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Pyramid Model for Early Childhood Education

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**NEBRASKA CENTER FOR RESEARCH ON
CHILDREN, YOUTH, FAMILIES & SCHOOLS**

Pyramid Model for Early Childhood Education: An NeMTSS Research Brief

Key Points:

- The Teaching Pyramid Model is a comprehensive, multi-tiered, PBIS and RTI supportive framework of evidence-based practice that promotes social, emotional, behavioral development, positive behavior and addressing challenging behavior of young children.
- Tiers of practice are described to address issues related to the early childhood workforce and training needed to provide universal supports to all children to promote wellness, targeted support to those who need additional help, and intensive interventions to those who need them.
- Teacher fidelity of pyramid implementation must be observed at each tier of the pyramid model within the classroom

Challenging behavior is an issue for many young children. Approximately 10% to 15% of typically developing preschoolers have behavior problems when they enter kindergarten (Campbell, 1995; West, Denton, & Germino-Hausken, 2000). Unfortunately, the percentage is higher for children living in poverty and for children with disabilities (Hemmeter, Ostrosky, & Fox, 2006). In addition, longitudinal researchers showed that about 50% of children who displayed externalizing behaviors in preschool continued to display these problem behaviors in later school years (Campbell, 1995). Therefore, promoting positive social-emotional competence in all children and intervening before social-emotional difficulties escalate is important for children to be successful from the very beginning.

Supporting the social and emotional development of preschoolers has gained significant attention in the past 20 years, and recently, researchers found that expulsion rates of preschoolers are higher than that of elementary and secondary students (Fox & Hemmeter, 2009; Gilliam, 2014). The issue with expelling young children is that it eliminates their chance to learn appropriate, desired behaviors that will prepare them for their future education. When children are removed from the classroom it is more difficult to implement evidence-based strategies (Lewis, Adamson, Mitchell, & Lembke, 2013) and the negative effects of these practices have come to the attention of the U.S. Departments of Health and Human Services and Education (2014a, 2014b).

Furthermore, early childhood teachers and caregivers encounter a wide range of behaviors in preschool-age children and many public preschool programs serve children who are already at-risk for behavior problems due to a disability or low socio-economic status (Lewis et al., 2013). Moreover, many early childhood teachers and caregivers report feeling unprepared to deal with such a wide variety of challenging behaviors. This is supported by a finding that only 10% of the children who displayed severe challenging behavior received appropriate supports for such difficulties (Kazdin & Kendall, 1998). Additionally, a later study found that between 30% and 40% of students who entered kindergarten did not possess the social and emotional skills needed to succeed in school (Stage, 2005). Further, even though school dropout is a concern with high school students, the best way to prevent it is to provide children with positive school experiences at the beginning of their education (National Dropout Prevention Center/Network, 2011).

What is the Pyramid Model?

The Teaching Pyramid Model, more recently referred to as the Pyramid Model, is a comprehensive, multi-tiered framework of evidence-based practices that promote the social, emotional, and behavioral development of young children (Hemmeter, Ostrosky, & Corso, 2012). The Pyramid Model focuses on promoting positive behavior and addressing challenging behavior (Hemmeter et al., 2012). The following strategies are emphasized in the effective practices:

- Acknowledging and reinforcing positive child behavior
- Directly teaching social skills, expectations, and behaviors to children related to different environments
- Monitoring children's challenging behaviors
- Teaching positive replacement behaviors.

This model incorporates the ongoing collection and use of teacher, classroom, child and family data for decision-making regarding children's response to intervention and employs team-based decision making.

Relationship to PBIS and RTI

The Pyramid Model is the early childhood model for Positive Behavior Interventions and Supports (EC-PBIS) and for Response to Intervention (RTI), which have been implemented at the K-12 levels (Fox, Carta, Strain, Dunlap, & Hemmeter, 2009). It is based on the same underlying principles, practices, and strategies as PBIS and RTI, but is implemented and taught in a way that is developmentally appropriate for young children in early care and education programs. It is designed as a program-wide intervention and should be implemented with fidelity to provide positive environments and promote engagement for all children. Fox and Hemmeter (2009) hope that, like PBIS, the Pyramid Model can be used as a framework for instruction and behavior management in preschool settings. Overall, researchers say that the focus of a PBIS framework in early childhood settings should be on the promotion of social and emotional development and the prevention of challenging behavior for all young children (Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003).

