5-12-2022

Trauma healing with the neurosequential model of therapy and Bal-A-Vis-X

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Trauma Healing with the Neurosequential Model of Therapy and Bal-A-Vis-X

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A research project submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

Partial Fulfillment of the Requirements

for the degree of

Educational Specialist

Department of Graduate Psychology

May 2022

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Dedication

To my husband, Aaron, who contributed way more than just tacos

To my son, Avery, whose distractions were mostly always invited

To my parents, Doug and Sally, who taught me to always look at the science and to have compassion for others

Thank you.

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Abstract

Stigma related to childhood trauma is shifting with the help of advancements in the understanding of neurobiology and interventions that are proving to be effective for healing. There are immense costs and consequences for survivors of childhood trauma and their loved ones that were not so long ago considered irrelevant and the notion that kids bounce back from adversity was previously popular in the psychological community (Perry & Szalavitz, 2017). The broad strokes of Dr. Bruce Perry's clinical intervention model, *The Neurosequential Model of Therapy* (NMT) describes a trauma-sensitive, sequential approach to changing the stress response within mental health counseling. In light of this newer understanding, I introduce an intervention that fits with the NMT called Bal-A-Vis-X to school counseling students through a workshop. While simplistic in practice, this cross-lateral movement-based intervention integrates brain hemispheres which provide emotional regulation, strengthen relationships, provide rhythm, and build fine and gross motor skills leading children to have deeper focus, body control, self-confidence, and fun. School counseling students surveyed after the workshop said they are enthusiastic to introduce Bal-A-Vis-X to students to provide trauma-sensitive interventions that include movement.

Keywords: Childhood Trauma, Trauma-Sensitive, Bal-A-Vis-X, Bottom-Up Approach, Neurosequential Model of Therapy, stress response

Introduction

Childhood trauma, referring to at least one harmful or life-threatening event that happens to someone between birth to age eighteen, is incredibly prevalent and will affect the work that mental health counselors do (Myers, 2014). Over forty percent of children in the United States may experience one or more traumatizing events before age eighteen (Perry & Szalavitz, 2017). Clinicians can be one of the first in the line of caregivers who bring trauma-sensitive awareness to the healing process of a traumatized child and to advocate for developmentally appropriate responses (SAMHSA, 2014). In conjunction with Dr. Bruce Perry's *Bottom-Up Approach*, found in the Neurosequential Model of Therapy (NMT) paired with a simple movement-based intervention called Bal-A-Vis-X, I propose that counselors can introduce movement-based, trauma-sensitive therapy in any setting. The purpose of this paper is to introduce a developmentally appropriate trauma awareness intervention and the idea of movement and body awareness activities that align with the NMT to support children who have experienced trauma.

Childhood Trauma in the United States

Mental Health Clinicians in every setting experience the effects of childhood trauma due to its high prevalence (SAMHSA, 2014). According to the *National Survey of Children's Exposure to Violence*, over sixty percent of participating children had exposure to violence and almost half experienced assault at least one time in the preceding year while ten percent had been maltreated i.e.: non-sexual abuse, emotional abuse, neglect, custody disruption (Hamby et al., 2011). Additionally, one in four girls and one in six boys were sexually abused in the last year, and these numbers may be skewed by underreporting (Meyers, 2014).

About eight percent of those children who experience trauma may meet the criteria for post-traumatic stress disorder or PTSD as well as almost forty percent of sexual abuse and assault cases (Herringa, 2017). Having a diagnosis of PTSD affects learning achievement increases instances of depression, substance use, and suicide attempts in adulthood (Herringa, 2017). Societal costs of PTSD and childhood trauma include $500 billion annual costs. Efforts should be made to intervene and reduce the harm in children and adolescents with PTSD while also working to reduce harm as youth grow into adults and make efforts to reduce intergenerational trauma (Herringa, 2017).

The Biology of Stress in Children

When a child experiences trauma it is important to understand the internal biological responses to be able to effectively treat symptoms. When something threatening or scary happens, the body responds by increasing cortisol, adrenaline, and other hormones in the amygdala and hypothalamus as well as the pituitary and adrenal glands (Dhabhar, 2018). When this happens every organ and tissue in the body can be impacted (Dhabhar, 2018). In a 2019 report by the *Economic Policy Institute*, Morsy and Rothstein wrote, "[Hormones] send the brain a signal to attack the threat or escape from it. This fight or flight response is an essential survival mechanism in the face of a frightening or threatening situation" (Morsy & Rothstein, 2019, 1). When a child is growing older the hypervigilance which increases the stress hormone cortisol production in the brain can therefore rewire it and cause cognitive development to stall. The child loses ground which causes them an inability to learn (Myers 2014).

