Supporting Students with Autism Spectrum Disorder in Schools Through Multi-Tiered Systems of Support

Sarah E. Pinkelman, Kaitlin Bundock, and Kristen Rolf

Abstract This chapter describes multi-tiered systems of support (MTSS) as methods to implement school-wide evidence-based practice. This system includes examples like positive behavioral interventions and supports or response to intervention. These systems adapt the intensity of support for the population and need of students across behavioral and academic domains. The use of interdisciplinary teams through a multi-tiered framework allows schools to best serve student needs. Characteristics of MTSS schools and each of the three tiers are discussed.

Multi-tiered Systems of Support (MTSS) are frameworks for evidence-based practice (EBP) in schools. In MTSS, evidence-based prevention and intervention efforts are organized by population groups (Tier 1/primary, Tier 2/secondary, and Tier 3/tertiary) related to student need (Merrell & Buchanan, 2006). Across these groups, or "tiers," an increasing intensity of support is provided to students based on their need. This multi-tiered logic originated in the area of public health and disease prevention (Walker et al., 1996) as a way to prevent health problems and minimize the number of people who require intensive medical care at the tertiary level. Common examples of MTSS in schools include school-wide positive behavioral interventions and supports (SWPBIS) and response to intervention (RtI). Both of these frameworks are consistent with the MTSS logic, with SWPBIS focusing on student prosocial and problem behavior and RtI focusing on student academic achievement.

SWPBIS aims to improve the social culture in schools and provide effective behavior support to all students, with intensified support provided to students as needed (Horner, Sugai, & Fixsen, 2017; Sugai & Horner, 2009). The three tiers in SWPBIS encompass a variety of evidence-based behavior support strategies that improve student prosocial behavior and minimize student problem behavior. Tier 1 SWPBIS involves best practice in classroom management and instruction for all students, Tier 2 is supplemental support that is provided to individual students or groups of students, and Tier 3 includes individualized comprehensive interventions that teach socially appropriate behavior and address the function of the student's

S. E. Pinkelman (✉) · K. Bundock · K. Rolf
Department of Special Education and Rehabilitation, Utah State University, Logan, UT, USA
e-mail: sarah.pinkelman@usu.edu

problem behavior (i.e., "why" the student engages in the problem behavior). RtI is a MTSS applied to academics (Freeman, Miller, & Newcomer, 2015; Harlacher, Sanford, & Nelson Walker, n.d.; Harn, Basaraba, Chard, & Fritz, 2015). In RtI, core academic curricula in the areas of reading and math are provided at Tier 1, and Tiers 2 and 3 involve intensifying the core instruction or using a research-validated supplemental or replacement curriculum or intervention (Fuchs & Fuchs, 2006; Harlacher, Sanford, & Nelson Walker, nd.). Both SWPBIS and RtI share common elements related to the intricacies of implementing MTSS in schools. These elements are described below. For more information on RtI and promoting academic success, see the chapter "Promoting Academic Success".

Hallmarks of MTSS in Schools

Contextual Fit

Contextual fit refers to how well practices align with the values, skills, and resources in a given setting (Albin, Lucyshyn, Horner, & Flannery, 1996). Related to values, SWPBIS and RtI start with identifying a school's valued outcomes, such as improving reading achievement scores or reducing disruptive behavior in the classroom. After defining the valued outcomes, school teams then collaboratively select research-validated practices that will result in achieving these outcomes with the majority of the student population (Horner & Sugai, 2015). Schools implementing SWPBIS and RtI also assess social validity, or the extent to which relevant stakeholders agree that the goals, procedures, and results (i.e., student outcomes) are acceptable and socially meaningful (Wolf, 1978). In SWPBIS, community stakeholders provide input related to a variety of program components, such as the school climate and the selection of school-wide rules and expectations. In RtI, families work with school teams to select a core academic curriculum that they feel is best suited for their particular student population. The second element of contextual fit, skills, refers to the skill set required by those who will be implementing the practice (e.g., teachers, paraprofessionals) and those overseeing implementation (i.e., school administrators). By assessing the skills needed to carry out these implementation and supervisory functions, school teams can determine if additional training and coaching is needed, and if so, develop a plan for how they will provide such support. Lastly, resources in contextual fit refer to the allocation of funding, time, and materials that are needed for successful implementation, and the school's capacity to provide ongoing support for implementation.