Applicable Ages and Programs

Although the Pyramid Model was designed for programs serving 3- and 4-year-olds, the research-based strategies are not limited to use in this age group. The practices have been adapted in many states for use in childcare programs and homes for children birth to age five and have been adapted and extended into K-3 classrooms.

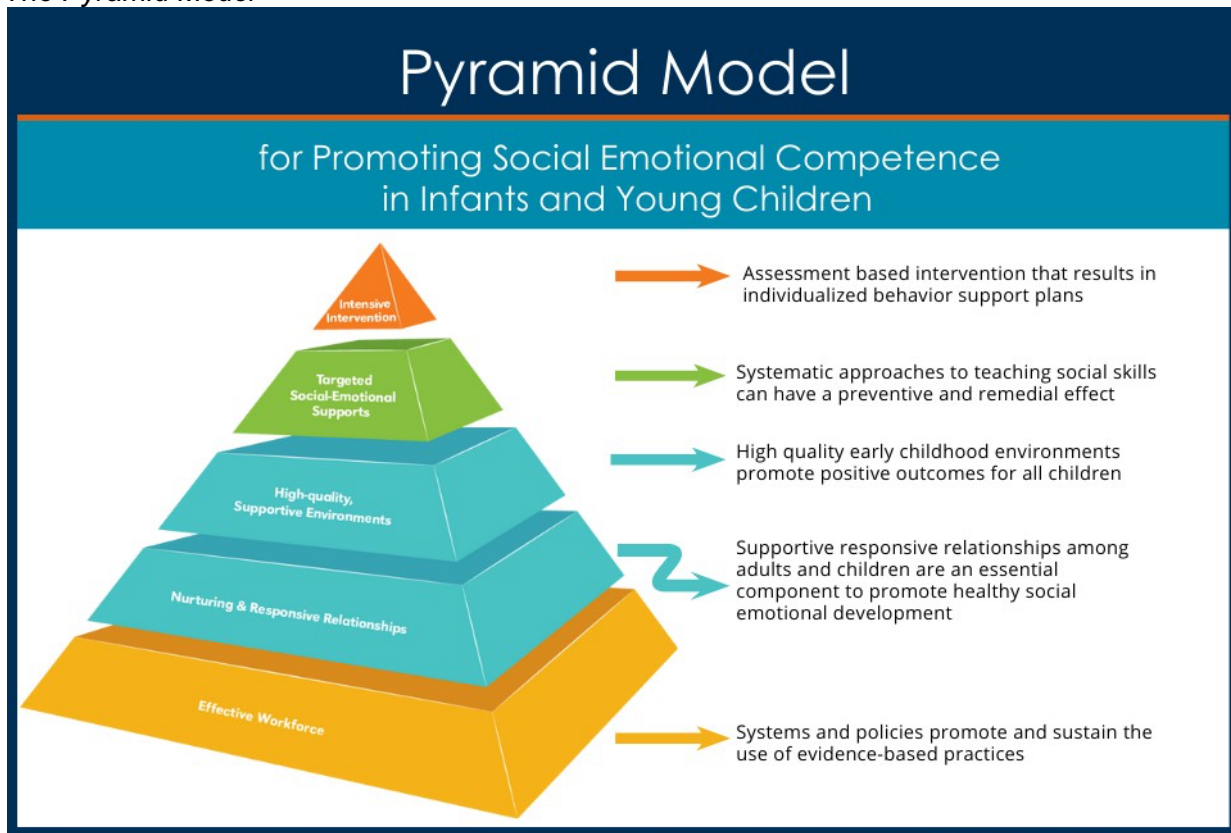
Establishment of the Pyramid Model

The Pyramid Model was developed in collaboration between two federally funded research and training centers. These are the Center for the Social and Emotional Foundations for Early Learning (CSEFEL) funded by the federal Office of Head Start and Child Care (<https://csefel.vanderbilt.edu>), and the Technical Assistance Center on Social Emotional Intervention (TACSEI) funded by the federal Office of Special Education Programs (<https://challengingbehavior.org>). Both centers are now consolidated under the umbrella of the national Pyramid Model Consortium (<https://www.pyramidmodel.org>). Their aim has been to disseminate Pyramid research and evidence-based teaching practices to early childhood programs across the U.S.