The fight or flight response changes the overall physical condition of the child towards a survival state by increasing breathing rate, heart rate, and blood pressure while

dilating blood vessels and lung bronchioles so that oxygen reaches essential organs like the muscles and the brain. Additionally, the hormone causes a hyper-awareness heightening the senses while lessening brain power ordinarily saved for processing decision making and memory so that full attention can be given to the fight or flight response (Morsey & Rothstein, 2019). Typically, after the threat has passed, the body can then return to normal functioning, no longer in need of alert protectiveness, however, when intolerable situations like physical or verbal abuse, neglect, or sexual abuse occur over and over again these hormonal functions "become overactive or overly reactive- in other words, sensitized" (Morsey & Rothstein, 2019, Winfrey & Perry, 2022, 57). When a child's body cannot return to normal functioning that is when the trauma can cause a toxic stress response (Shonkoff et al. 2012, 236).

Children then only have access to their "survival brain" and not the ability to access the parts of the brain that can learn and focus, self-regulate, form relationships and this can even lead to changes in the physical structure of the child's brain (Myers, 2014). For a child who experiences a typical, predictable, tolerable amount of stress in their life the brain's response creates prefrontal cortex growth and development, leading to broader resiliency which survivors of trauma miss. (Meyers, 2014). Instead, trauma survivors become vulnerable and suffer consequences in each part of the brain and body, leading to a wave of health risks (Winfrey & Perry, 2022). Clinicians can start recognizing these responses by applying a trauma-sensitive lens and asking the question, "what happened to you?" to have a better understanding of how experiences shape people (Winfrey & Perry, 2022). Oftentimes children who have experienced trauma are misunderstood and may

experience psychiatric disorders and misdiagnosis, medications, and punishing behavior modification, but there may be a better way through Dr. Bruce Perry's NMT.

The Neurosequential Model of Therapy (NMT)

While prevention in cases of abuse is first and foremost a priority, effective tools are vital for counselors working with children. One method of intervention towards positive change for children and families is Dr. Bruce Perry's *Neurosequential Model of Therapy* (NMT). First manualized in 2008, Dr. Perry describes this model as "a neuroscience-informed, developmentally sensitive, approach to the clinical problem-solving process (Perry, n.d.)." He goes on to say that it is a formula from which to apply therapeutic techniques but is not on its own a technique or method. The NMT bases interventions on each client's individual needs, looking at *functional* indicators like impulsivity, inattentiveness, trouble learning language, fine motor skill issues, and or trouble with relationships. Perry suggests examining the client's behaviors and capabilities to clue into what interventions to use (Perry & Szalavitz, 2017). NMT also bases interventions on how the brain growth of a client was interrupted by a traumatic event(s). Through the course of Dr. Perry's work with a child and their family, he first asks what happened to the child, a trauma-sensitive question, instead of "what's wrong with" the child, listening to caregivers, teachers, friends, family members, and other clinicians to investigate all facets of the child's life and behaviors. He then systematically starts to paint a picture of where the child's development was stalled, what aspect of the brain development needs to be restimulated and finds ways to meet the child's unmet developmental need through therapy as well as holistic changes in the

child's life and supporting caregivers to ensure they provide developmentally appropriate care.

In one instance in his 2017 book *The Boy Who Was Raised as a Dog*, Dr. Perry talks to the children in a child client's classroom to help them understand their peers' developmental lags and related needs which became an extremely important aspect of the child's positive social development. Oftentimes children who have experienced trauma are misunderstood and are pulled down a path of psychiatric disorders and misdiagnosis, medications, and punishing behavior modification. Dr. Perry writes, "It is important to understand mechanisms underlying current functioning. Developmental lags in younger children can lead to labels like ADHD and ODD and in older children can be seen as antisocial or even criminal" (Perry, 2022, 22).

There is evidence to show that taking the NMT's approach will improve the lives of those involved (Perry & Szalavitz, 2017). If a child displays misbehavior in a classroom, for example, the case may be that they are overstimulated or stressed due to their developmental age not matching the tasks being asked of them and for his stress responses to be triggered by the environment. Teachers who lack training in trauma sensitivity or the NMT may associate this child's behavior with a need for discipline or even punishment. Perry states that "this lack of trauma awareness, trauma sensitivity, in our public systems is unfortunate for these families and kids. So many children end up becoming more and more misunderstood and then ultimately have challenging outcomes" (Perry, 2015, 16:35). He goes on to say this can be different. Matching the clinicians' expectations with the client's skill set and vulnerabilities is the key to using NMT in a way that allows for safe and repetitive experiences that lead to change. (Perry, 2015).