Evidence-Based Practice

Another hallmark of SWPBIS and RtI is evidence-based practice (EBP). EBP remains a hot topic in the fields of education and services for students with Autism Spectrum Disorder (ASD), and there are many descriptions of EBP available in the literature. Arguably, the definition of EBP most relevant to MTSS and serving children with ASD is the definition provided by Slocum et al. (2014), who describe EBP as a decision-making process that integrates the best available evidence, clinical expertise, values, and context. In SWPBIS and RtI, the best available evidence refers to research-validated practices that are likely to produce intended student outcomes under particular conditions when implemented with fidelity. Clinical expertise is the skill set of teachers and staff who are tasked with implementing the intervention, as well as those who will support the implementers (e.g., instructional coaches, special education director, principal). Values and context as described by Slocum et al. (2014) are similar to contextual fit and social validity that was briefly outlined above. Variables related to stakeholder values and particulars of the implementation setting (i.e., the classroom, school, district) have a significant impact on the extent to which practices are implemented with fidelity and the likelihood that the practice will produce intended student outcomes.

Data-Based Decision-Making

Data-based decision-making is a critical component of both SWPBIS and RtI. Data are collected on both student outcomes and fidelity of implementation at different levels of the system (e.g., individual, group, school-wide) across all three tiers. These data not only inform the extent to which interventions are being implemented with fidelity and impacting student behavior, but these data also allow school teams to determine the level of student need (i.e., Tier 1, Tier 2, or Tier 3) across domains (e.g., social behavior and academics). For example, in SWPBIS, system-level data are collected using assessment tools such as the Tiered Fidelity Inventory (TFI; Algozzine et al., 2019) to determine the extent to which the school-wide MTSS framework is in place. System-wide data are also collected on student behavior via proxy measures, such as office discipline referrals (ODRs). In Tier 3 SWPBIS and RtI, data are collected on individual student behavior and individual implementer (e.g., teacher, paraprofessional) behavior to assess if the student's plan is being implemented with fidelity and if the plan is having an impact on student behavior and academic achievement.

Continuum of Support

In SWPBIS and RtI, different levels of intervention intensity, or "tiers" are provided for students based on their academic and behavioral needs (Fuchs & Fuchs, 2006; National Center on Intensive Intervention, n.d.; Stecker, 2007). While MTSS can have any number of tiers of support, it is most common to have three (Freeman et al., 2015). Tier 1, also known as the primary tier, aims to prevent students from developing challenges in academics and social behavior by providing a level of support that allows for a minimum of 80% of the student population to be successful (Hawken, Vincent, & Schumann, 2008). For students who are not successful at Tier 1, Tier 2 is initiated. Ideally, no more than 15% of students will require Tier 2 supports. Tier 2 is designed to supplement what students already receive as part of Tier 1 (Hawken et al., 2008). For students who are not successful at Tiers 1 or 2, Tier 3 support is provided. It is estimated that approximately 5% of students in a school will require Tier 3 supports. In Tier 3, also known as the tertiary tier, students receive intensive, individualized support (Hawken et al., 2008). This may involve further intensifying interventions that are already in place as part of Tiers 1 and 2, layering on additional individualized interventions, or using interventions that replace what the student previously received at Tiers 1 and 2.

Teaming

Another hallmark of SWPBIS and RtI is the use of building-level teams, which are responsible for reviewing school-wide student data, making data-based decisions, reviewing data on the effectiveness of strategies, and planning future actions (Nellis, 2012). Schools often have leadership teams, behavior support teams, academic support teams, and grade-level teams. School leadership teams typically include administrators and at least one representative from each relevant school role (teachers, counselors, school psychologists). The school leadership team is responsible for guiding and overseeing MTSS implementation efforts. They are tasked with ensuring that strategies and interventions are being used with fidelity and that student outcomes are being achieved. This team collaboratively problem solves to determine what adjustments are necessary based on data, and also ensures that sufficient resources are available to support implementation (e.g., materials, funding, staff time allocation).