Underlying Principles of the Pyramid Model

The Pyramid Model proposes practices identified through a review of researched strategies to promote and enhance the social-emotional development of children. The practices are organized in a multi-tiered system of support. The model employs a “Pyramid” to represent the tiered system of supports (See Figure 1).

Figure 1
The Pyramid Model



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Some of the principles used in the Pyramid Model, such as specifying clear expectations and providing positive reinforcement for appropriate behaviors, are well-known as evidence-based strategies for increasing desired behavior. In addition, the Pyramid Model implements teacher practices which have been shown to lead to positive social and behavioral outcomes for young children. Some of these practices include, “actively supporting children’s play, responding to children’s conversations, promoting the communicative attempts of children with language delays and disabilities, providing specific praise to encourage appropriate behavior, developing positive relationships with children and families, and collaborative teaming with colleagues and other professionals” (Fox & Hemmeter, 2009).

Tiered Approach

The Pyramid Model describes four tiers of practice, adding an underlying foundational level, which addresses issues related to the early childhood workforce and training needed to support the following tiers. Developing, implementing, and reviewing the foundational level is necessary to sustain the intervention practices over time. The Pyramid Model builds on a public health approach to provide universal supports to all children to promote wellness, targeted support to those who need additional help, and intensive interventions to those who need them (<http://challengingbehavior.fmhi.usf.edu>). The tiers of intervention serve as the framework through which intervention decisions are made. Within each tier of intervention, research-based teaching practices and supports are outlined for educators to implement in early childhood settings. The tiers of intervention help prioritize the type and intensity of behavioral interventions that students receive (Fluke & Peterson, 2013).

Foundational Level

The foundation for all the practices in the Pyramid Model is the systems and policies necessary to ensure a workforce is able to adopt and sustain these evidence-based practices. Early care and education environments and teacher/caregiver skills are diverse and vary widely. An effective workforce that includes well-trained teachers, professional collaboration, shared decision-making and positive relationships between teachers, parents, caregivers, and any specialists are essential to prevent and address challenging behavior across all settings associated with an individual child. This is a necessary support system for the three tiers of intervention to be implemented effectively and with fidelity.

Promotion Practices

Universal supports (Tier 1 in K-12 PBIS) promoting the social development of all young children include two levels of practices: nurturing and responsive relationships and high-quality environments.

Nurturing and Responsive Relationship

Nurturing and responsive relationships are important for the promotion of social competence (Fox & Hemmeter, 2009). The Pyramid Model focuses on positive interactions not only with children but also with families, in order to provide a comfortable space to discuss problem behaviors, if they emerge (Hemmeter et al., 2012). Therefore, decision-making about a child is a collaborative process between care givers, parents, and teachers in order to build relationships before challenging behaviors arise. Effective teachers develop these relationships through ongoing communication with parents and caregivers related to the child.

To build positive and supportive relationships with children, it is important for teachers in early childhood settings to have positive interactions with each child in their classroom every day and to focus on acknowledging positive behaviors more than problem behaviors (Fox, et al., 2011). Because early childhood settings are typically children's first introduction to school, creating a foundation for building meaningful relationships between schools and families may help set children up for success later in school (Hemmeter et al., 2006; Sheridan, Knoche & Marvin, 2008). Finally, the Centers for Disease Control and Prevention (CDC) identified stable and nurturing relationships as an integral component of early childhood education that can serve as a "buffer" to promote positive health-related outcomes for at-risk children (Mendez, Simpson, Alter, & Meyers, 2015).