The Six Rs of Positive Development

The framework of therapeutic interventions with the NMT involves the 6 Rs as *Key Elements of Positive Developmental and Educational Settings*: relevant, rhythmic, repetitive, relational, rewarding, and respectful (Perry, 2015). Perry says that to be most effective in our work as counselors and caregivers for children we must provide a connection through safe, relational, rhythmic, and regulating interactions so that they can access their cortex and therefore reason. In every interaction with a child or client, each of these R's should be considered as it relates to what the child needs to regulate, relate, and reason to retrain the child's trauma response system. (Perry, 2022, 36).

The 6 Rs: Relevant

While there is no specific order to the six Rs of Positive Development in the NMT, one can understand the NMT best by starting with relevance. To be "relevant" in any interaction with a child means to match the interventions with the child's developmental age, not necessarily their numerical age. A child who has trouble interacting with peers, sucking their thumb, and throwing temper tantrums may have needed to utilize these behaviors for her basic needs to be met by a neglectful caregiver earlier in life. Now, in second grade these behaviors are maladaptive and do not fit the child's chronological age. The NMT suggests that this child cannot be treated the same as another typically developing seven-year-old might in this circumstance. Rather, looking at their behavior to understand that their developmental age is more like a two or three-year-old will increase a therapist's, teachers', and caregivers' chances of providing a healing, safe environment for the child (Perry, 2015). Identifying and matching with the child's developmental age when formulating appropriate interventions will touch on

something that the child missed in their upbringing, i.e., effective communication to receive basic care, being touched, rocked, and nurtured, or learning how to crawl. By doing so the therapist and caregivers can start the healing process by creating changes in stress response patterns. A child's lack of experience of something as seemingly small as being rocked by a caregiver may mean that until they are rocked in a rhythmic, repetitive, respectful manner, the child's brain is not producing the chemicals it needs to provide proper growth. Dr. Perry states that "if one system doesn't get what it needs when it needs it, those that rely upon it may not function well either, even if the stimuli that the later developing system needs are being provided appropriately. The key to healthy development is getting the right experiences in the right amounts at the right time." (Perry & Szalavitz, 2017, 152). When a child does not experience the right thing at the right time during development due to abuse or neglect, then the NMT seeks to fill in those gaps with those missed experiences.

It is in the "relevance" "R" where having a trauma-sensitive practice is vital for children's healing and growth because of the compounding intensification of consequences when a child falls behind in developmental age. When students in school are behind in social skills and self-regulation that can be even tougher for a child to learn in school when the teachers and caregivers are unaware of the needs as it is not the direct goal of the teacher. The further and further behind a child falls the more they get labeled in our society. Many times, those labels are pejorative. If someone took into consideration developmental capabilities someone wouldn't give them a psychiatric label and would meet them where they are developmentally and help them catch up.

Unfortunately, many kids are not given appropriate opportunities at the right times (Perry, 2015).

Instead, kids amass neuropsychiatric diagnoses and are prescribed medications instead of building on skills and capabilities from where the child has progressed developmentally. According to Dr. Perry, delays that are observed in preschool as disruptive go through school accumulating disorders while getting further behind in school. He goes on to say during the teenage years the child makes friends with others in a marginalized crowd and ends up becoming involved in the juvenile justice system. This demonstrates a lack of awareness of those in the education and judicial systems to recognize trauma and provide trauma sensitivity through those many years of opportunities to provide appropriate interventions that match the child's needs and leads children and families to very challenging outcomes (Perry, 2015).

Assessments for children to be better understood according to their developmental age are needed to ensure proper care and understanding for counseling services. As counselors, it is vital to consider what the child is capable of before putting expectations, labels, and diagnoses on them and sending them back into the care of others who also may not understand the NMT and trauma-sensitive practices. Extending this information and training to other mental health providers and systems in our society is also key to having more viable and realistic goals for healing and growth for the client.

The Six Rs: Relational

According to Dr. Perry, "relationships are the agents of change, and the most powerful therapy is human love" (Perry & Szalavitz, 2017, 258). Relational interaction, or connections with friends, family, co-workers and community members, and others, is

where the magic happens for kids. In other words, as Dr. Perry says, this is where the most important developmental experiences take place. From the earliest moments of life, babies depend on relationships with caregivers for all learning including language, emotional regulation, healing, motor skills, and development. Above all, however, a child must feel safe to go outside of their comfort zone and explore something new, the key in learning and development.

