.1007/s10803-018-3752-1>

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2013). *Using multivariate statistics* (Vol. 6, pp.

497-516). Boston, MA: Pearson.

Ung, D., Selles, R., Small, B. J., & Storch, E. A. (2015). A systematic review and meta-analysis

of cognitive-behavioral therapy for anxiety in youth with high-functioning autism

spectrum disorders. *Child Psychiatry & Human Development*, 46, 533-547. Doi:

<https://doi.org/10.1007/s10578-014-0494-y>

Van Steensel, Francisca JA, Susan M. Bögels, and Sean Perrin. "Anxiety disorders in children

and adolescents with autistic spectrum disorders: A meta-analysis." *Clinical child and*

family psychology review 14 (2011): 302-317. Doi: [https://doi.org/10.1007/s10567-011-](https://doi.org/10.1007/s10567-011-0097-0)

[0097-0](https://doi.org/10.1007/s10567-011-0097-0)

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

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 & Adolescent Psychiatry*, *45*(1), 61-68. Doi: <https://doi.org/10.1097/01.chi.0000187243.17824.6c>

Weaver, A., & Himle, J. A. (2017). Cognitive–behavioral therapy for depression and anxiety disorders in rural settings: A review of the literature. *Journal of Rural Mental Health*, *41*(3), 189. Doi: <https://doi.org/10.1037/rmh0000075>

Weston, L., Hodgekins, J., & Langdon, P. E. (2016). Effectiveness of cognitive behavioural therapy with people who have autistic spectrum disorders: A systematic review and meta-analysis. *Clinical psychology review*, *49*, 41-54. Doi: <https://doi.org/10.1016/j.cpr.2016.08.001>

Zablotsky, B., Pringle, B. A., Colpe, L. J., Kogan, M. D., Rice, C., & Blumberg, S. J. (2015). Service and treatment use among children diagnosed with autism spectrum disorders. *Journal of developmental and behavioral pediatrics: JDBP*, *36*(2), 98. Doi: 10.1097/DBP.0000000000000127

Hayutin, L., Middleton, C., Yankowitz, L. *et al.* All Hands on Deck: Training Mental Health and Non-mental Health School Providers to Deliver a CBT Anxiety Intervention for Students on the Autism Spectrum. *School Mental Health* **17**, 289–300 (2025). <https://doi.org/10.1007/s12310-024-09730-1>

Table 1.

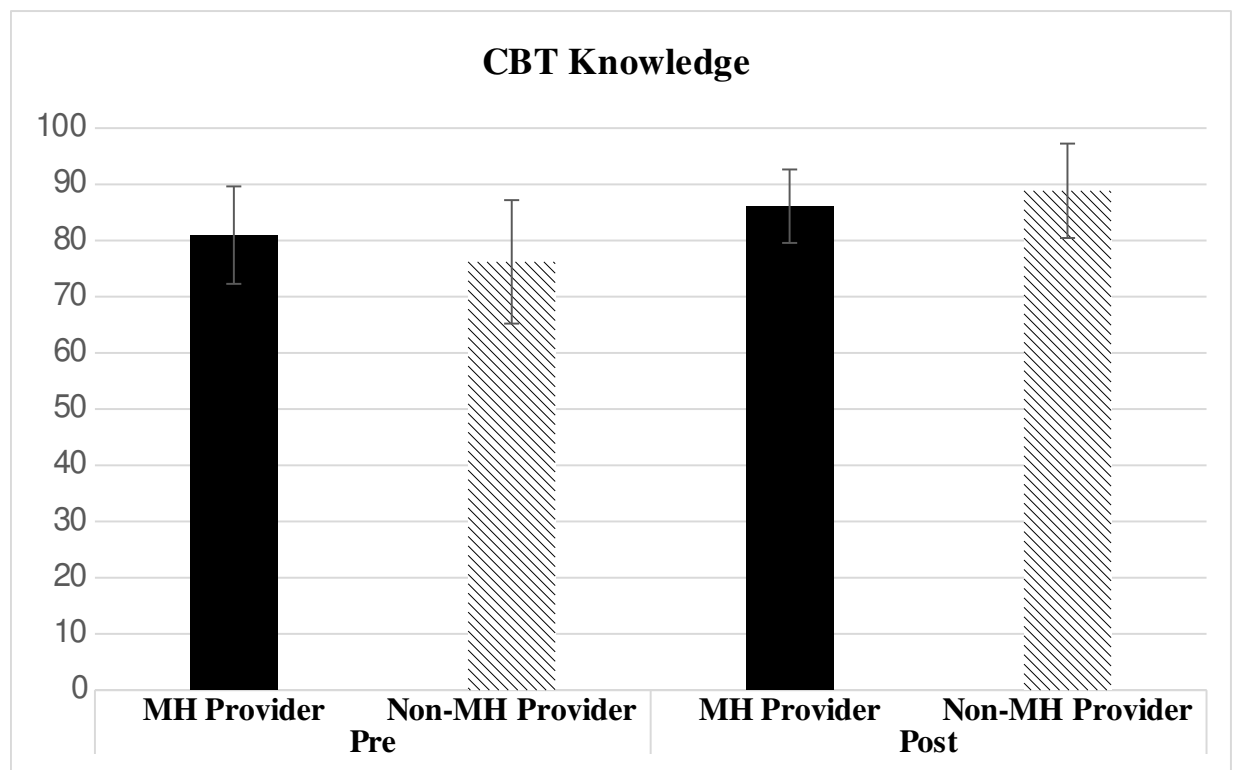
Interdisciplinary School Providers, ISPs (N=77)