Student support teams (behavior and/or academic) make data-based decisions for groups of students (Tier 1 and Tier 2) and individual students (Tier 3). The structure and purpose of behavior support teams and academic support teams are similar. It is recommended that these teams be combined when possible (based on school size and structure) to help facilitate collaboration and consistency between behavior and academic intervention efforts (Harn et al., 2015). Support teams typically meet twice per month to review data and (a) determine the extent to which Tier 1 supports

are effective for the majority of the student population, (b) examine whether specific students need Tier 2 or 3 intervention, and (c) discuss the progress of students who are receiving Tier 2 or 3 interventions to determine whether any adjustments should be made. It is recommended that student support teams are interdisciplinary and include an administrator, representatives from each grade level and content area (if middle or high school), school psychologists, social workers, and specialized personnel such as a Board Certified Behavior Analyst (BCBA) for behavior support teams, and reading or mathematics specialists for academic support teams.

Another team in SWPBIS and RtI are grade-level teams. Grade-level teams involve teachers from each grade level who meet to discuss curriculum and teaching practices and to review data to determine if there are students who are facing similar behavioral and/or academic difficulties in multiple contexts. If there is evidence that students are facing significant difficulties in multiple areas and they have not responded to Tier 1 support, grade-level teams may refer students to the student support team for additional support.

Systems Approach

SWPBIS and RtI focus on establishing systems to support the implementation of research-validated practices. Without effective systems in place, it is unlikely that schools will be able to implement practices with sufficient fidelity to improve student outcomes and sustain implementation over time (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Systems are not simply the school policies, but include the coordination of relevant school personnel for processes such as general operating procedures, budget and staff time allocation, data systems, teaming, hiring, onboarding, evaluation, and ongoing coaching for staff. By working to maximize the system infrastructure, this improves the school's capacity to efficiently implement practices and sustain implementation over time (Horner, Sugai, & Fixsen, 2017).

Integrated MTSS Support Students with ASD

While SWPBIS and RtI were originally developed and implemented in isolation from one another, researchers and practitioners now recognize the importance of integrating behavioral and academic supports to efficiently and effectively meet student needs (Freeman et al., 2015; Harn et al., 2015; Hawken et al., 2008; McIntosh, Horner, Chard, Boland, & Good, 2006). It is important to prioritize the integration of academic and behavioral support efforts, primarily because academic and behavioral success are tied to one another, and because coordination of system-level efforts ensures more efficient and organized use of resources and personnel (Hawken et al., 2008). Research has found that students' academic performance influences the likelihood that they will receive ODRs, as well as the degree to which they will respond to

behavioral interventions (McIntosh et al., 2006). Additionally, student behavior can also influence academic success. Students who face difficulty accessing academic material may engage in off-task behavior, which may escalate as academic demands increase. Similarly, students who are exposed to academic material that is too easy for them may also engage in problem behavior. Due to how closely behavior and academics are linked, it is important for professionals to consider both academic and behavioral factors when evaluating student performance and making data-based decisions about interventions.

Using an integrated and collaborative approach to academic and behavioral support also helps ensure that school resources are used efficiently, and that interventions do not conflict with one another. If it is determined that a student needs both behavioral and academic interventions, it is important to involve the school personnel related to the implementation of each intervention to ensure that they are compatible, and to streamline different intervention components when possible. For example, a student who needs an intensive reading intervention who also engages in frequent off-task behavior may benefit from an intervention that includes targeted skill building in reading and a dense schedule of reinforcement for on-task behavior and work completion. The student's needs will be most efficiently and effectively met if the reading specialist and behavior specialist collaborate when designing, implementing, and evaluating the intervention.

It is important to note that students could require different levels of support for academics and social behavior, and this is also true for students with ASD. For example, a student with ASD might require an additional 30 min/day of reading instruction above what they receive in the general education classroom (Tier 2), and also have an individualized behavior support plan (Tier 3) that allows them to be successful in the general education setting. Another student with ASD might be successful with core academic instruction (Tier 1), but require small group social skills instruction for skill building in social behavior (Tier 2). The supports provided across the multi-tiered framework for both academics and social behavior are outlined below.

