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How to Support Adolescents Affected by ACEs: An Advocacy Guide

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How to Support Adolescents Affected by ACEs: An Advocacy Guide

by

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Occupational Therapy Doctorate, University of North Dakota, 2022

A Scholarly Project

Submitted to the Occupational Therapy Department

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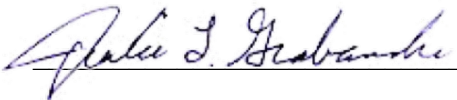
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Grand Forks, North Dakota

May 2022

Approval Page

This scholarly project, submitted by Hallie N Longtin, OTDS in partial fulfillment of the requirement for the Degree of Occupational Therapy Doctorate from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

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04/15/2022

Date

Permission

Title: How to Support Adolescents Affected by ACEs: An Advocacy Guide

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Degree: Occupational Therapy Doctorate

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Table of Contents

ACKNOWLEDGEMENTS.....	vi
ABSTRACT.....	vii
CHAPTERS.....	
I. INTRODUCTION.....	1
II. LITERATURE REVIEW.....	9
III. METHODS.....	24
IV. PRODUCTS.....	27
V. SUMMARY.....	30
REFERENCES.....	33
APPENDIX.....	39

Appendix A: Product

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Abstract

The purpose of this scholarly project was to create a trauma-informed guide for educators within a school setting to be used to support adolescents effected by adverse childhood experiences (ACEs). 1 in 6 adults reported experiencing four or more types of ACEs, and 5 of 10 leading causes of death are associated with ACEs (CDC, 2022). ACEs can negatively impact adolescents in various ways, including cognitively, physically, and socially. These negative impacts affect adolescent's overall well-being and leads to difficulty with engagement in several occupations. Due to their traumatic experiences and the various impacts, adolescents within a school setting are in need of complex support.

A complex literature review was conducted in order to identify the type of support these adolescents need in order to address their academic performance and overall well-being. The author utilized the person-environment-occupation model (PEO) as a framework towards the development of this product. *How to Support Adolescents Affected by ACEs: An Advocacy Guide for Educators*, was organized utilizing the various PEO components. The guide begins with an introduction, followed by operational definitions, background information on ACEs, an overview of occupational therapy, outline of PEO, strategies for educators to utilize with this population, and intended use and future recommendations.

Chapter 1:

Introduction

Adverse childhood experiences (ACEs) can be defined as any traumatic events that occur during a child's life before the age of 19 (cdc.gov., 2022). Interestingly, 1 in 6 adults reported experiencing four or more types of ACEs, and 5 of 10 leading causes of death are associated with ACEs (cdc.gov., 2022). The DSM-5 defines trauma as a "person being exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence. Individuals can experience trauma in the following way(s): direct exposure, witnessing the trauma; learning that a relative or close friend was exposed to a trauma or indirect exposure to aversive details of the trauma, usually in the course of professional duties" (American Psychiatric Association, 2013, p. 88; Spence et al., 2021). Different types of ACEs or traumatic events include: physical abuse, verbal abuse, sexual abuse, physical neglect, emotional neglect, a parents who is an alcoholic, a mother who's a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and experiencing divorce of parents (pacesconnection.com., 2022). These traumatic events can have a direct impact on development and brain structure, mainly within the medial prefrontal and hippocampus areas which effect their overall function (Lackner et al., 2018). In addition, ACEs may lead to toxic stress (pacesconnection., 2022). Toxic stress occurs through chronic or cumulative traumas that the child experiences without available support of a loving caregiver (Gronski et al., 2013). Toxic stress is the impact of early exposure to pronounced and sustained stress on a developing nervous system and the lifelong sequelae for physical, emotional, and mental health and economic potential (Gronski et al., 2013).

Maslow's Hierarchy of Needs was one of the main components in the development of *How to Support Adolescents Affected by ACEs: An Advocacy Guide*. Maslow's Hierarchy of Needs is a psychological model that highlights 5 levels of human needs. These 5 levels from bottom to top include: physiological needs (food, water, warmth, rest), safety needs (security, safety), belongingness and love needs (intimate relationships, friends), esteem needs (prestige and feeling of accomplishment), and self-actualization (achieving one's full potential, including creative activities) (McLeod, 2018). This model works through the understanding that the bottom level of physiological needs has to be met in order for individuals to move up and eventually reach the top level of self-actualization (Crandall et al., 2019). Individuals affected by ACEs are likely to not have the bottom level of physiological needs met. Throughout the creation of *How to Support Adolescents Affected by ACEs: An Advocacy Guide*, essential information was included on safety and survival needs as a foundational approach for educators to provide support to students throughout the school day. Adolescents who have experienced ACEs are at a vulnerable time in their life due to their continued development. This puts them at risk for having prolonged side effects, which puts them in need of complex support. When they experience ACEs, they are at risk for having prolonged side effects due to their continued development.

Purpose Statement

Throughout this doctoral experiential placement (DEP), the purpose was to create an educational product designed for educators who work with at-risk adolescents who have experienced 1 or more adverse childhood experience (ACE). The product *How to Support Adolescents Affected by ACEs: An Advocacy Guide for Educators* was created to help students improve their overall well-being and engagement in academic tasks. This was done by

addressing their emotional-regulation, self-regulation, and executive function skills and providing faculty with information about ACEs, establishing consistent expectations/boundaries and communication strategies to use during the school day.

Occupation-Based Model

The Person - Environment - Occupation (PEO) Model (Baptiste, 2017) was used to analyze the literature and to guide the creation of *How to Support Adolescents Affected by ACEs: An Advocacy Guide*. This model focuses on providing the best “fit” between the person, environment, and occupation, overall giving a client centered approach to service delivery (Baptiste, 2017). This model was beneficial for understanding this particular population of adolescents effected by ACEs for many reasons. PEO recognizes the developmental changes individuals go through throughout their lifespan. In adolescence, issues related to sense of self, testing roles, exploring opportunities, and taking risks challenge that central balance, causing the element of occupational performance to become small, often asymmetrical, and imbalanced (Baptiste, 2017). This population can be very complex due to the various types of ACE’s and how they can affect individuals in a broad spectrum of ways. The PEO model can be used no matter how complex the client or situation is due to the individualized analysis of identifying the “fit” between the various person factors, environmental contexts, and occupations one encapsulates (Baptiste, 2017). This model recognizes the complexity of environments as equally as important as recognizing the person and their engagement in various occupations. In the context of adolescents affected by ACEs within a middle school setting, the PEO model provides a framework for determining their occupational performance as a middle school student based off the transactions between the three domains of person, occupation, and environment. This

offers therapists and other educators working with these adolescents a way to re-establish order, purpose, and meaning (Baptiste, 2017).

According to PEO, the person is a combination of physical self, cognitive self, and affective self with the idea that every person brings unique personal attributes and life experiences (Baptiste, 2017). The person's components are further broken down into physical, cognitive, sensory, affective, and spiritual components (Baptiste, 2017). Within this given situation, the persons are the at-risk adolescents within a middle school setting in need of appropriate support to help achieve successful academic and life skills. It is important to understand that each student has a unique set of experiences and skills impacting their academic performance within a middle school environment.

Within the PEO model there are five different types of environments. Environments are the external and internal physical and social aspects that surround a person while they engage in occupations. This includes the physical, social, cultural, institutional, and virtual environments (Baptiste, 2017). These various contexts are viewed from a very broad and inclusive perspective. Every aspect of the environment has similar importance in considering its impact on individual clients (Baptiste, 2017). Baptiste (2017) states that the PEO model enables the application of its inherent concepts in an environment. Environments are important to analyze when measuring someone's occupational performance due to their various inclusive components that impact one's performance.

Lastly, is the occupation portion of the PEO model. This consists of the various occupations that students engage in within an academic environment (Baptiste, 2017). Examples include completing homework assignments, group projects, eating, interacting with peers and faculty members, etc. The overarching goal of providing the best "fit" between the person,

environment, and occupation is to increase the student's academic and social performance during educational activities (Baptiste, 2017). A good fit will ensure that each student is experiencing a sense of satisfaction with their level of functioning, thus increasing their performance in areas while at school as well as areas outside of school. Considering all portions of the PEO model was pertinent in the development of this scholarly project.

The PEO model also highlights the aspect of temporality that is helpful in understanding the "fit" between the person, environment, and occupation. The temporal aspect is framed through habits, patterns of time use, or routine and linked with use of space (Batiste, 2017). Baptiste (2017) suggests that everyone creates a structure that enables them to manage their daily roles and responsibilities. When time use becomes imbalanced, disorganized, or unmanageable for a client such as following traumatic events, this leads to a poor "fit" between the three domains. Time is an essential component to a person's life and how they complete occupational performance. PEO highlights the various developmental stages individuals go through in their lifetime, providing an adequate understanding of how this can change and alter the domains, ultimately impacting the "fit" and occupational performance (Baptiste, 2017).

Key Terminology

- **Adolescents:** This period of life between childhood and adulthood, from the ages of 10 to 19 that is marked by the onset of new cognitive structures, social conceptions, development of physical and sexual maturity, relationship changes, and the formulation of self-identity (Gestsdottir & Lerner, 2008)
- **Adverse childhood events:** Any traumatic events that occur during a child's life before the age of 19 (cdc.gov., 2022). This includes physical abuse, verbal abuse, sexual abuse,

physical neglect, emotional neglect, a parent who is an alcoholic, a mother who's a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and experiencing divorce of parents (pacesconnection.com., 2022)

- **Occupations:** Anything that a person engages in throughout the day that occupies their time (Kuhaneck & Case-Smith, 2020)
- **Occupational Therapy:** A profession that works with individuals of all ages who encompass a wide range of skills, diagnoses, etc. to help them develop, recover, improve, as well as maintain skills needed for their everyday occupations (Johnson & Dickie, 2019)
- **Emotional regulation:** The ability to regulate and modify the experience and expression of emotions successfully (Lennarz et al., 2019)
- **Executive functioning:** Skills such as time management, attention, planning, organizing, memory, self-control, and multitasking that support individual's ability to complete tasks on a day-to-day basis (Ratcliff et al., 2020)
- **Self-regulation:** The ability to regulate and modify all aspects of adaptation such as behavior, thoughts, attention, emotions, as well as the ability to react to different contexts and modulate reactions to contexts (Gestsdottir & Lerner, 2008)
- **Sensory modulation disorder (SMD):** A subcategory of SPD that refers to the way individuals respond to certain stimuli in an either sensory over-responsive (SOR) or sensory under-responsive way (SUR) (Yochman et al., 2013)
- **Sensory processing disorder (SPD):** Condition in which environmental sensory information is processed in an ineffective and disorganized way causing disruption (Yochman et al., 2013)

- **Toxic stress:** Impact of early exposure to pronounced and sustained stress on a developing nervous system and lifelong sequelae for physical, emotional, and mental health and economic potential (Gronski et al., 2013)
- **Trauma:** Person being exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence. Individuals can experience trauma in the following way(s): direct exposure, witnessing the trauma; learning that a relative or close friend was exposed to a trauma or indirect exposure to aversive details of the trauma, usually in the course of professional duties (American Psychiatric Association, 2013, p. 88; Spence et al., 2021)
- **Trauma informed care:** The ability to identify symptoms of trauma in individuals to be able to provide support (Acesaware.org)

Significance of project to chosen area of practice

Throughout this doctoral experiential placement, the main occupation of focus was on education. Education is one of the core occupations in occupational therapy and is a primary component to a lot of people's lives, especially throughout adolescence. Education often sets the stage for individuals' lives and gives them the opportunity to reach their highest potential and can teach skills that can last a lifetime. Individuals who have been affected by ACEs are at risk for developing psychological, emotional, and physical difficulties throughout their lifespan (Gronski et al., 2013; Lackner et al. 2018; Turkben, 2019; Toglia., 2019). Creating a project centered on targeting these difficulties that individuals face will impact their lives in a positive way and increase their overall well-being.

Project Structure

The development of this scholarly project was guided by the outline of five different chapters provided in this document. Chapter II discusses information that was gathered through a comprehensive literature review on the topic of adolescents affected by ACEs. This literature search led to a range of pertinent information that was included in creation of *How to Support Adolescents Affected by ACEs: An Advocacy Guide*. Chapter III describes the key literature and theories used to guide the development of the project. Chapter IV provides a description of the product itself followed by its elements. Lastly, chapter V includes a summary and discussion of the project elements, implications for use within the academic setting and limitation and recommendations.