Providing a safe, accepting, emotionally responsive space for a child to build trusting relationships with those around them is key to building scaffolding for change (Gil et al., 2013). Relationships that are consistent, predictable, and stable are important in calming and changing the stress response system and are key to a healthier response to stressors. At the same time, we live in an individualistic society where relationships are minimal in comparison to what we as humans evolved to need. Some children have supportive families, friend groups, and community networks, like those humans have lived in for over 200,000 years that are protective factors and help to buffer the effects of a dangerous world (Gil et al., 2013).

However, this is not always the case. Others are relationally impoverished, and a child must rely on a single adult, who may be chaotic, unpredictable, or even frightening and therefore contributes to a developmental lag as well as attachment and emotional regulation issues. This in turn creates difficulties in forming and maintaining relationships for the child creating an unfortunate deficit in relational interaction through the lifespan (Gil et al., 2013).

Most therapeutic experiences do not happen in therapy (Gil et al., 2013). Therefore, the NMT encourages therapists to assist clients in building caring, loving,

trauma-sensitive relationships with not just the therapist but other caregivers, teachers, coaches, friends, and community members to increase the healing effects of relationships.

The Six Rs: Rhythmic

The next R in the NMT is rhythmic. Activities such as dancing, walking, singing, and meditative breathing start with the brain stem, utilizing the mind and body connections causing the brain to be available for relating and reasoning (Vassar, 2018). Body systems by nature are rhythmic. In utero, a fetus is in a dark, warm, muffled environment and tends to be sufficiently fed and satiated by the mother's resources. When we experience patterns, we make associations with those patterns. Any sensory information coming in through sight, sound, or touch is interpreted and used with which to make meaning of the world. (Perry, 2015). While these things are happening the fetus experiences continuous sound and vibrations of the body systems that are in rhythm i.e.: the heartbeat, blood flow, and the baby's heart rhythm naturally syncopate with the mother's at about 60-80 beats per minute. This rhythmic pattern is associated with a safe, predictable, warm environment and therefore regulates a person. Perry suggests that the only way to move from these super-high anxiety states to calmer more cognitive states, is rhythm and that "when you incorporate rhythm into education or therapeutics you are taking advantage of these powerful vehicles that can help you get to the positive trends that you want" (Perry 2015, 26:00).

The Six Rs: Rewarding and Repetitive

The next Rs are "rewarding" and "repetitive," and they go well together. Therapy that involves play, humor, and fun activity is something a child will want to do again and again over time. In addition, for a therapeutic intervention to be successful, it needs to be

repeated many times. Imagine trying to learn to play the piano or to speak French without repeating new skills over and over again. We learn through repetition, and we only want to repeat something if it is rewarding. Dr. Perry gives the example of neurofeedback, as an intervention that is rewarding and therefore effective because clients want to come back again to repeat the therapy (Perry, 2015). Therapeutic interventions cannot just happen in one 50-minute session per week and be expected to be successful or even helpful. True change and learning come from the patterned, repetitive, rewarding experiences we have regularly. Perry speaks about teaching caregivers, teachers, and community members as part of the NMT to create therapeutic moments to meet the specific needs of children. Caregivers can rock with or hold an older child who needs that stimulation due to neglect in early life. This also takes on providing rhythm for the child. Teachers can ensure proper reward and repetition while also paying close attention to developmental age when trying to teach reading or math.

The Six Rs: Respectful

This R may be the most obvious and rudimentary item to consider when interacting with clients, however, historically respectful care has been overlooked in the field of psychology thus creating distrust. To dispel this distrust and create a safe relational space for the child, family, and the community it is vital to make respecting the client and their family, culture, and identity a priority (Perry, 2022). However, we have a sordid history and counselors bring biases and bad habits into the therapy. This can be particularly true in working with children. To build a philosophy around the NMT, counselors allow for small doses of therapeutic experiences and never intend to have

children experience any stress for long at any given time which realizes the need for respecting the child fully.

Using the NMT in practice: Brain-Body Integration

Through the NMT and the six Rs, we know that repetitive, rhythmic, predictable movement and matching the intervention with the child's developmental age are impactful in retraining the trauma response system (Perry, 2015). Using brain-body integration in therapy is a natural fit for the NMT as it provides opportunities for practical application of Dr. Perry's Rs. One method of brain-body integration is through cross-lateral movement.

Cross lateral movement is any movement that crosses the centerline of the body, i.e.: touching your left hand to your right knee. These movement patterns increase psychological abilities through the mind-body connection (Chow, 2018). Cross lateral movement increases the use of the corpus callosum which connects both hemispheres of the brain and allows it to network and communicate with all brain systems and levels of functioning simultaneously. (Homann, 2010).