Tier 1

Goals and aims of Tier 1. The primary goal of Tier 1 supports is to prevent academic and behavioral problems before they occur by implementing effective practices to promote positive academic, behavioral, and social outcomes aligned with school success (Lane, Menzies, Ennis, & Bezdek, 2013). As mentioned earlier in this chapter, it is estimated that approximately 80% of the student population will be responsive to Tier 1 efforts alone, as long as they are implemented with fidelity (Hawken et al., 2008; Lane et al., 2013). The key implementation features of Tier 1 supports include the identification of meaningful outcomes, establishing and investing in schoolwide systems, selecting and implementing contextually appropriate and research-validated

practices, and collecting and using data for decision-making (Simonsen, Sugai, & Negron, 2008).

To identify meaningful outcomes, the school leadership team works with relevant stakeholders (e.g., teachers, staff, families, community members) to identify socially significant outcomes related to academic and behavioral success. At this stage, schools examine data related to their school and any existing school-improvement plans to select areas that are priorities for improvement. The team then sets observable, measurable, and feasible goals to focus their Tier 1 implementation efforts.

A number of schoolwide systems will facilitate effective Tier 1 implementation, such as school teams, clear policies for how students are identified and provided intervention, universal screening, data collection and evaluation systems, fidelity checks, and an ongoing commitment to SWPBIS from staff and administration at both the school and district levels will enhance implementation (Horner, Sugai, & Anderson, 2010). A leadership team should be built with relevant representatives from administration, teachers, special services, support staff, and community members (Simonsen et al., 2008). The leadership team is responsible for guiding the implementation of other system-level components of Tier 1, which includes gaining at least 80% buy-in from the school faculty and staff, establishing an efficient data collection and evaluation system, and pursuing training in effective implementation of academic and behavioral efforts (Simonsen et al., 2008). After initial implementation, the leadership team is responsible for evaluating the effectiveness and fidelity of Tier 1 practices, providing ongoing coaching and training to maintain practices, and evaluating progress on the school's established goals.

At the core of Tier 1 is the selection and implementation of contextually appropriate, research-validated practices that will be provided to all students in the school. Within the context of SWPBIS, this involves establishing clearly defined school-wide rules and expectations along with a continuum of consequences for appropriate and inappropriate behavior (Hawken et al., 2008). For RtI, this entails selecting a research-validated curriculum in each core content area that will be implemented by all teachers (Hawken et al., 2008; Lane et al., 2013).

The final critical element related to the implementation of Tier 1 practices is the collection and use of data for decision-making. Data are collected to determine which students need additional supports (using universal screening), evaluate the fidelity with which Tier 1 practices are implemented, and assess the degree to which student needs are being met through Tier 1 efforts (Horner et al., 2010). If there is low fidelity, or if fewer than 80% of students are responsive to Tier 1 efforts, the leadership team should invest in coaching teachers on Tier 1 practices and/or adjusting Tier 1 practices to ensure that contextually appropriate and research-validated practices are being used effectively and meeting the needs of the majority of the student population (Hawken et al., 2008; Lane et al., 2013).

Tier 1 RtI. Tier 1 RtI includes the core instruction that is provided to all students. Tier 1 RtI often refers to English/language arts and math curricula that are provided to all students in general education classrooms (Lane et al., 2013). Additionally, Tier 1 involves the implementation of effective teaching practices that can be used

with any curricula in any class (i.e., frequent opportunities to respond, the use of assessment data to guide instructional decision-making, etc.; Lane et al., 2013). Tier 1 instruction should be backed by research. Schools that implement Tier 1 instruction that is not research-validated risk creating a situation in which a disproportionate number of students require more intensive intervention. Tier 1 instruction is the first level of preventative support. Schools that successfully implement research-validated instructional programs at Tier 1 create an environment in which most students will meet grade-level standards (Fuchs & Fuchs, 2006; Stecker, 2007).