Chapter II

Literature Review

Adolescence

Adolescence is a period of dramatic developmental changes in a person's cognitive, physical, psychological, and social development that occurs while interacting with people and within various contexts (Gestsdottir & Lerner, 2008). These marked changes in adolescents come with many demands such as having to juggle higher academics and a social life (Toglia & Berg, 2013). This phase of life, also known as the second decade of life, is marked by the onset of new cognitive structures, social conceptions, development of physical and sexual maturity, relationship changes, and the formulation of self-identity (Gestsdottir & Lerner, 2008). In addition, the onset of the adolescent period is simultaneously marked with the transition from elementary school to middle school, which can come with its many challenges (Parker, 2009). Adolescence can be defined as the period between childhood and adulthood, from the ages of 10 to 19 (who.int). For the purpose of this chapter, the main focus of this project will be on middle school student ages 10-14. During this adolescent time period, a majority of their time is spent in school, or engaging in academic and school aspects outside of school. Due to the many changes an adolescent goes through during this time period, it affects the way they feel, think, make decisions, and interact with the world around them (who.int., 2022). Although some may ease into these many transitions and changes, for others it may be the most difficult time in their life.

Adverse Childhood Experiences

Adverse childhood experiences can be defined as any traumatic events that occur during a child's life before the age of 19 (cdc.gov., 2022). When ACEs occur on top of already

challenging times as an adolescent, it can have a major impact on their development and lives in various ways. ACEs can have a direct impact on an individual's brain structure, mainly within the medial prefrontal and hippocampus areas which effects their overall function (Lackner et al., 2018). The DSM-5 defines trauma as a "person being exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence. Trauma can be experienced in the following way(s): (a) direct exposure, (b) witnessing the trauma, (c) learning that a relative or close friend was exposed to a trauma, (d) indirect exposure to aversive details of the trauma, usually in the course of professional duties (e.g., first responders, medics)" (American Psychiatric Association, 2013, p. 88; Spence et al., 2021). In addition, trauma can also include emotional abuse, neglect, and other stigmatizing events such as peer aggression (Spence et al., 2021).

ACEs impact individuals in a variety of ways, impacting both biological and psychosocial development that can have long-term psychological effects on a person's health and well-being throughout their life (Logan-Greene, 2017). These effects often lead to individuals having social, emotional, and cognitive impairments that can lead to difficulty and disruptive behaviors from the onset of their trauma that can last throughout their lifespan (Logan-Greene, 2017). ACEs are associated with increased risk for psychiatric disorders throughout life, including depression, anxiety, attention-deficit disorder, and post-traumatic stress disorder, and increased risk for delinquent behavior (Logan-Greene, 2017). These effects from ACEs do not occur without reason. When impact on developmental milestones occur, the difficulties in one domain or system of development often result in effects spreading across and accumulating in other facets of an individual's development because of the many complex interactions between domains (Logan-Green, 2017). For example, psychological effects that occur at an early age can

have a chain reaction effect on adolescents such as impacting their ability to socialize effectively with peers (Logan-Greene, 2017). As these biological and psychosocial effects continue to impact individuals, their fight or flight response system can become overwhelmed, which leads to disrupting self-regulation processes (Logan-Greene, 2017). Not only do individuals have an increased risk of physical health issues, they are also at risk for being involved in the juvenile system, having mental health problems, and problems associated with self-regulation, executive functioning, and emotional regulation. These impacts have an overall effect on their ability to function in their associated environments and contexts of everyday life including at school, home, work, etc. (Lackner et al. 2018; Logan-Green, 2017).

Transition to Adolescence and Middle School

Transitions along with any type of change can be difficult at any age. However, the move from elementary school to middle school, paired with the onset of adolescence is often correlated with various forms of psychological and academic distress (Parker, 2009). Although this transition is not difficult for everyone, for those who may experience challenges are at risk for academic, motivational, and emotional challenges (Parker, 2009). During the transition into middle school, adolescents are seen as being between two life stages, childhood and adulthood. This stage makes working with this age group challenging and complex (Parker, 2009). The complexity involves adolescents having increased problem-solving capabilities, a growing desire to be independent, decision-making opportunities, and a need to have interpersonal connections with adults (Parker, 2009).

Adolescents are a product of their environment; thus, they are constantly having to adapt and make decisions based on their various contexts, whether that be at school or at home (Parker,

2009). Within school, there are many other contexts to contend with during the school day, such as the classroom, hallway, lunchroom environments, and bus transportation (Getsdottir & Lerner, 2008). During this adolescent time period, these individuals are spending a majority of their time within a school setting. has high instances of social comparison and limited opportunities to decisions involving (Parker, 2009). These decision-making opportunities include classroom expectations, group projects, seating arrangements, and many others. It is recommended that an instructional climate design would be best to address these characteristics adolescents seek to employ (Parker, 2009). Within a middle school setting, the literature suggests the following be essential parts for education of young adolescents: “a rigorous, standards based, and relevant curriculum, instruction characterized by diverse and differentiated methods, staff well-versed in developmental characteristics of early adolescence, organizational structures that foster the development of positive student-teacher relationships, and community and family involvement” (Parker, 2009, p. 326). Other instructional strategies to support this developmental age include cooperative learning, service learning, and differentiated instruction in order to meet their diverse academic and social needs (Parker, 2009). Cooperative learning involves using academic and social learning activities simultaneously within a classroom. Service learning is an educational approach that focuses on community and human needs. Lastly, differentiated instruction is referred to the use of academic instruction that is individualized to each student (Parker, 2009).

Risk Factors and Long-term Effects

Experiencing any type of childhood trauma leads to many short and long-term effects. Experiencing trauma is linked to many neurological, physical, and sensory difficulties which may lead to problems with self-regulation, emotional regulation, and executive functioning. All

of these difficulties can attribute to toxic stress syndrome, anxiety, depression, and other future adult conditions such as cardiovascular disease, hypertension, diabetes, liver cancer, asthma, chronic obstructive pulmonary disease, and an autoimmune disease (Gronski et al., 2013; Lackner et al. 2018; Turkben, 2019; Toglia., 2019).

The ability to self-regulate is compromised when individuals come from ACEs (Fraser et al., 2017). Self-regulation includes the ability to control and monitor cognition, behaviors, actions, and motivation strategically in a way that supports an individual's ability to monitor and exercise control over one's inner state during purposeful, goal directed, and problem-solving behavior (Lackner et al. 2018; Turkben, 2019). Research has shown that individuals who have experienced trauma are more prone to having self-regulation difficulties (Lackner et al. 2018). According to a social cognitive theory perspective, self-regulation has three phases known as the forethought phase, performance phase, and self-reflection phase (Turkben, 2019). The forethought phase has two sub-categories called task-analysis and self-motivation beliefs. During task-analysis, goals are first identified followed by strategic planning. An individual's self-motivation are believed to play an important role in their ability to identify and set goals (Turkben, 2019). These beliefs include self-efficacy, outcome expectations, intrinsic interest/value, and goal orientation. In this context, goal-orientation may be the main reason for individuals to engage in certain tasks and courses (Turkben, 2019). During the performance phase, it is essential for an individual to utilize self-control and self-observation. During the self-reflection phase, individuals focus on reflecting on their efforts made in the previous stages to determine their self-satisfaction/affect in order to adapt and/or make changes based on their results (Turkben, 2019).

At-risk youth, or youth who have been involved in ACEs are deemed to have executive functioning impairments (Toglia, 2013). Executive functioning is the cognitive portion of self-regulation and refers to the ability to utilize strategies to cope with challenges and support performance in everyday life (Toglia, 2013). Executive functions are the cognitive processes including working memory, flexible thinking, and self-control, which are all used to help us plan, initiate, organize, connect information, transition, shift mindsets, set goals, prioritize, remember, and self-monitor (Cramm et al., 2013). Middle school and adolescence are times where many changes are made, and adolescents are expected to adapt with their environment and juggle multiple things at once such as academics and a social life. When a person's executive function is compromised, this affects their ability to successfully manage all of the tasks and challenges that come with the onset of adolescence, paired with the transition to middle school, thus negatively impacting their academic and learning abilities (Toglia, 2013). In addition, executive function impairments can lead to delinquent behaviors, substance abuse, and aggression (Toglia, 2013).

Adolescent's ability to regulate their emotions is significantly decreased once they have experienced ACEs. Emotional regulation is the ability to adapt while experiencing emotions and express them in a way that is appropriate (Lennarz, 2018). This includes the ability to think about a problem, problem-solve, or distract oneself from an emotion in order to benefit oneself. Effective emotional regulation skills are linked to better mental health and is central to psychosocial functioning (Lennarz, 2018). Adolescents often lack the ability to display emotions that were not present in their childhood (Lennarz, 2018). When adolescents experience difficulties with their emotions, it is often due to the trauma that has been inflicted on them and their lack of resources (Lennarz, 2018). When the ability to regulate emotions becomes

compromised, this can lead to hyper-arousal including fear, panic, and uncontrolled anger (Spence et al., 2022). Adolescents are products of their environment, in which they learn to adapt, create, and make decisions based off of their various contexts (Parker, 2009). When they lack the ability to regulate their emotions, it can affect their development and relationships they gain throughout their various occupations and roles within their different environments (Lennarz, 2018).

Elevated exposures to ACEs coincide with individuals having a higher risk of being involved in the juvenile system. Not only are individuals who suffer from ACEs at risk for mental illness, but being involved in the juvenile system only makes matters worse (Logan-Greene, 2017). Mental illness is one of the most reliable predictors of youth demonstrating criminal behavior (Barrett et al., 2014). When individuals are involved with the legal system and are suffering from mental illness, they are more likely to have negative impacts versus someone who suffers from mental illness alone (Logan-Greene, 2017).

Repeated exposure to childhood trauma can lead to possible toxic stress syndrome (Gronski et al., 2013). The NSCDC (2005) has proposed a taxonomy on three categories of stress experiences neurologically: positive, tolerable, and toxic stress (Gronski et al., 2013). Positive stress occurs during normal childhood events that help with the growth and development of a child. Tolerable stress occurs during traumatic events such as illness, loss of a loved one, or natural disasters that can be alleviated with the support of caregivers to help with coping and the ability to respond to stress appropriately. Lastly, toxic stress occurs from chronic and cumulative trauma experiences throughout childhood with the absence of caregiver support (Gronski et al., 2013). Adolescence is a sensitive time for brain development, and when paired with a culmination of trauma that leads to toxic stress, an alteration in brain structure and chemistry

occurs (Gronski et al., 2013). Impact on stress exposure is not limited to the developmental period. Chronic overuse of the body's stress response system is correlated with many adult conditions such as cardiovascular disease, hypertension, diabetes, liver cancer, asthma, chronic obstructive pulmonary disease, autoimmune disease, and depression (Gronski et al., 2013). These risk factors have a direct link to occupational deprivation within individuals and populations (Gronski et al., 2013).

Individuals vary in their responses to sensations with respect to the type, intensity, and affective tone displayed (Yochman & Pat-Horenczyk, 2019). The variations in responses have a direct impact on adolescent's interests, motivations, tolerance, and pleasure to the behavior and choices made throughout their life (Yochman & Pat-Horenczyk, 2019). Individuals who experience chronic stress are at risk for developing sensory difficulties (Yochman & Pat-Horenczyk, 2019). These difficulties can lead to sensory modulation disorder (SMD) or sensory processing disorder (SPD) (Yochman & Pat-Horenczyk, 2019; Purvis et al., 2013). SPD refers to information being processed in an ineffective and disorganized way, causing a disturbance in occupational engagement (webmd., 2022; baltimoretherapyspot, 2022). SMD refers to the way individuals respond to certain stimuli in either sensory over-responsive (SOR) or sensory under-responsive (SUR) (Yochman & Pat-Horenczyk, 2019). Individuals with SOR tend to have higher and more intense arousal levels for a longer duration. They often react with a fight or flight response, displayed as amplified avoidant and defensive behaviors to their correlated environmental demands. Individuals with SUR have delayed and decreased arousal levels to sensations (Yochman & Pat-Horenczyk, 2019). This often is displayed as showing a lack of interest, motivation, or passive behavior during socialization and other environmental settings (Yochman & Pat-Horenczyk, 2019).

Current/Recommended Treatment Approaches

As mentioned earlier, adolescents affected by ACEs have difficulty with emotional regulation, self-regulation, and executive functioning. The literature outlines many approaches that could be helpful in working with adolescents who have experienced ACEs, including providing direct support related to these deficits. In addition, it has been proven that adolescents affected by ACEs can be supported through trusting relationships, having set expectations, establishing a safe environment, and specifically addressing their emotional regulation, self-regulation, and executive functioning deficits (Murphy & Sacks, 2019; Dombo & Sabatino, 2019; Lennarz, 2018; Fraser et al., 2017; Spruijt et al., 2017).