Movement techniques like dance in therapy can have lasting impacts on the mind-body connection. Through movement, someone can creatively increase connections between the body and mind, summoning increased awareness to elaborate situations effectively (Homann, 2010). This in turn allows for small doses of manageable stress within a safe space to allow for managing feelings and making small changes in the stress response (Perry & Szalavitz, 2017). "As a more conscious interrelationship between the mind and the body is developed, the body naturally becomes the resource for emotional self-regulation and integration. Moving actively, with full effort, can allow strong

feelings, such as anger, rage, or joy, to be more consciously experienced and expressed, making them more available for verbal processing" (Homann, 2010, para 18). Crossing the midline has neurological benefits that increase focus, control, and emotional regulation. It is recommended that a child regularly completes activities that cross the midline [during early development] to assist in both hemispheres communicating well to facilitate and strengthen the neural networks to coordinate movement and learning. (Why Crossing the Midline is Important, 2021).

Kansas-based K-12 teacher, Bill Hubert, created Bal-A-Vis-X (which stands for balance, auditory, visual exercises). Bal-A-Vis-X (BAVX) utilizes cross-lateral movement in a series of balance, auditory, and vision exercises of varied complexity, requiring full-body coordination and focused attention and are deeply rooted in rhythm. (Hubert, 2014). Hubert created these exercises to support students who had trouble with general balance and body control, visual tracking for things like reading and math, and attention to auditory learning ability. The low-tech exercises, which use simple bean bags, racket balls, and balance boards, are modifiable for age, ability and involve short, easily understandable directions. BAVX is relational and has social benefits like building self-confidence and empathy. Strengthening neural networks and improving coordination through motor development increases perception, provides doses of positive social interaction, as well as cognitive skills.

Bal-A-Vis-X: Regulate, Relate and Reason, and More

In the process of doing BAVX, someone can go through the sequence of engagement, or bottom-up approach, which includes first regulating, relating, and then reasoning or the *Three 3 Rs of Engagement*. (Perry, 2022, 22) One can imagine an

upside-down triangle with the bottom of the triangle representing the brain stem, which allows for regulation or dysregulation. The limbic or midbrain section is next on the way up the triangle which modulates feelings and then the top part is the cortex, which allows for critical thinking and abstract thought. Dr. Perry says, "To get to a child's cortex you have to go through a sequential process. The development of the brain is sequential, the processing of information from the outside and the inside world up to the smart part of the brain is sequential and the way we engage children to change them, either as a parent, a teacher, or a therapist is also sequential" (Perry, 2015, 44:35). The cortex (top) part of the brain is where time-oriented thinking can happen. If a child is dysregulated, information about the future, i.e., "wash your hands so you don't get sick" will be lost to the child at that moment because the information is being processed in the lower parts of the brain, where survival and basic needs are processed.

Further, Hubert makes the argument that BAVX works with this sequential model saying that each exercise requires that the person regulate (the first R in Dr. Perry's model) or concentrate on basic instructions of the exercise like when and how to start, where to look, how to place a bag or bounce a ball where it needs to go for the exercise. Then participants relate, the second R in Dr. Perry's model, by learning synchronous rhythmic patterns by both partners. Next comes the participant's ability to reason, the third R in Dr. Perry's model. At the reasoning, stage participants discover through observing and repetition that mistakes occur and how to make changes to fix them (Hubert 2014). BAVX exercises are sequential starting from the easiest patterns and becoming more difficult. Hubert writes that the exercises get sequentially more difficult,

building scaffolding through practice so that the participants can increase the difficulty as they are able and willing.

Another part of BAVX is that it causes moderate, predictable stress. This happens by way of dropping balls or bean bags, forgetting a pattern, or persevering through a series of exercises. Hubert goes on to say that BAVX provides pressure to perform, however at a level of stress that can be handled and controlled, and not alarming to the client. (Hubert, 2014).

In addition to hitting the three Rs of engagement BAVX is also rewarding, and for that reason is a therapeutic intervention that will be repeated. Anecdotally, I have used BAVX with students and I have seen evidence of reward: smiles and laughter during the session and response of "that was fun!" afterward. BAVX is relational and can be used for couples, families, groups, individuals, siblings, conflict resolution between children, adolescents, or adults and even to lighten the mood after difficult content. The counselor-client relationship is also built and strengthened through using BAVX together, as I have seen firsthand. This strategy increases relational bonds creating meaningful experiences between people. Benefits include increasing feelings of trust and safety in the relationship, enhancing motor, balance, and attention skills as well as increasing frustration tolerance in a connected and fun way. Using BAVX, at the very least, allows someone to find a retreat from whatever hardship they are experiencing.