High Quality Supportive Environments

The second component of the promotion practices is to provide predictable and supportive environments for young children. Stegelin (2004) identified seven characteristics of high-quality early childhood education which include: 1) Holistic, 2) Nurturing, 3) Consistent, 4) Hands-on, 5) Stimulating, 6) Exploratory, and 7) Interactive learning across the curriculum. These environments promote appropriate behavior through the explicit teaching of rules and expectations. When children are taught rules and expectations, and have opportunities to practice them, their problem behaviors decrease (Hemmeter et al., 2012). Hemmeter and colleagues (2012) outline three essential approaches to well-structured environment:

- Implement a consistent schedule: set a routine where children learn what to do on a day-to-day basis.
- Minimize transition time: have an activity waiting for children who complete a transition quickly so that they are actively engaged while they wait for their peers (Hemmeter, Fox, & Snyder, 2013).
- Teach classroom routines and expectations: use picture prompts and teacher reminders when necessary.

Another component of a high-quality environment is reinforcement for positive behavior. Adult attention is important for supporting the growth of young children's social-emotional development. For some children, it might be difficult to "catch them being good" because they display challenging behavior often. Good practice suggests that five or more efforts to praise children for positive behavior should occur for every behavior correction a teacher might make. Hemmeter and colleagues (2012) suggest setting a timer to beep every two minutes to prompt the teacher or caregiver to acknowledge positive child behavior in the classroom. Through acknowledging such behaviors and providing specific feedback on children's behaviors, early childhood teachers are promoting social-emotional development. Again, because some children served in early childhood settings may already be at-risk for displaying challenging behaviors, the promotion practices are critical to supporting those children's emotional development as the consistency of practices can build children's trust in the environment and promote pro-social independence. While most children in early childhood settings will respond to these promotion practices, some children will need additional support to be successful.

Targeted Social Emotional Supports

This tier of intervention (Tier 2 in K-12 PBIS) addresses the needs of children at risk for social-emotional delays and includes more targeted social and emotional support for some children. The purpose of this tier is to identify and provide targeted support to children who show early signs for developing challenging behavior, but who are not currently in need of an individual behavior plan. Young children often require adult help in order to express their emotions appropriately. For some children, it will be necessary to provide explicit instruction for social emotional skills that help them to identify their emotions, express their emotions appropriately, initiate and maintain relationships, and use appropriate social problem-solving strategies (Hemmeter et al., 2006).

To effectively do this, a comprehensive and intentional approach to teaching social skills is recommended. For instance, a teacher can direct activities through introducing a behavior or concept, modeling the behavior, asking the children to rehearse and role-play, prompting the children to use the behavior in a situation, and providing feedback when children engage in the desired behavior (Hemmeter et al., 2006). When such an approach is taken, opportunities to practice skills are increased and progress monitoring takes place more often (Hemmeter et al., 2013). The caregiver can also extend this support to families to promote the development of the child's social and emotional skills at home. Research in the use of such family-focused instruction in social skill learning has repeatedly shown positive results (Jones, Daley, Hutchings, Bywater, & Catrin-Eames, 2008; Webster-Stratton, 1998).

Individualized Intensive Intervention

This tier of intervention (Tier 3 in K-12 PBIS) includes intensive support for children who have persistent behavior problems and who are not responsive to the previous tiers of environmental support and intervention. In this tier, a team of people meet to develop an individualized behavior plan to supplement and strengthen the current support the child is receiving. An individual behavior plan is developed through the collection of functional assessment data in order to determine the function or purpose of a child's behavior. Functional assessment includes identifying variables in the environment that affect the child's behavior. From this data, an intervention can include teaching positive replacement behaviors that serve the same purpose as the problem behavior (Maag, 2004) and using consequences that do not reinforce problem behavior (Hemmeter et al., 2013). Once the plan is in place, data is collected daily to determine the child's progress toward intervention goals and any necessary changes are implemented to increase progress. A more complete description of this approach is described in the Prevent-Teach-Reinforce for Young Children (PTR-YC) – An Early Childhood Model of Individualized Positive Behavior Support (Dunlap, Lee, Joseph, & Strain, 2015).