	Percent Total (N=77)	Mental Health (N=31)	Non-Mental Health (N=46)
Gender (% female)	91.2	93.5	91.3
Age in Yrs (Range = 25-60) (M/SD)	39 (9.51)	36.4(8.91)	40.7(9.61)
Ethnicity (%)			
Hispanic or Latino	5.2	6.5	4.3
Non-Hispanic	94.8	93.5	91.3
Race (%)			
White	92.2	87.1	95.7
Asian	2.6	6.5	-
Black/African American	2.6	3.2	2.2
Multiple Race	1.3	3.2	-
Not Reported	1.3	-	2.2
Professional Position (%)			
School Psychologist	30.0	74.2	-
Other Mental Health Provider	11.7	25.8	-
Speech Pathologist	22.0	-	40.0
Occupational Therapist	3.9	-	6.5
Special Educator	28.6	-	47.8
School Administrator	3.9	-	5.7

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Figure 1 Pre- and post-intervention changes in CBT Knowledge scores by provider

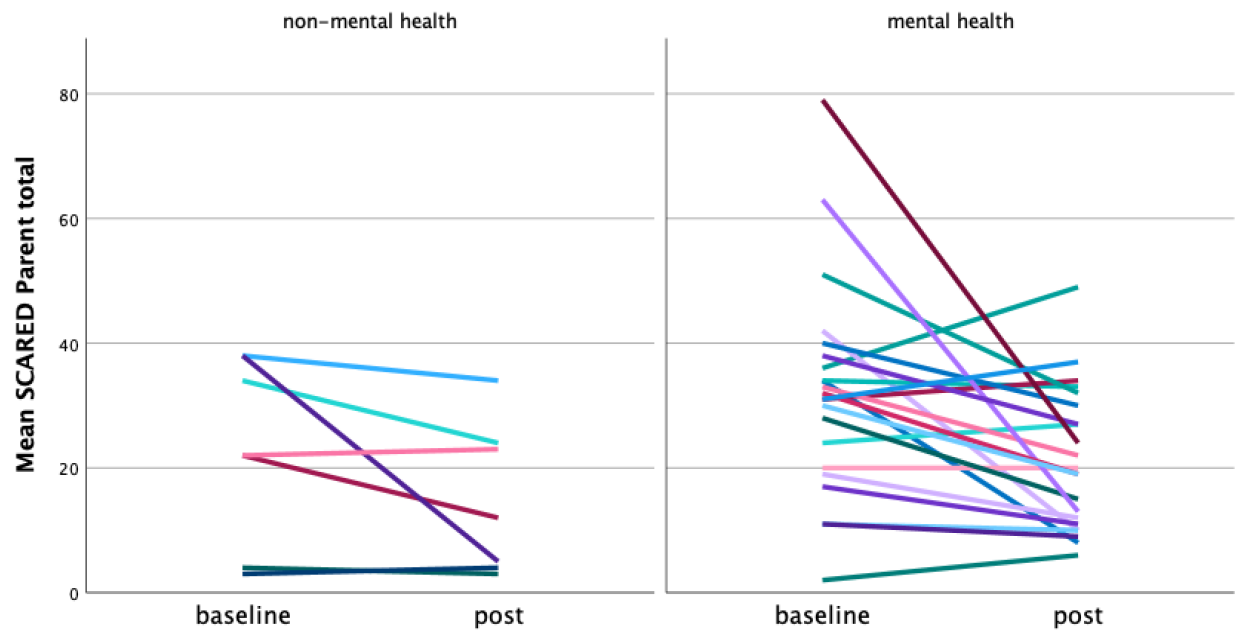
group



Note: MH = Mental Health providers; Non-MH = non-Mental Health providers.

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Figure 2 Pre- and post-intervention changes in Parent reported SCARED Total scores by Provider Type



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Figure 3 Pre- and post-intervention changes in Child reported SCARED Total scores by Provider Type