One of the most simple but profound ways to have an impact on an individual's life is through fostering positive relationships (Murphey & Sacks, 2019). It is important for adolescents who have experienced ACEs to have a strong interpersonal relationship with a few trusting adults, whether that be at school, home, or any place they spend their time (Murphey & Sacks, 2019). It is recommended for students to also have support at school through trained professionals such as social workers, nurses, psychologists, therapists, etc. who are able to work as an interdisciplinary team (Murphey & Sacks, 2019; Parker, 2009).

An instructional school setting is recommended to foster these positive interactions, especially within a smaller group setting, compared to a departmentalized setting which makes it more challenging for teachers to get to know students (Parker, 2009). Whenever trauma is inflicted on an adolescent by an adult, the adolescent often no longer feels that adults can be trusted (Dombo & Sabatino, 2019). Thus, when adolescents are entering into a new environment such as a school, they are often on alert for anyone who can be a threat to them (Dombo & Sabatino, 2019). Due to these individuals experiencing hypervigilance, it makes it challenging

for them to make connections with others, especially adults (Dombo & Sabatino, 2019). Hypervigilance can cause a trauma response of individuals testing others by behaving in a disruptive or aggressive way in order to see how they will respond. When adults do not respond in a way an adolescent would expect, such as in a demeaning and punitive manner, the adolescent is assured with feelings of safety (Dombo & Sabatino, 2019). However, building these connections can come with its many challenges.

When trying to build connections in a school setting, it can be helpful to start by setting ground rules and by trying to understand the student's needs (Dombo & Sabatino, 2019). When someone is displaying disruptive behavior, it is recommended to respond in a firm but calm way and through curiosity. For example, if someone is banging the wall or yelling in the hallways, it could be beneficial to respond with asking them why they are doing so, which shows them you are not judging and are wanting to understand their emotions and where they are coming from (Dombo & Sabatino, 2019). In addition, another way to form connections is through consistency through routines, responses, etc. (Dombo & Sabatino, 2019).

Safety is a basic human right that unfortunately is violated whenever individuals experience ACEs (Dombo & Sabatino, 2019). Individuals often feel safe when they are in the presence of calm people and a calm environment (Dombo & Sabatino, 2019). A way to help promote an individual's sense of safeness is by first recognizing the individual's actions, words, and nonverbal communications and by respecting their boundaries and rights (Dombo & Sabatino, 2019). As mentioned above, individuals who have experienced ACEs have difficulty with regulating their emotions which can cause them to engage in inappropriate and disruptive behavior. In response to these behaviors, it is ineffective to use power to demean the individual because it can cause them to feel unsafe (Dombo & Sabatino, 2019). Instead, keeping a calm

presence, staying regulated and focused whenever these inappropriate behaviors occur can help make the individuals feel safe. Adolescents who experience these types of behaviors look for someone to be predictable and consistent, and someone who does not demonstrate these same kinds of chaotic or disorganized behaviors (Dombo & Sabatino, 2019). Another way that can support an individual's sense of safeness within a school setting is by having clear expectations, well-defined routines, time for transitions, choices, and focused teachers (Dombo & Sabatino, 2019).

When working with individuals who have experienced ACEs, it is essential to remember that each person may have some aspect of triggers that can make them feel unsafe (Dombo & Sabatino, 2019). These triggers remind these individuals of their traumatic experiences and can be sensory reminders from touch, smell, sounds, images, and food. At times it may be hard to predict these types of triggers because an individual may not even realize when something is triggering them, as well as someone else not recognizing why they may be upset. Whenever someone does become triggered and this disrupts their behavior, it is essential for the teacher or whomever is present to keep calm and try to understand. In addition, when forming relationships with these individuals, it is helpful to try and look for clues for anything that may be a trigger (Dombo & Sabatino, 2017).

As previously mentioned, ACEs impact an individual's ability to appropriately regulate their emotions. There are several strategies that can help individuals manage their emotions effectively. These strategies include the following: Identifying the emotion(s) through words and/or images, reflecting on the emotion(s), provide support to the individual to help manage the emotion(s), implement calming strategies that are effective for the person, and provide education to the individuals during an appropriate time (Dombo & Sabatino, 2017). In addition, Lennarz

(2018), found that the most effective strategies when working with adolescents were emotional regulation, problem-solving, acceptance, and reappraisal. Problem-solving in terms of an emotional regulation strategy is used to try and adapt a situation in order to resolve the issue at hand. Acceptance means to recognize and be at peace with how one feels towards or during a certain situation. Lastly, reappraisal means to shift the meaning towards a certain situation in a way to adjust your judgment in order to prevent negative emotions (Lennarz, 2018). Other strategies that have been used and were somewhat successful include mindfulness, avoidance, suppression, social support, and distraction (Lennarz, 2018).

Adverse childhood experiences can lead to many long-term effects on individuals, including their ability to successfully perform and navigate within a school setting. Alternative education programs are “educational programming separate from an alternative to the conventional high school and/or middle school. The core purpose of this growing segment of K-12 education is preventing at-risk adolescents from dropping out of the K-12 system and completing the requirements for a high school diploma” (Dirette & Kolak, 2004, p. 337). They are set in place to help support these types of individuals who have challenges in a general education setting (Dirette & Kolak, 2004). Alternative education programs provide learning opportunities for students who are at-risk for dropping out of or failing in a standard educational setting (Dirette & Kolak, 2004).

As individuals become adolescents and enter middle school, this is a critical time of cognitive development and their ability to use executive functioning skills (Spruijt et al., 2017). With ACEs negatively impacting adolescents and their ability to use executive functioning skills, it affects their overall academic performance. Executive functioning skills are underlying processes such as focus, inhibition, memory, emotion, and action that allow adolescents the

ability to regulate their emotions (Ratcliff et al., 2020). Research indicates that there are several strategies that can be used to help individuals use their executive functioning skills (Spruijt et al., 2017). Providing environmental modifications can help manage these executive functioning deficits. These modifications include dividing tasks into smaller pieces, providing checklists for organization, utilizing visuals, limiting distractors, providing clear expectations, and creating a system that is unique to a person's situation and abilities (Ratcliff et al., 2020).

Adverse childhood experiences may lead to deficits in sensory processes, disrupting one's ability to engage in needed occupations. When one displays difficulties with sensory processing, it is recommended to first identify what type of sensory processes are causing the difficulty, then create an approach suitable to the sensory needs. The various sensory processes include auditory, visual, taste/smell, tactile, proprioception, and movement. Interventions to address deficits in sensory processes use a sensorimotor framework, incorporating movement and sensory activities to help adolescents process the trauma at a sensory level (Fraser et al., 2017). Intervention strategies can involve the use of sensory rooms or calming rooms as a safe space for individuals to utilize in times of distress (Fraser et al., 2017). These rooms can help facilitate regulation, increase self-awareness, and decrease feelings of seclusion and restraint (Fraser et al., 2017). Other forms of strategies to help with sensory regulation include various sensory tools such as equipment, forms of movement, and postures (Fraser et al., 2017).

Adolescents who have been affected by ACEs often seek people and places that make them feel safe (Dombo & Sabatino, 2019). Having clear expectations and boundaries in relationships and inside classrooms is a way to help them feel safe (Dombo & Sabatino, 2019). There are many aspects to keep in mind when setting these expectations in the classroom environment. Begin by setting a small number of expectations in collaboration with the students

within the classroom. Use positive statements, enforce consequences instead of punishments and enforce expectations consistently, clearly, and regularly (Alter & Haydon, 2017). Research suggests that it is also helpful for teachers to understand their own teaching styles (Dunbar, 2004). Teachers that understand their own teaching style are able to address situations more appropriately (Dunbar, 2004).

Summary

There are many strategies to use to help support adolescents affected by ACEs. This includes addressing their deficits in emotional regulation, self-regulation, and executive functioning by providing strategies on how to improve these skills. Although there are many helpful resources and strategies to support individuals who have experienced ACEs, there are still several gaps that need to be addressed. For example, there is a current need for research on transitions to middle school with the current increase of middle schools departmentalized instruction paired with high stakes testing (Parker, 2009). Despite this, though there has been significant progress made towards emotional regulation, there is still a need to understand how its strategies impact adolescents in their day to day lives (Lennarz, 2018). In addition, there is a need for more research on how executive functioning strategies can be used to support more complex activities rather than abstract activities (Toglia, 2013). In an effort to work towards filling some of these gaps, it is recommended that an interactive educational module be developed to help professionals work interactively by acquiring executive functioning education in order to support those with executive functioning challenges (Cramm et al., 2013). Lastly, there is still a need to further understand which environmental factors increase an individual's risk for developing mental health difficulties in order to improve resources that provide support

to these individuals who have suffered from ACEs (Logan-Greene et al., 2017). *How to Support Adolescents Affected by ACEs: An Advocacy Guide* was created to help fill some of these gaps by providing information and strategies to educators to be used on a day-to-day basis with adolescents affected by ACEs.

Chapter III

Methods

How to Support Adolescents Affected by ACEs: An Advocacy Guide was created to increase awareness of individuals who have experienced ACEs. In addition, this guide provides education and strategies for educators to utilize on how to address the needs of adolescents affected by ACEs. The need for this product was discovered by conducting an extensive literature to find information regarding ACEs, how to best support individuals involved in ACEs, and to explore various resources and intervention strategies used when working with this population. The terms “adverse childhood experiences/events,” “adolescents,” “middle school,” “occupational therapy and ACEs,” were searched using the databases: CINAHL, ERIC, Google Scholar, American Journal of Occupational Therapy, and PubMed. Following the literature review, in-person observation was completed on the targeted population to complete the needs assessment.

In conclusion of the need’s assessment data, it was determined that adolescents who have been impacted by ACEs have decreased emotional and self-regulation, decreased executive functioning skills, and limited motivation to engage in their academic tasks. The information found in the literature review suggest that there is a need for consistency across disciplines working with adolescents who have experienced ACEs. In addition, there is a need for educators to understand ACEs and its effects on their students’ academic performance and overall well-being. Finally, the compilation of information found in the need’s assessment along with guidance from the PEO model were used to create *How to Support Adolescents Affected by ACEs: An Advocacy Guide*. This product was chosen to help advocate for adolescents affected

by ACEs within a school setting, and to bring awareness of the range of effects that they can have.

Occupation-Based Model

The Person - Environment - Occupation (PEO) Model was used to help guide the creation of *How to Support Adolescents Affected by ACEs: An Advocacy Guide*. This model focuses on providing the best “fit” between the person, environment, and occupation which overall gives a client centered approach to service delivery (Baptiste, 2017). The person within the given situation are the at-risk adolescents in need of appropriate support to help achieve successful academic and life skills. However, it was important to understand that each student has a unique set of experiences and skills impacting their academic performance. Within the PEO model there are five different types of environments. This includes the physical, social, cultural, institutional, and virtual environments (Baptiste, 2017).

All 5 types of environments were considered in creating this scholarly project. These various environments are important to understand because they impact the student’s quality of performance in an academic setting. The occupation portion includes various occupations that the student engages in while at school that includes homework assignments, projects, socializing, and eating in the lunchroom (Baptiste, 2017). Examples include engaging in homework assignments, playing games, socializing, eating, etc. The overarching goal of providing the best fit between the person, environment, and occupation is to increase the student’s academic and social performance during educational activities (Baptiste, 2017). A good fit will ensure that each student is experiencing a sense of satisfaction with their level of functioning, thus increasing their performance in areas while at school as well as areas outside of school. The

meaningful occupation being focused on in hopes to support this population is academic performance (Baptiste, 2017). A few of the transaction statements that were important to address in creating the strategies for educators include:

- Emotional regulation deficits can impact a person's ability to appropriately cope with their emotions during stressful academic work.
- Emotional regulation deficits may disrupt an individual's ability to socialize appropriately and form relationships with peers and faculty members.
- Executive functioning deficits can impact adolescent's ability to sustain enough attention to complete an academic task within the allotted amount of time (e.g., taking a test)
- Emotional regulation deficits can negatively impact a person's ability to have appropriate conversations with others.