According to Perry, "if we are providing safe, relationally regulating and rhythmic interactions we will be able to effectively connect to a child and in that moment, they will be opening up their cortex for us to be more effective in our work" (Perry, 2015, 58:33). BAVX is one way to utilize Dr. Perry's strategies.

Bal-A-Vis-X Workshop Proves Rewarding

On January 27, 2022, a ninety-minute workshop was provided by a facilitator for nine school counseling students during their PSYC 665: Group Counseling class at James Madison University in Johnston Hall. The workshop began with the facilitator giving the group a pre-workshop survey asking if movement in therapy is beneficial, comfort level with movement in therapy with clients and with participants, and if participants plan to use movement with a client or with themselves in the future. Results showed that six out of nine (67%) students in that group said that they somewhat or strongly "disagree" that they are comfortable using movement with a client while eight out of nine (89%) participants stated that they strongly or somewhat agree that "movement in therapy is beneficial." None of the participants have had Bal-A-Vis-X experience in the past.

After surveys were turned in the group shared how they have been involved in movement in their lives and their experience with children so far. Each person shared, most having childhood experience with sports and recreation. Others shared about early careers as babysitters, camp counselors, and child protective service workers. Next, information was presented by the facilitator on Dr. Bruce Perry's NMT and the "Six Rs of Positive Development" and the "Three Rs of the Sequence of Engagement." Dr. Perry's work and techniques work well with an intervention that utilizes the six Rs of the NMT - Bal-A-Vis-X. An overview was presented on Bill Hubert's BAVX history, philosophy, and methods including the benefits of cross-lateral movement being cognition, focus, and balance. Bean bags and balls were displayed for participants and ready for use in the front of the room. Students were instructed by the facilitator to pick up one bean bag and stand in a circle with enough space in between each person to feel

comfortable. The facilitator gave instructions on posture including standing with feet hip-width apart and for participants not to lock knees. Additionally, students were instructed to track the object, either bean bag or ball, with their eyes at all times, resisting the urge to use peripheral vision to ensure the maximum benefit of the exercises. The facilitator explained that this is helpful in working with children's level of development for visual tracking which is key to strengthening reading and math skills, as well as hand-eye coordination.

Bean Bag Exercises

The group began with the simple BAVX exercise: clapping the bean bag from left hand to right hand in rhythm with others. It was obvious to this group that this was very simple and easy. The facilitator reminded the group to keep the same tempo of movement together by paying attention to the group rhythm. Additionally, the facilitator stated that when working with wiggly small children or children with special needs the group can sit cross-legged on the floor to better focus attention on the task at hand. Next, the "around the back" move was added to the activity where the bean bag goes from the left hand to the right hand and then around the back to the left hand again and then repeated (Hubert, 2022). Directions to go left around the body were given. The group was instructed on how to toss the bean bag to self using the right hand, involving a slight swing of the arm and elbow to throw the bean bag just above the head and catch it in a rhythmic pattern. Then the group switched to the left hand. To increase the difficulty of the exercises methodically the group added a step forward with one foot, then the other. This was done while clapping the bean bag back and forth, around the back, or during the

toss. During each exercise, participants are reminded to listen for the rhythm, try to stay together in tempo, and track the bean bag whenever possible with the eyes.

"One Bag Rectangle"

So far in the workshop, all exercises have been to self, so at this time partner tossing with bean bags was initiated. Students paired up and were instructed to stand about fingertip distance away from each other, with arms outstretched in front of them. Each partner was to toss a bean bag to their partner, mirroring each other's movement. Each partner tosses with their right hand first to be caught by a partner's left hand, passes it to the right hand, and toss again to a partner in syncopated rhythm. To complicate the exercise slightly the movement was changed from the "clap pass" to the "behind the back pass," or the "1-Bag Oval," exercise in which participants pass the bean bag around the back to the other hand to start the exercise again (Hubert, 2022). Each exercise can be done going both directions, right and left. After the group stops one motion, they switch directions right to left or left to right. Increasing the challenge, even more, group members were asked to add an alternating step forward with each pass of the bean bag. Participants caught on quickly with a few minutes of practice. There is no need to talk once the group finds the rhythm during these exercises. The goal is that there is 100% focus on the task while all communication is non-verbal.