Data collection to monitor students' responsiveness to intervention at Tier 1 involves universal screening of all students three times per academic year at their grade level (Lane et al., 2013). Often, this involves giving students a quick, reliable, and valid assessment known as a curriculum-based measure (CBM). A variety of CBMs are available for reading, writing, and math (Deno, 1985; Fuchs & Fuchs, 2006; Shinn, 2007). Conducting universal screening at each student's grade level allows school leadership to make instructional decisions that will support the students to meet short and long-term goals (National Center on Response to Intervention, n.d.b). The interdisciplinary school leadership team should include teachers who provide general education and special education services, related service personnel (e.g., occupational therapists, speech/language pathologists, physical therapists, etc.), a school psychologist, a school counselor, a behavior specialist, and at least one administrator with authority to commit resources. Including all of these individuals will enable the school leadership team to quickly and effectively design supports that will benefit all students.

Tier 1 SWPBIS. Consistent with MTSS logic, Tier 1 SWPBIS aims to prevent problem behavior from developing through the implementation of research-validated classroom management for all students. Common Tier 1 practices in SWPBIS include (a) working with stakeholders to establish school-wide rules that can be applied to any school context (e.g., be safe, be respectful, be responsible), (b) operationally defining rule-following for all school environments (e.g., being safe, respectful, and responsible on the playground, in the classroom, etc.), (c) explicitly teaching students the rules and expectations across environments, (d) reinforcing student appropriate behavior, (e) providing a continuum of consequences for problem behavior, and (f) data-based decision-making (Horner et al., 2010).

Data are collected at Tier 1 to evaluate the fidelity with which Tier 1 practices are being implemented and also to assess the degree to which Tier 1 is impacting student behavior (Horner et al., 2010). Analyzing these data also allow school teams to determine if any student might benefit from additional support at Tier 2. Fidelity data at Tier 1 are collected using tools such as the TFI, as outlined earlier in this chapter. For student behavior, proxy measures such as ODRs are used to monitor student rule violations. School teams review ODR data regularly and analyze data to identify any patterns (e.g., by location, time of day, student) and assess the impact of Tier 1 on the student population. These interdisciplinary school teams include a representative sample of the teachers, related service personnel, staff, and administration who work in the school, as well as family and student representatives. Including all of these individuals on the team allows for relevant stakeholders to have an opportunity to

provide feedback on Tier 1 practices, solve problem, and shape Tier 1 implementation in a manner that is in the best interest of all students in the school.

Tier 2

Goals and aims of Tier 2. The goal of Tier 2 is to provide students who are non-responsive at the Tier 1 level with additional supports (Hawken et al., 2008). It is anticipated that even with well-implemented Tier 1 efforts, approximately 15% of students will require additional support at the Tier 2 level (Hawken et al., 2008; Lane et al., 2013). Tier 2 efforts are designed to heighten the intensity of support by increasing the time allocated to instruction, increasing the frequency of opportunities to practice and opportunities for feedback, and providing targeted instruction in specific areas of need (Fairbanks, Simonsen, & Sugai, 2008; Hawken et al., 2008; Horner et al., 2010). It is important to note that Tier 2 supports should be implemented in addition to those at Tier 1, and not as a substitution for Tier 1 (Lane et al., 2013). Additionally, Tier 2 supports should be considered fluid and temporary, meaning that a student should only receive Tier 2 supports until they are responding to intervention and can be successful at Tier 1 without additional supports (Lane et al., 2013).

Tier 2 interventions should require minimal time to implement, have similar features across students, and be aligned with Tier 1 efforts to facilitate implementation and sustainability (Fairbanks et al., 2008; Hawken et al., 2008; Yong & Cheney, 2013). As such, Tier 2 interventions are often multicomponent in nature (address more than one skill or area of need), frequently involve the use of standardized protocols, and often are delivered to groups of students (Hawken et al., 2008; Yong & Cheney, 2013). Tier 2 interventions may include direct instruction on specific skills, the allocation of more minutes to instruction in a particular subject, increased structure, more precise feedback, and increased school to home communication (Fairbanks et al., 2008; Hawken et al., 2008; Horner et al., 2010; Rodriguez, Loman, & Borgmeier, 2016; Yong & Cheney, 2013).