Chapter IV

Product

Evidence has shown that adolescents who experience ACEs tend to have difficulty with emotional regulation, self-regulation, and executive functioning, impacting their ability to engage in meaningful occupations such as education (Fraser et al., 2017; Toglia, 2013; Lennarz, 2018). This proves that there is a need for adolescents affected by ACEs to receive support from their educators to help prevent any prolonged difficulties, and to help increase their performance in educational activities. Therefore, *How to Support Adolescents Affected by ACEs: An Advocacy Guide* was created to be utilized by all educators working with adolescents who have experienced ACEs. This guide provides these educators with background knowledge on ACEs, how trauma impacts the brain, an overview of occupational therapy and the occupation-based model used to guide this product, support strategies, and future recommendations.

Project Objectives

The three main components of this scholarly project are:

- Introduction and background information: Included are the purpose of *How to Support Adolescents Affected by ACEs: An Advocacy Guide* along with background information on ACEs and the various impacts they have on adolescents. A list of pertinent operational definitions is also included, making it easier for the intended population to understand the product. An overview on the role of occupational therapy within this given population was provided, along with a table of the PEO model, application of the model, and a table that describes common transactions between the person-environment, person-occupation, and occupation-environment that impact adolescents with ACEs. This table includes

an assessment of the main components of PEO followed by main transactions that are important to understand.

- Strategies for use in the school setting: Included are strategies that were found in the literature that are to be utilized when working with adolescents affected by ACEs. The first strategy outlined includes information on Maslow's Hierarchy of Needs. This strategy was given first due to the importance of understanding the 5 physiological needs of human beings. Individuals who are affected by ACEs are likely to not have their physiological or safety needs met. In order for these individuals to function effectively throughout a typical school day, their basic needs need to be met. Keeping this idea in mind when working with students affected by ACEs can help provide them with the resources and support that they need. Maslow's Hierarchy of Needs was used to help layout the rest of the strategies. Based off of the needs assessment that was conducted, it was found that the bottom level of physiological needs were often met within the school setting. From there, the author worked her way up the model by addressing the adolescent's safety needs next, followed by the belongingness and love needs. The following strategies were provided as follows: Maslow's Hierarchy of Needs, establishing a safe environment, setting expectations, relationship building and motivational interviewing, communication amongst educators, emotional and sensory regulation strategies, and executive functioning strategies.
- Intended use of the project and recommendations: Describe the intended use of project, why an occupational therapy role would be helpful, and recommendations for future use.

The PEO model was chosen to help guide the creation of *How to Support Adolescents Affected by ACEs: An Advocacy Guide* for many reasons. The authors of PEO consider the developmental stages individuals experience throughout the lifespan. This model can be used in a variety of situations and can be applied with individuals across the lifespan with attention to the temporal aspects of any given situation (Baptiste, 2017). The overarching goal of PEO is to ultimately increase occupational performance by analyzing the “fit” between the person, environment, and occupation (Baptiste, 2017). Analyzing the “fit” between the three domains will provide an understanding of the supports and barriers individuals face when engaging in occupations. The purpose of *How to Support Adolescents Affected by ACEs: An Advocacy Guide* was to increase adolescent’s overall well-being and engagement in meaningful occupations, specifically education, by providing educators within a school setting information on ACEs, followed by strategies for them to utilize to help support these adolescents.

Chapter V

Summary

According to the Center for Disease Control and Prevention (2022), 1 in 6 adults reported experiencing 1 four or more ACEs, and 5 of 10 leading causes of death are associated with ACEs. These variations of traumatic events can have a direct impact on the development of someone's brain structure and may lead to prolonged and sustained impact in someone's physical, emotional, and cognitive, and mental health (Lackner et al., 2018; Gronski et al., 2013). More specifically, adolescents who have experienced ACEs are at a vulnerable time in their life due to their continued stage in developmental (Gestsdottir & Lerner, 2008). This puts them at an increased risk for developing prolonged cognitive and mental health disparities. The research illustrates a need for individuals affected by ACEs to receive complex support from various disciplines, including educators. The purpose of *How to Support Adolescents Affected by ACEs: An Advocacy Guide* is to provide educators within a school setting information on ACEs and how they might be affecting the students' that they work with. In addition, this guide provides educators with strategies on how to better support and interact with students affected by ACEs. Adolescents spend a lot of time either at school or engaging in tasks related to school. Therefore, educators have a profound impact on the education adolescents receive and have the opportunity to help shape the lives of these individuals.

Strengths

One of the major strengths of this project is the model that was chosen to help guide the creation of *How to Support Adolescents Affected by ACEs: An Advocacy Guide*. The PEO model was used to help complete a comprehensive analysis on the adolescent population affected by ACEs. The author thoroughly examined the person variables, environmental components, and

occupational variables of the chosen population. From there, a chart was created to address these core domains, and provide an overview of the main transactional components between all three domains. The transactions led to the author understanding the main barriers affecting adolescent's ability to successfully engage in an academic setting. Finally, information was provided on how to use the PEO model.

Another strength of this guide was that it included information that was made to advocate for the population of adolescents affected by ACEs. In addition, it utilized strategies that were intended to be used every day to support these adolescents. Another strength of this guide was that it was created for people who don't require specialized training to use the strategies that are provided.

Limitations

Limitations of this guide include that the guide was designed to use with adolescents with ACEs in a school setting. In addition, it does not have specific intervention approaches for this population, who are in need of one-on-one or group support from trained professionals such as an occupational therapist. Unfortunately, the amount of support that this population needs is often limited within a middle school setting. This guide was created to provide educators with everyday strategies that can be used with their students' who are affected by ACEs.

A barrier to the implementation of this guide is the variety of teaching strategies that teachers already employ, especially ones who have been teaching for a long time. It is hard for teachers who have been teaching for a long time to shift their mindset and teaching habits towards individuals who may show symptoms of disruptive behaviors or other signs of trauma exposure. In addition, there may already be behavioral protocols or communication processes put into place at a school, and sometimes it may be difficult to switch in the middle of a school year.

Lastly, it may be challenging for some of the strategies to be used with students' if a negative relationship was already formed between a teacher and student.

Recommendations

The first recommendation for future implementation is for a potential occupational therapy graduate student to create various outlines of interventions to be utilized for this population. However, in order for these interventions to be sustainable, it is recommended to make referrals for occupational therapists, or other disciplines to implement these interventions. Creating interventions will help increase the support that these adolescents receive, ultimately increasing their overall academic performance and well-being. In addition, it is recommended that an in-service or type of training take place for all educators who may work or even come into contact with adolescents who have experienced ACEs within the school setting. This in-service or training would be regarding the topic of ACEs and include education on how to apply *How to Support Adolescents Affected by ACEs: An Advocacy Guide*.

Conclusion

The proposed and intended implementation of this guide is to be used by educators within a school setting who may come into contact or work directly with adolescents affected by ACEs. The age range for this guide is to be used with middle school ages 10-14. This guide will be most effective in collaboration with all educators who work with the targeted at-risk adolescents.

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Appendix

Appendix A

Product

How to Support Adolescents Affected by ACEs: An Advocacy Guide

Hallie Longtin, OTDS

Table of Contents

Introduction.....	3
Operational Definitions.....	4
Background	5
Trauma Impact on the Brain	7
Occupational Therapy	9
Occupation-Based Model	10
PEO Elements	11
Application of the PEO	12
PEO Table	13
Maslow’s Hierarchy of Needs	18
Establishing a Safe Environment	19
Setting Expectations	25
Relationship Building & Motivational Interviewing	26
Communication Amongst Educators	32
Emotional & Sensory Regulation.....	34
Executive Functioning.....	41
Intended Use & Future Recommendations.....	44
References.....	45

INTRODUCTION

This guide was created as a trauma-informed guide to be used by all educators such as teachers, counselors, paraprofessionals, and administrators within a school setting who may work or come into contact with students affected by adverse childhood events (ACEs). The purpose of this guide is to provide educators with information and resources in order to better promote student's occupational engagement and performance throughout a typical school day. This guide was created due to a need for increased education and support within a school setting for this population of students affected by ACEs. By providing these educators with the knowledge and resources to support this population, they will be able to better support the students' academic success and increase their overall well-being. This guide includes background information on ACEs, an overview of occupational therapy, outline of the occupation-based model used to develop this guide, various strategies for educators to use to support this population of students and intended use and future recommendations.

OPERATIONAL DEFINITIONS

Adolescents: This period of life between childhood and adulthood, from the ages of 10 to 19 that is marked by the onset of new cognitive structures, social conceptions, development of physical and sexual maturity, relationship changes, and the formulation of self-identity (Gestsdottir & Lerner, 2008)

Adverse childhood events: Any traumatic events that occur during a child's life before the age of 19 (cdc.gov., 2022). This includes physical abuse, verbal abuse, sexual abuse, physical neglect, emotional neglect, a parent who is an alcoholic, a mother who's a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and experiencing divorce of parents (pacesconnection.com., 2022)

Occupations: Anything that a person engages in throughout the day that occupies their time (Kuhaneck & Case-Smith, 2020)

Occupational Therapy: A profession that works with individuals of all ages who encompass a wide range of skills, diagnoses, etc. to help them develop, recover, improve, as well as maintain skills needed for their everyday occupations (Johnson & Dickie, 2019)

Emotional regulation: The ability to regulate and modify the experience and expression of emotions successfully (Lennarz et al., 2019)

Executive functioning: Skills such as time management, attention, planning, organizing, memory, self-control, and multitasking that support individual's ability to complete tasks on a day-to-day basis (Ratcliff et al., 2020)

Self-regulation: The ability to regulate and modify all aspects of adaptation such as behavior, thoughts, attention, emotions, as well as the ability to react to different contexts and modulate reactions to contexts (Gestsdottir & Lerner, 2008)

Sensory modulation disorder (SMD): A subcategory of SPD that refers to the way individuals respond to certain stimuli in an either sensory over-responsive (SOR) or sensory under-responsive way (SUR) (Yochman et al., 2013)

Sensory processing disorder (SPD): Condition in which environmental sensory information is processed in an ineffective and disorganized way causing disruption (Yochman et al., 2013)

Toxic stress: Impact of early exposure to pronounced and sustained stress on a developing nervous system and lifelong sequelae for physical, emotional, and mental health and economic potential (Gronski et al., 2013)

Trauma: Person being exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence. Individuals can experience trauma in the following way(s): direct exposure, witnessing the trauma; learning that a relative or close friend was exposed to a trauma or indirect exposure to aversive details of the trauma, usually in the course of professional duties (American Psychiatric Association, 2013, p. 88; Spence et al., 2021)

Trauma informed care: The ability to identify symptoms of trauma in individuals to be able to provide support (Acesaware.org)

BACKGROUND



Adverse Childhood Experiences

Abuse

- Physical Abuse
- Verbal Abuse
- Sexual Abuse

Neglect

- Physical Neglect
- Emotional Neglect

Household Dysfunction

- Substance abuse
- Mother who is a victim of domestic violence
- Incarcerated Relative
- Mental Illness
- Divorced Parents

Adverse childhood events can be defined as any traumatic events that occur during a child’s life before the age of 19 (cdc, 2022). Interestingly, 1 in 6 adults reported experiencing four or more types of ACEs, and 5 of 10 leading causes of death are associated with ACEs (cdc.gov., 2022). The DSM-5 defines trauma as a “person being exposed to death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence. Individuals can experience trauma in the following way(s): direct exposure, witnessing the trauma; learning that a relative or close friend was exposed to a trauma or indirect exposure to aversive details of the trauma, usually in the course of professional duties” (American Psychiatric Association, 2013, p. 88; Spence et al., 2021). Different types of ACEs or traumatic events include physical abuse, verbal abuse, sexual abuse, physical neglect, emotional neglect, a parents who’s an alcoholic, a mother who’s a victim of domestic violence, a family member in jail, a family member diagnosed with a mental illness, and experiencing divorce of parents (pacesconnection.com., 2022). These traumatic events can have a direct impact on development and someone’s brain structure, mainly within the medial prefrontal and hippocampus areas which effect their overall function (Lackner et al., 2018). In addition, ACEs may lead to toxic stress (pacesconnection., 2022). Toxic stress occurs through chronic or cumulative traumas that a child experiences without available support of a loving caregiver (Gronski et al., 2013). Toxic stress indicates the impact of early exposure to pronounced and sustained stress on a developing nervous system and the lifelong sequelae for physical, emotional, and mental health and economic potential (Gronski et al., 2013).