"Two Bag Rectangle in Groups"

The group is now ready for a more challenging exercise. Participants get into groups of four while keeping the original partners but now with two sets of partners. Each partner group stands across from each other now making a square of four people. The partner groups pass the bean bag from their right hand to their partner's right hand

and a pass to the left hand and back to their partner simultaneously, all the while the other group is doing the same underneath of their hands passing the bean bag back and forth (OSDE, 2017). The groups are reminded to add a step forward when they are ready for an increase in difficulty and to pay attention to the group pace and stay together in syncopation.

Ball Exercises

After the partner bean bag toss, participants place bean bags back on the table and each student is instructed to pick up one racquetball and gather in a circle formation. Instantly balls begin to bounce and distract the group which was brought to the group's attention as something that students may do as well. The group was made aware that group management should be part of their plan for implementing BAVX with children.

Next, the "cup-catch" involves letting go of the ball with the thumb up on the ball and catching it making a cup with the hand, palm up. Once caught, the hand returns to the thumb up position. This will be important when the exercises become more difficult.

The group begins with the "1-Hand Bounce, 1 Ball" exercise first with the right hand and then with the left. Next, the group learns how to create a "V Bounce" by dropping the ball from the right hand to a place between the feet, in front of the toes, to be caught by the left hand, making a V with the ball. (OSDE, 2017, 00:14). The ball is given to the right hand with a "clap return" and bounced again. The V bounce is then done going from the left hand to the right hand in the same pattern. The students noticed the sounds that were being produced by their bounces. This created a calming and soothing rhythm to the class as was noticed and stated by the group.

“Puppet Arms Bounce” and “Two-Ball Simultaneous Bounce”

The next set of exercises included the class making “puppet arm bounces,” meaning dropping and catching each ball in a pattern such as “right catch, left catch, right catch, right catch, left catch, left catch.” The leader instructed students to create new patterns including using both balls simultaneously. Next, the leader and group members created a call and response activity where the leader demonstrated a pattern to the group and the group completed the bounce pattern. In a group setting an instructor could allow a student or client (or multiple) to take a turn being the demonstrator or leader.

The ball bouncing techniques only get more difficult from here. Mr. Hubert recommends practicing the above tasks for a few minutes each day to be prepared for the more difficult bouncing patterns, i.e., “3-Ball Bounce Juggling.”

Partner Ball Juggling

To provide an example of how to use the BAVX balls for partner and group work, exercises were introduced to the group that meets the relational and rewarding Rs in Dr. Perry’s Six Rs of Positive Development. These may also provide opportunities for moderate predictable stress. The first is a “one-Ball Rectangle” with a partner, which is the same as with a bean bag in formation with a partner but this time using a “V bounce” in between one student and their partner. This led easily into the “one-Ball Oval” with a behind-the-back pass with a V-bounce in between partners.

The Final Group Bean Bag Pass

To culminate our workshop experience together the group was asked to put the balls down and pick up one bean bag. Then, participants formed a circle, just as we had started the activities. Each participant started with a bean bag in their right hand, clapped

in left, and passed it to the person on their left by twisting the wrist downwards so that the bean bag lands in a flat position on their neighbor's right hand. The group was so successful immediately that the group's passing speed became way too fast to keep the rhythm together and move at the same pace. A reminder was given by the facilitator that even though participants are highly skilled and are excellent at this easy task, the group must stay together, go slowly, find a rhythmic pattern, and listen to one another. The group obliged and the activity ended in tempo passing the bean bags in rhythm.

At various times during the workshop, the facilitator asked how participants felt at different points of difficulty of the exercises. The group of students had an air of confidence and did not get embarrassed after dropping balls or bean bags as was stated. However, together the group members explored that future clients or students may not feel so confident and in fact, this activity may trigger frustration or anger and clients may struggle with this level of stress. When this occurs, group members were encouraged to process with students what is going on for them and what are their needs at that moment. This may mean modifying the activity, allowing for students to take a break or continue depending on how the child is feeling. To follow Dr. Perry's NMT, clinicians must allow for small doses of therapeutic experiences and never intend to have children experience stress for long at any given time (Perry & Szalavitz, 2017).

Post-Workshop Survey Results

To complete the workshop, the facilitator provided a post-workshop survey that included the same questions as the pre-survey with additional open answer questions. To summarize survey results, students enjoyed the experiential nature of Bal-A-Vis-X. Participants described what they liked about the workshop, stating that it was fun,

collaborative, and easy to imagine using with students, even as soon as during their practicum and internship experiences. Group members described the activity as soothing and therapeutic, that it helped with their sense of focus.