Individual Behavior Plans

For a multi-tier system of support to be effective for young children, a few factors need to be considered. First, young children spend their time in many different settings in one day (e.g., home, preschool, childcare, etc.), therefore it is necessary to consider the skill level of caregivers in every environment the child is in when developing an individual behavior plan (Hemmeter et al., 2006). Specifically, when developing an individual behavior plan for a child, the plan must be able to be carried out consistently in a childcare center, preschool, and at home. Not all early childhood teachers or care providers of young children are required to be "highly qualified" or meet state department of education teacher certification standards. Lower education levels and/ or inadequate training for some staff may mean less knowledge and skill in implementing strategies that support young children's social-emotional development and addressing challenging behaviors. Therefore, if any individual plan is to be effective, all adults working with the child need to work collaboratively to ensure consistent implementation.

Second, some of the challenging behaviors young children engage in may be developmentally appropriate or expected and/or may be due to lack of experience in certain social situations (Hemmeter et al., 2006). It is important to determine whether a child's behavior is developmentally appropriate for his or her age. If behavior is not developmentally appropriate, it is then important that adults teach positive behaviors and implement support based on individual needs. Learning prosocial behavior takes time and young children might perform "mistaken" behaviors when an alternative, more positive behavior is not yet known (Gatrell, 1994). Considering these issues will be helpful in developing appropriate behavior plans that teach children positive behavior and that can be consistent across settings.

Does Research Support the Pyramid Model?

The Pyramid Model has not been researched extensively as it is still a relatively new comprehensive framework for young children. To date, limited research data has been collected on the use of a multi-tiered system of support in early childhood settings. The first randomized study was conducted in public preschool classrooms with children with disabilities in Florida and Tennessee. The study found that children who were in classrooms where teachers received training in the Pyramid Model practices demonstrated better social skills and a significant reduction in problem behavior (findings were presented at the American Educational Research Association in New Orleans, April, 2011 and the Third conference of the International Society of Early Intervention in New York, May, 2011 http://challengingbehavior.fmhi.usf.edu/do/pyramid_model.htm). Additionally, other early

research on the Pyramid Model produced positive results of decreased problem behaviors; however, it also suggests that it is challenging for early childhood teachers and parents to implement with fidelity without ongoing support and training (Fox, Hemmeter, Snyder, Binder, & Clarke, 2011).

Implementing the Pyramid Model

It is beyond our scope to provide detailed recommendations about how to implement the Pyramid Model. As a complex, comprehensive prevention model, a variety of components must be in place depending on the type of setting and personnel involved. Hemmeter and colleagues (2006) identified nine components as being essential (See Figure 2).

Figure 2

Nine Components essential for successful implementation of Pyramid Model.

1. Administrative Support and Commitment
2. Behavior Support Team and Leadership Team
3. Commitment from Program Staff
4. Family Involvement in All Aspects
5. Program-wide Expectations for Children’s Behavior
6. Strategies for Teaching Expectations and Acknowledging Children’s Behavior
7. Process for Addressing the Needs of Children with Ongoing Challenging Behavior
8. Staff Training and Support Plan
9. Data Collection and Use for Decision Making

(Hemmeter, et al., 2006)

Any effort to implement the Pyramid Model must also be concerned about measuring how well and complete the implementation of the model is occurring in a particular environment. This “fidelity of implementation” becomes a crucial factor in measuring the model’s effectiveness. Fox and colleagues (2011) created the Teaching Pyramid Observation Tool (TPOT), an instrument that measures the fidelity of teacher implementation of the Pyramid Model practices in the classroom or center-based setting. The TPOT contains Pyramid practices that must be observed and rated by a reliable observer in each tier of intervention of the Pyramid Model to establish a level of implementation fidelity within the classroom (See Figure 3). Fox and colleagues (2011) created the TPOT, an instrument to measure implementation fidelity. The practices outlined should be observed in successful implementation of the Pyramid Model. This table was copied directly from Fox et al. (2011).