Adverse Childhood Experiences are Common

Household Dysfunction:

Substance Abuse	27%
Parental Separation/Divorce	23%
Mental Illness	17%
Battered Mother	13%
Criminal Behavior	6%

Abuse

Psychological	11%
Physical	28%
Sexual	21%

Neglect

Emotional	15%
Physical	10%

Statistics: pacesconnecton.com

TRAUMA IMPACT ON THE BRAIN

Direct exposure to traumatic events has a negative impact on brain development. Early abuse and neglect can deregulate the child's developing neurobiological system by reducing its resistance to stressful events (Giotakos, 2013). Unfavorable early social experiences, such as emotional and physical abuse can affect the structure and function of the prefrontal cortex. Exposure to repeated emotional stressors, even in the absence of post-traumatic stress disorder (PTSD) diagnoses, has been shown to produce increased synapse formation and dendritic growth in basolateral amygdala, dendritic retraction in the hippocampus, and anxiety-like behavior against specific triggers. During the narration of an emotionally traumatic event, there is activation of the limbic system, the right amygdala, the orbitofrontal cortex and the anterior cingulate gyrus. In addition, there is an activation of the anterior insula, which records the physical impact of negative emotions, and the anterior and medial temporal cortex, which are involved in negative emotions. Adolescents are at a critical time in their life for brain development. When trauma occurs during an adolescent time period, it hinders their ability to build on areas of functioning such as language, self-regulation, and interactions with others (Fraser et al., 2017). In order to respond appropriately to individuals who have been through traumatic experiences, it is important to understand how these experiences impact them physiologically. When these individuals feel threatened, they may respond with a fight, flight, or freeze reaction (Fraser et al., 2017).

The fight-flight-freeze is an automatic response and is your body's natural reaction to perceived threats. It is known as a stress response and survival instinct that occurs quickly to help protect yourself. Although it causes physiological responses, it is triggered by psychological fear. The fear is conditioned, meaning that the perceived threat is negatively associated with a situation or thing. The perceived fear can be seen as an overactive response to something that is not nonthreatening (healthline, 2020).

Fight

Reacting aggressively

Flight

Reacting by running away

Freeze

Reacting by being unable to move or act against the threat

Physiological changes

amygdala



hypothalamus



autonomic nervous system (ANS)

ANS is broken down into



sympathetic nervous system (fight-or-flight)

parasympathetic nervous system (freeze)

ANS releases adrenaline and cortisol (stress hormone) which are responsible for:

Increased heart rate

increased breathing

increased peripheral vision

increased hearing

thickened blood to prepare body for injury

Skin produces more sweat or can become more cold, pale, and produce goosebumps

decreased perception of pain

OCCUPATIONAL THERAPY

Occupational therapy is a profession that works with individuals of all ages who encompass a wide range of skills, diagnoses, and occupations. Occupational therapists work with these individuals to develop, recover, improve, as well as maintain skills needed for their everyday occupations. Occupations are considered anything that a person engages in throughout the day that occupies their time or brings meaning and purpose to life. School-based occupational therapy services are guided by an educational model. An educational model focuses on the student's education as the primary occupation.

The occupational therapist:

- Collaborates with the person, guardian, and/or team to build an occupational profile
- Evaluates the person-environment-occupational variables as a student to identify barriers in their academic performance
- Utilize various intervention approaches to address these barriers



OCCUPATIONAL THERAPY

SKILLS FOR THE JOB OF LIVING

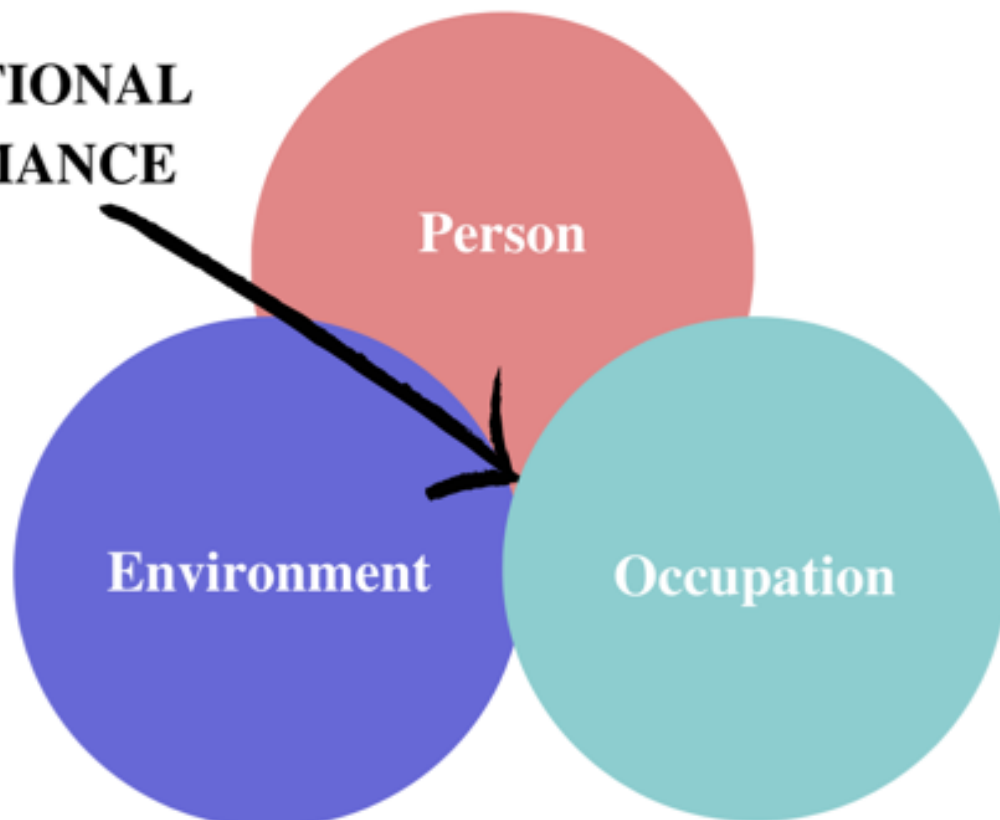
OCCUPATION-BASED MODEL

The Person – Environment – Occupation (PEO) Model: Systematic Analysis of Occupational Performance of Education in a School Environment for Adolescents affected by Adverse Childhood Events

Overview of PEO:

This model focuses on providing the best “fit” between the person, environment, and occupation which overall gives a client centered approach to service delivery (Baptiste, 2017). The authors of PEO recognize the developmental changes individuals go through throughout their lifespan. In adolescence, issues related to sense of self, testing roles, exploring opportunities, and taking risks challenge that central balance, causing the element of occupational performance to become small, often asymmetrical, and imbalanced (Baptiste, 2017). The PEO model can be used no matter how complex the client or situation is due to the individualized analysis of identifying the “fit” between the various person factors, environmental contexts, and occupations one encapsulates (Baptiste, 2017). The authors of PEO recognize the complexity of environments as equally as important as recognizing the person and their engagement in various occupations. In the context of adolescents affected by ACEs within a middle school setting, the PEO model provides a framework for determining their occupational performance as a middle school student based off the interfaces between the three domains of person, occupation, and environment. This offers therapists and other staff members working with these adolescents a way to re-establish order, purpose, and meaning (Baptiste, 2017).

OCCUPATIONAL PERFORMANCE



PEO ELEMENTS

Person: combination of physical self, cognitive self, and affective self with the idea that every person brings unique personal attributes and life experiences (Baptiste, 2017). The person's components are further broken down into physical, cognitive, sensory, affective, and spiritual components (Baptiste, 2017). It is important to understand that each student has a unique set of experiences and skills impacting their academic performance within a middle school environment.

Environment: external and internal physical and social aspects that surround a person while they engage in occupations. This includes the physical, social, cultural, institutional, and virtual environments (Baptiste, 2017). These various contexts are viewed from a very broad and inclusive perspective. Environments are important to analyze when measuring someone's occupational performance due to their various aspects they have that impact one's performance.

Occupation: various occupations that the students engage within an academic environment (Baptiste, 2017).

Occupational Performance: Measurement of how one engages in and/or completes their occupations based off the "fit" between the person, environment, and occupation (Baptiste, 2017)

Temporality: habits, patterns of time use, or routine that are linked with use of time (Baptiste, 2017)

Transactions: Various relationships between the person, environment, and occupations that drive the measurement of one's occupational performance (Baptiste, 2017)

The overarching goal of providing the best "fit" between the person, environment, and occupation is to increase the student's performance a typical school day (Baptiste, 2017). A good fit will ensure that each student is experiencing a sense of satisfaction with their level of functioning, thus increasing their performance in areas while at school as well as areas outside of school.

APPLICATION OF PEO

Occupational (Performance) Issue Identified:

1. Occupation Summary: How the Occupation is “Typically Performed” in Our Society/Culture

- a. Roles and Meanings at the Societal/Cultural level:
- b. Area of Occupational Performance expected:
- c. Developmental Expectations: typical “norms”
- d. Temporal issues: speed, duration, time of day, season
- e. Task/Activity Analysis:
 - i. Typical sequence of steps involved
 - ii. Safety, equipment, and space considerations

1. Person Components Summary

- a. Current Roles:
- b. Health Conditions:
- c. Spirituality: *meaning, values, interests*
- d. Personality, Habits, Routines:
- e. Cultural Background:
- f. Performance Components:
 - i. Relevant Subcomponents (Body Functions/Structures)
 - ii. Effects on Occupational Performance
- g. Physical (motor, sensory)
- h. Affective (e.g. self-concept, mood)
- i. Cognitive (including process and learning)
- j. Communication

1. Environment Components Summary

The “context” for occupational performance

- a. Cultural
- b. Societal:
- c. Institutional:
- d. Physical:
- e. Virtual:

1. Person-Environment-Occupation Analysis

Examine the “fit” in the person-environment-occupation relationship and summarize the components/factors that support and hinder or create barriers to occupational performance.

1. Theoretical Approaches for This Occupational (Performance) Issue

- a.
- b.

Recommendations for assessment and adapting/grading occupation:

Baptiste (2017)

PEO

Assessment of Main Components

Person

Physical

- The various forms of ACEs can cause physical harm to adolescents.
- Adolescents can experience toxic stress as a result of being exposed to chronic and cumulative trauma. Toxic stress can have long-term physical effects such as cardiovascular disease, hypertension, diabetes, liver cancer, asthma, chronic obstructive pulmonary disease, autoimmune disease, and depression (Gronski et al., 2013),
- Adolescents development of a healthy immune system may be compromised (Gronski et al., 2013).
- Sleep disturbances which range widely, could impact cognition, social functioning, academic performance, and emotional regulation (Kelly et al., 2020).

Cognitive

- Adolescents are at a vulnerable time in life due to their continued development. Prolonged exposure to stress during an adolescent time period can alter brain structure and chemistry (Gronski et al., 2013).
- Toxic stress and emotional trauma can cause difficulty with learning, memory, executive function, emotional regulation, and may cause an increase in anxiety (Gronski et al., 2013; Giotakos, 2020).
- ACEs can have a direct link to sleep disturbances. Sleep problems range widely influencing cognition, social functioning, academic performance, and emotional regulation (Kelly et al., 2020).

Sensory

- Trauma exposure can affect adolescent's ability to process sensory information which could lead to sensory modulation disorder (SMD), which is a subtype of sensory processing disorder (SPD).
- Individuals with SOR either have more or less response levels to stimuli and for a longer period of time (Yochman & Pat-Horenczyk, 2019).

Affective

- Toxic stress and emotional trauma can cause mood disturbances, interrupting a person's ability to regulate their emotions.
 - o Throughout a school day, toxic stress can cause students to have difficulty with managing their emotions appropriately.

Environment

Physical

- Classroom
- Hallway
- Restroom
- Lunchroom
- Gymnasium
- Library
- Office
- School bus

Social

- Peers and/or friends
- Teachers
- Counselors
- Paraprofessionals
- Administrators
- School Therapists
- Disciplines employed outside of a school that provide services to some students' (refer to table ... for an overview of various services that are provided to at-risk adolescents)

Cultural

- Cultural groups within the school (four directions)
- Variance of race, ethnicity, and culture amongst peers and school staff

Institutional

- Physical school environment and all that it entails
- Laws and policies that a school holds
 - o 504 plans
 - o IEP plans
 - o Suspension policies
 - o Detention policies
 - o Hallway access policies (e.g. checking out to use the restroom)
 - o Classroom policies
 - o School mission/vision
 - o Bullying policies
- Laws and policies for community and residential programs available for students
- Tier system
- Sports policies

Virtual

- iPads
- Cellphones
- Virtual educational programs

Occupation

ADLs

- Feeding/Eating
- Toileting
- Dressing

IADLs

- Navigating around school environments

Health management

- Engaging in activities that promote one's health (e.g. eating, drinking water, exercise, etc.)