There are several system components essential for the efficient implementation of Tier 2. These include the establishment of criteria for early identification based on universal screening, a progress monitoring system, team meetings with a goal of identifying and monitoring the progress of students in need of Tier 2 supports, allocating financial time and effort to coordinate intervention implementation, an administrative and team process for selecting interventions, and the use of fidelity data to guide and adjust implementation (Horner et al., 2010). Additionally, a plan for gradually fading Tier 2 interventions should be incorporated to help facilitate maintenance and generalization of skills targeted during the Tier 2 intervention (Rodriquez et al., 2016; Yong & Cheney, 2013).

Tier 2 RtI. Tier 2 support is provided to students who perform below the defined benchmark in an academic area (Hawken et al., 2008). Supports in this tier may involve intensifying the instruction provided as part of Tier 1 or providing a research-validated intervention that supplements core instruction. Tier 2 supports are often

provided to small groups of students with similar academic needs, with the goal that they will respond well to the intervention and not require more intensive interventions (Fuchs & Fuchs, 2006; Harlacher, Sanford, & Nelson Walker, n.d.; Stecker, 2007).

Students who receive Tier 2 supports participate in the universal screening described as part of Tier 1 (Lane et al., 2013). This allows school personnel to monitor how students are performing relative to other students at their grade level (National Center on Response to Intervention, n.d.b). Students receiving Tier 2 supports also benefit from progress monitoring (Hawken et al., 2008). Progress monitoring involves frequently giving students reliable, valid, and relatively quick assessments in the relevant academic area at their instructional level (Fuchs & Fuchs, 2006; National Center on Response to Intervention, n.d.a). In Tier 2, administering a progress monitoring assessment every two to four weeks is usually sufficient, depending on how sensitively the particular assessment measures growth, the subject area, and the student's goals (Harlacher, Sanford, & Nelson Walker, n.d.). Progress monitoring data assist school personnel in setting appropriate goals for students, monitoring their progress toward short and long-term goals, and adjusting instruction.

As described previously regarding Tier 1 RtI, the school leadership team that is responsible for monitoring the progress of students receiving Tier 2 supports should be interdisciplinary. For example, a student with ASD receiving Tier 2 supports in reading may also require additional support in the area of mathematics, particularly, when engaging in mathematics with more intense reading demands (e.g., solving story problems). In a situation like this, the reading and mathematics teachers both need to participate in the school leadership team so that reading performance and its impact on mathematics may be monitored. If the school leadership team decides that the student would benefit from supplemental reading instruction, then the individual responsible for delivering the supplemental instruction should also be a member of the school leadership team. It is important to carefully consider the needs of the students who receive Tier 2 supports to ensure that all of the necessary individuals are involved in the school leadership team.

Tier 2 SWPBIS. Tier 2 behavioral interventions are appropriate for students who engage in frequent mild to moderate intensity behavior problems throughout the day, and who have not been responsive to Tier 1 supports alone. These students are considered at risk, and should be provided with efficient and effective interventions to prevent the development of more intensive behavior problems (Mitchell, Stormont, & Gage, 2011). Students are typically identified for Tier 2 support by the behavior support team based on data such as ODRs, high rates of absenteeism, or teacher/parent referral. With Tier 2 interventions, there is a high priority placed on quick intervention implementation following identification; it is recommended that students be able to access an appropriate Tier 2 intervention within five days of being identified as in need of support (Crone, Hawken, & Horner, 2010). The intervention should align with the area of need demonstrated by the student. For example, a student exhibiting frequent off-task or disruptive behavior could be a good candidate for Check-in Check-out (CICO), the most widely implemented Tier 2 intervention in schools (Mitchell et al., 2011; Rodriguez et al., 2016). On the other hand, a student who is not engaging in disruptive and off-task behavior, but is struggling with poor

social skills and peer interactions would likely be a good candidate for a social skills intervention. Regardless of the specific Tier 2 intervention selected, interdisciplinary collaboration plays an important role in the selection and provision of services. The interdisciplinary student support team works collaboratively to collect and review data when determining which students require Tier 2 support and to identify appropriate Tier 2 interventions for each student. To ensure that Tier 2 interventions are implemented with fidelity, relevant school professionals communicate to identify who is responsible for both implementing the intervention and collecting data to monitor student progress. For example, when implementing CICO, the CICO coordinator plays an important role in facilitating interdisciplinary collaboration. The CICO coordinator is responsible for communicating with each student's teachers to help address any concerns they have and deliver feedback to teachers on how they are implementing the intervention. The CICO coordinator is also responsible for communicating with the student's family on a regular basis, as well as providing data to the student support team so they can evaluate student progress. In addition to communicating with teachers, the student support team, and students' families, the CICO coordinator also updates administrators on a regular basis and asks for their support in resolving issues or challenges as they arise.