Figure 3

Practices Assessed by the Teaching Pyramid Observation Tool (TPOT)

Level	Practice Topics
Nurturing and Responsive Relationships	<ul style="list-style-type: none"> • Supporting children’s play • Responding to child conversations • Support communication of children with special needs • Positive feedback and encouragement of appropriate behavior • Build relationships with children
High-Quality Supportive Environments	<ul style="list-style-type: none"> • Adequate materials • Defined play centers • Balanced schedule (large and small group) • Structured transitions

	<ul style="list-style-type: none"> • Individualized instructions for children who need support • Teach and promote small number of rules • Design activities that are engaging to children • Provide clear directions
Social Emotional Teaching Strategies	<ul style="list-style-type: none"> • Teach children to identify and express emotions • Teach and support self-regulation • Teach and support strategies for handling anger and disappointment • Teach and support social problem-solving • Teach and support cooperative responding • Teach and support friendship skills • Teach and support collaboration with peers
Individualized Interventions	<ul style="list-style-type: none"> • Convene a team to develop interventions • Collect data to determine nature of problem behavior • Develop individualized behavior support strategies • Implement behavior support plan with consistency • Conduct ongoing monitoring of child progress • Revise plan as needed • Partner with families and colleagues in plan implementation

Conclusion

The Pyramid Model represents a comprehensive effort to provide teachers, caregivers, and families with the tools and strategies needed to promote and support positive behavior, prevent challenging behavior, and address the social needs of all young children. The Pyramid Model emphasizes data-based decision making, employs evidence-based prevention and intervention practices, and matches the intensity of behavior intervention to the intensity level of behavior for those children in need of individual support. The Pyramid Model provides a program-wide approach for use by early childhood teachers, caregivers, and families to support the social-emotional development of young children and decrease or eliminate challenging behaviors.

See Other Related Briefs

The Student Engagement Project has available several related Strategy Briefs: Individual behavior plans & functional assessment; Positive behavior interventions & supports; and Parent & family involvement. All are available at: <http://k12engagement.unl.edu>.

Resources

The Pyramid Model Consortium (PMC)

On the Pyramid Model Consortium website, research and resources can be found to support the implementation of the Pyramid Model in school-based and center-based early childhood programs. You can also locate training and professional development opportunities as well as other helpful information regarding implementation of the Pyramid Model via this website. <http://www.pyramidmodel.org/>

Center on the Social and Emotional Foundations for Early Learning (CSEFEL)

CSEFEL is focused on promoting the social emotional development and school readiness of young children from birth to age 5. CSEFEL is a national resource center funded by the Office of Head Start and Child Care Bureau for disseminating research and evidence-based practices to early childhood programs across the country. <http://csefel.vanderbilt.edu/>

Technical Assistance Center on Social Emotional Intervention for Young Children

Among its many goals, the Technical Assistance Center will offer up-to-date information for multiple consumers including parents, providers, administrators, and policy makers. It provides web-based TA and training opportunities. www.challengingbehavior.org

National Institute on Effective Practices: Addressing Challenging Behavior and Supporting Young Children's Social/Emotional Development

All of the latest research and effective practices are presented at this annual national training institute. Links to all presentation PowerPoints are provided at this link. <http://nti.cbcs.usf.edu/>

Prevent-Teach-Reinforce for Young Children (PTR-YC)

Here you will find a webinar recording with more information about the early childhood model for individualized positive behavior support. <https://challengingbehavior.org/webinar/prevent-teach-reinforce-for-young-children-an-intervention-model-for-the-most-serious-challenging-behaviors/>

Positive Behavior Intervention and Supports (K-12)

The Positive Behavior Intervention and Supports (PBIS) website provides information on K-12 schoolwide implementation with answers to frequently asked questions and case examples at each tier of intervention. In addition, there is information about family-school partnerships and community partnerships. Information on the evaluation, research and training on PBIS is also provided at the website. <https://www.pbis.org/>

Policy Statement on Expulsion and Suspension Policies in Early Childhood Settings

The U.S. Department of Health and Human Services and U.S. Department of Education (2014) provide several resources and website links related to this topic in their policy statement on expulsion and suspension policies in early childhood settings. <https://www.acf.hhs.gov/resource-library>

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