Education

- Homework
- Reading
- Writing
- Listening/Comprehending lessons
- Individual projects
- Group projects
- Presentations
- Quizzes
- Tests
- Extracurricular activities

Leisure

- Engaging in unstructured times throughout a school day
- Extracurricular activities
- Social participation
- Interacting/communicating with peers and other individuals within a school setting

Transactions

Person-Occupation (P x O)

- Emotional regulation deficits can impact a person's ability to appropriately cope with their emotions during stressful academic work
- Emotional regulation deficits can negatively impact a person's ability to have appropriate conversations with others
- Sensory regulation deficits can impact adolescent's ability to successfully engage and complete academic tasks
- Executive functioning deficits can impact a person's ability to effectively manage their time (e.g. studying for tests and completing homework assignments on time)
- Executive functioning deficits can impact adolescents working memory, making it difficult to comprehend and understand expectations and information given during lessons

Occupation-Environment (O x E)

- Eating lunch typically takes place in the cafeteria
- Adolescents have to navigate their way to and from classes, lunch, the bus stop, front door, etc.
- Completing assignments, tests, projects, and other academic tasks take place in the classroom, common areas, at home, etc.
- Extracurricular activities such as sports typically take place outside of school time in their designated sports setting (e.g., gymnasium, football field. Etc.)
- Communication/interactions with peers and faculty take place in classrooms, hallways, lunchrooms, the office, etc.

Person-Environment (P x E)

- Executive functioning deficits can impact adolescent's ability to sustain enough attention to complete an academic task within the allotted amount of time (e.g. taking a test)
- Experiencing sensory over-responsive stimulation may cause individuals to become overwhelmed while in overcrowded, disrupting, or loud school environments (e.g. lunch rooms, hallways, chaotic classrooms, assemblies)
- Emotional regulation deficits may disrupt an individual's ability to socialize appropriately and form relationships with peers and faculty members
- Executive functioning deficits can impact an individual's ability to successfully utilize iPads that are needed to complete academic work
- Executive functioning deficits can impact an individual's ability to follow school policies
- Sensory regulation deficits can impact adolescent's ability to successfully engage in academic tasks while in disruptive environments (e.g. background noise, talking, music playing, etc.)

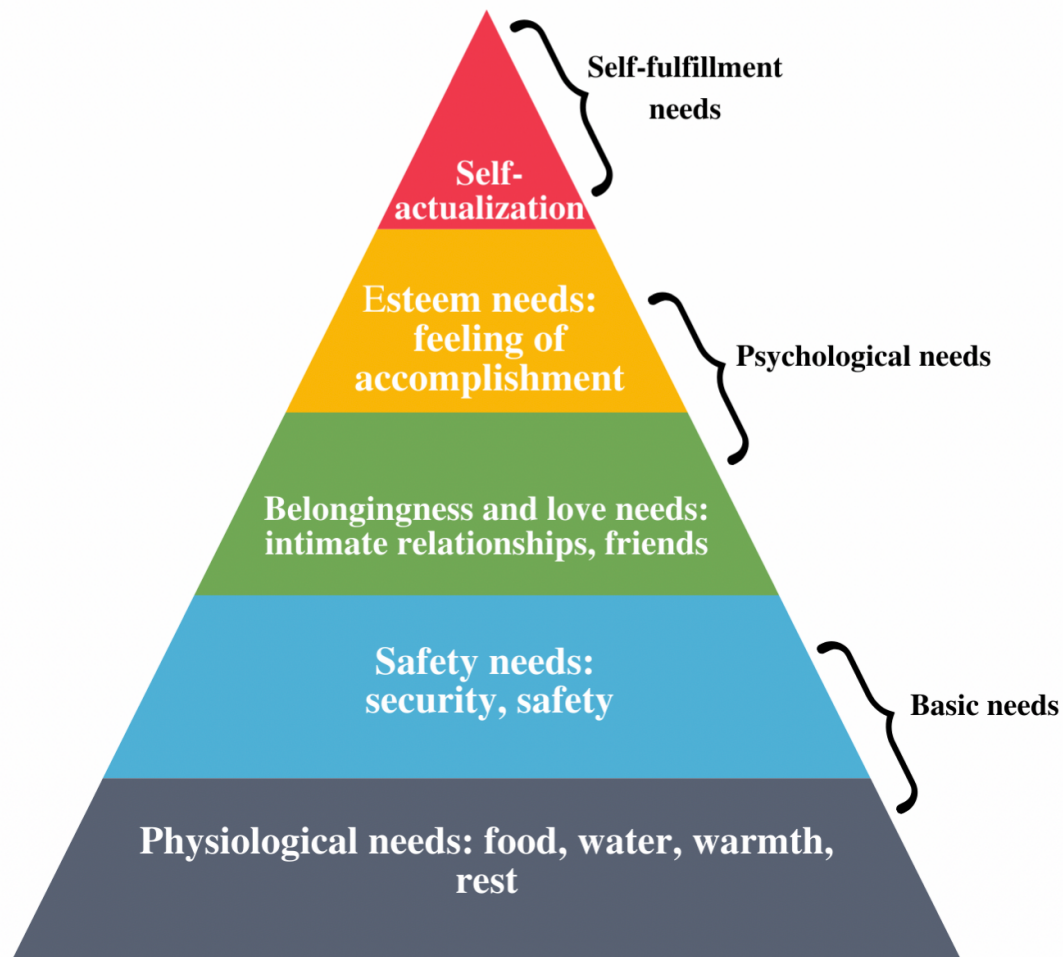
Formulation of Occupational Performance (P x E x O)

When evaluating an adolescent who has been affected by adverse childhood events (ACEs), there are many areas in the academic setting in which they are required to engage in. Varying occupations in differing environments can inhibit or facilitate a student's ability to learn. An adolescent affected by ACEs may experience various physical, cognitive, and sensory challenges that impact their engagement in occupations that are required to complete in school settings. When these difficulties arise, adolescents require additional supports to help facilitate their overall well-being and to increase their occupational performance. Furthermore, when exploring the institutional aspects of the environment, school professionals often times have limited training and knowledge on the effects of ACEs and trauma in working with adolescents affected.

Support Strategies for Educators

- Maslow's Hierarchy of Needs
- Establishing a Safe Environment
- Setting Expectations
- Relationship Building & Motivational Interviewing
- Communication Amongst Educators
- Emotional & Sensory Regulation
- Executive Functioning
- Intended Use & Future Recommendations

MASLOW'S HIERARCHY OF NEEDS



Maslow's Hierarchy of Needs was another framework used as a foundation towards the development of strategies laid out in this guide. This theory was utilized due to the importance of understanding the 5 physiological needs of human beings. This theory works from bottom to top, with the idea that needs lower down on the hierarchy must be satisfied first in order for needs higher up to be met. Individuals who are affected by ACEs are likely to not have their physiological or safety needs met. In order for these individuals to function effectively throughout a typical school day, their basic needs need to be met first. Based off of the needs assessment that was conducted, it was found that the bottom level of physiological needs of food, water, warmth, and rest was often met within the school setting when needed. From there, the author worked her way up the hierarchy by addressing the adolescent's safety needs next, followed by the belongingness and love needs, and so on. Keeping this framework in mind when working with students affected by ACEs can help to provide adolescents with the resources and support that they need.

ESTABLISHING A SAFE ENVIRONMENT

Adolescents who have experienced trauma are more prone to being in a constant state of survival mode. A lot of times it is hard for them to trust others, making it difficult for them to form relationships with others. Adolescents can feel safe when they are in the presence of calm people and in a calm environment. A way to help promote an individuals' sense of safeness is by first recognizing their actions, words, nonverbal communications, and by respecting their boundaries and rights. Individuals who have experienced ACEs often have deficits in regulating their emotions. This can cause them to engage in inappropriate and disruptive behavior. In response to their trauma responses and being in a state of survival, there are some techniques that can be used to establish a safe environment.

Prevention: Building Resilience strategies

1. Teach students to identify their stressors
2. Identify what students' normally do when presented with stressors
3. Brainstorm alternative ways to respond to stressors
4. Practical application and maintenance of coping skills

(Lew, 2018)

Safe Teaching Styles

Unsafe Teaching Styles

Focus on the student when interacting with them - use appropriate verbal and non-verbal skills (e.g. make eye contact, do not cross your arms)

Inappropriate verbal and non-verbal skills - wondering eyes, looking away, crossing your arms, becoming distracted

Communicating in a calm and low voice

Yelling, raising your voice, interrupting, muttering, or whispering

Being consistent with your behavior

Displaying irregular and unpredictable behavior

Having clear expectations and boundaries for all students. Apply appropriate consequences and positive reinforcements, and being fair

Having no expectations or boundaries. Applying inappropriate consequences or punishments. Not being consistent with your consequences.

Displaying appropriate reactions to unsettling situations (e.g. staying calm)

Inability to manage your emotions (e.g. outbursts)

Setting expectations and boundaries, and ensuring they are taught to students regularly, are understood, and are being practiced consistently

Having no expectations or boundaries

Treating all students fairly

Playing favorites, giving preferential treatment

Allowing students to use their coping tools when needed (e.g. taking a break, going to talk to someone)

Not allowing students to leave when they need to (e.g. using threats)

<p>Practicing consideration for all students</p>	<p>Inflicting judgment on students based off of their behavior, taking things personally</p>
<p>Being honest and transparent with students</p>	<p>Lying to students, refusing to communicate with them when needed</p>
<p>Holding students accountable for their actions, holding them to a high standard. Understanding that they are doing their best with what they have and are given.</p>	<p>Ignoring students, giving up on students, and thinking that they are not capable of completing/engaging in tasks</p>

Dombo & Sabatino, (2019)

Function-Based Support - A Team-Based Approach

Function-based support is a team-based approach including an assessment and intervention process. Data collection, data analysis, and plan development are all utilized during this process (Martel & Cavanaugh, 2016).

Functional Behavioral Assessment Information and Data

1. Define the problem behavior (e.g. leaving the classroom abruptly and being inappropriate in the hallways)
2. The context of where the behavior usually occurs (where, what, who was around while it happened - before and during)
3. Document what you believe the antecedent of the problem behavior is (aka a trigger - what happened before the student left the classroom abruptly)
4. Consequences and reinforcement: what were the consequences and reinforcements that occurred after the event, and how did the student respond. This helps to understand if the current consequences and reinforcements are appropriate or if there needs to be a shift in action taken.
5. Summary: Utilize the information from steps 1-4 to develop a behavior plan.

Behavioral Support Planning paired with Building Resilience

Adaptation: Behavioral support planning

1. Adjust and/or remove antecedent triggers
2. Teach positive/prosocial behaviors, or a better way for student's to cope with their triggers
3. Identify consequences and reinforcements that are appropriate and effective for the student and situation

Prevention: Building resilience strategies

1. Teach students to identify their stressors
2. Identify what students' normally do when presented with stressors
3. Brainstorm alternative ways to respond to stressors
4. Practical application and maintenance of coping skills

Behavior Plan & Escalation Review Form

Student name: _____ Date: _____

Team members: _____

Level	Context Information				
	Time	Place	What was the student doing	What was the teacher/adult doing	What else was occurring during this time (e.g., what were other students' doing)
Calm					
Trigger/ antecedent					
Escalation					
De-escalation					
Calm					

Adjust and/or remove antecedent/triggers

Antecedent/trigger identified:

Adjust and/or remove identified trigger? Explain:

Teach positive/prosocial behaviors OR how to cope

Positive/prosocial behaviors being taught:

What coping skills can they use:

Plan to implement these behaviors and/or coping skills:

Identify consequences and/or reinforcements

Consequences and/or reinforcements identified:

Plan to implement these consequences and/or reinforcements:

SETTING EXPECTATIONS

1. Set the least number of expectations as possible

- a. The smaller number of rules there are, the most likely students are able to comprehend and follow them

2. Create expectations collaboratively with students'

- a. Not all expectations need to be formed collaboratively, but students are more receptive when they feel like they are able to use their voice towards something that will be affecting them

3. Implement positive statements

- a. Use wording that describes desired behaviors rather than undesired behavior
 - i. Example:
 1. should statement: "Sit quietly while working" vs
 2. shouldn't statement: "Don't talk to your neighbors"

4. Be as specific as possible

5. Publicly Posted

- a. Helpful in serving as a visual prompt for teaching and reminding students' – adding pictures to represent words may also be useful

6. Taught to Students'

- a. Teach the expectations for the first 2-3 days for a new class for no more than 3 to 5 minutes.
- b. Review the expectations on the first Monday of each month
- c. Teach each expectation as you would your regular academic information by stating the expectation, give a rationale, follow with examples)

7. Tied to Positive and Negative Consequences

- a. Consequences must go beyond threats or lectures and must have consistent follow-through

Consequences vs. Punishment

-punishments are seen as a way to cause suffering, pain, or loss that seems to have no relation or appropriate reason to be inflicted upon a student.