Tier 2 behavioral interventions are typically directly linked to Tier 1 practices, provide students with more structure, include specific prompts, incorporate self-monitoring, and include reinforcement of appropriate behavior (Fairbanks et al., 2008; Hawken et al., 2008; Horner et al., 2010; Rodriguez et al., 2016). For example, CICO is structured to align with the school-wide expectations in place at Tier 1. A student is provided with (a) positive adult contact at the start of the day when they check-in with the CICO coordinator, (b) targeted and specific feedback from their teacher(s) throughout the day, (c) reinforcement through teacher attention and feedback for appropriate behavior, and (d) additional reinforcement at the end of the day from the CICO coordinator if they meet their daily point goal (Crone et al., 2010). Additionally, students can self-monitor the degree to which they meet expectations throughout the day, and have teachers validate or correct their ratings. This process can also be used to help fade the intervention once the student has made adequate progress, which is a goal of Tier 2 interventions to help ensure that students can be successful with Tier 1 supports only (Rodriguez et al., 2016).

Tier 3

Goals and aims of Tier 3. Tier 3 interventions target the estimated 5% of students who have the most intensive needs in schools and are non-responsive to Tier 1 and Tier 2 supports (Hawken et al., 2008; Lane et al., 2013). These students may have needs in multiple areas (academic and social behavior), and/or may have multiple risk factors. Tier 3 interventions typically incorporate individualized lesson plans and strategies to address an individual student's specific learning needs (Hawken et al., 2008). Because Tier 3 supports are individualized and intensive, they require a

significant time investment and should be used only for students who have not been successful with Tier 1 and 2 supports. Tier 3 supports are implemented in addition to, not as a replacement for, Tier 1 and 2 supports.

Tier 3 interventions involve the use of systems features, including the behavior support team, a progress monitoring system, a process for evaluating intervention fidelity, a specified process for reporting intervention outcomes, access to specialized expertise, and use of data to guide implementation (Horner et al., 2010). The process for implementing Tier 3 support begins by organizing an interdisciplinary team of relevant school personnel, family member(s), and perhaps the student themselves. The team works together to examine what assessments might be needed to inform particulars of Tier 3 intervention, data to be collected, and the process and people involved in collecting those data. The data most typically collected in the process of creating individualized interventions is a strength-based assessment and a functional behavior assessment (FBA; Fairbanks et al., 2008; Horner et al., 2010). After data are collected, the team meets again to evaluate the data and develop a comprehensive plan of support (Fairbanks et al., 2008). Tier 3 typically involves intensive instruction, applied behavior analytic techniques, self-management strategies, person-centered planning, and often components of Tier 2 interventions discussed earlier in this chapter (i.e., increased instructional time, opportunities for practice and feedback, etc.; Hawken et al., 2008; Horner et al., 2010). The interdisciplinary Tier 3 team also determines (a) the specific frequency of intervention implementation, (b) team member roles related to intervention delivery, (c) a measurement process to evaluate student progress, (d) criteria for response to intervention, and (e) how fidelity of implementation will be monitored.

Tier 3 RtI. Tier 3 RtI may involve further intensifying the academic supports provided in Tiers 1 and 2 (Fuchs & Fuchs, 2006; Harlacher, Sanford, & Nelson Walker, n.d.; Stecker, 2007), or it may also involve replacing the core and supplemental interventions provided in Tiers 1 and 2 with a research-validated core replacement program. Tier 3 support is provided to individual students or small groups of students. It is important to note that there is no consensus within the field regarding how Tier 3 academic supports interact with special education services; in some cases, Tier 3 RtI is considered synonymous with special education services, while in others Tier 3 supports are separate from special education services, or considered a step prior to referral for special education services (Hawken et al., 2008).