There was one very interesting comment to the question, “What did you not like about this workshop?” which was “I'm very impulsive so it's a test to stick with everyone else.” I think this is a great example of how a child or adult with impulse can benefit from the BAVX exercises. When asked “how was this workshop useful to you?” participants stated that it helped them to learn about using movement with students and gave them the confidence to provide a new and innovative mind-body approach to movement in the school setting. One participant stated, “I can see myself using this when working with kids who have difficulty with concentration or collaboration.” Respondents would like to have access to balls and beanbags, the book and videos as well as additional training to increase their readiness to practice this intervention. When asked if participants thought that movement in therapy is beneficial, they responded positively, with comments on how this activity is fun and therapeutic without it feeling like therapy, more like a brain break which then increases focus, balance, confidence, and emotional regulation while providing a calming, mindful and predictable auditory effect. A participant noted that BAVX will benefit active children who need to move. Participants were curious about utilizing BAVX with students in an anger management group, what other movement therapy resources there are and how to adapt activities to work with students with special physical and sensory needs. This was a pilot process.

Limitations

The January workshop was a success, however, there are some limitations to the workshop as well as the data collected. First, the sample size of the group is small, with nine participants and all are studying school counseling which can mean that they have similar ways of thinking about movement with children in therapy. The group is a homogenous, mostly White, mostly female group. Another limitation was time. When Bill Hubert leads a training session it takes at least four hours up to two days of learning and practicing. This time frame was just enough time to give a rudimentary overview of what BAVX can offer and a tiny bit of practice. The room in Johnston Hall designated for this class was small and therefore during group activities, it was difficult to have a comfortable amount of space. Lastly, this workshop was given during the Covid-19 pandemic and therefore masks were necessary to be near others. This dampens people's voices and makes the discussion more difficult to hear and participate in.

A limitation to this paper is that the NMT literature is not fully available for free. The broader concepts of NMT are easily searchable however, assessment procedures and the full program are not readily available. NMT trainings are available but cost from $500 and up.

Discussion

Further exploration and research are needed for a few of the topics discussed in this paper. First is the connection between motor skill underdevelopment and behavior issues in children. I believe there is a connection that relates to the level of trauma experienced by a child and skill underdevelopment which ultimately means that children

are, in some cases, being punished for the trauma they have experienced when it is not understood.

Secondly, there is research stating that cross-lateral movement in very young children is important to proper physical development. There is currently a lack of research on the neurobiological benefits of social and emotional regulation and how it can be a useful tool as an intervention for mental health professionals.

Another important topic of discussion is whether there is empirical evidence that supports the NMT's validity and whether the interventions suggested are beneficial to clients. Perry discusses that the DSM-V does not provide labels that cover the complexity of the impact of trauma on the developing brain. Many facets of a child's development are considered during the assessment process and therefore finding a homogenous group to study is extremely difficult. Perry & Dobson write, "A fifteen-year-old child may have the self-regulation capacity of a five-year-old, the social skills of a three-year-old, and the cognitive organization of a ten-year-old. And, due to the unique genetic, epigenetic, and developmental history of each child, it is very difficult to apply a "one-size-fits-all" treatment approach (Ford et al., 2013, 259). For this reason, the authors use a type of crowdsourcing method to collect data over time. The authors state that those being assessed using the NMT, numbering around 15,000 at this point, are collecting trackable data and over time and homogenous groups will be able to be compared in the future. Perry and Dobson site challenge to the NMT's crowdsourcing data collection approach is a fear of fidelity not being upheld, funding to complete recommendations by NMT assessed clients can be challenging to find, and continued

training is needed. Most importantly the NMT allows for cost-effective trauma-informed care for clients which outshines the negative aspects listed (Ford et al., 2013).

Lastly, much of what is considered "therapy" involves sitting with a therapist for fifty minutes per week and this is a very narrow view. Instead, consider the possibility of therapy being in everyday moments in relationship with others, not always with a Licensed Professional Counselor. Through this paper and the NMT becoming more widely known, understand therapy to expand to the potential opportunities we have with every child and caregiver. Mental health providers can easily fall into the trap of assuming that unless a child is participating in therapy sessions with a mental health clinician, they will have the ability to heal and grow from their traumatic past. Dr. Perry teaches that it is okay to think outside of this box. Therapy is important, but not always realistic for every family for a variety of reasons. We can expand this narrow view to include ensuring that kids have good relationships with many caring adults, that teachers do not discipline-based on chronological age, that adults learn how to listen well to children and believe them when they disclose something potentially traumatic. Clinicians can advocate for doing more than just the counseling part of therapy, but to pay attention to the holistic picture of the child's world and support the child's caregivers as well.

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