-consequences on the other hand are put into place to teach a lesson, helping the student to understand why what they did was wrong.

Follow-through

-Hold and communicate the expectations clearly and regularly

-Enforce the expectations promptly, **consistently**, and equitably starting right away

-When enforcing expectations and giving consequences amongst student's who display behaviors across various classrooms, they need to be communicated between all faculty involved.

alter & Haydon, (2017)

RELATIONSHIP BUILDING & MOTIVATIONAL INTERVIEWING

Adolescents who have experienced ACEs are on high alert for anyone to be a threat to them. Research suggests that it is important for these adolescents to have strong interpersonal relationships with trusting adults in their lives, including at school to help promote their academic success and overall well-being. Due to these individuals experiencing hypervigilance, forming relationships can be challenging.

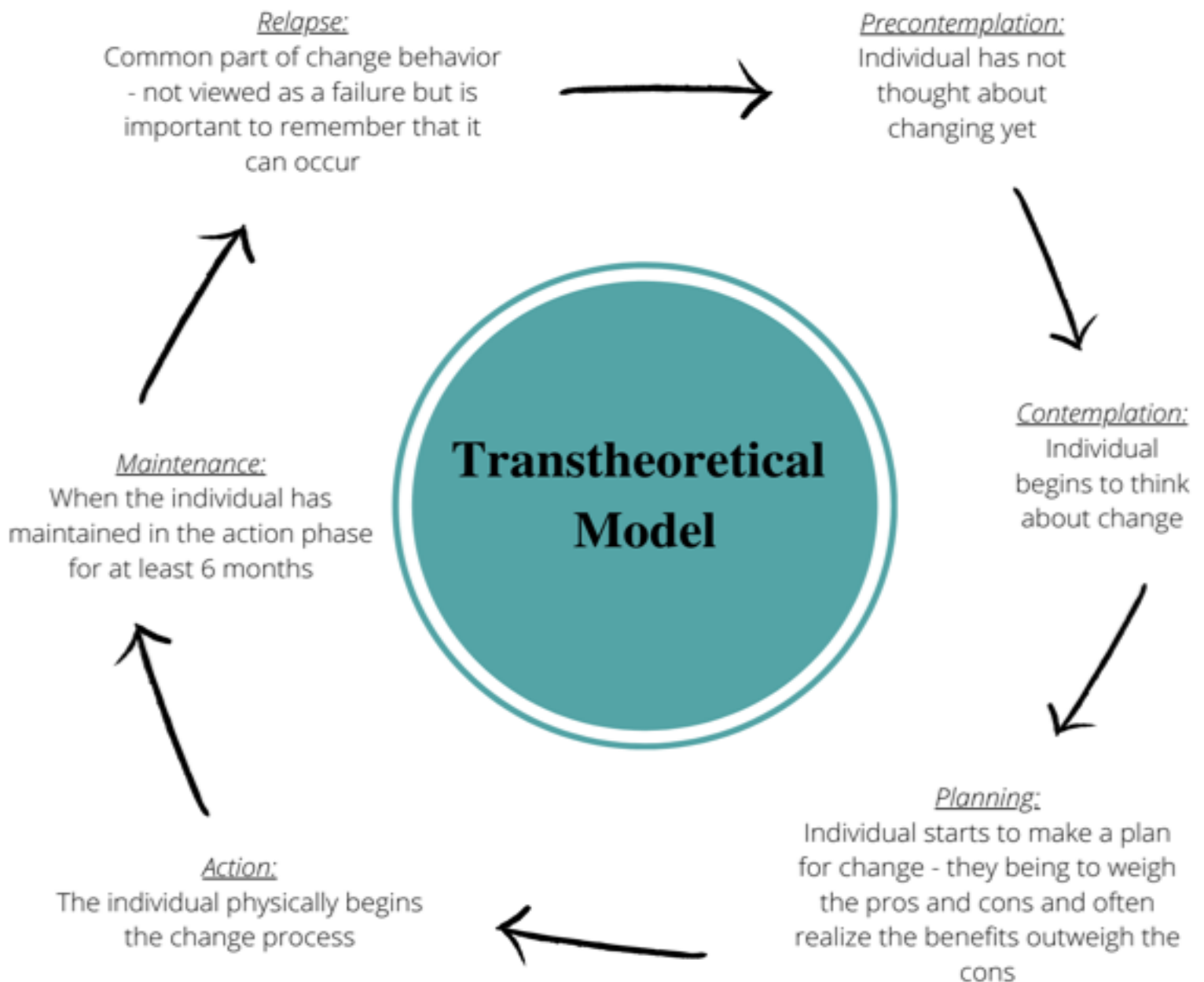
Hypervigilance can cause a trauma response resulting in individuals testing others by behaving in a disruptive or aggressive way to see how they will respond. Motivational interviewing is a communication tactic that can be used to help communicate more effectively with these adolescents. The Developmental Relationships Framework has also been provided to help foster relationship building.

Motivational Interviewing: A collaborative, goal-oriented conversational approach to facilitate a person's motivation to make a significant change, especially related to lifestyle (Brown, 2019).

First – identify a person's readiness to change and enhance motivation to change and remember to:

- Talk less than the individuals
- Maintain MI spirit
 - Obtain from directing, advising, and confronting
 - Rule of thumb – reflect twice for each question asked
 - Mostly use open-ended questions
 - Avoid getting ahead of the individuals readiness level – let them lead

Goals for MI



Brown (2019)

4 Processes of MI

Engaging

- Discussing change, desires, and goals
- Can take minutes to months
- Involves listening, understanding, and perspective-taking
- Person-centered communication

Focusing

- Agreeing with the person on what the direction of change or goal will be
- May be straightforward or vague
- Usually the client brings focus, sometimes needs exploration or temporary focus

Evoking

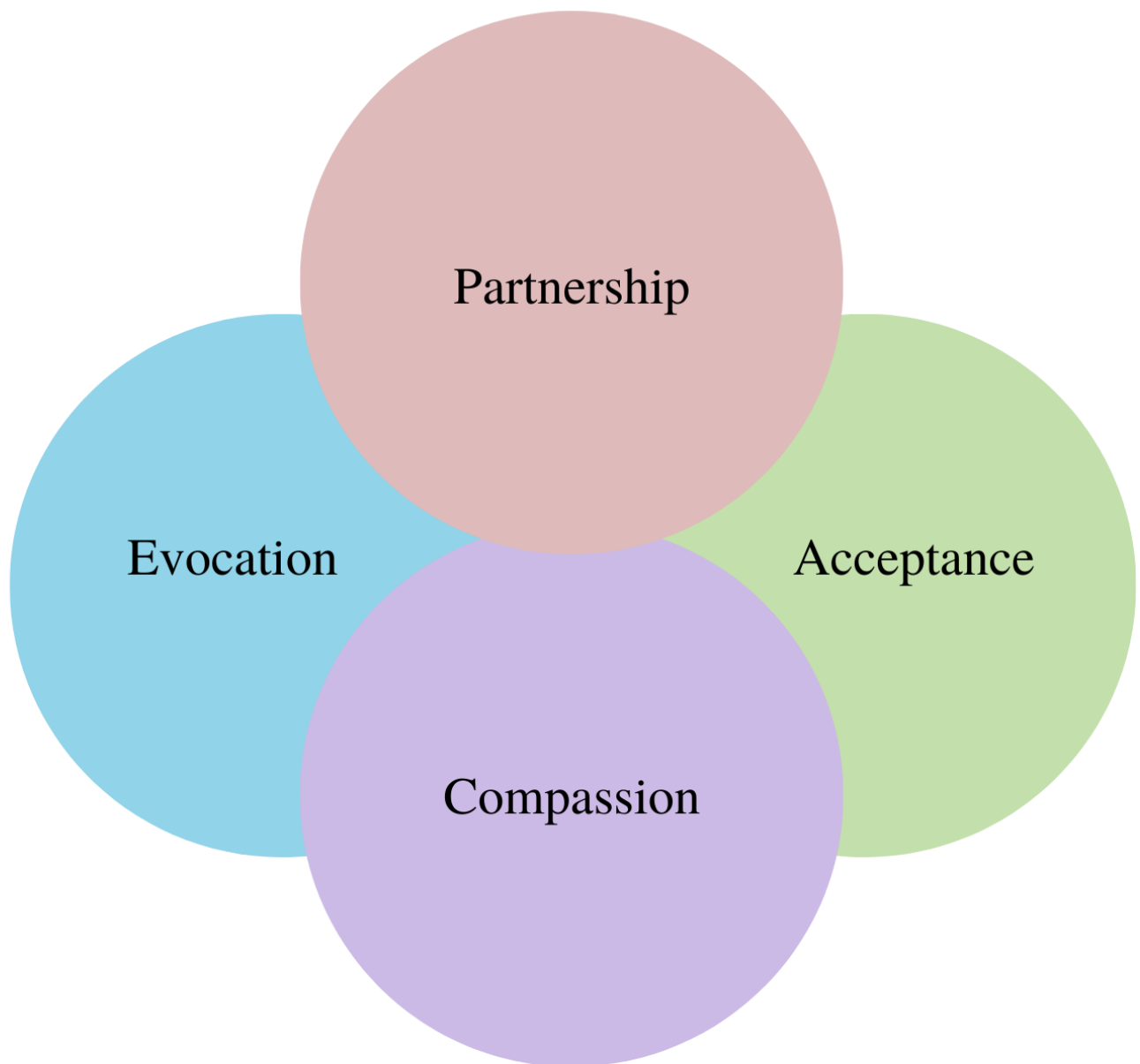
- The heart of MI
- Eliciting from the client what their wisdom, strategies, and ideas about change are and why change is important to them
- Brings forth the person's own motivation and reasons for change!

Planning

- Consolidating commitment to change by...
 - Reinforce commitment language
 - Asking key questions to determine readiness for action planning
 - Assisting with change plans
 - Revisiting change plans to make adjustments or return to former stages for more information

MI Spirit - PACE

Utilize the MI Spirit (PACE) and MI Skills (OARS) in harmony



MI Skills - OARS

Open-ended questions – Questions that don't allow just a yes or no response, requiring individuals to give more information

Affirmation – Positive statements and/or gestures on the client's thoughts, feeling, or actions towards desired change in order to help overcome self-sabotaging or negative thoughts.