Students receiving Tier 3 support typically participate in the same universal screening process as students who receive Tier 1 and Tier 2 supports. Again, this allows school personnel to assess performance relative to the grade-level standards (National Center on Response to Intervention, n.d.b). Occasionally, however, a team may decide that participating in universal screening at the student's grade level is not beneficial for the student, such as when a student's skill level is well below grade level. Regardless if a student participates in universal screening, progress monitoring is still used to measure academic achievement at the student's instructional level. Progress monitoring at Tier 3 uses the same types of assessments as progress monitoring in Tier 2. The main difference between Tier 2 and Tier 3 progress monitoring

is the frequency with which the assessments are delivered. Depending on the assessments being used, the academic area, the skill(s) being monitored, and the amount of time required to administer the assessments versus the amount of instructional time available, progress monitoring assessments in Tier 3 are usually administered at least every one to two weeks (Busch & Reschly, 2007; Harlacher, Sanford, & Nelson Walker, n.d.; National Center on Response to Intervention, 2012).

An interdisciplinary team is critical to the successful implementation of Tier 3 RtI. As stated earlier in this chapter, many students who receive Tier 3 supports in one area also receive them in other areas. As such, a student with ASD who receives Tier 3 supports in reading may also require Tier 3 supports in writing, mathematics, and related services. The amount of individualized instruction necessary to support a student who needs Tier 3 supports in multiple areas requires that all of the student's teachers and related service personnel meet frequently and regularly to review progress monitoring data and plan instruction. These meetings provide opportunities for alignment of instruction across service providers. For example, the reading, writing, and mathematics teachers may collaborate with the speech/language pathologist to design instruction that is aligned across subject areas and uses the student's time efficiently by not being overly repetitive or unintentionally introducing skills and concepts in ways that contradict one another.

Tier 3 SWPBIS. Tier 3 SWPBIS involves individualized, function-based support for students whose problem behavior is not sufficiently responsive to Tier 1 or Tier 2 support. Tier 3 includes working on an interdisciplinary team to conduct a functional behavior assessment (FBA) to hypothesize the variables maintaining problem behavior (i.e., the function of problem behavior), and the conditions under which problem behavior is most and least likely to occur. The FBA process should include input from relevant professionals who can provide input with respect to the student's social behavior, academic performance, mental health, and any other areas relevant to the student's success (e.g., speech and language, occupational therapy, etc.). From these FBA data, the interdisciplinary team develops a comprehensive behavior support plan (BSP; also known as behavior intervention plan). The BSP outlines strategies to (a) influence the larger social context around the student (b) prevent problem behavior (antecedent manipulations), (c) teach function-matched replacement behavior and other skills, (d) reinforce appropriate behavior, and (d) respond to problem behavior (consequence manipulations; Horner, Sugai, & Anderson, 2010). A common misconception is that Tier 3 is reserved for students receiving special education services. While students with special needs, including students with ASD, often engage in problem behavior (Ala'i-Rosales, et al., 2019), it is erroneous to equate special education services with Tier 3 behavior support, as not all students who require Tier 3 behavior support receive special education services.

A challenge for effective Tier 3 behavior support is not only developing the BSP, but ensuring that the plan is implemented consistently and with sufficient fidelity that it will produce desired student outcomes (Pinkelman & Horner, 2017). As such, in addition to specific instructional and function-matched strategies, the BSP should also include an implementation and evaluation plan that details (a) team members responsible for implementing each component of the plan, (b) how team members

will receive training to implement the plan, (c) a timeline for implementation, (d) data to be collected on both fidelity and student outcomes, and (e) when data will be reviewed to assess both the extent to which the BSP is being implemented with fidelity and the extent to which it is impacting student behavior.

Conclusion

MTSS provides a framework for schools to efficiently deliver evidence-based practice to all students, including students with ASD. The continuum of supports in MTSS (i.e., Tiers 1, 2, and 3) allow interdisciplinary school teams to match intervention intensity to student need. Integrated and interdisciplinary MTSS that include both academic and behavior support are maximally effective and allow school teams to collaboratively address the unique and varied needs of all students.

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