Formula:

- Identify personal strength + behavior/value
- Personal strength = persistence
- Behavior/value = completed food logs
- “you are persistent” “you are always positive, and you were able to reach your goal for the week”

Reflections – A way to express uncertainty

- Considered the “backbone” of MI
- Communicates an observation, a theme, hypothesis, or conclusion that is evident from the client's verbal and non-verbal behavior
- Formed as a statement, not a question
 - Generally, a reflection should not be longer than the client's statement
- Allows the client to provide feedback as to whether or not the reflection is accurate

Summarizations – A way to let individuals know that they are being heard and to bridge any miscommunication

- Pulling together points from two or more prior statements
- Express active listening and reflect back to the person's story
- Used to structure the session and guide clients towards change

Brown (2019)

Components	Action
Demonstrate a concern and show them you care	<ul style="list-style-type: none"> • Be reliable and build trust • Demonstrate active listening • Do not give up on them • Be welcoming • Show encouragement and pride – praise them for their accomplishments
Challenge growth	<ul style="list-style-type: none"> • Expect them to do their best • Challenge them to step out of their comfort zone • Hold accountability, be consistent with consequences • Allow reflection on their mistakes
Provide support and guidance	<ul style="list-style-type: none"> • Help them with difficult situations when needed • Advocate for them • Set expectations and boundaries, and follow through with them
Collaborate and be respectful	<ul style="list-style-type: none"> • Show them dignity and respect • Communicate and collaborate with them when problems arise
Increase their possibilities and introduce them to people who could help them grow	<ul style="list-style-type: none"> • Teach them skills • Inspire them to grow

Developmental Relationships Framework

(Scales et al., 2019)

COMMUNICATION AMONGST EDUCATORS

Communication Do's	Benefits
Identify and address conflicts as soon as possible	Can help to "clear the air" and prevent conflicts from becoming worse
Utilize a bottom-up approach - an approach that involves a collaboration between all team members -	Increases understanding among all members involved, improves implementations and satisfaction with decision making
Be transparent	Creates an opportunity for open communication and builds trust
Analyze current and previous communication techniques	Provides an understanding of what works well and what didn't work well, allowing an opportunity for improvement
Set clear communication guidelines and create a communication plan each year	Allows communication to flow more easily, decreases misunderstandings, helps tailor a plan to each persons communication style
Establishes goals and objectives	Helps to stay on task, provides an understanding of priorities
Update plans, changes, and decisions regularly utilizing chosen communication tool	Increases successful implementation of plans, and decreases misunderstandings and frustrations

TECHNOLOGY COMMUNICATION OPTIONS



<https://www.remind.com>

- Simple to use
- Two-way communication
- Built for education



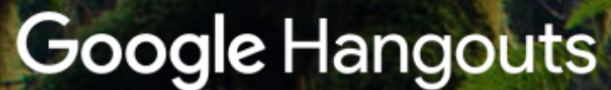
<https://slack.com>

- Two-way communication
- File sharing
- Separate chat topics
- Private messaging
- Search features



<https://www.atlassian.com>

- Plan & track
- Support & fix
- Code, build, & ship
- Collaborate



<https://hangouts.google.com>

- Can be quicker than email
- Good for a quick question or one-on-one conversation

EMOTIONAL & SENSORY REGULATION

Emotional regulation refers to the ability of an individual to control their conscious and unconscious emotions in a way that is appropriate for a given situation (Ratcliff et al., 2020). Emotional regulation occurs in coordination with the limbic system and executive functioning system (Ratcliff et al., 2020). Adolescents demonstrate differences in how they process and respond to stimuli in their environments. This can either be over-responsive reactions or under-responsive reactions. Individuals who have difficulty with processing emotions show differences in neural activity between the limbic regions and prefrontal cortex. In order for adolescents to show goal-directed behavior, they must have the ability to regulate negative emotions and promote positive emotions. In order for adolescents to be able to properly regulate their emotions they must recognize their emotions, label emotions, and maintain positive emotions. Difficulty in this area results in poor emotional awareness, difficulty understanding emotions in themselves and in others, and difficulty managing emotions when faced with adversity (Ratcliff et al., 2020).

Sensory system	Description/signs of difficulty	Strategies
Proprioception	<ul style="list-style-type: none"> • Having awareness of where your body is at in space <p>-Difficulty with knowing where your body is in space. May appear clumsy, displays difficulty with body/limb position and movement. May seek out forceful/excessive movements</p>	<ul style="list-style-type: none"> • Any type of safe movement - jumping jacks, jumping, climbing, push-ups, using exercise machines • Pulling or pushing heavy items • Sitting/bouncing on a yoga ball • Weighted blankets, lap pads/animals
Tactile	<ul style="list-style-type: none"> • Sense of touch <p>-Difficulty sensing where an object touched them at, difficulty identifying what an object is just by touch (stereognosis)</p>	<ul style="list-style-type: none"> • Stress balls • Enlarged pencil grips • Avoid sticky/messy things • Wear clothing that is loose, comfortable, and has no tags • Do not touch them without asking
Auditory	<ul style="list-style-type: none"> • Sense of hearing <p>-Difficulty with comprehension (e.g., following directions), difficulty locating where sound is coming from, difficulty concentrating with background noise</p>	<ul style="list-style-type: none"> • Headphones to help muffle sounds • Listening to music can help them concentrate • Avoid high-pitched sounds • Speak directly to them, make eye contact • Allow time for them to respond • Give clear directions
Taste/smell	<ul style="list-style-type: none"> • Sense of taste and smell <p>-Being overly sensitive to smells/food to where it disrupts engagement in tasks</p>	<ul style="list-style-type: none"> • Limit strong chemical cleaners • Limit diffuser/perfume usage
Movement	<ul style="list-style-type: none"> • Change in physical location or position <p>-Difficulty with sitting still long enough to complete a task</p>	<ul style="list-style-type: none"> • Allow time/space for movement, take movement breaks (go to the gym, for a walk, stretch, yoga poses, etc.)
Visual	<ul style="list-style-type: none"> • Seeing or sight <p>-Difficulty with identifying two objects that are the same, difficulty discriminating objects, difficulty with visual memory</p>	<ul style="list-style-type: none"> • Decrease clutter • Encourage organization by having a set place for certain things such as homework assignments • Utilize visual timers, schedules

(Ratcliff et al., 2020; Parham & Mailloux, 2020)

Other coping tools:

- Chewing gum
- Water/snacks
- Fidgets
- Coloring
- Mindfulness – glitter jar, belly breathing, relaxation techniques, gratitude
- Breathing exercises
- Going for a walk
- Alone time
- Talking to someone
- Sensory rooms with white noise machines, dim lighting options, string lights/lava lamps or other fun lighting objects, bubble tubes or other visual stimulation objects, bean bags, screens to display calming scenery

Zones of Regulation

The "zones of regulation" is a curriculum full of lessons and activities designed by Leah Kuypers, a licensed occupational therapist, to help individuals gain skills in self-regulation. Self-regulation can be defined as the best state of alertness for the body and its emotions to be in, in any given situation (Kuypers, 2011). For the purpose of this product, only some concepts and strategies from the zones of regulation curriculum are discussed. This curriculum can be taught in one-on-one or group settings. When implementing the zones, it is most successful when utilizing it consistently, and by using the language provided in the curriculum. Utilizing the behavior chart and sensory table provided in this guide would be helpful in identifying triggers and coping tools for students to use. This curriculum will help students gain insight on their own emotions and will help to create a way to manage these emotions more effectively to support their academic performance.

Zones of regulation topics discussed in this guide:

- The four zones and their associated feelings
- Triggers
- Coping tools
- Expected vs. unexpected behavior
- Flexible vs. stuck thinking
- Size of the problem



- First - introduce the student's to the zones of regulation curriculum. Teach them about these four different zones, what they mean, and their associated feelings (note: feelings go well beyond what are listed above). There are numerous ways to practice this concept including:
 - Printed visuals of each zone color and their associated feelings - have the student practice matching each color to the zone
 - Quiz the student's verbally
 - Have them identify how they are feeling currently and have them match what zone they belong in
 - State an emotion and ask the student a time where they have felt that emotion before, then have them name the zone they were in

The ability for student's to understand these zones and emotions not only in their own body, but in others as well is equally as important. Often times, individuals who have been affected by ACEs have difficulty with identifying emotions in general. A way for them to understand these emotions is by teaching them the physiological characteristics associated with each feeling, and by having them identify facial expressions for each feeling as well. A good way to do this is providing the students with visuals of others expressing these emotions, and having them name each physical and physiological characteristic (e.g., if a sad person was provided, the student should name each characteristic they are displaying that tells us they are sad - frowning, crying, eyebrows are going down, droopy eyelids, slouched posture)

Triggers and Coping Tools

Triggers: something or someone that causes an individual to become disregulated causing them to be put in the yellow or red zone (Kuypers, 2011).

Coping tools: a calming technique or object that individuals use to help them become regulated and calm again (Kuypers, 2011).

Identifying triggers can help to prevent situations to become escalated quickly. It is important for both the student and the teacher to understand what may trigger the individual. Once the triggers are identified and analyzed, the teacher can work with the student to identify coping tools that are helpful for the student to use in times of distress. Coping tools may include but are not limited to: taking a break and/or walking away from the situation, coloring, talking to someone, engaging in breathing exercises, having a snack, getting a drink of water, journaling.

Ways to teach student's insight and how to utilize the zones of regulation concepts:

1. Analyze the situation

- a. Communicate with the student and discuss situations where using the zones concepts would have been helpful. For example, talk about a situation where the student was either in the yellow zone or red zone and did not react appropriately. *Ask them:*
 - i. How did you feel during that situation? (note - it is helpful to point out any physiological characteristics they may have been feeling, such as a fast heart beat so that they can gain a better understand of the clues our body's give us when we start to feel certain emotions)
 - ii. What zone do you think you were in?
 - iii. How did you react to this feeling? (note - it is helpful to incorporate any concepts related to the zones of regulation curriculum, talk about flexible vs. stuck thinking and expected and unexpected behaviors)
 - iv. What is something that you could have done differently? (note. - this is a good time to discuss coping tools and size of the problem)
- a. Communicate with student and discuss situations where they were in the yellow or red zone and WERE able to act appropriately.

Flexible vs. Stuck Thinking

Flexible thinking: someone is able to have a different perspective on a situation or way(s) to do something (Kuypers, 2011)

Expected behavior: behavior that is seen as good/appropriate and makes people around you feel safe (Kuypers, 2011)

Unexpected behavior: behavior that is not appropriate for the given situation and makes people around you feel uncomfortable (Kuypers, 2011)

Size of the Problem

size of the problem = size of the reaction

Small problems

Problems you can fix yourself

- spilling water
- not liking the lunch options
- not getting to sit where you want to
- not winning a game
- failing an exam you studied hard for

Medium problems

Problems you might need some help, but it can wait

- getting a cut on your finger
- someone in class is bothering you, but not harming you
- not understanding content that is being taught in class
- not winning a game

Big problems

Considered an emergency, you need help right away

- someone is harassing you
- someone is physically hurting you
- someone mentioned that they might hurt themselves or others
- the school is on fire

Go through these concepts regularly with the students until they are able to understand them without being helped. Use examples, visual handouts, play games, and use reinforcements. Go to <https://www.zonesofregulation.com/index.html> for more information on the zones of regulation curriculum and for resources and handouts.

EXECUTIVE FUNCTIONING

Executive functioning refers to underlying processes such as attention, inhibition, working memory, emotion, and action that allow individuals to engage in independent, purposeful, and goal-directed behavior. Executive functioning deficits can impact the ability to use these processes, and can lead to more risk behavior, particularly during adolescence. Deficits in executive functioning processes can have a major impact on adolescents' academic performance. Examples include difficulty with time management, maintaining attention to tasks, comprehending information, managing their emotions, and resisting distractions (Ratcliff et al., 2020).

Executive Functions

Focus

- Sustaining and shifting attention to tasks
 - Ex. Time management and being able to sustain attention long enough to complete tasks in an allotted amount of time (e.g. tests, getting ready in the morning, completing homework assignments)
 - Ex. Initiating and being persistent enough to complete meaningful tasks

Inhibition

- Controlling one's impulses, regulating behaviors
 - Emotional regulation, being able to stop responses that are not appropriate for a situation
 - Being flexible and adjusting an approach to a situation or task

Memory

- Utilizing working memory and accessing recall
 - Ex. Being able to comprehend lessons, and understanding "rules" and expected behaviors

Emotion

- Managing frustration and modulating emotions
 - Ex. Being able to handle stressful situations at school

Action (goal-directed)

- Monitoring and self-regulating action
 - Ex. planning and organizing a task, putting forethought into future events

Environmental modifications to Executive Functioning Deficits

- Sustained attention - divide tasks into smaller pieces
- Organization - provide checklists
- Working memory - utilize visual organizers to help cue adolescents to complete tasks
- Limit distractors - provide comfortable seating, adequate lighting, available resources
- Provide clear and explicit expectations regarding behaviors
- Create and organize systems that are unique to a person's situation and abilities

INTENDED USE AND FUTURE RECOMMENDATIONS

This guide is intended to be utilized by all educators who may come into contact with adolescents affected by ACEs. This includes teachers, administrators, counselors, and paraprofessionals. This guide was created to raise awareness on ACEs, and the wide variety of negative impacts they have on adolescents and their day-to-day life as a student trying to juggle many tasks. The support that adolescents affected by ACEs need goes well beyond the everyday strategies that this guide provides. Future recommendations to increase the support these adolescents need include:

- A more detailed and specified approach that is tailored to each individual needs. This can be done by making an occupational therapy referral. Occupational therapists can assist with gathering data from interviews, questionnaires, informal and formal observations, and standardized tests. They are able to reach conclusions, make recommendations, and apply appropriate group or one-on-one interventions based on the individual needs (Parham & Maillox, 2020). Occupational therapists are trained and expected to have a team-based approach on intervention by communicating and collaborating with student teacher's, other therapists, and parents/guardians. Occupational therapists can provide a unique approach to trauma informed care.
- Hold an in-service or training regarding the information included in this guide. This is recommended to be completed by all educators who may come into contact with adolescents affected by ACEs.

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